

November 2015



Township of Puslinch

PUSLINCH FIRE AND RESCUE SERVICES

MASTER FIRE PLAN

Final Report

Submitted by:

**DILLON
CONSULTING**

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Executive Summary

This Master Fire Plan (MFP) has been developed to provide the Township of Puslinch with a strategic framework to assist Council in making decisions regarding the provision of fire protection and emergency services based on in-depth analyses of its “local needs and circumstances” as defined by the *Fire Protection and Prevention Act* (1997) (FPPA).

Our interpretation of Council’s commitment to public safety is to provide the optimal level of fire protection and emergency services in responding to the Township’s legislated responsibilities as contained within the *FPPA* and the *Occupational Health and Safety Act* (OHSA).

Significant emphasis has been placed on the use of Public Fire Safety Guidelines (PFSG) and the resources provided by the Office of the Fire Marshal and Emergency Management (OFMEM). One of the primary roles of the OFMEM is to provide assistance to municipalities through the provision of information and processes to support determining the fire protection services a municipality requires, based on its local needs and circumstances. The Comprehensive Fire Safety Effectiveness Model and Fire Risk Sub-Model are examples of the OFMEM documents that have been utilized to prepare this MFP.

Within the Province of Ontario the delivery of fire protection services are guided by the FPPA including the strategic optimization of the three lines of defence which include:

- I. Public Education and Prevention;***
- II. Fire Safety Standards and Enforcement; and***
- III. Emergency Response.***

Optimization of the first two lines of defence has proven to be an effective strategy in reducing the impacts of fire, and fire related injuries across the province. The OFMEM has indicated that further optimization of programs targeted specifically at the first two lines of defence must be a priority for fire services within Ontario. Emergency response, including fire suppression resources, is a necessary tool in managing the overall fire risk within a community. However, as indicated by the OFMEM, preventing fires through the delivery of education and prevention programs, and utilization of the appropriate fire safety standards and enforcement strategies is the most effective means to further reduce the impacts of fire, and fire related injuries across the province.

The analyses within this report recognize four strategic priorities for the delivery of fire protection services within the Township of Puslinch including:

- *The utilization of a Community Risk Profile to determine the fire safety risks within the Township as the basis for developing clear goals and objectives for all fire protection and emergency services to be provided by the Puslinch Fire and Rescue Services;*

- *The optimization of the first two lines of defence including public education and fire prevention, and the utilization of fire safety standards and fire code enforcement to provide a comprehensive fire protection program within the Township based on the results of the Community Risk Profile;*
- *Emphasis on the value of all emergency services that are provided by the Puslinch Fire and Rescue such as responses to motor vehicle accidents and medical responses that enhance life safety within the Township; and*
- *Emphasis on strategies that support the sustainability of fire protection and emergency services that provide the most cost effective and efficient level of services resulting in the best value for the community.*

The FPPA states that, "every municipality shall, establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention; and provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances."

In our view the Puslinch Fire and Rescue Services (PFRS) reflects a progressive fire service that, with the support of the current and previous municipal Councils, has developed a comprehensive fire protection plan that is supported by a high degree of public satisfaction and support. The findings of this MFP reflect that the Township of Puslinch is currently providing a level of fire protection services commensurate with its legislated responsibilities as defined by the *Fire Protection and Prevention Act, 1997*. A summary of the MFP recommendations are provided below.

Industry best practices suggest that a review of the MFP should be conducted at five year intervals to ensure it continues to provide Council and staff with the strategic planning framework to address evolving trends and community growth in sustaining the most cost effective and efficient level of fire protection and emergency services resulting in the best value for the community.

Summary of Recommendations

The following is a summary of our recommendations for each division of the PFRS:

Administration Division:

1. *That the Mission Statement of the Puslinch Fire and Rescue Services be updated to include a Vision Statement and to reflect the framework of the OFMEM PFSG 03-02-13 "Master Planning Process for Fire Protection" subject to approval of the proposed Master Fire Plan by Council.*
2. *That consideration be given to increasing the hours of work for the part-time Administrative Assistant from the current 10 hours per week to 24 hours per week to support the administrative needs of the PFRS.*
3. *That the administrative workspace for the PFRS be reviewed in consideration of the recommendations of the Master Fire Plan and the current facilities review of the Township administrative offices.*

4. *That the Fire Chief be directed to prepare a fire department Annual Report including an updated Community Risk Profile for consideration by Council.*
5. *That the Establishing and Regulating By-Law #12/10 be reviewed and revised subject to the consideration and approval of the proposed Master Fire Plan by Council.*
6. *That the part-time Deputy Fire Chiefs Appointment By-law #019/14 be reviewed and revised subject to the consideration and approval of the recommendations impacting these positions included within the proposed Master Fire Plan by Council.*
7. *That following Council's consideration of the proposed Master Fire Plan that the Fire Chief be directed to review the current Mutual Aid Agreements in consideration of the fire suppression deployment options and utilization of automatic aid presented within the proposed Master Fire Plan.*
8. *That the Township prioritize the full implementation of the updated fire dispatch services agreement with the City of Guelph, including the provisions of performance measures similar to those identified within the NFPA 1221 standard, or alternatively begin investigating alternative solutions for the provisions of full fire dispatch services.*
9. *That the PFRS develop distinct formats for all PFRS Department Policies (DP's) and Standard Operating Guidelines (SOG's) to include a date of approval and signed approval by the Fire Chief or designate, and that all Department Policies and Standard Operating Guidelines be reviewed on annual basis as required by SOG #0-103.*
10. *That additional licensing be acquired for the FIREHOUSE records management software program to further enhance the records management practices of the PFRS.*
11. *That Council approve the strategic priorities identified within the proposed Master Fire Plan to guide the development and delivery of fire protection and emergency services within the Township of Puslinch.*

Fire Prevention/Public Education Division:

12. *That subject to Council's consideration and approval of the proposed Master Fire Plan that a Fire Prevention Policy be created utilizing the framework of PFSG 04-45-12 "Fire Prevention Policy" for consideration and approval by Council, and attached as an appendix to the fire department Establishing and Regulating By-law.*
13. *That subject to the consideration and approval of the proposed public fire safety education activities and program cycle objectives by Council that they be included within the proposed Fire Prevention Policy and proposed Establishing and Regulating By-Law.*
14. *That Council consider the provision of 20 hours per week to support a dedicated position of part-time Public Fire and Life Safety Educator reporting to the part-time Chief Fire Prevention Officer with the responsibility to coordinate and optimize the public fire safety education objectives of the PFRS.*
15. *That the PFRS Smoke Alarm Program be updated as a department Standard Operating Guideline and included within the proposed Fire Prevention Policy for consideration and approval by Council.*

16. *That PFSG OFM-TG-01-2012 be considered in developing the proposed Fire Prevention Policy for consideration and approval by Council.*
17. *That subject to the consideration and approval of the proposed fire inspection goals and objectives by Council that they be included within the proposed Fire Prevention Policy and proposed Establishing and Regulating By-Law.*
18. *That consideration be given to increasing the hours of work for the part-time Chief Fire Prevention Officer from the current 16 to 24 hours per week to achieve the proposed fire inspection frequencies identified within the proposed Master Fire Plan.*

Training Division:

19. *That the PFRS develop a comprehensive annual training program based on the NFPA Professional Qualifications Standards and the core functions of a comprehensive annual training program identified within the proposed Master Fire Plan.*
20. *That the part-time Fire Chief be directed to review the participation of the PFRS in joint training initiatives with the other Fire Department within Wellington County in seeking efficiencies in the provision of training programs for the PFRS.*
21. *That the PFRS include live fire training as a required element within the proposed comprehensive annual training program.*
22. *That the PFRS investigate the use of an online firefighter training program as a component of delivering the proposed comprehensive annual training program.*
23. *That the PFRS reduce the current level of emergency response services and related training for Confined Space Rescue and Slope/High Angle Rope Rescue incidents from an operational capability to an awareness level of response, and that these service levels be reflected in the proposed Establishing and Regulating By-law.*
24. *That the part-time Fire Chief be directed to investigate the options available for the delivery of operational level emergency response for incidents including Confined Space Rescue, Slope/High Angle Rope Rescue, HAZMAT response, and Trench Rescue.*
25. *That the PFRS enhance the training opportunities for Company Officers to achieve the competencies identified within the new NFPA 1021 Standard – Level II for Company Officers.*
26. *That the PFRS consider adoption of the Blue Card Fire Command Training Program as a component of the proposed Comprehensive Annual Training Program.*
27. *That the PFRS develop a succession plan for the PFRS including opportunities to enhance the leadership and management training available for all officers.*

Fire Suppression Division:

28. *That the emergency response performance objectives identified within the proposed Master Fire Plan be considered and approved by Council and included within the new Establishing and Regulating By-law including:*

Initial Response Staffing Performance Objective:

That the Township of Puslinch should be striving to achieve an initial response deployment of four firefighters to all fire related emergency calls.

Depth of Response Staffing Performance Objective:

That the Township of Puslinch should be **striving to achieve a depth of response deployment to all fire related emergency calls of four firefighters to low risk occupancies, 14 firefighters to moderate risk occupancies, and 24 firefighters to high risk occupancies.**

Response Time Performance Objective:

That the Township of Puslinch should be **striving to achieve the response time performance objective referenced within the NFPA 1720 Rural Area Demand Zone including a minimum of six firefighters responding within a 14 minute response time (turnout time + travel time) with a performance objective of 80%.**

29. That the PFRS continue to participate in the Superior Tanker Shuttle Accreditation process, and where possible identify additional alternative water supply locations to provide further enhancements to the accreditation.
30. That the Fire Chief be directed to develop a department policy for responding to medical responses that details the types of medical responses, requirements for volunteer firefighters responding, and requirements for data collection to be presented to Council for consideration and approval and inclusion within the recommended updated Establishing and Regulating By-law.
31. That Council authorize the Chief Administrative Officer and Fire Chief to approach the City of Cambridge to negotiate a revised Automatic Aid Agreement for the provision of fire suppression services as reflected in the proposed Master Fire Plan.
32. That Council authorize the Chief Administrative Officer and Fire Chief to approach the City of Guelph to negotiate an Automatic Aid Agreement for the provision of fire suppression services as reflected in the proposed Master Fire Plan.
33. That Council implement the strategies to optimize the Volunteer Firefighter Recruitment Process identified within the proposed Master Fire Plan including increasing the approved complement of the PFRS by 6 volunteer firefighters.
34. That consideration be given to reducing the hours of work for the part-time Fire Chief from the current 30 hours per week to 24 hours per week.
35. That consideration be given to making the position of part-time Deputy Fire Chief of Administration permanent with direct responsibility for the Fire Prevention, Public Education and Training Divisions with a set schedule of 24 hours per week.
36. That consideration be given to making the position of part-time Deputy Fire Chief of Operations permanent with direct responsibility for the Fire Suppression Division with a set schedule of 24 hours per week.
37. That Council implement the strategy to optimize the use of part-time resources included within the proposed Master Fire Plan.
38. That a revised on-call process be implemented to ensure a minimum response to include a minimum of six volunteer firefighters and a senior officer at all times.

39. *That a revised call-out process be considered to provide an option for alerting either the on-call crew, or alternatively all of the fire suppression resources of the PFRS.*
40. *That subject to Council's desire to enhance the level of fire suppression and emergency services that site Option "C," as presented within the proposed Master Fire Plan, including the addition of nine volunteer firefighters be considered for a satellite station (second station).*

Station, Apparatus & Equipment:

41. *That the Township of Puslinch prioritize the purchase of a replacement 75 foot Quint for Aerial #33.*
42. *That subject to the purchase of a new or used 75 foot Quint that the Township revise the major apparatus replacement plan to accommodate a 20 year life cycle from the time of construction for the purchased apparatus.*
43. *That the Township of Puslinch purchase a 4-wheel drive pick-up truck capable of carrying 5 to 6 volunteer firefighters and associated department equipment.*
44. *Subject to Council's consideration of the proposed Satellite Station it is recommended that the Township purchase a new or used triple combination pumper for operation from the proposed station.*
45. *That the PFRS develop a life cycle replacement plan for all equipment including firefighters bunker gear and self-contained breathing apparatus based on industry best practices and manufacturer's directions.*

1.0

Introduction

The Township of Puslinch (Township) initiated this Master Fire Plan (MFP) study to assess current and future levels of service and programs provided by the Puslinch Fire and Rescue Services (PFRS). The Master Fire Plan is a strategic document that will assist the Township and PFRS with planning the delivery of fire protection services over the next ten year period with consideration for the 20 year planning horizon. Master Fire Plans are typically ten year plans, with a review of the plan conducted at the five year horizon. Completion of the MFP recognizes the commitment of the Township's Council and senior staff in achieving the most cost effective and efficient level of fire protection services resulting in the best value for the community.

This MFP provides a complete review of the current operations of the PFRS to assist Council in establishing key objectives for the department. The plan includes recommendations to address both short-term and long-term strategies for the Township, consistent with the master fire planning process outlined within the Office of the Fire Marshal and Emergency Management, *Shaping Fire-Safe Communities Initiative*.

The overarching goal of this report is to present a clear understanding of the existing and future requirements of the PFRS. Referencing best practices, including relevant standards and legislation, this report was prepared by completing an assessment of the following departmental administrative and operational components:

- Governance, legislation, by-laws and SOG/SOP's;
- Administration, structure and workload;
- Fire prevention and public education;
- Firefighter staffing and service agreements;
- Community fire risk and hazards;
- Emergency response and station location;
- Firefighter training;
- Apparatus, equipment, inventories and maintenance;
- Dispatch and communications;
- Community consultation; and
- Budgets and revenues.

The Master Fire Plan was developed with a broad and comprehensive stakeholder consultation program. This included interviews with fire rescue department and Township staff, roundtable discussion session with the volunteer firefighters, targeted community stakeholder telephone interviews and continuous consultation with the Township's Fire Chief, Deputy Fire Chief, Chief Administration Officer (CAO) and Director of Finance.

1.1

Community Background

The Township of Puslinch is located in the County of Wellington. The Township is comprised of five hamlets including Aberfoyle, Arkell, Crieff, Morriston and Puslinch. The community is a predominantly rural and agricultural area which has been experiencing residential infill development and growth as a result of its proximity to Guelph, Cambridge and other urban centers within southern Ontario. The Township's current population is approximately 7,029 people (2011 Census) experiencing an approximate 5.1% increase in population since 2006. The current density of the Township is approximately 33 people per square kilometre.

It is anticipated that Puslinch's population will continue to grow in the future. The County's Official Plan outlines that the Township is anticipated to grow 32.7% from 2011 to 2031. The majority of expected growth is anticipated to occur within the hamlets of the Township.

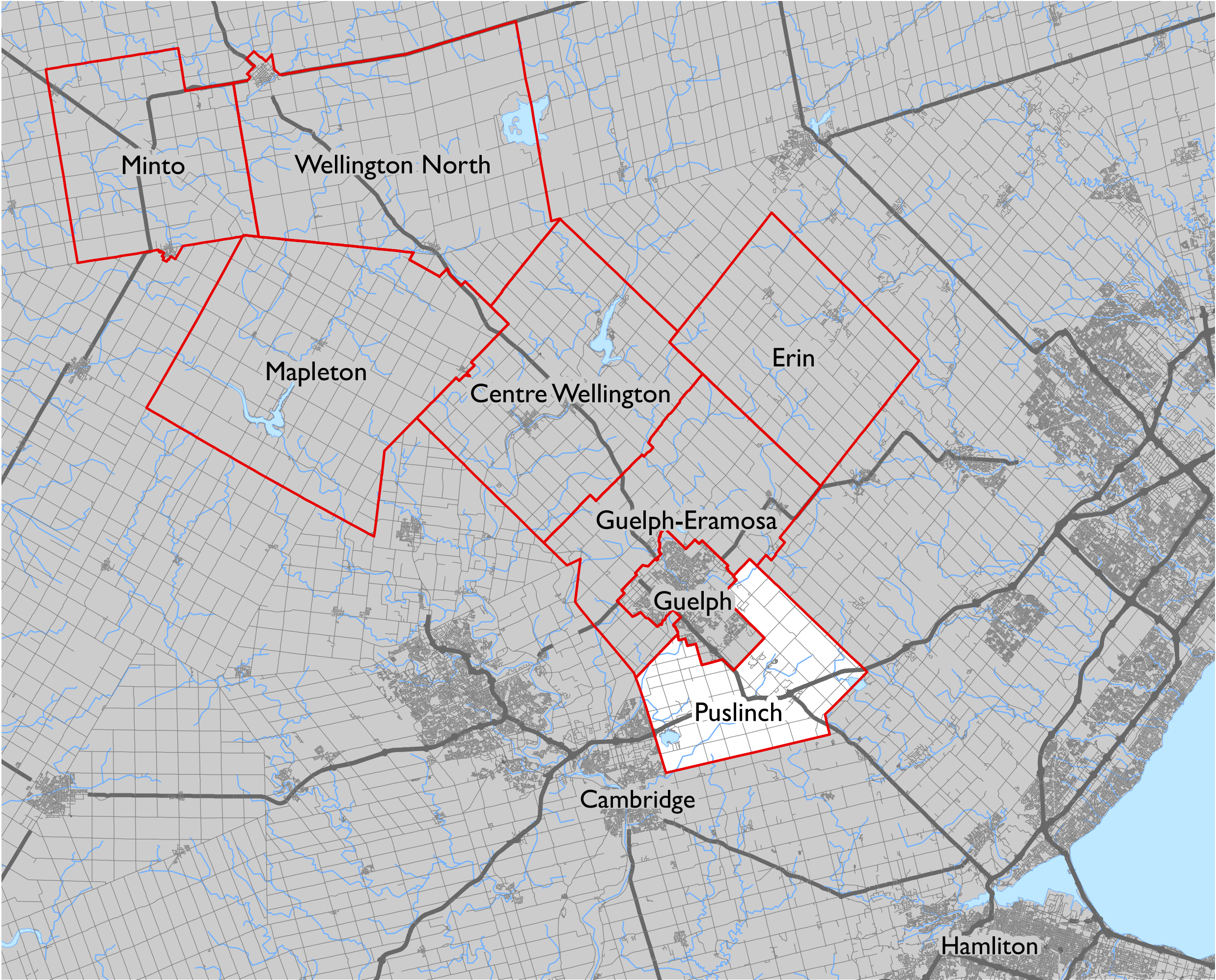
The PFRS currently operates from one centrally located fire station. The staff includes a part-time Fire Chief, two temporary part-time Deputy Fire Chiefs, a part-time Chief Fire Prevention Officer, a part-time Training Captain, part-time Training Officer, part time Administrative Assistant, four volunteer Captains, 28 volunteer firefighters and four auxiliary firefighters.

The primary duty of an Auxiliary Firefighter is to perform firefighting duties when accompanied and supervised by a member of the fire department including duties such as truck checks, attend community events, and support fire prevention and public education initiatives.

The Township of Puslinch encompasses an area of 215 square kilometers in southern Ontario. Shown in **Figure 1**, Puslinch is situated on the southern edge of Wellington County and is bordered by Guelph to the north, Cambridge to the west, Hamilton to the south, and the Town of Milton to the east.

PFRS provides services to the stretch of Highway 401 between Townline Road, Cambridge (Exit 286) and Guelph Line in Campbellville (Exit 312) which, on a given day, more than 50,000 visitors pass through. The department provides rescue from fires, motor vehicle collisions, medical assist calls, land/water based and ice rescues, confined space and rope rescue.








Highway 401, which runs east-west through the Township, and Highway 6, which runs north-south through the Township, are the primary access routes into Puslinch. The Township is also serviced by a number of county roads as well as concession and side roads which provide transportation links throughout Puslinch and to neighbouring Townships and municipalities of the County Of Wellington. The only public transportation in the Township is run by GO Transit which provides access to surrounding municipalities.



TOWNSHIP OF PUSLINCH
MASTER FIRE PLAN

PUSLINCH LOCATION MAP

FIGURE #1

-  COUNTY OF WELLINGTON
-  TOWNSHIP OF PUSLINCH
-  WATERBODY
-  HIGHWAY
-  ARTERIAL
-  COLLECTOR
-  LOCAL

00.51 2 km

SCALE 1:81,000



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR AND THE COUNTY OF WELLINGTON

MAP CREATED BY: SB
MAP CHECKED BY: SC
MAP PROJECTION: NAD 1983 UTM Zone 17N

\\dillon.ca\\DILLON_DFS\\Toronto\\Toronto CAD\\GIS\\141138 - Puslinch Fire and Rescue



PROJECT: 14-1138
STATUS: DRAFT
DATE: 7/16/2015

1.2

Department Background

The evolution of delivering fire protection within the Township of Puslinch is well documented within a book written by former Volunteer Fire Chief Dan Quinnell titled *"Puslinch Fire Department 1968-2008"*. The background within this book dates back to the early 1900's, including a detailed description of how the fire department evolved to its current state.

The Puslinch Fire Department was created on September 9, 1968 through passing of a by-law by the presiding Council. The initial group of 34 volunteer firefighters commenced an initial training program with the assistance of the Fire Marshal's Office (now the OFMEM). The Puslinch Fire Department officially started providing fire protection services to the Township on January 1st 1969.

The first fire station was located on Brock Road South, and it had enough space to accommodate two fire vehicles. An addition to the building allowed space for a radio room, classroom, shower, washroom, office for the Fire Chief and four fire vehicles.

In 1981, the Township completed the construction of its new municipal offices located on Wellington Road 34 just west of Brock Road. In addition to the fire department this new complex provided a centrally located facility for the roads department and municipal offices. In 2002, an addition to the municipal offices was completed providing more office space for the fire chief, training officers, fire prevention and equipment storage.

Another important and relevant element to this MFP is the Township's history of having agreements with surrounding municipalities in supporting the fire department's resources in the delivery of fire protection services. For example, Puslinch has a long history of shared services and fire protection agreements with the City of Cambridge.

2.0

Legislation

2.1

Fire Prevention and Protection Act, 1997

Within the Province of Ontario the relevant legislation for the operation of a fire department is contained within the *Fire Protection and Prevention Act, 1997* (FPPA). The following are applicable sections of the FPPA for reference purposes:

PART I DEFINITIONS	
Definitions	<p>1.(1) In this Act,</p> <p>“fire chief” means a fire chief appointed under section 6 (1), (2) of (4); (“chef des pompiers”)</p> <p>“fire code” means the fire code established under Part IV; (“code de prevention des incendies”)</p> <p>“fire department” means a group of firefighters authorized to provide fire protection services by a municipality, group of municipalities or by an agreement made under section 3; (“service d’ incendie”)</p> <p>“Fire Marshal” means the Fire Marshal appointed under subsection 8 (1); (“commissaire des incendies”)</p> <p>“fire protection services” includes fire suppression, fire prevention, fire safety education, communication, training of persons involved in the provisions of fire protection services, rescue and emergency services and the delivery of all those Services; (“services de protection contre les incendies”)</p> <p>“municipality” means the local municipality as defined in the Municipal Act, 2001; (“municipalite”)</p> <p>“prescribed” means prescribed by regulation (“prescript”)</p> <p>“regulation” means a regulation made under this Act; (“reglement”)</p> <p>“volunteer firefighter” means a firefighter who provides fire protection services either voluntarily or for a nominal consideration, honorarium, training or activity allowance; (“pompier volontaire”)</p>
Application of definition of firefighter	<p>(3) The definition of firefighter in subsection (1) does not apply to Part IX. 1997, c. 4, s. 1 (2)</p>
Automatic aid agreements	<p>(4) For the purposes of this Act, an automatic aid agreement means any agreement under which,</p> <p>(a) a municipality agrees to ensure the provision of an initial response to fires and 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</p> <p>(b) a municipality agrees to ensure the provision of a supplemental response to fires, rescues and other 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 other emergencies occurring in the part of the other municipality. 1997, c. 4, s. 1 (4)</p>

**PART I
DEFINITIONS**

**PART II
RESPONSIBILITY FOR FIRE PROTECTION SERVICES**

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.
Services to be provided	(3) In determining the form and content of the program that it must offer under clause (1)(a) and the other fire protection services that it may offer under clause (1)(b), a municipality may seek the advice of the Fire Marshal
Automatic aid agreements	(6) A municipality may enter into an automatic aid agreement to provide or receive the initial or supplemental response to fires, rescues and emergencies.
Review of municipal fire services	(7) The Fire Marshal may monitor and review the fire protection services provided by municipalities to ensure that municipalities have met their responsibilities under this section, and if the Fire Marshal is of the opinion that, as a result of a municipality failing to comply with its responsibilities under subsection (1), a serious threat to public safety exists in the municipality, he or she may make recommendations to the council of the municipality with respect to possible measures the municipality may take to remedy or reduce the threat to public safety.
Failure to provide services	(8) If a municipality fails to adhere to the recommendations made by the Fire Marshal under subsection (7) or to take any other measure that in the opinion of the Fire Marshal will remedy or reduce the threat to public safety, the Minister may recommend the Lieutenant Governor in Council that a regulation be made under subsection (9).
Regulation	(9) Upon the recommendation of the Minister, the Lieutenant Governor in council may make regulations establishing standards for fire protection services in municipalities and requiring municipalities to comply with the standards.
Fire departments	(1) A fire department shall provide fire suppression services and may provide other fire protection services in a municipality, group of municipalities or in territory without municipal organization. 1997, c. 4, s. 5 (1)
Same	(2) Subject to subsection (3), the council of a municipality may establish more than one fire department for the municipality. 1997, c. 4, s. 5 (2)
Exception	(3) The council of a municipality may not establish more than one fire department if, for a period of at least 12 months before the day this Act comes into force, fire protection services in the municipality were provided by a fire department composed exclusively of full-time firefighters. 1997, c. 4, s. 5 (3)
Same	(4) The councils of two or more municipalities may establish one or more fire departments for the municipalities. 1997, c. 4, s. 5 (4)

**PART I
DEFINITIONS**

Fire chief, municipalities	6. (1) If a fire department is established for the whole or part of a municipality or for more than one municipality, the council of the municipality or the councils of the municipalities, as the case may be, shall appoint a fire chief for the fire department.
Same	(2) The council of a municipality or the councils of two or more municipalities may appoint a fire chief for two or more fire departments.
Responsibility to council	(3) A fire chief is the person who is ultimately responsible to the council of a municipality that appointed him or her for the delivery of fire protection services
Powers of a fire chief	(5) The fire chief may exercise all powers assigned to him or her under this Act within the territorial limits of the municipality and within any other area in which the municipality has agreed to provide fire protection services, subject to any conditions specified in the agreement.

**PART III
FIRE MARSHAL**

Appointment of Fire Marshal	8 (1) There shall be a Fire Marshal who shall be appointed by the Lieutenant Governor in Council.
Powers of Fire Marshal	<p>9.(1) the Fire Marshal has the power,</p> <ul style="list-style-type: none"> (a) to monitor, review and advise municipalities respecting the provision of fire protection services and to make recommendations to municipal councils for improving the efficiency and effectiveness of those services; (b) to issue directives to assistants to the Fire Marshal respecting matters relating to this Act and the regulations; (c) to advise and assist ministries and agencies of government respecting fire protection services and related matters; (d) to issue guidelines to municipalities respecting fire protection services and related Matters; (e) to co-operate with anybody or person interested in developing and promoting the principles and practices of fire protections services; (f) to issue long service awards to persons involved in the provision of fire protection services; and (g) to exercise such other powers as may be assigned under this Act or as may be necessary to perform any duties assigned under this Act.
Duties of Fire Marshal	<p>9.(2) It is the duty of the Fire Marshal,</p> <ul style="list-style-type: none"> (a) to investigate the cause, origin and circumstances of any fire or of any explosion or condition that in opinion of the Fire Marshal might have caused a fire, explosion, loss of life, or damage to property; (b) to advise municipalities in the interpretation and enforcement of this Act and the regulations;

PART I
DEFINITIONS

	<p>(c) to provide information and advice on fire safety matters and fire protection matters by means of public meetings, newspaper articles, publications, electronic media and exhibitions and otherwise as the Fire Marshal considers available;</p> <p>(d) to develop training programs and evaluation systems for persons involved in the provision of fire protection services and to provide programs to improve practices relating to fire protection services;</p> <p>(e) to maintain and operate a central fire college;</p> <p>(f) to keep a record of every fire reported to the Fire Marshal with the facts, statistics and circumstances that are required under the Act;</p> <p>(g) to develop and maintain statistical records and conduct studies in respect of fire protection services; and</p> <p>(h) to perform such other duties as may be assigned to the Fire Marshal under this Act.</p>
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2.2 Office of the Fire Marshal and Emergency Management, Ontario

As indicated within the FPPA the duties of the Office of the Fire Marshal and Emergency Management (OFMEM) include responsibilities to assist with the interpretation of the Act, to develop training and evaluation systems and enforcement of the Act and its regulations. One of these roles includes the review of compliance with the minimum requirements of a Community Fire Safety Program, which must include:

- ***A smoke alarm program with home escape planning;***
- ***The distribution of fire safety education material to residents/occupants;***
- ***Inspections upon complaint or when requested to assist with code compliance (including any necessary code enforcement); and***
- ***A simplified risk assessment.***

The OFMEM has developed Public Fire Safety Guidelines (PFSG) to assist municipalities in making informed decisions to determine local “needs and circumstances” and achieve compliance with the FPPA.

It is important to note that the OFMEM began a comprehensive review of all Public Fire Safety Guidelines in January 2015. The following information is presented on the OFMEM website regarding this review:

“Please be advised that the Office of the Fire Marshal and Emergency Management (OFMEM) has commenced a comprehensive review of all OFMEM

Public Fire Safety Guidelines (PFSGs). The OFMEM anticipates releasing updated guidelines by the end of 2015. Pending the release of the new guidelines, the existing guidelines will remain on our website for reference. In addition, the OFMEM recommends municipalities access other resources from our website such as Technical Guidelines or Communiqués.”

With the Township’s approval, Dillon Consulting Limited continued the completion of this MFP utilizing the current PFSGs, recognizing the current review process is underway.

2.2.1

PFSG 01-02-01 “Comprehensive Fire Safety Effectiveness Model”

The Comprehensive Fire Safety Effectiveness Model (PFSG 01-02-01, attached as **Appendix A**) was developed by the OFMEM to assist communities in evaluating their level of fire safety. The model recognizes that there is more to providing fire protection services than just building fire stations, purchasing equipment and deploying firefighters. The Comprehensive Fire Safety Effectiveness Model (CFSEM) confirms that the fire service within Ontario is currently experiencing an evolution of significant change. In response to increasing public expectations and diminishing financial resources municipalities are being forced to critically assess their fire protection needs in identifying new and innovative ways to providing the most cost effective fire protection services.

The following is an excerpt from PFSG 01-02-01:

“The provision of fire protection in Ontario is a municipal responsibility. The level and amount of fire protection provided is determined by the residents of the community through decisions made by and support provided by the local municipal council. Due to a wide variety of factors, the Ontario fire service finds itself in a period of change. Increased community expectations coupled with reduced financial resources are forcing all communities to critically assess their fire protection needs and to develop new and innovative ways of providing the most cost effective level of service. A refocus on fire protection priorities is providing progressive fire departments and communities throughout Ontario with an exciting opportunity to enhance community fire safety. There is more to providing fire protection than trucks, stations, firefighters and equipment.”

The CFSEM identifies that every municipality should be guided by a master or strategic plan covering a planning horizon of five to ten years. Shifting from the traditional focus of hazard identification and fire suppression response the CFSEM recognizes more comprehensive risk assessment and optimizing the use of fire prevention and control systems are part of a paradigms shift within the fire service.

Figure 2 below shows each of the factors which make up the comprehensive model. Although the chart is divided equally, each factor will in reality contribute differently to the total level of fire protection provided to a community.

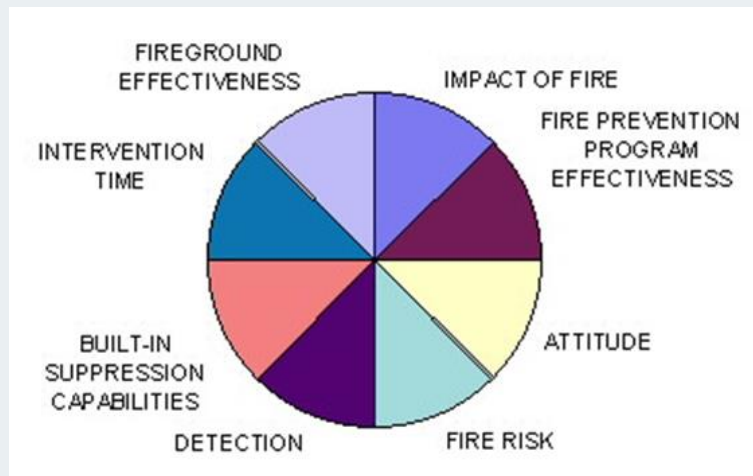
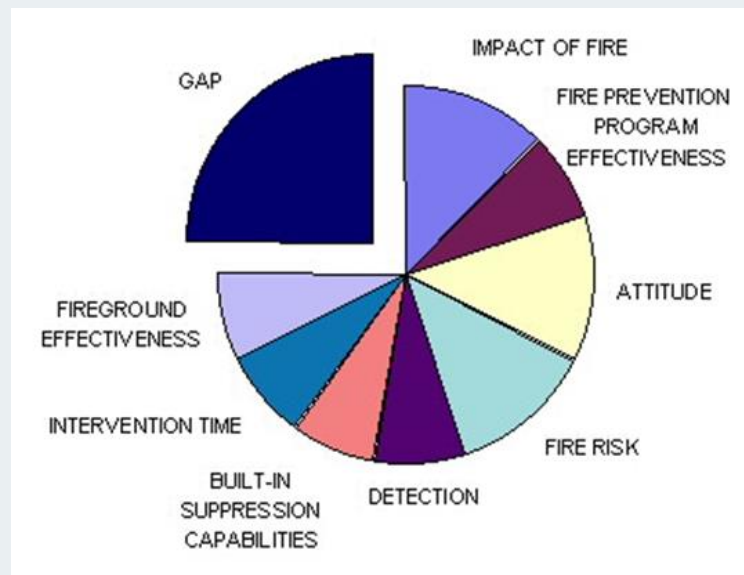
FIGURE 2: FACTORS IN A COMPREHENSIVE FIRE SAFETY EFFECTIVENESS MODEL

Figure 3 shows how the comprehensive model can be applied to a typical fire department. The "gap" depicts the difference between the existing level of protection and the ideal.

FIGURE 3: COMPREHENSIVE MODEL APPLIED TO A TYPICAL FIRE DEPARTMENT

Utilizing the framework of the CFSEM and the fire protection service assessment processes developed by the OFMEM the primary objective of this MFP is to identify, through evidence-based analysis, the presence of any existing gaps in the current delivery of fire protection services within the Township of Puslinch. The MFP also identifies where options for optimizing the level of fire protection services may be available.

In response to any existing gaps identified this MFP recommends strategies that are intended to optimize the use of the “three lines of defence” including:

- I. Public Education and Prevention**
- II. Fire Safety Standards and Enforcement**
- III. Emergency Response**

A further description of each line of defence includes:

I. Public Education and Prevention:

Educating residents of the community on means for them to fulfill their responsibilities for their own fire safety is a proven method of reducing the incidence of fire. Only by educating residents can fires be prevented and can those affected by fires respond properly to save lives, reduce injury and reduce the impact of fires;

II. Fire Safety Standards and Enforcement:

Ensuring that buildings have the required fire protection systems, safety features, including fire safety plans, and that these systems are maintained, so that the severity of fires may be minimized;

III. Emergency Response:

Providing well trained and equipped firefighters directed by capable officers to stop the spread of fires once they occur and to assist in protecting the lives and safety of residents. This is the failsafe for those times when fires occur despite prevention efforts.

The CFSEM emphasizes the importance and value of preventing a fire. This is important from both an economic and public safety perspective. At the same time, the CFSEM ensures an appropriate level of health and safety for firefighters. The model also recognizes that developing programs and providing resources to implement the first line of defence (a proactive public education and fire prevention program) can be the most effective strategy to reduce and potentially minimize the need for the other lines of defence.

2.2.2

PFSG 00-00-01 “Framework for Setting Guidelines within a Provincial-Municipal Relationship”

PFSG 00-00-01 (attached as **Appendix B**) provides an understanding of the municipal and provincial roles and responsibilities in terms of delivering fire protection services at the local level. The following is an excerpt from the background section of this guideline that states the following:

“Municipalities are compelled to establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention. The act also states that municipalities are responsible for arranging such other fire protection services as they determine may be necessary according to their own needs and circumstances. The relationship between the

province and municipalities is based on the principle that municipalities are responsible for arranging fire protection services according to their own needs and circumstances.”

As referenced in this document, PFSGs represent one component of the strategy that the Ministry of Community Safety and Correctional Services proposes for public fire protection in Ontario. The strategy referenced in PFSG 00-00-01 includes:

- ✓ *Clarifying municipal responsibility for local fire protection, while protecting the provincial interest in public safety.*
- ✓ *Removing remaining legislative barriers which forestall the restructuring and reorganization of municipal fire services.*
- ✓ *Facilitating a shift in focus which places priority on fire prevention and public education as opposed to fire suppression.*
- ✓ *Providing municipalities with decision-making tools to help them provide services according to their own needs and circumstances.*
- ✓ *Facilitating more active involvement of the private sector and other community groups in fire prevention and public education through the Fire Marshals Public Fire Safety Council.*

2.2.3 PFSG 03-02-13 “Master Planning Process for Fire Protection Services”

PFSG 03-02-13 (attached as **Appendix C**) outlines the process to develop a Master Fire Plan as the strategic blueprint for the delivery of fire protection services that address the “*local needs and circumstances*” as defined by the FPPA, and in determining the level of fire protection services the community can afford.

An excerpt from PFSG 03-02-13 guiding principles indicates the following:

- ✓ *The residents of any community are entitled to the most effective, efficient and safe fire services possible;*
- ✓ *The content of existing collective agreements will be respected and the collective bargaining process will be recognized as the appropriate channel for resolving labour relations issues under collective agreements and the Fire Protection and Prevention Act;*
- ✓ *Collective bargaining issues affecting public safety will be identified; and*
- ✓ *Those responsible must work within these parameters in making recommendations for improving municipal fire services.*

2.2.4 PFSG 01-01-01 “Fire Protection Review Process”

Analyzing local needs and circumstances is a core component of the fire master planning process. PFSG 01-01-01 (attached as **Appendix D**) identifies the three main issues that define local circumstances including the guidelines to be utilized:

- ✓ *PFSG 02-03-01 “Economic Circumstances” (attached as **Appendix E**)*
- ✓ *PFSG 02-02-03 “Comprehensive Community Fire Risk Assessment” (attached as **Appendix F**)*

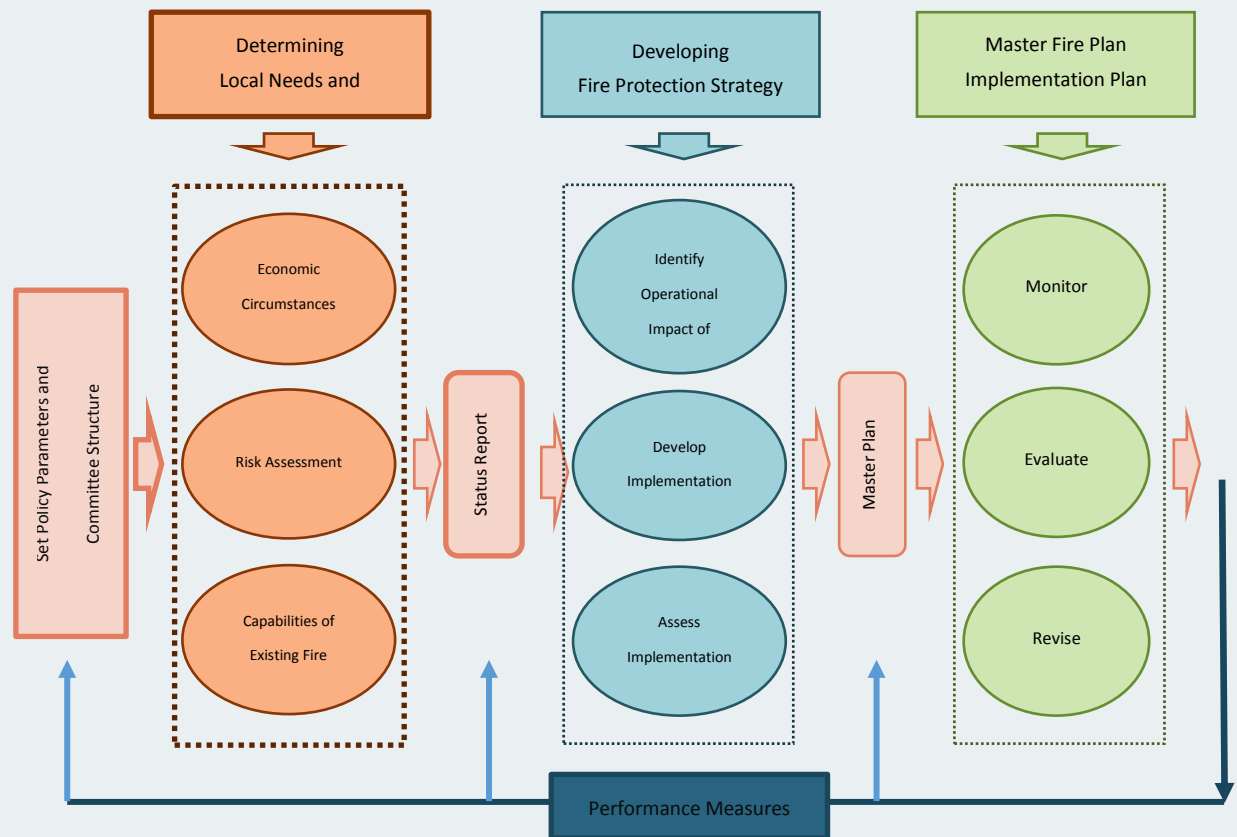
- ✓ *PFSG 02-04-01 “Capabilities of Existing Fire Protection Services” (attached as Appendix G)*

PFSG 01-01-01 describes a number of factors to be considered in conducting the review including:

- ✓ *The overall objective of any fire protection program is to provide the optimum level of protection to the community, in keeping with local needs and circumstances;*
- ✓ *Extensive research has demonstrated that there are a variety of factors that will have an impact on the fire department's capacity to fulfill this objective;*
- ✓ *Conversely, there are many different options that a municipality may pursue to improve the efficiency and effectiveness of its fire protection system;*
- ✓ *Local circumstances will have a profound effect on which factors are most important for any one municipality, and what options are available for its fire protection system;*
- ✓ *Selecting among these options is an extremely complex task; and*
- ✓ *Success will require a combination of specialized expertise in fire protection, and a thorough appreciation of your municipality's economic, social and political circumstances.*

Figure 4 reflects the framework for developing a plan for optimizing public fire safety.

FIGURE 4: FRAMEWORK FOR OPTIMIZING PUBLIC FIRE SAFETY



2.2.5

PFSG 04-08-10 “Operational Planning: An Official Guide to Matching Resource Deployment and Risk”

PFSG 04-08-10 (attached as **Appendix L**) was developed by the OFMEM to assist municipalities in meeting their responsibilities under Section 2. (1) (b) “provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances” of the FPPA.

As stated by the OFMEM in PFSG “04-08-10 Operational Planning: An Official Guide to Matching Resource Deployment and Risk:

“The overall public safety objective of a municipality is to provide the community with an optimal level of fire protection. Fire suppression is one aspect of the three lines of defence; the other two lines are Public Education and Prevention and Fire Safety Standards and Enforcement. A municipality needs to evaluate its existing fire suppression capabilities to ensure that it is managing all fire risk levels within the community, responding to and addressing fires that occur, and meeting public and council expectations.”

2.2.6

PFSG 04-40-03 “Selection of Appropriate Fire Prevention Programs”

PFSG 04-40-03 (attached as **Appendix I**) identifies the four minimum requirements of the FPPA Section 2. (1) (a) “*establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention*” including:

- ✓ *Simplified risk assessment;*
- ✓ *A smoke alarm program;*
- ✓ *Fire safety education material distributed to residents/occupants; and*
- ✓ *Inspections upon complaint or when requested to assist with code compliance.*

2.3

Occupational Health and Safety Act

The *Occupational Health and Safety Act, R.S.O. 1990* (OHSA) requires every employer to, “*take every precaution reasonable in the circumstances for the protection of the worker.*” The OHSA provides for the appointment of committees, and identifies the “*Ontario Fire Services Section 21 Advisory Committee*” as the advisory committee to the Minister of Labour with the role and responsibility to issue guidance notes to address firefighter-specific safety issues within Ontario.

Where 20 or more workers are regularly employed at a workplace, the OHSA requires the establishment of a Joint Health and Safety Committee (JHSC). The committee must hold regular meetings including the provision of agendas and minutes.

Firefighter safety must be a high priority in considering all of the activities and services to be provided by a fire department. This must include the provision of department policies and procedures, or Standard Operating Procedures (SOPs) that are consistent with the direction of the OHSA *Section 21 Guidance Notes* for the fire service.

3.0

Administration Division

The administrative functions of the PFRS are overseen by the part-time Fire Chief. At the Chief's request Council approved Report FIR 2014-001 that requested the appointment of two temporary part-time Deputy Fire Chiefs. A temporary part-time Deputy Fire Chief of Administration was appointed through By-law 028/14. To fill the role of temporary part-time Deputy Fire Chief of Operations Council approved the appointment of five Captains on a rotating basis. These appointments are also included within By-law 028/14.

Determining the appropriate organizational structure for the PFRS, including the number of part-time Deputy Fire Chiefs and their respective roles and responsibilities, is an objective of this MFP. Further discussion of these positions is included within following sections of this review.

Administrative support for the PFRS is currently provided by a part-time Administrative Assistant. This person reports directly to the part-time Fire Chief and has an office located within the fire station.

Working as a management team, this group is responsible for overseeing the delivery of all services provided by the department, including monitoring the resources and operations of the suppression, prevention and public education, and firefighter training functions of the department.

The Administration Division is also responsible for the preparation and management of budgets, personnel management, resource management and records management in accordance with the Townships Records Management By-Law and Records management Program.

3.1

Vision, Mission, Goals and Objectives

The OFMEM identifies the importance of a fire department mission statement within PFSG 03-02-13 *"Master Planning Process for Fire Protection."* A mission statement should identify the goals and objectives of the department, identify the primary stakeholders (e.g. volunteer firefighters) and acknowledge the types of services and commitment of the department in order to achieve success.

The current PFRS mission statement is as follows:

"We, the members of Puslinch Fire & Rescue, dedicate our efforts to provide for the safety and welfare of our residents and the public through preservation of life, property, and the environment."

- Prevent
- Save Lives
- Protect Property"

The objectives of the Puslinch Fire and Rescue are:

1. *To prevent fire – quickly realized that the best way to tackle the problem was to prevent fire from starting.*
2. *To reduce the loss of life & property – if a fire does start – when achievement of the first objective not realized.*

The Puslinch Fire and Rescue Services' mission statement and objectives relate to the Office of the Fire Marshal and Emergency Management's (OFMEM) comprehensive fire safety effectiveness model's three lines of defence, as they cover life safety, prevention and education, and emergency response. Best practices within the industry indicate that the mission statement of the department should be accompanied with a vision statement as well. The vision statement should identify how the department plans to implement the mission statement and how the department sees itself in preparing for the future.

Subject to Council's consideration and approval of this MFP consideration should be given to updating the PFRS mission statement and objectives to reflect the strategic priorities outlined and recommendations contained within this MFP. Where possible, the mission statement should include more specific detail with regard to the types of services and programs to be delivered to the community, reflecting alignment with the "needs and circumstances" clause of the FPPA. Consideration should also be given to creating a vision statement for the PFRS. A vision statement is intended to express the future goals and objectives of the fire and rescue services. In our experience updating the mission statement and objectives and creating a vision statement provides an opportunity for an excellent team building exercise.

It is recommended that the mission statement of the Puslinch Fire and Rescue Services be updated to include a Vision Statement and to reflect the framework of the OFMEM PFSG 03-02-13 "*Master Planning Process for Fire Protection*" subject to approval of the proposed Master Fire Plan by Council.

3.2 Department Services

All services provided by the PFRS are included within the Establishing and Regulating By-law 12/10 approved by Council on January 20th 2010. The core services provided by the PFRS are included within "Appendix A to By-law 12/10." These services include fire suppression and emergency response, fire prevention, fire safety education, emergency dispatching and communications.

By-law 12/10 assigns the organization of the department into the following divisions:

- Fire Prevention;
- Fire Suppression;
- Training;
- Public Education; and

- Administrative Services.

3.3 Department Staff Resources

The composition of the PFRS is prescribed within By-Law No. 12/10 and requires the PFRS to *“consist of a Fire Chief, Deputy Fire Chief, Captains, other Officers, firefighters, administrative support staff and any other person as may be authorized or considered necessary from time to time by Council or by the CAO for the Fire Department to perform Fire Protection Services.”*

As indicated previously within this review Council has endorsed a temporary strategy to include two part-time Deputy Fire Chiefs within the composition of the PFRS. The analysis of this strategy and the overall composition of the PFRS is an objective of this MFP that will be discussed further within this review.

3.3.1 Fire Chief (Part-time)

By-law 12/10 defines this position as follows: ***“Fire Chief means the person appointed by Council to act as Fire Chief for the Corporation and is ultimately responsible to Council as defined in the FPPA.”*** In the Township of Puslinch the part-time Fire Chief reports to Council through the Township’s Chief Administrative Officer/Clerk (CAO/Clerk).

As an employee of the Township the part-time Fire Chief is compensated based on the staff remuneration rates established by Council on an annual basis. For the year 2014 the approved hourly wage for the position of part-time Fire Chief was \$36.86. The part-time Fire Chief is currently authorized for 20 to 30 hours per week to fulfill his administrative responsibilities. In addition to compensation for administrative responsibilities the Chief is also compensated based on the hourly rate for this position when responding to emergencies, attending training sessions and other approved department business.

An overview of the part-time Fire Chief’s roles and responsibilities as defined by By-law 12/10 include:

- Provide leadership and direction to all staff, maintain effective working relations with all departments and staff.
- Develop, administer and control the annual departmental operating and capital budgets. Oversee, manage and approve expenditures in compliance with Township By-laws, policies and procedures.
- Establish goals, objectives, financial and human resource requirements and performance indicators related to departmental functions and monitor the achievement of results.
- Provide direction of work priorities for the department operations based on needs, direction of Council, legislative requirements and risk mitigation.
- Oversee and ensure the maintenance of all apparatus, equipment and grounds.

- Develop and monitor departmental policies, procedures and standards that guide and direct the activities within the department, and ensure full compliance with legislative and regulatory requirements to reduce corporate liabilities and mitigate risk.
- Research, prepare and present reports to Council or committees of Council making recommendations regarding policy initiatives related to departmental services, capital requirements or special projects as directed.
- Perform human resource functions, such as preparing job descriptions, recruitment, training, supervision, performance evaluation, discipline, and attendance management in accordance with Township policies. Monitor performance levels, assign duties, and provide guidance fostering a team work environment.
- Supervises the Deputy Fire Chief, Fire Prevention Officer and Volunteer Fire Fighters.
- Identify, establish and implement best practices related to department activities with a focus on continuous improvement, efficiencies and cost effectiveness.
- Attend Council and committee meetings to represent the department, make recommendations as appropriate, respond to enquiries and provide professional advice.
- Ensure timely responses are provided to department inquiries from Council and the public.
- Represent the department and/or Township with residents, community groups and/or associations, consultants and vendors as required.
- Perform additional duties and special projects as required.
- Be responsible to work in compliance with the Occupational Health and Safety Act and Regulations, the Township of Puslinch Occupational Health, Safety and Workplace Violence Policy and Procedures, as well as established industry guidelines.

Further analysis and recommendations regarding the part-time Fire Chief's position is included within Section 8.12 *Options for Enhancing Fire Suppression Services* section of this MFP.

3.3.2 Deputy Fire Chief/Operations (Part-time)

This temporary position is authorized by By-law 028/14 reporting directly to the part-time Fire Chief. As an employee of the Township the part-time Deputy Fire Chief/Operations is compensated based on the staff remuneration rates established by Council on an annual basis. For the year 2014 the approved hourly wage for the position of part-time Deputy Chief of Operations was \$31.56. The part-time Deputy Fire Chief of Operations is currently authorized for 10 hours per week to fulfill his administrative responsibilities. In addition to compensation for administrative responsibilities this position is also compensated based on the hourly rate for this position when responding to emergencies, attending training sessions and other approved department business.

An overview of the part-time Deputy Fire Chief/Operations roles and responsibilities as defined by Report FIR 2014-001 include:

General duties and responsibilities:

- Provide leadership and direction to all staff, maintain effective working relations with all departments and staff.
- Assist the Fire Chief with administering and controlling the annual departmental operating and capital budgets.
- Assist the Fire Chief with establishing goals, objectives, financial and human resource requirements and performance indicators related to departmental functions and monitor the achievement of results.
- Assist the Fire Chief with developing and monitoring departmental policies, procedures and standards that guide and direct the activities within the department, and ensure full compliance with legislative and regulatory requirements to reduce corporate liabilities and mitigate risk.
- Perform incident command at emergency scenes
- Assist the Fire Chief with the identifying, establishing and implementing best practices related to department activities with a focus on continuous improvement, efficiencies and cost effectiveness.
- Attend Council and committee meetings to represent the department, make recommendations as appropriate, respond to enquiries and provide professional advice.
- Ensure timely responses are provided to department inquiries from Council and the public.
- Represent the department and/or Township with residents, community groups and/or associations, consultants and vendors as required.
- Perform additional duties and special projects as required.
- Be responsible to work in compliance with the Occupational Health and Safety Act and Regulations, the Township of Puslinch Occupational Health, Safety and Workplace Violence Policy and Procedures, as well as established industry guidelines.

Specific duties and responsibilities:

- Oversee and ensure the maintenance of all apparatus, building, equipment and grounds.

Further analysis and recommendations regarding the part-time Deputy Fire Chief/Operations position is included within Section 8.12 *Options for Enhancing Fire Suppression Services* section of this MFP.

3.3.3**Deputy Fire Chief/Administration (Part-time)**

This temporary position is authorized by By-law 028/14 reporting directly to the part-time Fire Chief. As an employee of the Township the part-time Deputy Fire Chief/Administration is compensated based on the staff remuneration rates established by Council on an annual basis. For the year 2014 the approved hourly wage for the position of part-time Deputy Chief of Administration was \$31.56. The part-time Deputy Fire Chief/Administration is currently

authorized for 10 hours per week to fulfill his administrative responsibilities. In addition to compensation for administrative responsibilities this position is also compensated based on the hourly rate for this position when responding to emergencies, attending training sessions and other approved department business.

The part-time Deputy Fire Chief/Administration roles and responsibilities are also defined by Report FIR 2014-001 include the same general duties and responsibilities as the part-time Deputy Fire Chief/Operations and the following specific duties and responsibilities:

Specific duties and responsibilities;

- Research, prepare and present reports to Council or committees of Council making recommendations regarding policy initiatives related to departmental services, capital requirements or special projects as directed.
- Perform human resource functions such as recruitment, training, supervision, performance evaluation, and discipline and attendance management in accordance with Township policies. Monitor performance levels, assign duties, and provide guidance fostering a team work environment.
- Act as the Fire Chief in the absence of the Fire Chief.
- Respond to complaints and inquiries from the public, staff, outside agencies and other enforcement or inspection units regarding building code matters and regulatory by-laws.
- Investigate complaints and conduct site inspections.

Further analysis and recommendations regarding the part-time Deputy Fire Chief/Administration position is included within Section 8.12 *Options for Enhancing Fire Suppression Services* section of this MFP.

3.3.4 Administrative Support (Part-time)

The Administrative Assistant reports directly to the part-time Fire Chief and is responsible for providing administrative support to the PFRS. As an employee of the Township the part-time Administrative Support position is compensated based on the staff remuneration rates established by Council on an annual basis. For the year 2014 the approved hourly wage for the position of part-time Administrative Assistant was \$19.69. The part-time Administrative Support position is currently authorized for 10 hours per week to fulfill the administrative responsibilities of this position.

The current duties of the Administrative Assistant include but are not limited to:

- Answer the phone and record questions for Fire Prevention Officer or other fire personnel.
- Enter data in program(s) recording number of responses, types, statistical information.
- Prepare monthly and annual statistical reports on behalf of the department.
- Report to the OFMEM on all responses.

- Request reports from Ontario Provincial Police (OPP) for all collisions being invoiced on Highway 401 and Highway 6.
- Prepare and submit invoices to the Ministry of Transportation for the recovery of costs for attendance at collisions.
- Provide administrative support to the Fire and Rescue Services department.
- Respond to general inquiries.
- Develop and maintain job -related procedures.
- Perform additional duties and special projects as required.
- Be prepared to do dispatch duties when firefighter numbers are not sufficient.
- Be responsible to work in compliance with the Occupational Health and Safety Act and Regulations, the Township of Puslinch Occupational Health, Safety and Workplace Violence Policy and Procedures, as well as established industry guidelines.

Our analyses of the current administrative duties of this position indicates that there is insufficient time to complete all of the duties assigned to this position. Often other staff are required to complete administrative tasks that could be more effectively and efficiently completed by the Administrative Assistant.

The recommendations of this proposed MFP identify several areas including fire prevention, public education and training where additional programs and activities are recommended. To support these programs and activities additional administrative support will be required. Based on our analyses of the current workload, and the additional work load that will be created we are recommending that the hours of work for the administrative assistant be increased from the current 10 hours per week to 24 hours per week.

It is recommended that consideration be given to increasing the hours of work for the part-time Administrative Assistant from the current 10 hours per week to 24 hours per week to support the administrative needs of the PFRS.

The Administrative Assistant position is currently solely an administrative function within the department with no participation in the operational areas of providing fire suppression, fire prevention or public education service delivery. Further analysis and recommendations regarding the part-time Administrative Assistant position are included within Section 8.12 *Options for Enhancing Fire Suppression Services* section of this MFP.

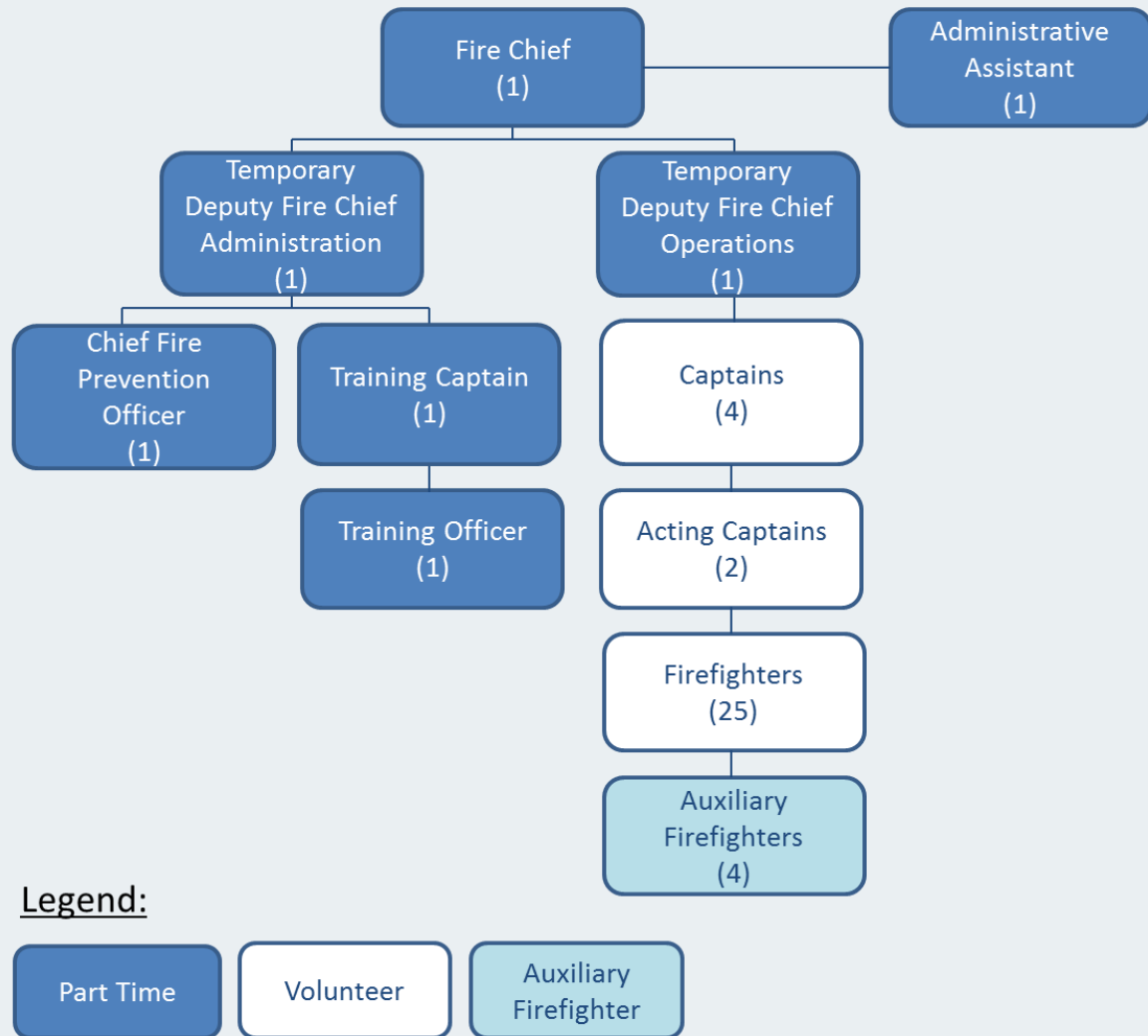
3.4 Current Organizational Structure

By-law #12-10 identifies the current organization of Puslinch Fire and Rescue Services that includes the following divisions:

- *Fire Prevention;*
- *Fire Suppression;*
- *Training; Public Education; and*
- *Administrative Services.*

The current organizational structure, including the two temporary part-time Deputy Chief positions, is illustrated below in **Figure 5**.

FIGURE 5: CURRENT (TEMPORARY) ORGANIZATIONAL STRUCTURE



The current total staffing of the department is illustrated in **Table 1**.

TABLE 1: PFRS CURRENT STAFFING

Role / Division	#Part-Time Staff	#Volunteer Firefighters
Fire Chief	1	0
Temporary Deputy Fire Chiefs	2	0
Administration Assistant	1	0
Chief Fire Prevention Officer	1	0
Training Captain	1	0
Training Officer	1	0
Captains	0	4
Acting Captains	0	2
Firefighters	0	25
Auxiliary Firefighters	0	4
Total Staffing:	7	35

3.5 Administrative Workspace

The PFRS has workspace within the fire station for the current administrative work functions of the department. This workspace includes individual offices for the Fire Chief and Administrative Assistant. There is also shared workspace for the Deputy Fire Chiefs, Chief Fire Prevention Officer, Public Education Officer, Captains and Training Officers.

The current administrative workspace has reached its capacity. Where possible the department is sharing space between multiple functions (positions) in order to complete the administrative functions. Although this model for workspace is functional, it is not the most effective and efficient model for the individual workspace functions. Several of the offices open directly into the training room that can create a conflict when the both spaces are being used at the same time. In our view this is particularly challenging for the part-time Chief Fire Prevention Officer who can be dealing with other agencies and the public while a training exercise is being facilitated.

It is recommended that the administrative workspace for the PFRS be reviewed in consideration of the recommendations of the Master Fire Plan and the current facilities review of the Township administrative offices.

3.6 Annual Report

The “Optimizing Public Fire Safety” model recognizes the importance of ongoing monitoring, evaluation and revisions to the fire protection services approved by Council. Fire services across the province have utilized Annual Reports to Council as a tool to provide a high degree of accountability and transparency on behalf of the Fire Chief in reporting to the community and Council on the level of fire protection services provided.

This regular reporting process is also an ideal opportunity to update the Community Risk Profile and fire related by-laws and can provide further value in identifying changes or trends within the community. The part-time Fire Chief currently provides Council with monthly reports. These reports give Council an update of:

- Monthly significant events;
- Fire loss for the month, the year to date, and the past two years;
- Year to date emergency calls by type; and
- Month and year to date prevention and public education activities.

In our view the department should enhance the current monthly reporting process to Council by preparing an Annual Report summarizing the status of all core services approved by Council.

It is recommended that the Fire Chief be directed to prepare a fire department Annual Report including an updated Community Risk Profile for consideration by Council.

3.7 By-Laws & Agreements

3.7.1 Establishing and Regulating By-Law

The Establishing and Regulating By-law for a fire department should provide a clear and accurate policy direction reflecting how a municipal council intends fire protection services to function and operate. PFSG 01-03-12 *“Sample Establishing and Regulating By-law”* (**Appendix J**) prepared by the OFMEM provides a description of the primary issues to be addressed, as well as a template for completing an Establishing and Regulating By-law. The primary components identified by the OFMEM include the following:

- general functions and services to be provided;
- the goals and objectives of the department;
- general responsibilities of department members;
- method of appointment to the department;
- method of regulating the conduct of members;
- procedures for termination from the department;
- authority to proceed beyond established response areas; and
- authority to effect necessary department operations.

The Township of Puslinch has a comprehensive establishing and regulating by-law in place that was approved on January 20th 2010. By-law #12/10 includes two appendices that identify the core services and the approved fire department organizational chart. Our review of By-law #12/10 identified a number of items that should be updated, or alternatively be reviewed as a result of considering the recommendations of this MFP. These include:

“Appendix A – Core Services”:

Section 1.1: This section references how fire suppression services shall be delivered in both an offensive and defence mode. In our experience with other municipalities that provide fire suppression services utilizing volunteer firefighters, and working with staff from the OFMEM, we suggest that the Township may want to include further wording in this section to describe the volunteer firefighter deployment model. This would include referencing the relationship between the number of volunteer firefighters that are able to respond and how that relates to the level of service that may be provided. Based on our review of the department’s deployment experience we suggest there are examples of incidents when there was an insufficient number of volunteer firefighters on scene to safely conduct offensive firefighting strategies that would include either interior attack or simultaneous interior attack and rescue.

Section 1.3: This section references the types of special technical and/or rescue services that the department will respond to and the level of services they will provide. This section appropriately refers to providing these services in accordance with available resources. In our experience with other municipalities that provide specialized services utilizing volunteer firefighters, and working with staff from the OFMEM, we believe further consideration should be given to providing more clarity as to the levels of services for each specialized service that will be provided. For example, this section explains how special technical and/or rescue services, such as water/ice rescue services will be provided up to and including the land-based and entry level, in accordance with available resources. In our view each specialized service should be identified individually along with the level of service to be provided, e.g. awareness, technical or operational and all special technical services should be in accordance with available resources.

Section 1.4: This section references the training standards that the PFRS will utilize. These should be updated to reflect the current transition to the National Fire Protection Association Professional Qualifications Standards.

Section 4.1: This section references the delivery of emergency dispatching and communications that has now been included within another agreement for contracting this service from another municipality. Clarification should be included to reference the contracted dispatching services.

It is recommended that the Establishing and Regulating By-Law #12/10 be reviewed and revised subject to the consideration and approval of the proposed Master Fire Plan by Council.

3.7.2 Appointment By-Laws

Fire Chief: The FPPA requires a municipality to appoint a Fire Chief through the approval of a municipal by-law. The Township of Puslinch approved By-law #019-14 on March 5th 2014 appointing the current part-time Fire Chief.

Deputy Fire Chief: The Township is currently reviewing the roles and responsibilities of the position of Deputy Fire Chief. To support this review the Township approved By-law #028/14 on April 2nd 2014 to temporarily appoint two part-time Deputy Fire Chiefs. These two positions include part-time Deputy Fire Chief of Administration and part-time Deputy Fire Chief of Operations. During this review the Township has identified one candidate that will be fulfilling the role of part-time Deputy Fire Chief of Administration and five candidates that will be fulfilling the role of part-time Deputy Fire Chief of Operations.

The analysis of services and resources within this MFP support the need for two part-time Deputy Fire Chiefs. The roles and responsibilities and recommendations for these positions are contained within Section 6.0 *Fire Prevention and Public Education* and Section 8.0 *Fire Suppression Division* of this report.

It is recommended that the part-time Deputy Fire Chief Appointment By-law #019/14 be reviewed and revised subject to the consideration and approval of the proposed Master Fire Plan by Council.

3.7.3 Rates and Fees By-law

By-law # 076/14 was approved by Council on December 17th 2014 providing the authority for the Township to impose fees or charges with respect to activities provided by the Township. "Schedule E" of this by-law identifies the various services and activities that the fire department is authorized to recover fees for.

The Township applies the most recent Ontario Ministry of Transportation rate for fire department response services on Kings Highways. This relates to the cost of an emergency response including personnel and apparatus. This rate is currently \$410.00 per vehicle for the first hour, for up to three vehicles, and \$205.00 per vehicle per half hour thereafter. The Township applies this rate to various emergency response services, including burning permit violations, false alarm calls (after the second false alarm in any calendar year), and motor vehicle accidents/collisions (with the exception of Township residents who are exempt). Our analysis indicates that these current rates and service charges are consistent with those of other comparable municipalities.

There are a number of other services and activities included within this by-law for recovering costs related to fire inspections, fire safety plan review and burning permits which have lower rates and fees than those of other municipalities. In our experience this is not uncommon, and can in part be associated with not reviewing each of these rate and fees on an annual basis in comparison to actual costs and a group of comparator municipalities.

By-Law No. 74/13 permits the Township of Puslinch to impose fees of service charges with respect to services or activities provided. **Table 2** displays the current fees for services provided by the fire and rescue services.

TABLE 2: SUMMARY OF 2015 FEES FOR SERVICE

Service	Unit/Description	Fee (No Tax)
Open Burning Permit	Per Permit	\$20.00
Burning Permit Violations or Unauthorized Open Air Burning	Per Hour Per Truck	\$410.00
Fire Extinguisher Training	Per Person	\$15.00
Sale of Fireworks Permit	Per Permit	\$100.00
Discharge of Fireworks Permit	Per Permit	\$100.00
Smoke Alarm	Per Alarm	\$0.00
Information of Fire Reports Regarding Emergency Incidents	Per Report	\$75.00
Occupancy Load	Flat Fee	\$100.00
Fire Safety Plan Review	Per Plan	\$120.00
Post Fire Watch	Per Hour Per Truck	\$410.00
Boarding up or Barricading Plus Materials	Per Hour Per Truck	\$410.00
Key Boxes	Per Box	\$100.00
Special Events – Request for Attendance	Per Event	\$0.00
Daycare & Home Daycare Inspections	Per Inspection	\$100.00
Industrial/ Commercial/ Institutional/ Assembly/ Apartment	Base Inspection	\$100.00
Industrial/ Commercial/ Institutional/ Assembly/ Apartment	Plus each tenant/ occupant/ apartment unit	\$25.00
Emergency Response to Motor Vehicle Occurrence/Incident/Collision	Per Hour Per Truck	\$410.00
Fire Alarm False Alarm Calls	Per Hour Per Truck	\$410.00

3.8 Development Charges

The Township of Puslinch collects and administers development charges in compliance with the *Development Charges Act, 1997 (DCA)*. The current development charges By-law No. 054/14 came in effect August 13, 2014 and will expire on September 3, 2019.

The current development charges by-law includes the collection of fees for fire services as identified in the Township's Schedule of Development Charges (DCs), shown in **Table 3**.

Eligible categories for inclusion in the collection of development charges are fire stations (and associated land) and firefighting apparatus (including pumpers aerial devices, and rescue vehicles). Small equipment and gear (e.g. bunker gear and breathing apparatus) are also eligible.

The Township of Puslinch retained the services of Watson & Associates Economists Ltd. to complete a Development Charges Background Study in June 2014. The results of the study were used to update the Township's development charges to accurately reflect servicing needs and recover costs related to growth in Puslinch.

TABLE 3: SCHEDULE OF DEVELOPMENT CHARGES (BY-LAW NO.054/14)

Schedule of Development Charges Town-Wide Development Charges (By-Law No. 054/14)					
Service Component	Residential Dwellings				Non Residential Other than Industrial
	Single Detached Dwelling or Semi-Detached Dwelling	Apartments		Rows & Other Multiples	Per square metre of gross floor area
		2 Bedrooms +	Bachelor & 1 Bedroom		
Fire Services	\$1,459	\$884	\$598	\$1,109	\$0.46

The Watson & Associates study identified several fire service elements as growth-related, and therefore DC eligible. This included the Township's anticipated need for additional fire facility space, additional vehicles, and additional equipment with DC eligible funds of \$728,972.00 to cover costs. The fire equipment needs include self-contained breathing apparatus (SCBA) compressor and cascade cylinders, equipment for new auxiliary firefighters (four), and radio communication interfacing.

3.9 Additional By-Laws

Through resolution of Council the Township of Puslinch has approved a number of additional by-laws that provide valuable insight into the operation of the PFRS, these include:

By-Law #034/14: that establishes the remuneration practices for members of the PFRS including hourly rates and expenses.

By-Law #039-14: that regulates the sale, storage, display and setting of fireworks within the Township of Puslinch.

By-Law # 9/95: that established the municipal addressing system including policies for numbering civic addresses and signage.

By-Law # 45/14: that regulates the setting of open air burning within the Township of Puslinch including the terms and conditions of permits, enforcement and penalty provisions.

By-Law #16/12: that includes policies approved by Council applying to the operation and governance of the Township of Puslinch including a 'Code of Conduct' for staff.

3.10 Mutual Aid Agreements

Mutual aid agreements are predetermined plans that allow a participating fire department to request assistance from a neighbouring fire department. Public Fire Safety Guideline (*PFSG 04-05-12 Mutual Aid*) provided by the OFMEM identifies the information required to develop and approve these agreements.

There are two main scenarios when mutual aid agreements are enacted:

1. *When a fire department is on-scene at an emergency, has received information that immediate assistance is required, it may ask for mutual aid assistance from a neighbouring fire department.*
2. *Where distance and/or conditions are such that a neighbouring fire department could provide a more timely response, fire departments may immediately request a simultaneous response from a participating fire department.*

The Puslinch Fire and Rescue Services is an active participant in the following agreements:

- Mutual and Automatic Aid Plan Program for the County of Wellington;
- Mutual Aid Agreement between the Township of Puslinch and the Town of Milton; and
- Mutual Aid Agreement between the Township of Puslinch and the City of Hamilton.

Our review indicates that the Township of Puslinch recognizes the objectives and values of participating in mutual aid agreements. The Township has developed agreements with neighbouring municipalities within the County of Wellington, as well as the communities that share municipal boundaries on the south and east of the Township.

Our review of the current operating practices of the department in utilizing mutual aid agreements reflects that the department may, at times, be implementing these agreements in advance of the conditions or procedures that are identified within the respective plans. In some instances the utilization of the current mutual aid agreements more closely reflect the procedures typically included within an automatic aid agreement rather than a mutual aid agreement.

It is recommended that following Council's consideration of the proposed Master Fire Plan that the Fire Chief be directed to review the current Mutual Aid Agreements in consideration of the fire suppression deployment options and utilization of automatic aid presented within the proposed Master Fire Plan.

3.10.1 Automatic Aid Agreements (Fire Protection Agreements)

In contrast to mutual aid agreements, automatic aid agreements are programs designed to provide and/or receive assistance from the closest available resource, irrespective of municipal boundaries, on a day-to-day basis.

The obvious advantage of implementing an automatic aid program, or fire protection agreement, is that the person experiencing the emergency receives fire services from the closest available provider by supplying seamless service through the elimination of artificial service boundaries. Some of the additional benefits that an automatic aid agreement provides include:

- enhancement of the level of public safety;
- reduction of the critical element of time elapsed between the commencement of a fire and the application of an extinguishing agent to the fire by dispatching the closest available assistance;
- reduction of life, property and environmental losses; and
- improvement of public and firefighter safety.

The Puslinch Fire and Rescue Services is an active participant in the following agreements:

- Township of Guelph Eramosa Automatic Aid Agreement; and
- City of Cambridge Fire Protection Agreement.

The use of automatic aid and fire protection agreements are further assessed within Section 8.0 *Fire Suppression Division* of this report.

3.10.2 Tiered Response Agreement

Within the Province of Ontario emergency response to incidents involving medical aid by the local fire department are commonly included within a regional tiered response agreement. These agreements are valuable in defining the emergency medical levels of service that a fire department will provide in the context of the regionally based provision of ambulance services. The Puslinch Fire and Rescue Services signed a Tiered Response Agreement with the Guelph Wellington Emergency Medical Service on August 17, 2012. The agreement is renewed automatically on an annual basis unless terminated in writing.

The information presented below provides an overview of the current tiered response agreement with Guelph Wellington Emergency Medical Service:

Puslinch Fire and Rescue Services will respond to any of the following medical emergency calls within their response area:

- Any 'Code 4' (emergency response) triggered in the primary assessment including:
- Obvious immediate threat to life or vital signs absent (VSA)
 - i. Choking, not breathing, severe respiratory distress, unconscious
 - ii. Airway/breathing compromise
- Burns/electrocutions/inhalation
- Near drowning
- Motor vehicle collision (MVC)
- Penetrating trauma

Puslinch Fire and Rescue Services will respond to any of the following medical emergency calls within their response area when the ambulance is not at the Clair Road Station:

- Breathing problem
- Chest pain/heart problem
- Convulsion/seizure
- Cardiovascular stroke
- Decreased level of consciousness/unconscious
- Blunt trauma/assault

Puslinch Fire and Rescue will also respond to any medical emergency call, including when there will be a significant delay (greater than 15 minutes) in the arrival of the ambulance.

3.10.3 Dispatch Services Agreement

The Township of Puslinch Council authorized participation in a dispatch agreement with the City of Guelph on September 5th 2007. Since that time the Guelph Fire Department has provided the core dispatching services for the PFRS. Within the terms of that agreement the PFRS was still required to assign the first arriving firefighter to the role of dispatcher to facilitate the monitoring of emergency responses and coordinating of additional resources. The scope of the 2007 agreement included:

Guelph Fire Department Dispatch will:

- *accept calls from 911, police, Central Ambulance Communications Centre (CACC) and directly from private citizens;*
- *notify Township firefighters through the pager to reply to the calls;*
- *provide incident information to the Township and keep an electronic record of such telephone and radio transmissions and provide copies to the PFRS upon request; and*
- *monitor all incidents dispatched to the Township and provide a level of support equal to that provided to the Guelph Fire Department.*

Report FIR-2015-001 presented to Council on March 18th 2015 by the Fire Chief requested authorization to enter into a new agreement with the City of Guelph for the provision of full fire dispatch services. This new agreement includes an updated formula for determining the operating costs, including establishing a process for determining the per capita fees for this service.

Report FIR-2015-001 also presented an updated scope of services to be provided by the Guelph Fire Department. In comparison to the previous agreement the updated agreement includes a revised scope of services including:

The City of Guelph will:

- a. accept calls from 911, police, Central Ambulance Communications Centre (CACC) and directly from private citizens, directed to the City of Guelph's Emergency Services – Guelph Fire Department (the "Guelph Fire Department");*
- b. in response to all such calls, page the PFRS to reply to the calls;*
- c. keep an electronic record of such telephone and radio transmissions and provide copies to the PFRS upon request;*
- d. provide incident information to the Township; the Township shall acknowledge, to the Guelph Fire Department, receipt of each dispatch received from the Guelph Fire Department and shall acknowledge, to the Guelph Fire Department, when each dispatched unit is on scene and when each dispatched unit is back in service; and*
- e. monitor all incidents dispatched to the PFRS and provide a level of support equal to that provided to the Guelph Fire Department; this will include but not be limited to tracking resources on scene, monitoring radio calls for safety, providing notifications, requesting extra resources, etc.*

Subject to the full implementation and operationalization of this new agreement the PFRS will no longer require the first volunteer firefighter to assume the role of dispatcher at the fire station. This is a significant enhancement in assembling the number of volunteer firefighters available to respond as part of the initial response to an emergency. It also reduces the training requirements of the PFRS for dispatching and reduces the liabilities associated with monitoring and managing the resource needs during an incident.

Our review indicates that there have been a number of challenges experienced with fully implementing the updated dispatch agreement. To date the Township is still not fully receiving the scope of services defined within the proposed dispatch agreement. The agreement has also not been executed by the City.

The scope of the MFP did not evaluate all of the challenges associated with implementing this agreement. The review completed, however, did indicate that this is a significant agreement which should be prioritized in terms of completing the full implementation, or alternatively investigating other opportunities for contracting these services. The updated agreement reflects the current industry practices of establishing fees based on a per capita basis and defining the scope of services included. One area that we recommend for further consideration

is the inclusion of performance measures for the call taking and dispatching services identified within the updated agreement.

Current industry practices in Ontario for the provision of emergency call taking and fire dispatching reflect the use of the National Fire Protection Association (NFPA) “1221 Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems” as the guideline for provision of services. The updated agreement does not include any performance measures for call taking and dispatching, such as those contained in the NFPA 1221 standard.

Based on our review, the Township should prioritize the full implementation of the updated dispatch agreement, including the addition of performance measures similar to those identified within the NFPA 1221 standard, or alternatively investigating other solutions for the provision of fire dispatch services.

It is recommended that the Township prioritize the full implementation of the updated fire dispatch services agreement with the City of Guelph including the provisions of performance measures similar to those identified within the NFPA 1221 standard, or alternatively begin investigating alternative solutions for the provisions of full fire dispatch services.

3.10.4 Hydrant Agreement

The Puslinch Fire and Rescue Services has an agreement with the City of Guelph to use the fire hydrants along the City of Guelph / Township of Puslinch boundary. The City of Guelph Hydrant Agreement, signed November 2012, establishes basic terms between the two municipalities and states that additional terms may be added. The basic terms are as follows:

1. *Locations of hydrants authorized for use:*
 - a. *Downey Road at Hanlon Creek Boulevard*
 - b. *Last hydrant south on Gordon Street*
 - c. *Victoria Road South at Clair Road East*
 - d. *Stone Road East at Watson Parkway*
 - e. *Niska Road at Ptarmigan Drive*
 - f. *Do not use the hydrant on Watson Parkway at Dunlop Drive*
2. *Notify the Water Services of hydrant use during business hours, Monday to Friday 8:00 AM to 4:00 PM. Notify of hydrant use after hours.*
3. *After hydrant use notify the Water Distribution Technician with date, time, and water used in square metres. If using hydrants for training purposes, notify in advance of use.*

Our review indicates the hydrant agreement providing hydrant access in the Guelph area provides a beneficial service to the Puslinch Fire and Rescue Services.

3.11 Departmental Policies and Standard Operating Guidelines

Our experience within the Ontario Fire Service reflects the use of department policies as the appropriate tool to communicate specific direction to all staff. In comparison to operating

guidelines, which provide a framework to guide decision making, department policies reflect more stringent and defined practices which minimize variance from the directive given. An example of a fire department policy would be a “Respect in the Workplace Policy” where specific direction is given to all members of the department that reflects the policy of the department in consideration of relevant legislation governing the topic.

Standard Operating Guidelines (SOGs) are commonly used within the fire service to establish a written statement to guide the performance or behaviour of departmental staff, whether functioning alone or in groups. PFSG 04-69-13 “Co-ordination, Development, Approval and Distribution of Standard Operating Guidelines for Various Disciplines” (included as **Appendix K**) provides the following points to reflect the intent of Operating Guidelines:

- *Enhance safety;*
- *Increase individual and team effectiveness;*
- *Improve training efficiency;*
- *Improve orientation for entry-level staff;*
- *Improve risk management practices;*
- *Prevent / avoid litigation;*
- *Create objective post-incident evaluations; and*
- *Permit flexibility in decision making.*

PFSG 04-69-13 further suggests that creating and empowering a committee of fire service staff to research, develop, and draft operating guidelines can be a successful model for administering these core documents. Activities that impact firefighter safety, the most common emergency operations, or high risk operations should be the top priority for a fire rescue service to have in place. Reviewing and updating SOGs is an ongoing evolution within the fire service.

The PFRS has established a review process and assigned accountability for reviewing SOGs on an annual basis through SOG #0-103 Standard Operating Guidelines & Policy Development Revisions that assigns this role to the Health and Safety Committee.

Our review of the PFRS current policies and SOGs indicates an appropriate representation of the guidelines that should be in place, based on the services and activities provided by the PFRS. A number of the SOGs have not been reviewed since 2008 indicating that they have not been reviewed as required within SOG #03-103. The current format of the guidelines provides no indication of the date and person approving the policy or guideline. In our view these are elements that should be included on all department policies and guidelines.

Where possible, consideration should also be given to clarifying current SOGs that may be more appropriately presented as a department policies rather than a guideline, including a dedicated format and numbering system. For example, SOG #8-112 On Call Weekends and Nights’ is currently presented in the format of an SOG and yet it is titled as a “Policy” and is

defined within the purpose as “*To establish a policy.*” This strategy will also be required for the Fire Prevention Policy proposed within this MFP.

It is recommended that the PFRS develop distinct formats for all PFRS Department Policies (DP’s) and Standard Operating Guidelines (SOG’s) to include a date of approval and signed approval by the Fire Chief or designate, and that all Department Policies and Standard Operating Guidelines be reviewed on annual basis as required by SOG #0-103.

3.12 Departmental Records Management

PFRS Standard Operating Guideline No. 8-105 *Records and Reports* establishes the policies and guidelines for maintaining records and reports. The guideline states that all fire reports, casualty reports, and response reports are forwarded to the OFMEM within three days of the end of the month within which the incident occurred. For internal records and reports the Fire Chief will designate members to keep accurate and detailed records of all PFRS activities.

The PFRS has recently implemented a new software program to integrate the records management process. The FIREHOUSE software program purchased is widely used within the fire service in Ontario and has proven to be an effective tool in managing the records management needs of similar sized fire departments. Implementing this type of electronic data management system does require additional training and appropriate licensing in order to achieve the full efficiency of the program.

Our review indicates there is currently only one license in place for use by the PFRS. In our view this limits that efficiency and effectiveness of this software. This may also be limiting the training and holistic application of this software by the various potential users within the department.

It is recommended that additional licensing be acquired for the FIREHOUSE records management software program to further enhance the records management practices of the PFRS.

3.13 Strategic Priorities

The purpose of this MFP is to provide Council and senior staff with a strategic framework to assist in making decisions regarding the provision of fire protection services. This MFP has been prepared with regard for the legislated and regulatory responsibilities of the municipality as contained within the *Fire Protection and Prevention Act* (1997) (FPPA) and the *Occupational Health and Safety Act, R.S.O. 1990* (OHSA).

Emphasis has been placed on the use of the current Public Fire Safety Guidelines and the resources provided by the Office of the Fire Marshal and Emergency Management. One of the primary roles of the OFMEM is to provide assistance to municipalities through the provision of information and processes to support determining the fire protection services a municipality

requires based on its local needs and circumstances. The Comprehensive Fire Safety Effectiveness Model and Fire Risk Sub-Model are examples of the OFMEM documents that have been referenced to prepare this Master Fire Plan.

Our interpretation of Council's commitment to the community is to provide the optimal level of fire protection services as determined through the analysis of the "needs and circumstances" of the Township of Puslinch as referenced in the FPPA, and in achieving the most cost effective and efficient level of fire protection services resulting in the best value for the community.

The analyses within this report recognize four strategic priorities for the delivery of fire protection and emergency services within the Township of Puslinch including:

- *The utilization of a Community Risk Profile to determine the fire safety risks within the Township as the basis for developing clear goals and objectives for all fire protection and emergency services to be provided by the Puslinch Fire and Rescue Services;*
- *The optimization of the first two lines of defence including public education and fire prevention, and the utilization of fire safety standards and fire code enforcement to provide a comprehensive fire protection program within the Township based on the results of the Community Risk Profile;*
- *Emphasis on the value of all emergency services that are provided by the Puslinch Fire and Rescue such as responses to motor vehicle accidents and medical responses that enhance life safety within the Township; and*
- *Emphasis on strategies that support the sustainability of fire protection and emergency services that provide the most cost effective and efficient level of services resulting in the best value for the community.*

It is recommended that Council approve the strategic priorities identified within the proposed Master Fire Plan to guide the development and delivery of fire protection and emergency services within the Township of Puslinch.

3.14 Administration Division Summary and Recommendations

Under the leadership of the current part-time Fire Chief the PFRS has sustained the delivery of fire protection services as initially created through the vision and dedication of volunteer firefighters. The current organizational model of the PFRS has evolved to the use of part-time resources to support the foundation of dedication and commitment that continues to be evident in the volunteer firefighters within the department today.

Through the approval of this master fire planning process Council has indicated a strong desire to sustain the use of volunteer firefighters as the primary providers of fire suppression services within the Township. However, past and current members of Council and members of the fire department have, through their ongoing support, recognized the intrinsic value of working with neighbouring communities to achieve the most cost effective and efficient level of fire protection services resulting in the best value for the community.

This master fire planning process reflects an opportunity to assess all the various activities and programs provided by the PFRS, including options for enhancing the organizational model of the department. The following recommendations are presented for Council's consideration in support of achieving the strategic priorities of the MFP.

Recommendations for the Administration Division include the following:

1. *That the Mission Statement of the Puslinch Fire and Rescue Services be updated to include a Vision Statement and to reflect the framework of the OFMEM PFSG 03-02-13 "Master Planning Process for Fire Protection" subject to approval of the proposed Master Fire Plan by Council.*
2. *That consideration be given to increasing the hours of work for the part-time Administrative Assistant from the current 10 hours per week to 24 hours per week to support the administrative needs of the PFRS.*
3. *That the administrative workspace for the PFRS be reviewed in consideration of the recommendations of the Master Fire Plan and the current facilities review of the Township administrative offices.*
4. *That the Fire Chief be directed to prepare a fire department Annual Report including an updated Community Risk Profile for consideration by Council.*
5. *That the Establishing and Regulating By-Law #12/10 be reviewed and revised subject to the consideration and approval of the proposed Master Fire Plan by Council.*
6. *That the part-time Deputy Fire Chiefs Appointment By-law #019/14 be reviewed and revised subject to the consideration and approval of the recommendations impacting these positions included within the proposed Master Fire Plan by Council.*
7. *That following Council's consideration of the proposed Master Fire Plan that the Fire Chief be directed to review the current Mutual Aid Agreements in consideration of the fire suppression deployment options and utilization of automatic aid presented within the proposed Master Fire Plan.*
8. *That the Township prioritize the full implementation of the updated fire dispatch services agreement with the City of Guelph including the provisions of performance measures similar to those identified within the NFPA 1221 standard, or alternatively begin investigating alternative solutions for the provisions of full fire dispatch services.*
9. *That the PFRS develop distinct formats for all PFRS Department Policies (DP's) and Standard Operating Guidelines (SOG's) to include a date of approval and signed approval by the Fire Chief or designate, and that all Department Policies and Standard Operating Guidelines be reviewed on annual basis as required by SOG #0-103.*
10. *That additional licensing be acquired for the FIREHOUSE records management software program to further enhance the records management practices of the PFRS.*
11. *That Council approve the strategic priorities identified within the proposed Master Fire Plan to guide the development and delivery of fire protection and emergency services within the Township of Puslinch.*

4.0

Community Risk Profile

The Office of the Fire Marshal and Emergency Management *Fire Risk Sub-model*¹ introduces the importance of community risk in the following paragraph:

“Assessing the fire risk within a community is one of the seven components that comprise the Comprehensive Fire Safety Effectiveness Model. It is the process of examining and analyzing the relevant factors that characterize the community and applying this information to identify potential fire risk scenarios that may be encountered. The assessment includes an analysis of the likelihood of these scenarios occurring and their subsequent consequences.”

Community fire risks are further explained in detail within the OFMEM’s *Fire Risk Sub-model* as follows:

“The types of fire risks that a community may be expected to encounter are influenced by its defining characteristics. For example, a “bedroom community” presents a different set of circumstances over one that is characterized as an “industrial town.” Communities that are distinguished by older buildings will pose a different set of concerns over those that are comprised of newer buildings constructed to modern building codes. Communities populated by a high percentage of senior citizens present a different challenge over ones with a younger population base.

Assessing fire risk should begin with a review of all available and relevant information that defines and characterizes your community. Eight key factors have been identified that contribute to the community’s inherent characteristics and circumstances. These factors influence events that shape potential fire scenarios along with the severity of their outcomes:

- *Property Stock*
- *Building Height and Area*
- *Building Age and Construction*
- *Building Exposures*
- *Demographic Profile*
- *Geography/Topography/Road Infrastructure*
- *Past Fire Loss Statistics*
- *Fuel Load”*

Utilizing the framework provided within the OFMEM’s *Fire Risk Sub-model* provides the opportunity to assess the potential fire risk scenarios that may be present by creating a Community Risk Profile. The profile can then be used to assess the current level of fire

¹ Source: *Comprehensive Fire Safety Effectiveness Model, Fire Risk Sub-Model*, June 2009 Office of the Fire Marshal, Ontario

protection services provided, and identify where, if any, potential gaps exist, or areas that a municipal Council may want to consider in determining its own needs and circumstances as defined by the FPPA.

The detailed Community Risk Profile is contained within **Appendix L** and contains detailed analyses of the eight key factors identified OFMEM's *Fire Risk Sub-model*.

4.1 Summary of Community Risk Profile

The Township of Puslinch represents the typical level of risk that would be found in comparable municipalities within the Province of Ontario. These include smaller hamlet settlement areas surrounded by large tracts of agricultural and natural environment zones forming a larger community. The geography, topography and road infrastructure are also consistent with those of similar communities. The road network layout is primarily a grid pattern of collector and arterial rural roads with local roads in the small urban centres.

The population of the Township of Puslinch is anticipated to steadily increase by approximately 1.6% per year over the 20 year horizon. By 2031 the population is expected to have grown 32.7% from 2011. Only a small portion of the growth (10%) is expected to be accommodated within the defined boundaries of Aberfoyle and Morriston. Growth in rural areas is expected to be compatible with the rural character of the Township. Employment projections from the County indicate that employment growth will also occur at a slower rate of 1.4% per year during this period.

Residential occupancies dominate the community at 93% of the building stock. Industrial and agriculture and farm-related buildings (not classified within the OBC) are the second largest percentages of property stock, both at 2.3%.

Within the province residential occupancies have historically accounted for approximately 72% of all structure fires and 86% of all fire related deaths. For the five year period from 2009 to 2013 the Township of Puslinch reported 23 fires of which 78% occurred in 'Group C - Residential Occupancies', which is higher than the provincial average of 72%. This relates to the high percentage of residential occupancies in the Township's building stock.

The analysis of the buildings within the Township of Puslinch in regards to height and area represent a minimal risk. This includes all occupancy classifications. There are a limited number of large area (by square footage) industrial buildings. Only seven industrial building were identified by PFRS as high risk. Historic buildings in the downtown areas of Aberfoyle and Morriston present a higher risk for fire loss because they were constructed before Ontario Fire Code changed in 1981 and the exposure to surrounding buildings.

The demographic analysis of the Township of Puslinch indicates that by age category the Township is representative of the provincial statistics; the only exception being a slightly higher than average population of senior residents. The Township's senior population, therefore,

should be considered a vulnerable demographic and a target for public education and prevention efforts.

The Township also faces a minor population shift during the spring and summer months, due to the abundance of camping and trailer sites, as well as seasonal cottages. Fire protection strategies should be accommodated as part of broader services, such as pro-active fire inspections of the facilities occupied by this demographic.

Geographic Information Systems (GIS) modeling of the actual emergency calls that occurred during the period 2009 to 2014 are reflected in the Fire Risk and Response (Calls Locations) profile in **Appendix L**.

The analyses within Section 7.0 *Fire Suppression Division* included within this proposed MFP indicates that the Township of Puslinch should be striving to achieve the response time performance objective referenced within the NFPA 1720 Rural Area Demand Zone. This includes a minimum of six firefighters responding within a 14 minute response time (turnout time + travel time) with a performance objective of 80%.

Results of the Community Risk Profile indicates that, of the geocoded calls, the department has been able to respond to 57% of high risk calls, 56% of moderate risk calls, and 50% of low risk calls within the 14 minute or less response time in the community.

The GIS model was also used to approximate geographic coverage of the existing risk zone areas. Analysis indicates that 30% of the high risk areas, 12% of the moderate risk areas and 2% of the low risk areas are covered within the 14 minute predicted response time. The detailed methodology and results (including figures) from the GIS model of the risk profile are contained within **Appendix L**. The Community Risk Profile will form the basis for strategically planning the fire protection plans, optimizing the three lines of defence and developing department procedures, programs and services. It should be reviewed and revised on an annual basis in order to maintain an up-to-date assessment of community risk and community needs for fire protection and prevention. This strategy would replace the process to develop a Simplified Risk Assessment which is required by the OFMEM.

5.0

Fire Prevention & Public Education

The minimum requirements of fire prevention and fire safety education programs are outlined within the *Fire Protection and Prevention Act, 1997* (FPPA). The minimum required services are referenced in the following section of the FPPA:

Section 2.(1) of the Fire Protection and Prevention Act states:

“(1) Every municipality shall,

1. *Establish a program in the municipality which must include public education with respect to [c1]fire safety and certain components of fire prevention; and*
2. *Provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances.”*

PFSGs 04-40-03 and 04-40-12 “*Selection of Appropriate Fire Prevention Programs*” (included as **Appendix I**) provides further information defining the minimum acceptable level of fire prevention and fire safety education services that a municipality must provide including:

- *Simplified Risk Assessment;*
- *Smoke alarm program;*
- *Fire safety education material distributed to residents/occupants; and*
- *Inspections upon complaint or when requested to assist with code compliance.*

Assessing community fire risk allows a municipality to determine the level of fire protection services required based on local needs and circumstances. This includes the level fire prevention and public fire safety education required to comply with the minimum levels identified within the FPPA.

Integrating risk analysis into the process to determine the level of fire protection services to be provided by a municipality recognizes there are alternatives to simply providing fire suppression services and emergency response. The introduction of sprinkler systems is an example of integrating alternatives to managing the inherent risks of a building rather than simply developing a larger emergency response deployment plan.

5.1

Comprehensive Fire Safety Effectiveness Model

The fire prevention and public education services provided by a fire department are intended to optimize impact of applying the first two lines of defence identified within the Ontario Fire Protection Model including:

- I. Public Education and Prevention***
- II. Fire Safety Standards and Enforcement***

The first two lines of defence have been defined as:

"I. Public Education and Prevention:

Educating residents of the community on means for them to fulfill their responsibilities for their own fire safety is a proven method of reducing the incidence of fire. Only by educating residents can fires be prevented and can those affected by fires respond properly to save lives, reduce injury and reduce the impact of fires; and

II. Fire Safety Standards and Enforcement:

Ensuring that buildings have the required fire protection systems, safety features, including fire safety plans, and that these systems are maintained, so that the severity of fires may be minimized."

Information reported by the OFMEM indicates that from 2009 to 2013 the number of fire losses, described as any fire with an injury, fatality or dollar loss reported, have declined from 12,945 in 2009 to 10,733 in 2013 resulting in a decrease of 17%. This occurred during a time period when the population and number of structures across Ontario continued to grow.

Through our discussions with Fire Chiefs across the province and staff from the OFMEM there is consensus that the efforts of fire departments dedicated at optimizing the first two lines of defence are responsible for reducing fire losses and improving the overall level of fire protection within the community.

In our view, strategies that optimize the use of the first two lines of defense to address the findings of the Community Risk Profile (**Appendix L**) should be considered a **strategic priority** of this MFP. For example, this should include prioritizing fire prevention and public education programs in areas of the community where vulnerable occupants such as seniors reside.

In our view the **strategic priorities** of this MFP should include the following:

"The optimization of the first two lines of defence, including public education and fire prevention, and the utilization of fire safety standards and fire code enforcement to provide a comprehensive fire protection program within the Township based on the results of the Community Risk Profile."

5.2 Division Staff Resources

5.2.1 Chief Fire Prevention Officer (Part-time)

The part-time Chief Fire Prevention Officer reports directly to the Fire Chief and is directly responsible for coordinating the delivery of the fire prevention and public education services provided by the department. These services include conducting fire inspections (as a result of a request or compliant) and ensuring continued compliance within the minimum legislated responsibilities for fire prevention and public education as defined by the FPPA.

As an employee of the Township the part-time Chief Fire Prevention Officer is compensated based on the staff remuneration rates established by Council on an annual basis.

For the year 2014 the approved hourly wage for the position of part-time Chief Fire Prevention Officer was \$30.92. The part-time Chief Fire Prevention Officer is currently authorized for 16 hours per week to fulfill his administrative responsibilities. In addition to compensation for administrative responsibilities the part-time Chief Fire Prevention Officer is also compensated based on the hourly rate for this position when responding to emergencies, attending training sessions and conducting other approved department business. The part-time Chief Fire Prevention Officer is currently shared between the Township of Puslinch and the Township of Wellington North.

An overview of the part-time Chief Fire Prevention Officer's roles and responsibilities include:

- Inspects and conducts investigations on all types of new and existing buildings to ensure conformity with applicable by-laws, codes and regulations;
- Responsible and accountable for the overall supervision of the Public Education Officer;
- Conducts evaluations and performance appraisals of the Public Education Officer;
- Investigates all fires;
- Reviews and evaluates building plans and specifications for development proposals and applications;
- Reviews Fire Safety Plans with the part-time Fire Chief;
- Responds to complaints and inquiries from the public, staff, outside agencies and other enforcement or inspection units regarding fire related matters;
- Investigates complaints and conducts site inspections;
- Collects evidence, obtains statements from witnesses, prepares and swears to information, affidavits, subpoenas and summons;
- Follows up on investigations within established standards, issues tickets, summons and lays charges in accordance with the Provincial Offences Act;
- Testifies as a witness for the Township at court, hearings or appeals;
- Conducts educational programs related to fire safety;
- Prepares and presents seminars on fire prevention and safety to groups and members of the public;
- Ensures timely responses are provided to department inquiries from Council and the public;
- Represents the department and/or Township with residents, community groups and/or associations, consultants and vendors as required;
- Performs additional duties and special projects as required; and
- Works in compliance with the Occupational Health and Safety Act and Regulations, the Township of Puslinch Occupational Health, Safety and Workplace Violence Policy and Procedures, as well as established industry guidelines.

Further analysis and recommendations regarding the part-time Chief Fire Prevention Officers position are included within Section 6.11 *Proposed Fire Inspection Program* and Section 8.12 *Options for Enhancing Fire Suppression Services* of this MFP.

5.2.2 Public Fire and Life Safety Educator (Proposed)

Although this position is specifically identified within the current Establishing and Regulating By-law the roles and responsibilities of this position are currently distributed to a number of the volunteer firefighters.

The fire service industry led by the OFMEM and the Ontario Association of Fire Chiefs has recognized the value of public fire safety education through the development of the Public Fire and Life Safety Educators Certificate Program. Consistent with the NFPA 1035 “*Standard for Professional Qualifications for Fire and Life Safety Educator, Public Information Officer, and Juvenile Fire-setter Intervention*” this includes the core competencies to complete tasks such as:

- *Select instructional materials, given a subject, learning objectives, and related resources, so that the materials are specific to the audience and activity objectives;*
- *Adapt a lesson plan, given the lesson content and information on the audience, so that the material presented meets the needs of the audience;*
- *Analyze community fire risk, design and manage programs, integrate prevention interventions to address community fire risk, create and lead a risk reduction program; and*
- *Develop informational material, given an identified fire or life safety objective and characteristics of the target audience, so that information provided is accurate, relevant to the audience and specific to the audience and needs of the target audience.*

Two of the current volunteer firefighters have achieved this certification. However, there are no scheduled hours for when these firefighters are available to deliver the public education programs and activities. In our view there are two options for the Township to consider to deliver the proposed public education programming and activities, these include dedicating the number of hours proposed for the two current volunteer firefighters to implement these initiatives, or alternatively hiring a dedicated part-time Fire and Life Safety Educator. The proposed Public Fire and Life Safety Educator position would be tasked with the responsibility to coordinate and optimize the efforts of the PFRS in the delivery of fire and life safety programs and establish further goals and objectives for all activities and programs.

Further analysis and recommendations regarding the part-time Fire and Life Safety Educator position are included within Section 6.5 *Proposed Public Education Programs and Activities* and Section 8.12 *Options for Enhancing Fire Suppression Services* of this MFP.

5.3

Fire Prevention Policy

The Community Risk Profile included within this MFP was used to assess the current fire prevention and public safety programs provided by the PFRS in relation to the Township's legislative responsibilities and our understanding of best practices within the Ontario Fire Service.

The Township of Puslinch does not currently have a comprehensive fire prevention policy in place that is approved by Council. PFSG 04-45-12 "*Fire Prevention Policy*" (included in **Appendix M**) provides an appropriate framework for developing a fire prevention policy.

An example of the purpose of a fire prevention policy includes:

- *To establish policies and procedures for fire department personnel for fire prevention, public education programs and activities as a primary means of protecting lives and property from fire; and*
- *To maintain compliance with the minimum fire prevention and public education activities as required by the Fire Protection and Prevention Act, 1997.*

The Fire Prevention Policy should also identify the following fire prevention and fire safety education activities such as:

- *Fire inspection activities;*
- *Fire code enforcement;*
- *Fire and life safety education;*
- *Fire investigation and cause determination;*
- *Fire loss statistics; and*
- *Fire department operational guidelines identifying how, when and where activities will be conducted.*

The PFRS has a number of SOGs related to the delivery of fire prevention and public education programs such as, SOG #8-101 *Fire Cause Determination*, SOG #8-102 *Fire Safety and Enforcement* and SOG #8-104 *Home Safe Home* that reference the information that would typically be included within a Fire Prevention Policy.

In our view, the PFRS should have a Council approved 'Fire Prevention Policy' attached as an appendix to the Establishing and Regulating By-law that reflects the levels of fire prevention and public education services approved by Council.

It is recommended that, subject to Council's consideration and approval of the proposed Master Fire Plan, that a Fire Prevention Policy be created utilizing the framework of PFSG 04-45-12 "*Fire Prevention Policy*" for consideration and approval by Council, and attached as an appendix to the fire department Establishing and Regulating By-law.

5.4

Current Public Education Programs and Activities

The current Establishing and Regulating By-law #12/10 identifies in “Appendix A Core Services” the fire safety education that the PFRS is authorized by Council to deliver. These include:

- (a) *Distribution of fire and life safety information and public education programs shall be administered in accordance with the FPPA and policies of the Fire Department’s Public Education Division;*
- (b) *A residential home fire safety awareness program shall be ongoing;*
- (c) *Smoke alarms for residential occupancies shall be provided to those in need;*
- (d) *Fire and life safety communiques shall be distributed to the media on a regular basis; and*
- (e) *The Fire Department shall maintain at least one Public Fire and Life Safety Educator to the Ontario Fire Service Standard.*

The current by-law acknowledges the benefits and importance of providing fire and life safety public education programming to the Township’s residents. The part-time Chief Fire Prevention Officer is responsible for coordinating the department’s public education programs and activities. Our review indicates that these programs and activities currently include the following:

- Media releases and public safety announcements;
- Smoke alarm, home escape planning;
- Home Safe Home Program;
- Public fire and life safety events and displays;
- Awareness and targeted education programs, such as students, seniors, and fire-safe living; and
- Fire Prevention Week, community event activities.

The experience of other municipalities has proven that expanding and enhancing public education efforts can be an effective strategy to mitigate emergency call volume and increase the overall level of fire safety within a community. Information provided by the OFMEM indicates that “*between 2000 and 2004 the leading cause of senior (aged 65 and over) fire deaths in the province were attributed to “open flame tools/smoker’s articles” and “cooking equipment”. These ignition sources were responsible for 35% and 10% respectfully of fire deaths for this age category during this period. It is believed that the decline in cognitive and physical abilities contributes to the frequency of fire incidents relating to careless use of these ignition sources*”.

In our view this is an example of where the proposed Public Fire and Life Safety Educator and the proposed enhanced public education programs that target the seniors demographic within the community should be reviewed to include clear goals and objectives, and then enhanced to address this identified vulnerable demographic.

5.5

Proposed Public Education Programs and Activities

Implementing goals and objectives for conducting public fire safety education activities and programs cycles is consistent with responding to the strategic priorities identified within this MFP. This would include developing cycles for providing fire safety education to the various occupancies classifications identified by the Community Risk Profile. Developing a cycle provides the opportunity to prioritize the delivery of fire safety education programs based on the results of the Community Risk Profile specifically for vulnerable demographics such as children and seniors.

Our research into developing fire safety program delivery cycles looked at the relevant NFPA standards, PFSG's and industry best practices. **Table 4** reflects the proposed public fire safety education activities and program delivery cycles for occupancy classifications.

TABLE 4: PROPOSED PUBLIC FIRE SAFETY EDUCATION ACTIVITIES AND PROGRAMS CYCLE OBJECTIVES

Occupancy Classification (OBC)	Buildings	Proposed Fire Safety Program Delivery Cycle Objectives
Group A – Assembly	Schools, Recreation Centres (Arenas)	1 – 2 Years
Group A – Assembly	Licensed Properties, Nursery/Day Care Facilities, Churches, Special Occasion Permits	1 – 2 Years
Group B – Institutional	B1 - General	1 – 2 Years
Group B – Institutional	B-2 & B-3 Long-Term Care and Care Facilities	Annually
Group C – Residential	Apartments regulated by Part 9.3 of the OFC Apartments regulated by Part 9.5 of the OFC Apartments regulated by Part 9.8 of the OFC Hotels, Motels and occupancies regulated by Part 9.9 of the OFC Home Inspection Program	1 - 2 Years 1 – 2 Years 1 - 2 Years 3 – 4 Years Upon Request
Group D - Business	Business and Personal Services Occupancies	Upon Request
Group E - Mercantile	Mercantile Occupancies	3 - 4 Years
Group F - Industrial	F1 – High Hazard	1 – 2 Years
Group F - Industrial	F2 – Medium Hazard	3 – 4 Years

Through our consultation with PFRS it is clear that the volunteer firefighters currently dedicated significant time to conducting public education activities. A large portion of this time is not specifically tracked in order to quantify the current number of hours. Based on our experience and the results of the current effort that can be documented it is our recommendation that for the Township to achieve the proposed Public Fire Safety Education Activities and Programs Cycle Objectives proposed, the identified part-time hours for the dedicated position of part-time Public Fire and Life Safety Educator would be required.

It is recommended that subject to the consideration and approval of the proposed public fire safety education activities and program cycle objectives by Council that they be included within the proposed Fire Prevention Policy and proposed Establishing and Regulating By-Law.

It is recommended that Council consider the provision of 20 hours per week to support a dedicated position of part-time Public Fire and Life Safety Educator reporting to the part-time Chief Fire Prevention Officer with the responsibility to coordinate and optimize the public fire safety education objectives of the PFRS.

5.6 Smoke Alarm and Home Escape Planning Programs

The provision of a smoke alarm program including home escape planning is a legislated responsibility of the Township. Achieving compliance with the provincial smoke alarm requirements has been a challenge for fire departments across Ontario. As a result of fire tragedies across the province, the OFMEM has introduced a “zero tolerance policy” for occupancies requiring smoke alarms.

The purpose of the PFRS Smoke Alarm Program is stated as:

- a) Ensure smoke alarms are installed and operating properly in all dwellings, and ensure compliance under Section 2.13 of the Ontario Fire Code;*
- b) Maintain fire deaths and property losses at a minimum;*
- c) Educate residents about the importance of installing and maintaining smoke alarms;*
- d) Promote residents to develop and practice an effective home escape plan;*
- e) Assist the Township of Puslinch to meet its legislative requirements of the FPPA; and*
- f) Create and opportunity for positive community relations with the Puslinch Fire and Rescue Services.*

The current PFRS Smoke Alarm Program reflects the components of a comprehensive program that includes a variety of strategies such as a Home Fire Safety Campaign and Public Fire Safety Information Distribution to achieve the Township’s legislated responsibilities.

The presence of working smoke alarms and home fire escape planning that is practised regularly by occupants are critical components of the first line of defence in an overall community fire protection plan. The relevance of these components must be further emphasized in areas of the community where extended emergency response travel times may be present, and vulnerable demographics such as children and seniors reside.

As of April 15th 2015 homeowners and property owners/tenants in buildings that contain no more than 6 suites must install and maintain carbon monoxide alarms as required by the Ontario Fire Code. Generally this means that a carbon monoxide alarm must be installed adjacent to each sleeping area of the residence. As the FPPA has also been revised to address “unsafe levels of carbon monoxide” the fire service has been tasked with monitoring compliance with this legislation. Recent experience has shown that fire departments are amending their Smoke Alarm Programs to include carbon monoxide alarms as well.

In addition to the Smoke Alarm Program the PFRS also delivers a *Home Safe Home* program (SOG #8-104) as an extension of the department's public education program initiatives. This program requires each fire suppression crew to enter homes in their designated area and educate occupants about identifying common fire hazards in the home and provide an opportunity for positive public relations. An information package is also to be given out and explained by firefighters. Visits are recorded on a map and the Captain enters the information into a log sheet. The log sheets are then transformed into monthly statistical data sheets.

Our review indicates that the current Smoke Alarm Program is not recognized as a Standard Operating Guideline or department policy, and it has not been updated to include requirements for carbon monoxide alarms. In our view it should be included as a department SOG and referenced within the proposed Fire Prevention Policy.

It is recommended that the PFRS Smoke Alarm Program be updated as a department Standard Operating Guideline and included within the proposed Fire Prevention Policy for consideration and approval by Council.

5.7 Current Fire Inspection Program

The current Establishing and Regulating By-law #12/10 identifies in "Appendix A Core Services" the fire prevention services that the PFRS is authorized by Council to deliver. These include:

- *Enforcing the Ontario Fire Code by conducting comprehensive inspections (complaint, request, retrofit, or self-initiated) of all classes of buildings and occupancies in the territorial limits of the Corporation;*
- *Record and report all findings and issue orders to improve fire safety;*
- *Where directed, determine the origin and cause of fires;*
- *Responsible for Fire Safety Planning, which involves liaison with architects, consulting engineers, contractors and owners to ensure fire safety requirements are met;*
- *Examine plans and specifications to ensure life safety requirements have been met in accordance with the Ontario Fire Code and Ontario Building Code;*
- *Prepare reports, letters and orders in accordance within applicable legislation requirements;*
- *Perform other duties as assigned;*
- *Reference the Ontario Fire Code, Fire Protection and Prevention Act, Building Code, and other related standards, legislation and reference materials for Puslinch Fire and Rescue Fire Prevention activities (as approved by the Fire Chief); and*
- *Reference the Ontario Fire Service Standard for Fire Prevention Officers, and the Ministry of Municipal Affairs and Housing Standards for fire prevention training.*

The current by-law acknowledges the benefits and importance of providing fire prevention programs and activities within the Township. The part-time Chief Fire Prevention Officer is responsible for coordinating the department's fire prevention program. SOG #8-102 *Fire Safety*

and Enforcement further defines these responsibilities including an inspection frequency for occupancies within the Township.

Table 5 identifies the current goals and objectives (performance measure) for the frequency of fire inspections within the Township of Puslinch.

TABLE 5: TOWNSHIP OF PUSLINCH CURRENT FIRE INSPECTION GOALS AND OBJECTIVES (PERFORMANCE MEASURE)

Occupancy Classification (OBC)	Buildings	Current Fire Inspection Frequencies (Performance Measure)
Group A – Assembly	Schools, Recreation Centres (Arenas), Curling/Golf Centres	6-12 Months
Group A – Assembly	Licensed Properties, Nursery/Day Care Facilities, Churches, Special Occasion Permits	6-12 Months
Group B – Institutional	Nursing homes, Homes for Special Care	6-12 Months
Group C – Residential	Apartments regulated by Part 9.3 of the OFC Apartments regulated by Part 9.5 of the OFC Apartments regulated by Part 9.8 of the OFC Home Inspection Program	6-12 Months 6-12 Months 6-12 Months Upon Request
Group D - Business	Business and Personal Services Occupancies	12-18 Months
Group E - Mercantile	Mercantile Occupancies	12-18 Months
Group F - Industrial	Factories and Complexes	12-18 Months

In our experience the fire inspection frequencies identified within SOG #8-102 are more frequent than what would be found in a comparable community with similar fire risk. Our analysis of the part-time Chief Fire Prevention Officer's current workload also indicates that the PFRS is not achieving the fire inspection frequencies identified within SOG #8-102.

Developing goals and objectives for fire inspection frequencies that reflect the results of the Community Risk Profile support the **strategic priority** of this MFP, including:

"The optimization of the first two lines of defence including public education and fire prevention, and the utilization of fire safety standards and fire code enforcement to provide a comprehensive fire protection program within the Township based on the results of the Community Risk Profile."

5.8

Enhancing Fire Safety in Occupancies Housing Vulnerable Ontarians, Ontario Regulation 150/13

Ontario Regulation 150/13 was filed on May 9, 2013. This regulation introduced amendments to the Ontario Fire Code that came into force on January 1, 2014. The OFMEM led the development of this new regulation in consultation with a Technical Advisory Committee consisting of industry experts.

Compliance with this new regulation will be achieved through a multi-pronged strategy including mandatory inspections by local fire departments and a process of providing training for facility staff and upgrades to existing buildings. The installation of automatic sprinkler systems is also a mandatory requirement of this new legislation.

Under the direction of the OFMEM one of the first impacts on local fire departments was the development of a building registry of all buildings affected by the new legislation. The PFRS is in the process of developing the building registry. Once completed the building registry will assist in providing the PFRS with a tool for managing the workload requirements of this new legislation.

The proposed fire inspection program within this MFP includes the requirements for annual testing of fire safety plans including conducting an evacuation and an inspection of each building affected by this legislation on an annual basis.

5.9

Fire Safety Inspections and Enforcement

The OFMEM developed Technical Guideline OFM-TG-01-2012 “Fire Safety Inspections and Enforcement” that includes a scope “to assist municipalities and their fire services in meeting their fire safety inspection and enforcement responsibilities in the most effective and efficient way possible, as provided by the FPPA”.

Our review of this guideline indicates that it supports the direction of the “first two lines of defence” as a means to optimize the level of fire protection services within a community. This technical guideline provides municipalities with strategies, particularly related to enforcement of the OFC, in situations where achieving compliance has or may be difficult to achieve.

It is recommended that PFSG OFM-TG-01-2012 be considered in developing the proposed Fire Prevention Policy for consideration and approval by Council.

5.10

Fire Safety Plans

The Ontario Fire Code requires a fire safety plan for specific occupancy types. These plans provide the on-site staff and the responding fire and rescue services with an understanding of the protocols to be utilized in the event of an emergency. Plans typically include building layouts, evacuation plans, details regarding fire alarm and life safety systems in place, and the

protocols for staff in an emergency. The Puslinch part-time Fire Chief and part-time Chief Fire Prevention Officer are responsible for reviewing and approving the fire safety plans. The Ontario Fire Code (Section 2.8) requires a fire safety plan for specific occupancy types. These premises include (but are not limited to):

- (a) *an assembly occupancy,*
- (b) *a care occupancy,*
- (c) *a care and treatment occupancy,*
- (d) *a detention occupancy,*
- (e) *a residential occupancy where the occupant load exceeds 10,*
- (f) *a retirement home,*
- (g) *a business and personal services occupancy where the occupant load exceeds 300,*
- (h) *a mercantile occupancy where the occupant load exceeds 300,*
- (i) *a high hazard industrial occupancy where the occupant load exceeds 25,*
- (j) *a medium hazard industrial occupancy where the occupant load exceeds 100, or*
- (k) *a low hazard industrial occupancy where the occupant load exceeds 300.*

The Chief Fire Official (part-time Fire Chief) of the municipality is required by the fire code to review and approve the fire safety plans for the occupancies listed above when the building is first occupied and on an ongoing basis. Fire Safety Plans are currently delegated for review by the part-time Chief Fire Prevention Officer and approved by the part-time Fire Chief.

5.11 Proposed Fire Inspection Program

Based on our analysis of the Community Risk Profile and the new Ontario Regulation 150/13, revised fire inspection goals and objectives (performance measures) are proposed within this MFP. The proposed fire inspection goals and objectives align with prioritizing the optimization of the first two lines of defence and the strategic priorities of this MFP.

To achieve the proposed objectives, the PFRS will need to reassess, and re-prioritize the current inspection program. To achieve the routine inspection cycles proposed, including prioritizing high risk occupancies and implementing the residential occupancy cycles, the department will need to look at alternative strategies for the current inspection program, including increasing the number of hours for the part-time Chief Fire Prevention Officer.

Further benefits of increasing the number of hours for the part-time Chief Fire Prevention Officer are presented within Section 8.0 *Fire Suppression Division* of this plan.

Table 6 identifies the proposed goals and objectives (performance measure) for conducting fire inspections within the Township of Puslinch based on the Community Risk Profile presented within this MFP.

**TABLE 6: TOWNSHIP OF PUSLINCH PROPOSED FIRE INSPECTION GOALS AND OBJECTIVES
(PERFORMANCE MEASURES)**

Occupancy Classification (OBC)	Buildings	Current Fire Inspection Frequencies (Performance Measure)	Proposed Fire Inspection Frequencies (Performance Measure)
Group A – Assembly	Schools, Recreation Centres (Arenas), Curling/Golf Centres	6-12 Months	Annually
Group A – Assembly	Licensed Properties, Nursery/Day Care Facilities, Churches, Special Occasion Permits	6-12 Months	Annually
Group B – Institutional	Nursing homes, Homes for Special Care	6-12 Months	Annually
Group C – Residential	Apartments regulated by Part 9.3 of the OFC Apartments regulated by Part 9.5 of the OFC Apartments regulated by Part 9.8 of the OFC Home Inspection Program	6-12 Months 6-12 Months 6-12 Months Upon Request	Annually Annually Annually Smoke Alarm Program
Group D - Business	Business and Personal Services Occupancies	12-18 Months	2- Years
Group E - Mercantile	Mercantile Occupancies	12-18 Months	2 - Years
Group F - Industrial	Factories and Complexes	12-18 Months	2 - Years

As previously indicated the current workload of the part-time Chief Fire Prevention Officer does not provide sufficient time to achieve the objectives of the current fire inspection frequencies. The proposed fire inspection goals and objectives reflect the results of the Community Risk Profile presented within this report to achieve the Township's legislated responsibilities for occupancies including new legislation for 'Enhancing Fire Safety in Occupancies Housing Vulnerable Ontarians, Ontario Regulation 150/13'.

To achieve the proposed fire inspection frequencies identified we are recommending that the hours of the part-time Chief Fire Prevention Officer be increased from the current 16 hours per week to 24 hours per week.

It is recommended that subject to the consideration and approval of the proposed fire inspection goals and objectives by Council that they be included within the proposed Fire Prevention Policy and proposed Establishing and Regulating By-Law.

It is recommended that the hours of work for the part-time Chief Fire Prevention Officer be increased from the current 16 to 24 hours per week to achieve the proposed fire inspection frequencies identified within the proposed Master Fire Plan.

Further analysis and recommendations regarding the part-time Chief Fire Prevention Officers position are included within Section 8.12 *Options for Enhancing Fire Suppression Services* of this MFP.

5.11.1 Fire Investigations and Cause Determination

Investigating the origin and cause of a fire is a municipal fire and rescue services' responsibility. Where fires meet specific criteria the local fire and rescue service can request assistance from the OFMEM to conduct these investigations. The criteria and process for this request are contained within OFMEM Communique #2010-12.

SOG #8-101 *Fire Cause Determination* establishes policies and guidelines to ensure fire cause determination is conducted. The SOG states *"The commanding officer, or designate, shall make every effort to determine the cause of every fire within the fire department's protection area."*

External agencies such as the police, hydro electric utility, Fuel Energy Branch, Technical Standards Safety Association, and OFMEM Investigation can be used to assist the local investigation.

The OFMEM Investigator must be notified when any of the following conditions exist:

1. *Fire damage exceeds \$500,000*
2. *Explosions*
3. *Fire death or injury that could result in death (includes firefighters)*
4. *Multi-unit residential (where fire spread is beyond unit of origin)*
5. *Suspicious nature or arson fire*
6. *Gaseous explosions*
7. *Clandestine drug labs*
8. *Injuries due to fires (includes firefighters)*
9. *Fires in buildings with vulnerable occupants – senior residence*

The SOG also defines when the OFMEM should be contacted and that accurate documentation is filed for possible future investigations, prosecutions, and litigations.

Currently the part-time Fire Chief and part-time Chief Fire Prevention Officer are the only two individuals in the PFRS with the sufficient training to investigate the cause of fires. Subject to consideration and approval of the proposed organizational model for the PFRS additional senior staff should be trained to support this function.

5.12 Fire Prevention and Public Education Priority Setting Worksheet

The priority setting worksheet developed by the OFMEM is an effective tool utilized by fire departments to identify and monitor activities targeted at fire prevention and public education.

Table 7 is the current priority setting worksheet which reflects the recommendations of this Master Fire Plan.

TABLE 7: FIRE PREVENTION AND PUBLIC EDUCATION PRIORITY SETTING WORKSHEET

Priority	Status		Effectiveness, Goals/Objectives		
Fire Safety Priority (In order of Priority)	Current fire prevention / public education programs that address the fire safety priority		Existing programs ensure compliance with minimum FPPA requirements?		
				Options for enhancement / improvement to address the fire safety priorities & community risk	
	Fire Prevention (Inspection) Activities	Public Education Activities	Y/N	Fire Prevention Activities	Public Education Activities
1) Children	Annual Fire Code Inspections	Media Releases, Public Safety Announcements Smoke Alarm - Home Escape Planning Home Safe Home Program Fire and Life Safety Displays Targeted Education Programs Fire Prevention Week Activities	Y	Proposed Fire Inspection Cycles	Proposed Public Education Programs and Activities Cycles
2) Seniors[C2]	Vulnerable Occupancy Inspections	Media Releases, Public Safety Announcements Smoke Alarm - Home Escape Planning Home Safe Home Program Fire and Life Safety Displays Targeted Education Programs Fire Prevention Week Activities	Y	Proposed Fire Inspection Cycles	Proposed Public Education Programs and Activities Cycles
3) All Residents	Smoke Alarm Program	Media Releases, Public Safety Announcements Smoke Alarm - Home Escape Planning Home Safe Home Program Fire and Life Safety Displays Targeted Education Programs Fire Prevention Week Activities	Y	Proposed Fire Inspection Cycles Updated Smoke Alarm Program to include Carbon Monoxide Checks	Proposed Public Education Programs and Activities Cycles
4) Industrial / Commercial	General Inspections (12-18 Months) Testing of Fire Safety Plans (Drills)	Fire Training General Fire Safety Talks	Y	Proposed Fire Inspection Cycles	Proposed Public Education Programs and Activities Cycles

5.13 Fire Prevention/Public Education Workspace

Workspace for the Fire Prevention/Public Education Division is shared amongst all of the staff resources assigned to these functions. This shared space strategy has been necessary to provide office space for the number of staff resources that require access to desk space and a computer to complete their work.

Although this model for workspace is functional, it is not the most effective and efficient model for the individual workspace functions. Several of the offices open directly into the training room, which creates a conflict when the functions of both spaces are being utilized at the same time. In our view this is particularly challenging for the part-time Chief Fire Prevention Officer who can be dealing with other agencies and the public while an internal department training exercise is being facilitated.

As recommended within the Administration Section of this MFP the administrative workspace for the PFRS should be reviewed in consideration of the recommendations of the proposed Master Fire Plan and the current facilities review of the Township Administrative Offices.

5.14 Fire Prevention/Public Education Division Summary and Recommendations

Our analysis of the current fire prevention and public education activities and programs provided by the PFRS indicates that the Township is achieving its minimum legislated responsibilities for these areas of the FPPA.

The **strategic priorities** contained within the proposed MFP are presented to provide Council with a framework for providing the most cost effective and efficient level for fire protection services that provides the most value to the community.

The recommendations within this proposed MFP for enhancing the fire prevention and public education activities and programs currently being delivered by the PFRS are intended to optimize the benefits of these activities in reducing the probability and consequences of a fire, resulting in a safer community.

Recommendations for the Fire Prevention/Public Education Division include the following:

12. *That subject to Council's consideration and approval of the proposed Master Fire Plan that a Fire Prevention Policy be created utilizing the framework of PFSG 04-45-12 "Fire Prevention Policy" for consideration and approval by Council, and attached as an appendix to the fire department Establishing and Regulating By-law.*
13. *That subject to the consideration and approval of the proposed public fire safety education activities and program cycle objectives by Council that they be included within the proposed Fire Prevention Policy and proposed Establishing and Regulating By-Law.*

14. *That Council consider the provision of 20 hours per week to support a dedicated position of part-time Public Fire and Life Safety Educator reporting to the part-time Chief Fire Prevention Officer with the responsibility to coordinate and optimize the public fire safety education objectives of the PFRS.*
15. *That the PFRS Smoke Alarm Program be updated as a department Standard Operating Guideline and included within the proposed Fire Prevention Policy for consideration and approval by Council.*
16. *That PFSG OFM-TG-01-2012 be considered in developing the proposed Fire Prevention Policy for consideration and approval by Council.*
17. *That subject to the consideration and approval of the proposed fire inspection goals and objectives by Council that they be included within the proposed Fire Prevention Policy and proposed Establishing and Regulating By-Law.*
18. *That consideration be given to increasing the hours of work for the part-time Chief Fire Prevention Officer from the current 16 to 24 hours per week to achieve the proposed fire inspection frequencies identified within the proposed Master Fire Plan.*

6.0 Training Division

The current training program includes volunteer firefighter recruit training, officer development, emergency medical care, vehicle driver/operator training, fire suppression, and specialized technical training. Training is overseen by the part-time Training Officer who is responsible for ensuring that all PFRS personnel receive the training necessary to meet the legislative requirements of the Ontario *Fire Prevention and Protection Act* (FPPA) and the *Occupational Health and Safety Act* of Ontario (OHSA).

Through our review and discussions with the part-time Fire Chief, part-time Deputy Fire Chief of Administration and volunteer firefighters our observations concluded that there is a comprehensive annual training program in place.

Our experience and knowledge of the Ontario Fire Service indicate that firefighter training is an area that has come under a high level of scrutiny over the past decade. The results of numerous inquests and investigations have concluded that firefighter training must be considered a strategic priority for municipalities, in their role as employer, and fire service leaders, and as supervisors. The Ministry of Labour has committed significant resources to audit and support this strategic priority. This division is responsible for ensuring that all PFRS personnel receive the training necessary to meet the legislative requirements of the Ontario *Fire Prevention and Protection Act*, 1997 (FPPA) and the *Occupational Health and Safety Act* of Ontario (OHSA).

6.1 Division Staff Resources

6.1.1 Training Captain (Part-time)

The part-time Training Captain is responsible for coordinating the delivery of the department's training program. This includes developing the annual training program, ensuring the required learning objectives are achieved and that the required training records are maintained.

As an employee of the Township the part-time Training Captain is compensated based on the staff remuneration rates established by Council on an annual basis. For the year 2014 the approved hourly wage for the position of part-time Training Captain was \$26.79.

The part-time Training Captain is currently authorized for ten hours per week to fulfill his administrative responsibilities. In addition to compensation for administrative responsibilities the part-time Training Captain is also compensated based on the hourly rate for this position when responding to emergencies, attending training sessions and other approved department business. The part-time Training Captain is also a member of the Wellington County Training Officers Association.

Further analysis and recommendations regarding the part-time Training Captain position are included within Section 8.12 *Options for Enhancing Fire Suppression Services* of this MFP.

6.1.2 Training Officer (Part-time)

The part-time Training Officer reports directly to the part-time Training Captain. This position is responsible for conducting research, developing lessons plans and ensuring that all necessary training props and equipment are available for scheduled training sessions.

The part-time Training Officer is a recognized training facilitator and as part of his duties facilitates the delivery of a range of training sessions to the volunteer firefighters. As an employee of the Township the part-time Training Officer is compensated based on the staff remuneration rates established by Council on an annual basis. For the year 2014 the approved hourly wage for the position of part-time Training Captain was \$26.79.

The part-time Training Officer is also currently authorized for ten hours per week to fulfill his administrative responsibilities. In addition to compensation for administrative responsibilities the part-time Training Officer is also compensated based on the hourly rate for this position when responding to emergencies, attending training sessions and other approved department business.

Further analysis and recommendations regarding the part-time Training Captain position are included within Section 8.12 *Options for Enhancing Fire Suppression Services* of this MFP.

6.2 Training Standards

In partnership with the Ontario Association of Fire Chiefs, the Office of the Fire Marshal and Emergency Management and other fire service stakeholders the Ontario Fire Services Standards (OFSS) were developed. Together these competency-based standards were applied in developing a comprehensive provincial fire service training program that included a firefighter curriculum, Fire Prevention Officer Diploma program, Company Officer Diploma program, and a Training Officer Diploma program.

The OFMEM announced in April of 2013 that the Ontario Fire Service would be adopting the National Fire Protection Association Professional Qualifications (NFPA Pro-Qual) Standards.

Table 8 below reflects the results of the comparative analysis between the previous Ontario Standards and the representative NFPA Standards.

TABLE 8: COMPARISON OF ONTARIO AND NFPA STANDARDS

Previous Ontario Standard	New NFPA Standard
Ontario Firefighter Standard	NFPA 1001 – Standard for Fire Fighter Professional Qualifications
Ontario Company Officer Standard	NFPA 1021 – Standard for Fire Officer Professional Qualifications
Ontario Fire Prevention Officer Standard	NFPA 1031 – Standard for Professional Qualifications for Fire Inspector and Plan Examiner
Ontario Training Officer Standard	NFPA 1041 – Standard for Fire Service Instructor Professional Qualifications

In January of 2014 the newly created Office of the Fire Marshal and Emergency Management distributed *Communique 2014 – 04* to the Ontario Fire Service reflecting the grandfathering and transition process to the use of the NFPA Professional Qualifications Standards. **Table 9** below reflects the OFMEM’s determination of concordance between the previous Ontario Standards and the representative NFPA Standards.

TABLE 9: CONCORDANCE OF ONTARIO AND NFPA STANDARDS

Previous Ontario Standard	New NFPA Standard
Ontario Firefighter Curriculum	NFPA 1001 Standard – Level I and Level II
Company Officer Diploma Program	NFPA 1021 Standard – Level II
Fire Prevention Officer Diploma Program	NFPA 1031 Standard – Fire Inspector Level I
Training Officer Diploma Program	NFPA 1041 Standard – Fire Instructor Level II

Communique 2014 – 04 indicates that “Members of the fire service who wish to take advantage of the grandfathering policy and obtain a Letter of Compliance with NFPA Standards must submit an application through their fire department, approved and signed by their fire chief, before December 31, 2015.”

As indicated within this communique the PFRS has until December 31st 2015 to apply for the grandfathering policy of the new NFPA standards. The department has initiated this process and submitted the documentation for grandfathering a large percentage of the current volunteer firefighters and officers.

SOG #7-100 Training Requirements outlines the current training program of the PFRS as the Ontario Firefighters Curriculum. As part of the transition to the new NFPA standards this SOP will need to be revised.

Training sessions are currently held every Tuesday morning and Wednesday evening. All firefighters are expected to attend and participate in these training sessions with a minimum attendance requirement of 50% quarterly and 60% annually. Attendance is monitored on a quarterly basis by the part-time Fire Chief and part-time Deputy Chief of Operations.

Within the consultation process with the volunteer firefighters it was identified that at times there is insufficient time to complete all of the training required within the scheduled training times. In our view this can partly be attributed to the time available within a training evening or morning, and in part to the increasing amount of training that is required to sustain the competencies of a volunteer firefighter.

This MFP recommends the development of a comprehensive annual training program based on the new NFPA Professional Qualifications Standards. As part of developing this program consideration should be given to this feedback, and where necessary further consultation and feedback should be sought from the volunteer firefighters and Officers.

6.3 Comprehensive Annual Training Program

In our view the NFPA standards identified should form the basis of a new comprehensive annual training program for all firefighters and officers within the PFRS.

Addressing an employer's responsibilities as defined by the *Occupational Health and Safety Act* and specifically the *Section 21 Guidance Notes for Firefighters* is another mandatory component that should be included as part of a comprehensive annual training program.

In addition to responding to the relevant firefighting standards, curriculum and health and safety requirements, a comprehensive annual training program should include the following core functions:

- ✓ Identifying training needs in relation to services provided;
- ✓ Coordinating / scheduling theoretical and practical training;
- ✓ Monitoring and evaluating in relation to outcomes achieved;
- ✓ Evaluating (on an ongoing basis) in relation to industry best practices and legislative requirements;
- ✓ Overseeing program objectives and records management; and
- ✓ Assessing (on an ongoing basis) program delivery for efficiency and effectiveness.

The current PFRS training program includes a three year cycle to complete all of the required elements.

It is recommended that the PFRS develop a comprehensive annual training program based on the NFPA Professional Qualifications Standards and the core functions of a comprehensive annual training program identified within the proposed Master Fire Plan.

6.4 Wellington County Recruit Training Program

In 2014 the PFRS participated in a volunteer firefighter recruit training program that was coordinated by the County. Through the efforts of the County and the Wellington County Training Officer's Association this program provided a coordinated initial training program for

volunteer firefighter recruits. Feedback received through consultation with the recruits attending this program, volunteer firefighters and senior staff from the PFRS, indicated this was a good program.

Some concerns were identified with respect to the consistency of the training provided within the PFRS internal recruit program. It was suggested that further training was required to ensure that the volunteer recruits attending this program met the training requirements of the PFRS before being allowed to participate in emergency response.

In our view this type of feedback is not uncommon when bringing together members from different fire departments. Our understanding is that the PFRS has initiated a review of participating in this program with the objective of how best to coordinate the efforts of the County departments with that of the traditional PFRS recruit training program.

It is recommended that the Fire Chief be directed to review the participation of the PFRS in joint training initiatives with the other fire departments within Wellington County in seeking efficiencies in the provision of training programs for the PFRS.

6.5 Live Fire Training

The purpose of live fire training is to provide realistic fire training simulations under safe and controlled conditions. With relatively low volumes of fire calls it is important that the department provides access for all volunteer firefighters to simulate safe and effective fire suppression operations in an appropriate training facility. Live fire training exercises are intended to simulate the actual fire conditions that a volunteer firefighter may encounter and provide simulated heat, humidity, restricted vision and smoke conditions. This type of training is also very beneficial for firefighters, and particularly Company Officers, in learning to understand fire behaviour including identifying evolving smoke conditions as they may relate to the potential for fire extension or conditions such as a “flashover”.

Live fire training sessions are an element of the volunteer recruit firefighter training program provided at the Waterloo Fire Training Grounds. When possible the PFRS also attempts to include live fire training sessions within the annual training schedule. This can include small scale burns held in conjunction with regular training, or alternatively attending training at the Cambridge Fire Department Training Tower.

The PFRS does not have a dedicated training centre with the facilities capable of facilitating this type of training. When possible they utilize donated structures, or attend scheduled training at one of the fire training facilities identified above or the Ontario Fire College in Gravenhurst.

It is recommended that the PFRS include live fire training as a required element within the proposed comprehensive annual training program.

6.6 Online Training

Access to online training programs can provide greater flexibility in delivering the comprehensive training program recommended, particularly for volunteer firefighters. Online programs can be designed to meet varying learning styles and objectives. As well, they provide flexibility in access from the fire station or at home. Participation can be either individually or in groups.

The PFRS has accessed online training in the past to facilitate training such as WHMIS. Volunteer recruits also participate in a number of online programs in conjunction with the County Training School.

The Fire Learning Management System (FLMS) is an example of an innovative and cost effective tool for delivering online firefighter training. The learning materials are accessed through the internet at any time of day. FLMS allows each member of the fire department to log on to their own account and complete courses created by the fire department / Training Division. These courses can be self-delivered or supervised and delivered by officers or Trainer-Facilitators (TFs).

Volunteer firefighters can access course materials anytime they want outside of the regular training schedule. Courses contain learning activities and materials presented in a logical, familiar fashion. Use of technology such as this would allow the PFRS to build and customize its own training course content and support the proposed comprehensive annual training program. This particular system also allows courses to be shared with other fire departments. The FLMS program is available for all firefighter and company officer subjects and is currently being revised to reflect the transition to the NFPA firefighter training programs being adopted by the OFMEM.

It is recommended that the PFRS investigate the use of an online firefighter training program as a component of delivering the proposed comprehensive annual training program.

6.7 Specialized Training Programs

In addition to basic firefighting training fire departments must also consider the training needs associated with specialized services. Specialized services (e.g. technical rescues) are the types of services that typically require a higher level of technical training and equipment to safely mitigate the emergency.

Our review identified that the following specialized services are currently being provided the PFRS:

- HAZMAT Response (Awareness Level)
- Confined Space Rescue (Operations Level)
- Slope/High Angle Rope Rescue (Operations Level)
- Trench Rescue (Awareness Level)

- Water / Ice Rescue (Land-Based and Entry Level)

In our view the level of training currently provided for Confined Space Rescue and Slope/High Angle Rope Rescue services is not consistent with the findings of the Community Risk Profile and the ability of the PFRS to sustain the required high degree of proficiency and accreditation in each specialized area.

In our view the PFRS should only be training to, and providing a level of emergency response service consistent with, an 'awareness level' of emergency response for these activities.

Consideration should be given to identifying other options, such as partnerships with other communities through automatic aid agreements, contracted services with other agencies, or partnering with the private sector in order to provide any services required above the awareness level for Confined Space Rescue and Slope/High Angle Rope Rescue.

It is recommended that the PFRS reduce the current level of emergency response services (and related training) for Confined Space Rescue and Slope/High Angle Rope Rescue incidents from an operational capability to an awareness level of response, and that these service levels be reflected in the proposed Establishing and Regulating By-law.

It is recommended that the part-time Fire Chief be directed to investigate the options available for the delivery of operational level emergency response for incidents including Confined Space Rescue, Slope/High Angle Rope Rescue, HAZMAT response, and Trench Rescue.

6.8 Company Officer Training

The fire service is a paramilitary organization that relies on a rank structure to manage the roles and responsibilities of the organization and the operational services it delivers. This structure needs to include an appropriate span of control in order to be efficient and effective. A sufficient number of officers are also required to ensure the function of incident command can be implemented at all emergency scenes, and depending on the incident action plan, have sufficient additional officers to facilitate other roles such as sectoring of the scene, and Safety Officer.

Municipalities are required to ensure a sufficient number of supervisors (officers) are trained to oversee the workforce. Within the Occupational Health and Safety Act, Part III, Duties of Employers and Other persons, Section 12, subsection (2) states that: *"Without limiting the strict duty imposed by subsection (1), an employer shall, "(c) when appointing a supervisor, appoint a competent person;"*

As an employer, the Township of Puslinch is legislated by this section of the OHSA to ensure that all supervisors, which includes the role of incident commander, be competent.

The OHSA defines a "competent person" to mean a person who:

- (a) *“is qualified because of knowledge, training and experience to organize the work and its performance,*
- (b) *is familiar with this Act and the regulations that apply to the work, and*
- (c) *has knowledge of any potential or actual danger to health or safety in the workplace: (“personne competente”)*”

The PFRS currently supports the need for Company Officer training and supports this need by providing opportunities for Company Officers (Volunteer Captains and Volunteer Lieutenants) to participate in additional training opportunities such as those offered by the Ontario Fire College.

It is recommended that the PFRS enhance the training opportunities for Company Officers to achieve the competencies identified within the new NFPA 1021 Standard – Level II for Company Officers.

6.9 Incident Command Training

Guidance notes to protect the health and safety of firefighters are developed by the Ontario Fire Service Section 21 Advisory Committee and distributed by the Ministry of Labour. Firefighters Guidance Note #2-1 – Incident Command reflects the importance of having an Incident Command System (ICS).

Incident Command Systems are designed to positively affect the outcome of an emergency scene operation and the health and safety of firefighters. These systems can have a dramatic effect on the efficiency and effectiveness of the emergency response and safety on the emergency scene. This includes all incidents that the fire department may respond to including the fire ground, hazardous materials incidents, automobile extrications, water/ice rescues and any other incident the fire department responds to where emergency responders and apparatus must be coordinated.

Firefighters Guidance Note #2-1 – Incident Command references a number of recognized systems including the “*Phoenix Fireground Command System*.” This system was developed by Alan V. Brunacini the former Fire Chief of the Phoenix Fire Department. Chief Brunacini is a renowned expert on incident command. In his book titled “*Fire Command*” (second edition) he includes the following statement:

“To provide continuous command, the first fire department unit or officer arriving at the scene should assume command, until relieved by a ranking officer, or until command is passed (transferred) or terminated. The initial assumption of command is mandatory.”

Incident command should be established by the first arriving officer and be sustained until the emergency is mitigated. The Incident Commander (officer) is responsible for all aspects of managing the emergency incident including developing an “Incident Action Plan” and managing all operations on scene. This includes:

- ✓ *Establish immediate priorities, especially the safety of responders, other emergency workers, bystanders, and people involved in the incident.*
- ✓ *Stabilize the incident by ensuring life safety and managing resources efficiently and cost effectively.*
- ✓ *Determine incident objectives and strategy to achieve the objectives.*
- ✓ *Establish and monitor incident organization.*
- ✓ *Approve the implementation of the written or oral Incident Action Plan.*
- ✓ *Ensure adequate health and safety measures are in place.*

SOG #6-115 'Taking Command' describes the roles and responsibilities of firefighters and officers in taking command of an incident. The PFRS also has a number of other SOGs related to incident command and identifying a Safety Officer.

6.9.1 Blue Card Fire Command Training

The PFRS has been investigating the implementation of the Blue Card Fire Command Training Program to further enhance the incident command training within the department. This training and certification process utilizes both on-line and in-class simulation training that focuses on structural fires. However, the program can be easily adapted to address all types of incidents the PFRS responds to.

This training program is based on the work of Chief Brunacini and has been applied in many fire departments across North America including Ontario.

It is recommended that the PFRS consider adoption of the Blue Card Fire Command Training Program as a component of the proposed Comprehensive Annual Training Program.

6.10 Succession Planning

Fire departments and municipalities are recognizing the importance and value that succession planning has within the municipal fire service. Succession planning has not traditionally been an area of concern or consideration within the fire service in Ontario. An effective succession plan requires the implementation of strategies to ensure that opportunities, encouragement and additional training are available for those staff that may be considering further advancement within an organization. A comprehensive succession plan also supports the concepts of coaching and mentoring in support of staff considering future career opportunities.

The recent process to provide the volunteer captains with the opportunity to rotate through the position of Deputy Chief of Operations is a good example a strategy that recognizes the importance of succession planning. However, there is no formal succession planning process in place within the department. Succession plans can provide a framework of skills and experience that are required for each position within the department. For candidates seeking promotion or further responsibilities the succession plan can provide a career path to the

position of their choosing. Succession planning can also provide Council with the knowledge that there are trained and skilled candidates available in the event vacancies occur within the department.

It is recommended that the PFRS develop a succession plan for the PFRS including opportunities to enhance the leadership and management training available for all officers.

6.11 Training Workspace

Workspace for the Training Division is also shared amongst the staff resources assigned to this division. This shared space strategy was necessary in order to provide office space for the number of staff resources that require access to desk space and a computer to complete their work.

As indicated previously within this report, the current workspace within the PFRS is not providing the most optimal functional space to meet the needs of the current and future staffing allocation and workspace functions of the PFRS.

As recommended within the Administration Section of this MFP it is recommended that the administrative workspace for the PFRS be reviewed in consideration of the recommendations of the Master Fire Plan and the current facilities review of the Township Administrative Offices.

6.12 Training Division Summary and Recommendations

The PFRS has initiated the transition process to the use of the NFPA Professional Qualifications Standards including the optimization of the grandfathering provisions provided by the OFMEM. In our view the PFRS has been proactive and efficient in taking the necessary steps to transition to the new training standards.

The analysis within this review has identified a number of areas within the current training program where further consideration of the current training levels should be reviewed, and where additional programs may further enhance the training program.

In our view the current training program provided by the PFRS further reflects the high degree of dedication and commitment that the members of the PFRS have towards servicing their community. The recommendations presented are intended to enhance the current training program.

Recommendations for the Training Division include the following:

19. *That the PFRS develop a comprehensive annual training program based on the NFPA Professional Qualifications Standards and the core functions of a comprehensive annual training program identified within the proposed Master Fire Plan.*
20. *That the part-time Fire Chief be directed to review the participation of the PFRS in joint training initiatives with the other Fire Department within Wellington County in seeking efficiencies in the provision of training programs for the PFRS.*

21. *That the PFRS include live fire training as a required element within the proposed comprehensive annual training program.*
22. *That the PFRS investigate the use of an online firefighter training program as a component of delivering the proposed comprehensive annual training program.*
23. *That the PFRS reduce the current level of emergency response services and related training for Confined Space Rescue and Slope/High Angle Rope Rescue incidents from an operational capability to an awareness level of response, and that these service levels be reflected in the proposed Establishing and Regulating By-law.*
24. *That the part-time Fire Chief be directed to investigate the options available for the delivery of operational level emergency response for incidents including Confined Space Rescue, Slope/High Angle Rope Rescue, HAZMAT response, and Trench Rescue.*
25. *That the PFRS enhance the training opportunities for Company Officers to achieve the competencies identified within the new NFPA 1021 Standard – Level II for Company Officers.*
26. *That the PFRS consider adoption of the Blue Card Fire Command Training Program as a component of the proposed Comprehensive Annual Training Program.*
27. *That the PFRS develop a succession plan for the PFRS including opportunities to enhance the leadership and management training available for all officers.*

7.0

Fire Suppression Division

The Township of Puslinch shares the characteristics of many primarily rural / agricultural communities in Ontario that include small urban centres surrounded by large sections of rural geography. Providing emergency response in these rural municipalities in the form of firefighting resources capable of effectively mitigating a fire in a timely manner can be difficult and challenging. Travel distances and water supply are only two factors that can impact the ability to provide this type of mitigation within an established time frame.

Puslinch Fire and Rescue Services currently has a part-time Fire Chief who, in addition to performing his administrative/management responsibilities, also oversees the fire suppression, or emergency response functions of the PFRS. A temporary part-time Deputy Chief of Administration is currently supporting the Chief in overseeing the administrative/management functions. Similarly, the temporary position of part-time Deputy Chief of Operations is supporting the Chief in overseeing the fire suppression functions. The role of this temporary part-time Deputy Chief of Operations is currently being rotated between five appointed Captains, as per By-Law #028/14.

Since inception in 1968 the PFRS has successfully sustained utilizing volunteer firefighters for the delivery of fire suppression and emergency response activities. The PFRS currently includes a complement of 31 dedicated volunteer firefighters and officers and 4 auxiliary firefighters. This core group of volunteer firefighters is supported through the provision of a number of agreements with surrounding communities including fire protection agreements, automatic aid and mutual aid.

In addition to fire suppression (firefighting) the PFRS responds to a range of other emergency including motor vehicle collisions, medical assist calls, land/water based and ice rescues, confined space and rope rescue. The master fire planning process places on a strong focus on assessing the municipality's legislative responsibilities within the FPPA. This strategy is appropriate and included within this MFP; however, the PFRS is also recognized within the community and by Council for their dedication and commitment in providing many other non-fire related services. This recognition has been reflected in the strategic priorities included within this MFP including:

"Emphasis on the value of all services other than those legislated by the Fire Protection and Prevention Act, 1997 that are provided by the Puslinch Fire and Rescue such as responses to motor vehicle accidents and medical responses that enhance life safety within the community."
and

"Emphasis on strategies that support the sustainability of fire protection services that provide the most cost effective and efficient level of fire protection services resulting in the best value for the community."

7.1 Emergency Response

The Comprehensive Fire Safety Effectiveness Model recognizes the high importance of the first two lines of defence in mitigating the potential of a fire occurring. In the event a fire does occur and emergency response is required the model defines the third line of defence as:

“III. Emergency Response (Suppression):

Providing well trained and equipped firefighters directed by capable officers to stop the spread of fires once they occur and to assist in protecting the lives and safety of residents. This is the failsafe for those times when fires occur despite prevention efforts.”

In our view the three lines of defence represent a proven model for optimizing the benefits of proactive prevention and education programs; appropriate use of standards and code enforcement and, as the model suggests, the provision of emergency response as the ‘failsafe’ for when these efforts when incidents occur despite all efforts towards optimization of the first two lines of defence.

A core component of evaluating the overall effectiveness of providing fire suppression services includes considering a measurement-supported set of performance targets (i.e. service standards) and setting clear goals and objectives. Within Ontario there is no specific legislated standard that a community must achieve with regard to the type of firefighter (career/part-time/volunteer) or the number of firefighters required to respond to any given incident. The FPPA does require that a municipal Council assess this level of resources based on determining its “local needs and circumstances.”

To assist with evaluating the level of fire suppression resources required by the Township of Puslinch this study identified the different guidelines and standards that are currently relevant within Ontario. Through comparison of each with a typical fire scenario this analysis presents insight into the industry best practices based on a risk-based approach.

7.2 Importance of Time with Respect to Fire Growth

Time is a critical component with respect to the growth of a fire and the success of intervention by firefighters. Research conducted by the OFMEM and National Research Council of Canada indicates that a fire in a non-sprinklered residential occupancy can spread from the room where the fire originates in ten minutes or less. Tests have shown that the fire can extend from this room of origin in as little as three minutes, under fast fire growth conditions.

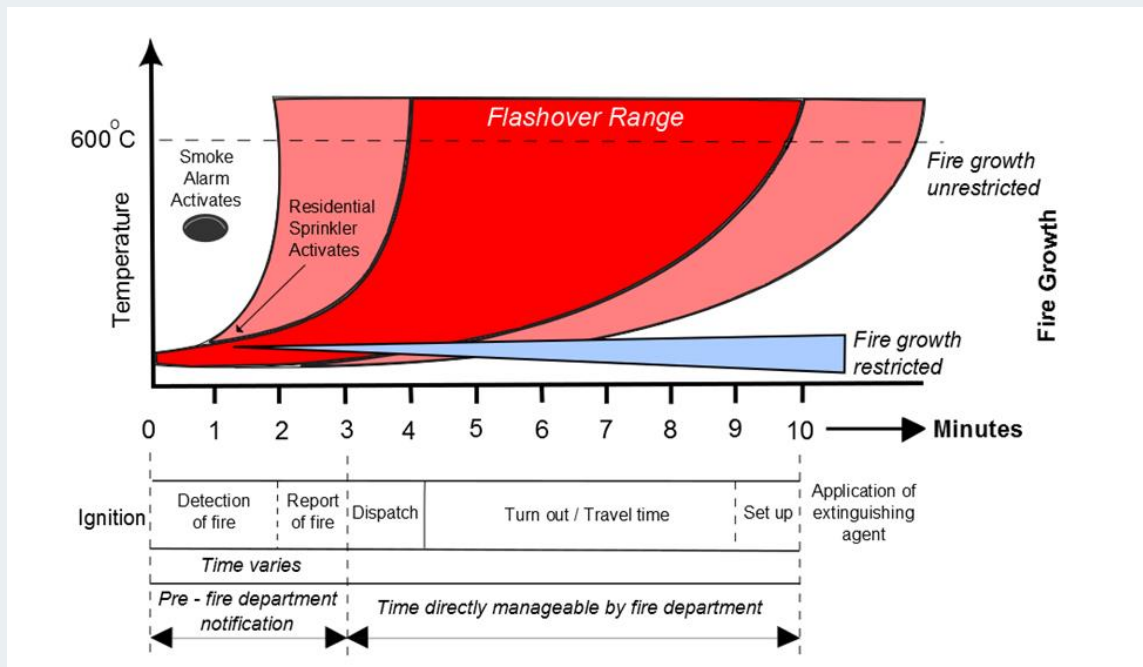
Fire growth rates, defined by the Society of Fire Protection Engineers, as slow, medium and fast are listed in **Table 10**. The fire growth rates are measured by the time it takes for a fire to reach a 1 megawatt (MW) fire. This is roughly equivalent to an upholstered chair burning at its peak. A 2 MW fire is approximately equal to a large upholstered sofa burning at its peak.

TABLE 10: TIME TO REACH 1 MW AND 2 MW FIRE GROWTH RATES IN THE ABSENCE OF FIRE SUPPRESSION**Time to Reach 1 MW and 2 MW Fire Growth Rates in the Absence of Fire Suppression**

<i>Fire Growth Rate</i>	<i>Time in Seconds to Reach 1MW</i>	<i>Time in Seconds to Reach 2 MW</i>
Slow	600 seconds	848 seconds
Medium	300 seconds	424 seconds
Fast	150 seconds	212 seconds

(Courtesy of the Office of the Fire Marshal and Emergency Management).

Within the ten minute time period flashover conditions can occur. Flashover occurs when the combustible items within a given space reach a temperature that is sufficiently high for them to auto-ignite. The graph in **Figure 6** highlights the importance of the first two lines of defence including early detection (Working Smoke Alarms) actions of the occupants including (Home Escape Planning) and prompt notification of the fire department. The success of firefighting intervention, given the exponential increase in fire temperature, and the potential for loss of property/loss of life with the progression of time further support the importance of public education and prevention programs.

FIGURE 6: EXAMPLE FIRE PROPAGATION CURVE

Reference: Fire Underwriters Survey "Alternative Water Supplies for Public Fire Protection: An Informative Reference Guide for Use in Fire Insurance Grading" May 2009 and NFPA "Fire Protection Handbook" 2001

The fire progression curve reflects the importance of time during the “*detection – report*” stage. This is the time period not impacted by any actions by the fire department. The time period controlled by the fire department begins when the call is initially received by “*dispatch*” and includes several other components leading up to the initiation of “*intervention*” by fire suppression staff.

Understanding factors such as “*growth rate*” and “*time*” in terms of how quickly a fire can reach a critical stage such as “*flashover*” are important considerations in assessing fire suppression performance targets. For example, where areas of the community may have extended response times due to long travel distances, in excess of 10 minutes, the potential for the fire to have spread from the room of origin, and or already reached a “*flashover*” state, will be significantly higher.

In these situations consideration should be given to the first two “*lines of defence*” including the provision of more public education and fire prevention activities as a means to inform the public on how to be prepared and react in the event of a fire.

7.3 **Current Fire Suppression Guidelines, Industry Standards, Industry Best Practices**

Within Ontario there is no specific legislated standard that a community must achieve with regard to the type of firefighter (career/part-time/volunteer) or the number of firefighters required to respond to any given incident. The FPPA does require that a municipal Council assess this level of resources based on determining its “*local needs and circumstances.*”

Over the past decade there has been a transition within the fire service industry across North America to the utilization of community risk-based analysis to determine the appropriate level of firefighter deployment based on the critical tasks to be performed to effectively, efficiently and safely conduct fire suppression operations.

The OFMEM represents the agency responsible for fire protection within the Province of Ontario, and the NFPA represents the most highly recognized fire service association in North America. In our view these agencies cumulatively represent the authorities for identifying an appropriate methodology and process for determining firefighter deployment in the Township of Puslinch.

7.3.1 **PFSG 04-08-10 Operational Planning: An Official Guide to Matching Resource Deployment and Risk**

PFSG 04-08-10 (**Appendix L**) was released by the OFMEM in January 2011 and includes a “*Critical Task Matrix*” to assist municipalities in determining the level of fireground staffing capabilities based upon low, moderate, high and extreme risks. The Critical Task Matrix is defined by the OFMEM as:

“The critical Task Matrix is based on the Incident Management System (IMS). It will assist in identifying fireground staffing capabilities based upon low, moderate, high and extreme risk levels within your community. The Office of the Fire Marshal (OFMEM) has identified the critical tasks from the Incident Management System that are used during fireground operations. These tasks are consistent with applicable legislation, industry best practices and the Ontario Fire College Curriculum.”

The matrix further recognizes that within the IMS that:

- *Upon arrival and rapid size-up, the incident commander can upgrade or downgrade response;*
- *Crews can be reassigned to other tasks once original assignments are complete;*
- *Response protocols can be established with specific risk levels used to assist with pre-planning to obtain more resources based on the escalating nature of the emergency;*
- *Fire departments perform rescue and building personnel conduct evacuations according to their approved fire safety plans;*
- *Some tasks will never be assigned based on the tactical approach chosen by the incident commander (offensive versus defensive).*

The Critical Task Matrix provides a lower and upper range of the number of firefighters required to respond for each of the four risk levels. The actual number of firefighters within each range is based upon analysis of actual fires, the *Occupational Health and Safety Act Section 21 Guidance Notes* affecting firefighters, and industry best practices. **Table 11** reflects the PFSG 04-08-10 (**Appendix L**) Critical Task Matrix.

The OFMEM Critical Task Matrix indicates that the lower and upper level incident response range to effectively, efficiently and safely conduct fire suppression operations to safely complete the tasks associated with a fire in moderate risk (Group C - Residential Occupancy) would be 16 to 43.

In comparison, the matrix indicates that the lower and upper level incident response range to effectively, efficiently and safely conduct fire suppression operations tasks associated with high risk occupancy (e.g. Group B – Institutional Occupancy) would be 36 to 83.

TABLE 11: PFSG 04-08-10 CRITICAL TASK MATRIX

Fireground Critical Task		Low Risk		Moderate Risk		High Risk		Extreme Risk	
		LERL	UERL	LERL	UERL	LERL	UERL	LERL	UERL
Incident Response (Note: Where zero or no number has been assigned, the task may be performed at the direction of the incident commander.)	Incident Command*	1	1	1	1	1	1	1	1
	Pump Operator	1	1	1	1	1	1	1	1
	Attack Line (Confine & Extinguish)	2	2	2	2	2	2	2	2
	Additional Pump Operator(s)	0	0	0	2	2	4	4	6
	Additional Attack Line Backup	0	0	0	4	4	8	8	12
	Search & Rescue	0	0	2	4	2	6	2	8
	Initial Rapid Intervention Team (IRIT)	0	0	4	6	8	16	12	22
	Ventilation	0	2	2	2	2	4	2	8
	Water Supply – Pressurized	0	1	1	1	1	1	1	2
	Water Supply – Non Pressurized	0	3	1	4	2	6	4	8
	Forcible Entry Team	0	0	0	0	0	1	0	1
	Utilities	0	1	1	1	1	1	1	1
	Laddering (Ground Ladders)	0	2	0	2	0	4	0	6
	Laddering (Aerial or Elevating Device Operator)	0	0	0	2	0	2	0	2
	Exposure Protection			0	4	2	6	2	6
	Incident Safety Officer			0	1	1	1	1	1
	Accountability			1	1	1	1	1	1
	Entry Control			0	2	1	4	1	4
	Rehabilitation			0	1	1	1	1	1
	Salvage			0	2	2	2	2	2
	Lighting					0	2	0	2
	Directing Occupants					0	4	0	4
	Scribe					1	1	1	1
	Sector Officers					1	4	1	4
	Air Management (Air Refilling Station, etc.)							1	2
Other Or Additional Response Considerations	Logistics Officer								
	Administrative and/or Finance Officer								
	Planning Officer								
	Evacuations (Large Scale)								
	Communications (Dispatch)								
	Public Information Officer								
	Overhaul								
	Additional Firefighters								
Summary	Incident Response Range	4	13	16	43	36	83	49	108
	Total Fire Department Including External								
	Fire Call Incident Response Range								

NOTES:

- LERL = Lower Effective Response Level
- UERL = Upper Effective Response Level (together form the critical staffing range)
- This tool provides a range of staffing requirements only. Actual numbers may vary depending on the fire risk that exists in the municipality. Tasks performed on fireground based on decisions made by Incident Commander.
- Planning moderate, high and extreme risk occupancies/locations will further validate staffing requirements to ensure the optimum level of protection for the municipality.
- Simultaneous events will require further consideration due to additional personnel requirements beyond the scope of the matrix.
- Incident Command will assume responsibilities for the accountability and entry control tasks when no person has been assigned, or until a person has been assigned the task.

(Source: Ontario Fire Marshal (2011), Operational Planning: An official Guide to Matching Resource Deployment and Risk)

7.3.2 National Fire Protection Association (NFPA)

The National Fire Protection Association (NFPA) is an international non-profit organization that was established in 1896. The organization's mission is to reduce the worldwide burden of fire and other hazards on the quality of life by providing and advocating consensus codes and standards, research, training, and education. With a membership that includes more than 70,000 individuals from nearly 100 nations, NFPA is recognized as one of the world's leading advocates of fire prevention and an authoritative source on public safety.

NFPA is responsible for 300 codes and standards that are designed to minimize the risk and effects of fire by establishing criteria for building, processing, design, service, and installation in the United States, as well as many other countries. Its more than 200 technical code and standard development committees are comprised of over 6,000 volunteer seats. Volunteers vote on proposals and revisions in a process that is accredited by the American National Standards Institute (ANSI).

7.3.3 NFPA 1710 Standard

NFPA 1710 *"Standard for the Organization and Deployment of Fire suppression Operations, Emergency medical Operations, and Special Operations to the Public by Career Fire Departments"* provides a resource for determining and evaluating the number of career firefighters required based upon recognized industry best practices.

NFPA 1710 is a standard that is designed for larger municipalities that, as a result of many factors, are operating their fire department utilizing primarily career firefighters. Relevant references from NFPA 1710 include the following:

- This standard applies to the deployment of resources by a fire department to emergency situations when operations can be implemented to save lives and property;
- The standard is a benchmark for most common responses and a platform for developing the appropriate plan for deployment of resources for fires in higher hazard occupancies or more complex incidents.

The NFPA references support the strategic priority of saving lives and property, as well as recognizing the standard as a *"benchmark"* for determining the appropriate level of resources based on the complexity and level of risk present.

This standard identifies the minimum deployment of firefighters based on an "Initial Arriving Company" and an "Initial Full Alarm Assignment."

Initial Arriving Company – "Initial Response"

Initial response is consistently defined in the fire service as the number of firefighters initially deployed to respond to an incident. Fire service leaders and professional regulating bodies have agreed that until a sufficient number of firefighters are assembled on-scene, initiating tactics such as entry into the building to conduct search and rescue, or initiating interior fire suppression operations are not safe practices. If fewer than four firefighters arrive on scene,

they must wait until a second vehicle, or additional firefighters arrive on scene to have sufficient staff to commence these activities.

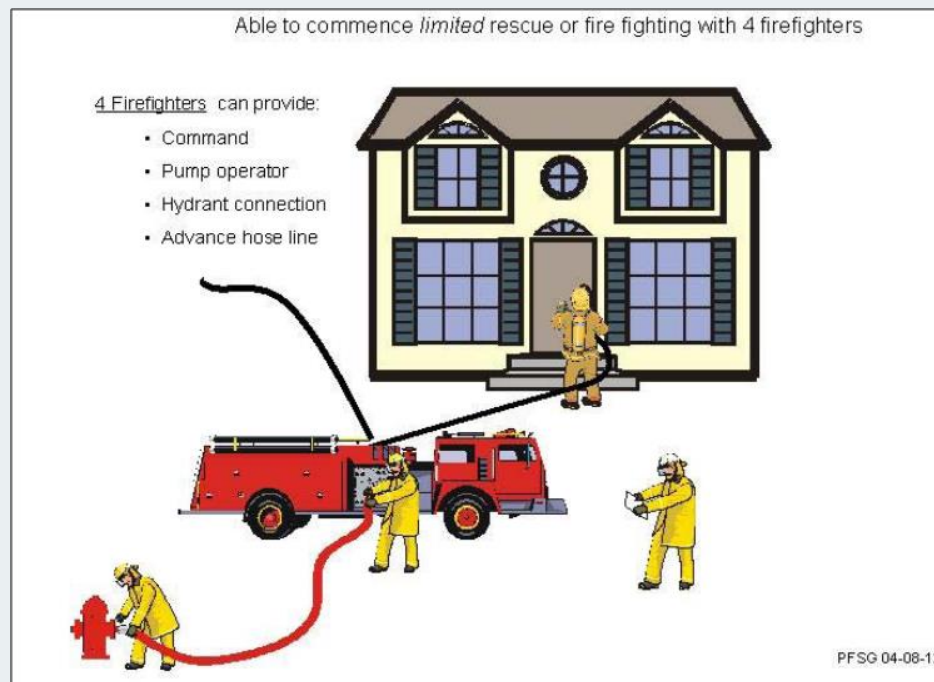
NFPA 1710 refers to the 'Initial Arriving Company' as an 'Engine Company' and further defines the minimum staffing level of an Engine Company as four firefighters whose primary functions are to pump and deliver water and perform basic firefighting at fires, including search and rescue.

An initial response of four firefighters once assembled on-scene is typically assigned the following operational functions. The officer in charge shall assume the role of Incident Commander; one firefighter shall be designated as the pump operator; one firefighter shall complete the task of making the fire hydrant connection; and the fourth firefighter shall prepare an initial fire attack line for operation.

The assembly of four firefighters on the fire scene provides sufficient resources to safely initiate some limited fire suppression operations. This first crew of four firefighters is also able to conduct the strategic operational priority of "size-up" whereby the officer in-charge can evaluate the incident and where necessary, request an additional depth of resources that may not have been dispatched as part of the initial response.

Fire scene responsibilities of an initial response are highlighted in **Figure 7** below.

FIGURE 7: INITIAL RESPONSE FIRE SCENE RESPONSIBILITIES



(Office of the Fire Marshal, Ontario, Public Fire Safety Guideline 04-08-12, December, 2001. (Rescinded November 10, 2010))

The NFPA 1710 standard identifies an initial response deployment of four firefighters to effectively, efficiently and safely conduct initial fire suppression operations. As listed in the Fireground Critical Tasks and summarized in **Table 11** the critical tasks with four firefighters on-scene include incident command, pumper operator and an attack line. This relates to a low-risk call response or an initial response for all calls.

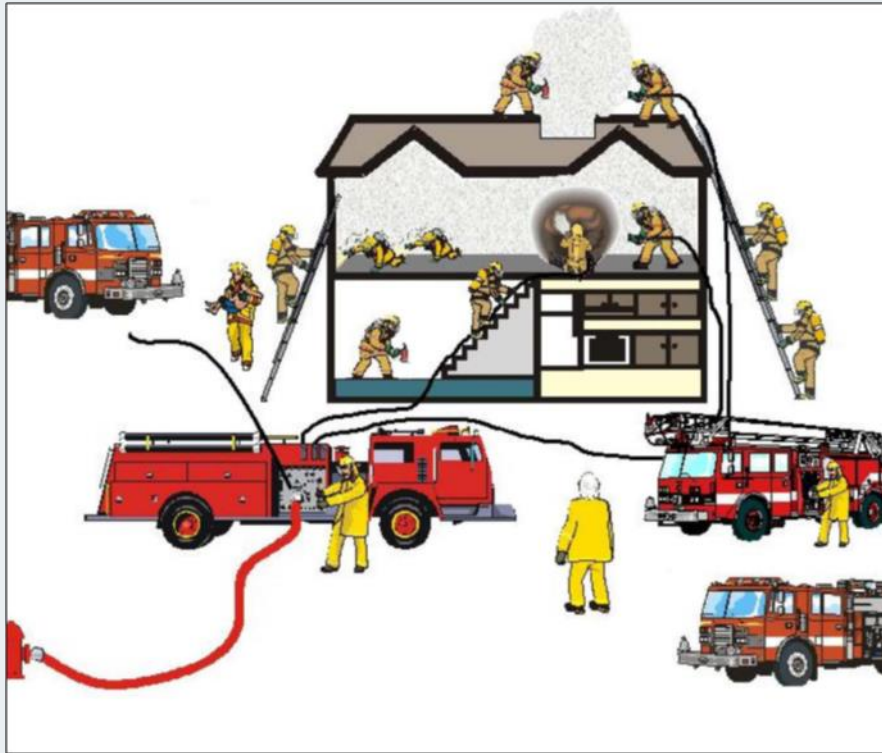
Initial Full Alarm Assignment – “Depth of Response”

In comparison to the initial response, the depth of response relates to the “total” number of firefighters initially assigned to an incident. Depth of response is also commonly referred to as “First Alarm” or “Full Response.” For example NFPA 1710 defines “*Initial Full Alarm Assignment*” as “*Those personnel, equipment, and resources ordinarily dispatched upon notification of a structure fire.*”

The standard utilizes the example of a fire risk scenario in a 2,000 square foot, two-storey single-family dwelling without a basement and with no exposures present. This represents a typical home of wood frame construction located in a suburban neighbourhood **having access to a municipal water supply including fire hydrants**. Within this MFP, this occupancy would be classified as a ‘Group C - Residential Occupancy’ (relating to a moderate risk).

It is very important to recognize that depth of response is referring to the “total” number of firefighters **initially** assigned to an incident. The total number of firefighters assigned to an incident can vary based on the type of occupancy and the level of risk present. Fires involving occupancies that have been assigned a higher level of risk such as high or extreme may require a higher number of firefighters as part of the initial depth of response.

The NFPA 1710 standard for depth of response to the fire risk scenario presented is fourteen firefighters, fifteen if an aerial device is to be used. The NFPA 1710 fire scene responsibilities for depth of response including an aerial are highlighted in **Figure 8**.

FIGURE 8: DEPTH OF RESPONSE FIRE SCENE RESPONSIBILITIES

(Shown including an aerial device – 15 firefighters) Modified from the Office of the Fire Marshal, Ontario, Public Fire Safety Guideline 04-08-12, December, 2001. (Rescinded November 10, 2010).

The NFPA 1710 standard identifies a depth of response deployment of 14 firefighters (with one additional firefighter with an aerial on-scene) to effectively, efficiently and safely conduct initial fire suppression operations in a fire risk scenario representing a single-family detached dwelling. Within this MFP this occupancy would be classified as a 'Group C - Residential Occupancy' (equivalent to a moderate risk). As listed in the Fireground Critical Tasks and summarized in **Table 11**, the critical tasks for a moderate level risk include:

- Incident Command / Accountability (1 firefighter)
- Pump Operator (1 firefighter)
- Two Attack Lines (4 firefighters)
- Search and Rescue (2 firefighters)
- Forcible Entry (1 firefighter)
- Water supply (1 firefighter)
- Initial Rapid Intervention Team (2 firefighters)
- Ventilation (2 firefighters)
- Laddering - Aerial – (additional 1 firefighter, optional)

7.3.4

NFPA 1720 Standard

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*” provides a resource for determining and evaluating the number of volunteer firefighters required based upon recognized industry best practices.

The NFPA 1720 standard further supports the minimum initial response staffing to include four firefighters including “*Initial firefighting operations shall be organized to ensure that at least four fire fighters are assembled before interior fire suppression operations are initiated in a hazardous area*”. This particular standard recognizes that the four firefighters may not arrive on the same vehicle, but that there must be four on the scene prior to initiating any type of interior firefighting operations.

Within this standard the NFPA identifies five different categories described as “Demand Zones” that relate to the type of risk that may be found within a typical community; either by population density, travel distance, or special circumstances. The standard then identifies a minimum level of firefighters that would be recommended for each of these categories.

Table 12 presents the NFPA 1720 standard minimum staffing levels by demand zone.

TABLE 12: NFPA 1720

Demand Zones	Demographics	Minimum # of Firefighters Responding	Response Time (Turnout + Travel) in Minutes	Performance Objective
Urban Area	>1000 people per square mile	15	9	90%
Suburban Area	500-1000 people per square mile	10	10	80%
Rural Area	<500 people per square mile	6	14	80%
Remote Area	Travel Distance + or – 8 miles	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%

The NFPA 1720 standard utilizes population density as a factor in evaluating the minimum number of firefighters recommended for depth of response. As a standard primarily for use by volunteer fire departments it recognizes lower population densities are typically found in smaller communities in comparison to much higher population densities found in large urban centres.

The NFPA 1720 standard identifies an initial response deployment of four firefighters to effectively, efficiently and safely conduct initial fire suppression operations.

The NFPA 1720 standard identifies a depth of response deployment range of four to 15 firefighters depending on the risks associated with fire demand zones to effectively, efficiently and safely conduct initial fire suppression operations.

Our analysis indicates that the Township of Puslinch has a population density of 32.9 people per square mile based on the 2011 Statistics Canada census data. This indicates that the **Rural Area Demand Zone** would be the applicable performance measure for assessing the minimum number of firefighters and response time (turnout time + travel time) for the Township of Puslinch with a performance objective of 80%.

7.4 Summary of Fire Suppression Guidelines, Industry Standards, and Industry Best Practices

In our view the framework for identifying community risk and deploying sufficient firefighting resources to address the community risk present is accurately presented in PFSG 04-08-10 *Operational Planning: An Official Guide to Matching Resource Deployment and Risk (Appendix L)*.

7.4.1 Initial Response Staffing Deployment:

Having considered PFSG 04-08-10, NFPA 1710 and 1720 Standards and based on our experience in working with other municipalities across Ontario current best practices within the Ontario Fire Service for deployment of an initial response to effectively, efficiently and safely conduct initial fire suppression operations reflects a minimum deployment of four firefighters.

In our view an appropriate deployment of an initial response within the Township of Puslinch should include a **minimum initial response of four firefighters** to provide sufficient deployment to effectively, efficiently, and safely conduct initial fire suppression operations. This accounts for the critical fireground tasks of:

- Incident Command- 1 firefighter/officer
- Pump Operation – 1 firefighter
- Initial Attack Line - 2 firefighters

7.4.2 Depth of Response Staffing Deployment:

Current best practices within the Ontario Fire Service for depth of response reflect the principles of PFSG 04-08-10 (**Appendix L**) that applies fireground critical tasks for determining the appropriate number of firefighters to be deployed based on the associated occupancy risk.

Fireground critical tasks refer to the types of activities that are required to be completed by firefighters to effectively and safely mitigate a fire situation. PFSG 04-08-10 provides a lower and upper effective range of firefighters for each of the occupancy risks levels including low, moderate, high and extreme. The OFMEM has identified the critical tasks from the Incident

Management System (IMS) that are used during fireground operations. As indicated within the guideline these tasks are consistent with applicable legislation, industry best practices and the NFPA training standards.

Residential occupancies and specifically single family residences provide an example of the type of fire risk present and fireground critical tasks required to effectively, efficiently and safely mitigate an incident. This is particularly relevant to Ontario where residential occupancies have historically accounted for 72% of all structure fires and 86% of all fire related deaths. During the five year period from 2009 to 2013 the Township of Puslinch reported that 78% of fires occurred in Group C - Residential occupancies, which is an even higher percentage than that of the province.

The fireground critical tasks and initial full response assignment (depth of response) identified within NFPA 1710 utilize the following definition of a residential occupancy:

“The fire risk scenario in a 2,000 square foot, two-story single-family dwelling without a basement and with no exposures present. This represents a typical home of wood frame construction located in a suburban neighbourhood having access to a municipal water supply including fire hydrants.”

The NFPA staffing deployment for this residential fire risk is 14 firefighters, 15 if an aerial device is deployed.

The identification of fire risk classifications (e.g. low, moderate, high and extreme) is determined based on analyzing and reviewing all available information that defines the characteristics of a community. The Community Risk Profile included within this MFP (**Appendix L**) provides the analysis for the Township of Puslinch. The analysis considers the eight key risk factors identified within the OFMEM Fire Risk Sub-Model.

The fire suppression resources necessary to complete the fireground critical tasks can vary based on the type of occupancy. For example, a fire situation in the example of a single family dwelling (moderate risk) will require sufficient fire suppression resources that are determined based on the Community Risk Profile and the relevant PFSG and the NFPA 1710 / 1720 and OHSA standards reflecting best practices in fire suppression activities.

High risk occupancies, such as a nursing home where higher risks such as on older demographic (seniors) that may become disoriented, or unable to evacuate themselves, present different challenges for responding firefighters. The nature of these occupancies to have more residents than a single family home present further challenges for conducting search and rescue and evacuation activities.

To determine the appropriate firefighter deployment for low, moderate, high and extreme risks occupancies within the Township of Puslinch an assessment of the Community Risk Profile; relevant PFSG and the NFPA 1710 / 1720 standards; and OHSA Section 21 Guidance Notes was completed.

The analysis identified a best practices firefighter deployment to complete the fireground critical tasks associated with each occupancy risk level. For low risk occupancies this reflects a minimum deployment of four firefighters. This represents the appropriate fire suppression resources to complete the following fireground critical tasks:

- ✓ *Incident Command - 1 firefighter/officer*
- ✓ *Pump Operator – 1 firefighter*
- ✓ *Initial Attack Line – 2 firefighters*

For moderate risk occupancies including 'Group C - Residential occupancies' (e.g. Single – Family Dwelling) a minimum deployment of 14 firefighters is required to complete the additional fireground critical tasks based on the fire risks present. The additional fireground critical tasks include activities such as providing an additional fire attack line requiring two firefighters, and providing a Rapid Intervention Team (RIT) comprised of two firefighters who are assigned the specific task of being prepared to respond quickly in the event one of the fire attack teams or other firefighters on scene require immediate assistance.

In comparison to the low and moderate risk occupancies, high risk occupancies, such as the nursing home referenced above, require additional fireground critical tasks to be completed and a higher minimum deployment of firefighters. The additional fireground critical tasks include activities such as providing a dedicated crew of two firefighters for positioning ladders on the building to support fire suppression and rescue activities, and the provision of an Incident Safety Officer to oversee and ensure all firefighting activities are conducted safely.

The recommended depth of response firefighter deployment is identified in **Table 13** below:

TABLE 13: RECOMMENDED DEPTH OF RESPONSE

Fireground Critical Tasks		Low Risk	Moderate Risk	High Risk
Incident Response	Incident Command	1	1	1
	Pump Operator	1	1	1
	Additional Pump Operator	0	0	1
	Initial Attack Line (Confine & Extinguish)	2	2	2
	Additional Attack Line (Confine & Extinguish)	0	2	2
	Search and Rescue	0	2	2
	Initial Rapid Intervention (RIT)	0	2	2
	Ventilation	0	2	2
	Water Supply- pressurized	0	1	1
	Forcible Entry Team	0	1	2
	Laddering	0	0	2
	Exposure Protection	0	0	2
	Incident Safety Officer	0	0	1
	Accountability	0	0	1
	Rehabilitation	0	0	2
	Minimum firefighter deployment	4	14	24

PFSG 04-08-12 prioritizes the planning and deployment of sufficient firefighters based on the risk present. Based on our analyses of the relevant PFSG and the NFPA 1710 / 1720 standards; and OHSa Section 21 Guidance Notes an appropriate minimum depth of response to the low, moderate and high risks occupancies within the Township of Puslinch to achieve the required critical fireground tasks includes four firefighters to low risk occupancies, 14 firefighters to moderate risk occupancies and 24 firefighters to high risk occupancies.

7.5 Fire Suppression Response Performance Objectives

The analyses within the preceding sections of this review consider two performance objective elements for fire suppression response including:

- *The number of firefighters required for both initial response and depth of response to effectively and safely mitigate a fire situation, and*
- *The response time (turnout time + travel time) performance objective for deploying the initial emergency response deployment.*

Initial Response Staffing Performance Objective:

Our analyses of the relevant PFSGs, NFPA Standards, and OHSa Section 21 Guidance Notes indicates that the Township of Puslinch should be ***striving to achieve an initial response deployment of four firefighters to all fire related emergency calls.***

Depth of Response Staffing Performance Objective:

Our analyses of the relevant PFGs, NFPA Standards, and OHSa Section 21 Guidance Notes indicates that the Township of Puslinch should be ***striving to achieve a depth of response deployment to all fire related emergency calls of four firefighters to low risk occupancies, 14 firefighters to moderate risk occupancies, and 24 firefighters to high risk occupancies.***

Response Time Performance Objective:

Our analyses of the relevant PFGs, NFPA Standards, and OHSa Section 21 Guidance Notes indicates that the Township of Puslinch should be ***striving to achieve the response time performance objective referenced within the NFPA 1720 Rural Area Demand Zone including a minimum of six firefighters responding within a 14 minute response time (turnout time + travel time) with a performance objective of 80%.***

It is recommended that the emergency response performance objectives identified within the proposed Master Fire Plan be considered and approved by Council and included within the new Establishing and Regulating By-law.

7.6 OFMEM Reviews

The Office of the Fire Marshal and Emergency Management was supportive in the initial establishment of the PFRS in 1968 and has since conducted a number of reviews of the fire protection services provided by the Township.

7.6.1 1982 Report on Municipal Fire Protection Information Survey

At the request of Council the OFMEM conducted a Municipal Fire Protection Information Survey (MFPIS) in 1982. The scope of this survey included *“a review of the organization, methods, practices, manpower, apparatus, equipment, communications, fire stations of the Township of Puslinch Fire Department, fire prevention and other appropriate by-laws, water supply for fire suppression purposes and other appropriate by-laws which may affect fire department operations.”*

The findings of this survey were more extensive than a previous survey conducted by the OFMEM in 1973. The consistency between these two surveys that remains relevant today was the recommendation to construct an additional two-bay fire station in the Puslinch Lake District, and the purchase of a triple combination pumper and 2200 litre tanker to be located in the proposed Puslinch Lake Station.

The Township has consistently responded to this recommendation through the agreement with the City of Cambridge to provide fire protection services to this area of the Township.

7.6.2 2004 Staffing of Emergency Responses to Reported Structure Fires

In fulfilling their legislated role to monitor fire protection services across the province the OFMEM conducted a review in 2004 of the Township's emergency response fire suppression capabilities.

In correspondence received by the Township from the OFMEM on May 20th, 2004 it was stated that *"The Office of the Fire Marshal recommends that the Township of Puslinch implement without delay, the service delivery improvements necessary to ensure that at least 10 firefighters are assembled at the scene of a reported single family dwelling structure fire, within 10 minutes of notification, 90% of the time, for urban areas of your municipality and to achieve the best possible response time for the rural areas of your municipality."* This recommendation was based upon PFSG 04-08-12 "Staffing – Single Family Dwellings" that was in place at the time of this report. This PFSG has since been rescinded by the OFMEM.

The May 20th report also highlights that *"More complex fire risks such as health care facilities, industrial, commercial and larger residential occupancies normally require additional resources than the ten firefighters expected for single-family dwelling fires in the Emergency Response Staffing Guideline."* The OFMEM also encouraged the Township to develop a Master Fire Plan to assist Council in determining the level of fire protection services required.

In further correspondence from the OFMEM on August 9th, 2004 in respect to providing fire protection services to structure fires, the OFMEM staff stated that they *"agreed that a **rural designation** more accurately depicts the layout of the Township."* Although continuing to reference the 04-08-12 PFSG the recommendation of this more recent report concluded that *"The Office of the Fire Marshal continues to recommend that the Township of Puslinch take the appropriate steps to ensure the best possible response to their rural area."*

Based on our review of documentation from the OFMEM's August 9th, 2004 correspondence, the clarifications of a rural designation and the recommendation for providing the best possible fire suppression response reflect the most recent directions from the OFMEM. There is no reference within any of the 2004 OFMEM correspondence to the 1982 recommendation for a second station.

7.6.3 2008 Report on Municipal Fire Protection Information Survey

The most recent survey conducted by the OFMEM occurred in 2008. The findings of this review were presented to the Township on September 29th, 2008 and included the following:

"It has been determined that as at August 28, 2008 your municipality is in compliance with the public fire safety education and fire prevention requirements of subsection 2 (1) (a) of the Fire Protection and Prevention Act, 1997."

The 2008 MFPIS assessed the Township's compliance with subsection 2 (1) (a) of the FPPA with respect to fire prevention and public education. It did not assess or comment on the

Township's compliance with subsection 2 (1) (b) regarding the provision of fire suppression services necessary in accordance with the Township's needs and circumstances.

In summary, the OFMEM has conducted a number of reviews of the fire protection services provided by the Township. With respect to the Township's compliance with the FPPA the most recent review concluded that the Township was in compliance as of 2008 with subsection 2 (1) (a) of the FPPA. The analyses within this review support this finding and that the Township continues to comply with this subsection of the Act.

With respect to compliance with subsection 2 (1) (b) there has been no further contact from the OFMEM since their 2004 review. The analyses within this review provide options for Council's consideration in determining the appropriate fire suppression services within the Township of Puslinch to achieve the legislative requirements of the Township as identified within subsection 2 (1) (b) of the FPPA.

7.7 Historical Emergency Response Capabilities

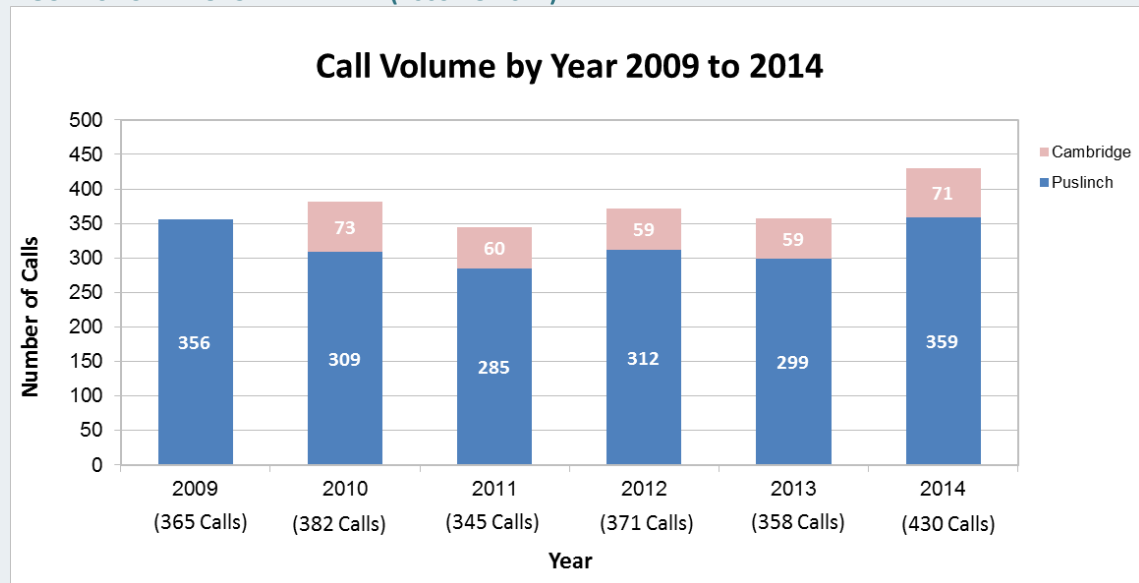
This section presents analysis of the historical emergency response capabilities of the PFRS. The information within this section was provided by the PFRS and represents the actual data collected by the department for the period from January 1st, 2009 to December 31st, 2014.

7.7.1 Emergency Call Volume

A summary of the total number of emergency calls within the Township is presented in **Figure 9**. This includes both the emergency calls that the PFRS responded to as well as the emergency calls that occurred within the fire protection area serviced by the Cambridge Fire Department.

Over this six year period the number of emergency calls both within the fire protection agreement area serviced by Cambridge, and the Township serviced by the PFRS have remained relatively stable. The total number of emergency calls within the Township has averaged approximately 375 emergency calls per year.

FIGURE 9: CALL VOLUME BY YEAR (2009 TO 2014)



Note: For the remainder of the analyses within this section only the number of emergency calls responded to by the PFRS are presented.

7.7.2 Emergency Response Types

Throughout this section emergency calls are referred to and categorized by response type. These response types are defined by the OFMEM and are used by jurisdictions throughout Ontario for comparative reporting purposes. To assist in the comparative process Dillon has grouped the OFMEM response types within this report. **Table 14** illustrates the relationship between the response types used in this report and the OFMEM defined response types. **Appendix N** provides definitions of the OFMEM response types.

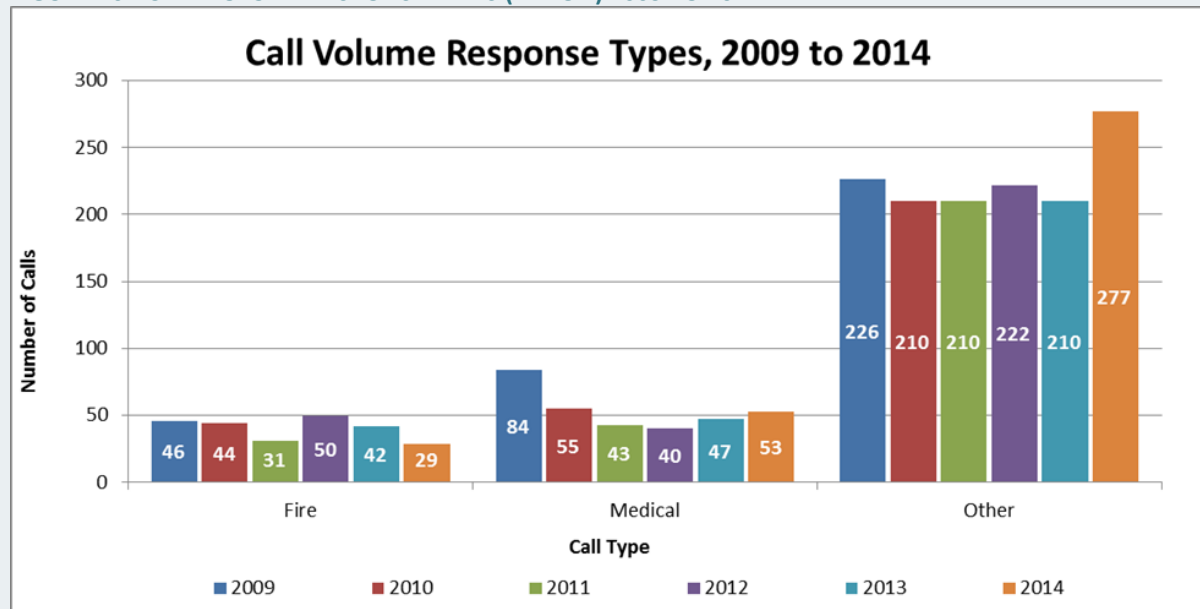
TABLE 14: EMERGENCY RESPONSE TYPES

Dillon Response Type	OFMEM Response Type
Fire	Property Fires / Explosions
Medical	Medical / resuscitator call
Other	Overpressure rupture / explosion (no fire)
	Pre-fire conditions / no fire
	Burning (controlled)
	False fire calls
	CO false fire calls
	Public hazard
	Rescue
	Other Response

7.7.3 Call Volume Response Types (Dillon)

A more detailed analysis of emergency call response types for the period 2009 to 2014 is presented in **Figure 10** below. As shown, the number of fire-related calls have been declining since 2012. The number of medical calls have stabilized since the highest peak that occurred in 2009 while the number of “other” calls increased significantly in 2014.

FIGURE 10: CALL VOLUME RESPONSE TYPES (DILLON) 2009 TO 2014



7.7.4 Call Volume Response Types (OFMEM)

Responding to motor vehicle collisions (MVC) represents the largest volume of response types that the PFRS responds to including 678 calls over the six year period with an average of approximately 113 calls per year. Medical calls are the second highest at a total of 308 calls representing an average of approximately 51 calls per year. The high volume of responses within these types of calls is further confirmation of the strategic priorities identified within this MFP including:

“Emphasis on the value of all services other than those legislated by the Fire Protection and Prevention Act, 1997 that are provided by the Puslinch Fire and Rescue such as responses to motor vehicle accidents and medical responses that enhance life safety within the community.”

There were a total of 218 fire calls over the six year period resulting in an average of approximately 36 fire calls per year. **Table 15** gives the detailed statistics of numbers of calls within the major OFMEM response type classifications.

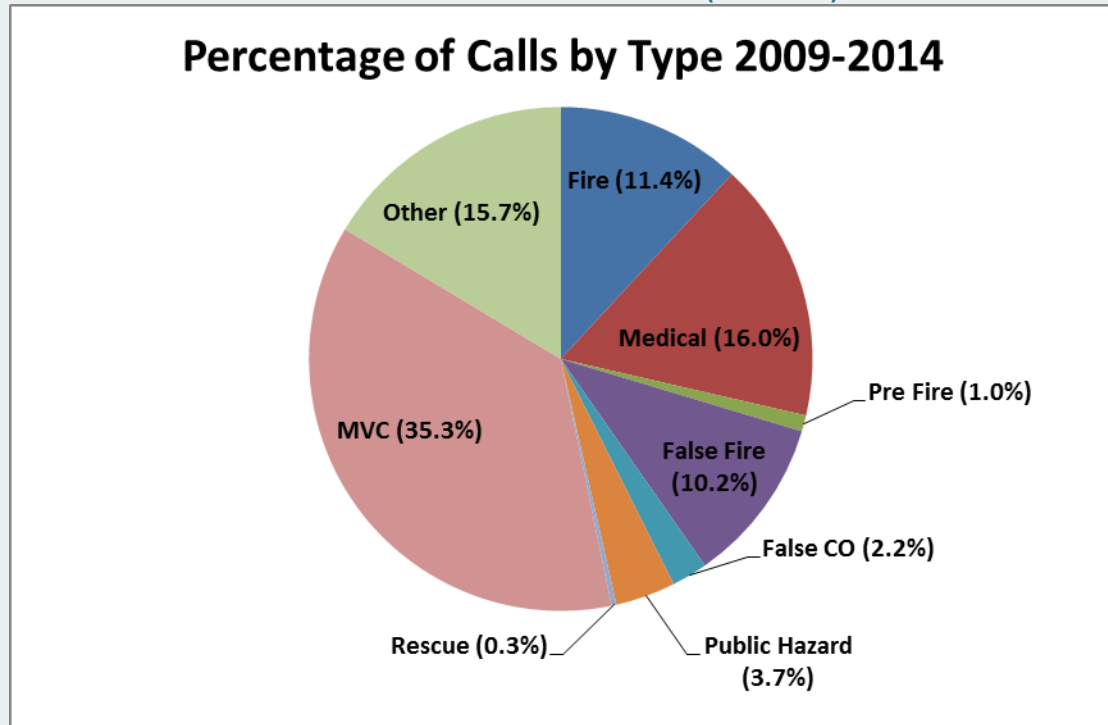
TABLE 15: CALL VOLUME RESPONSE TYPES (OFMEM)

Call Volume By Type							
	2009	2010	2011	2012	2013	2014	Total
Fire	39	39	31	50	39	25	218
Medical	84	55	43	40	47	53	308
Pre Fire	7	5	0	0	3	4	19
False Fire	35	36	28	36	34	36	196
False CO	5	9	10	9	4	9	43
Public Hazard	12	5	9	10	30	6	71
Rescue	2	1	2	1	0	0	6
MVC	125	123	124	103	92	136	678
Other	47	36	38	63	50	90	301
TOTAL	356	309	285	312	299	359	-

7.7.5 Percentage of Call Volume Response Types (OFMEM)

The OFMEM response types are presented within **Figure 11** as a percentage of the overall emergency call volume that the PFRS responded to during the period 2009 to 2014. Motor Vehicle Collision (MVC) related calls are the most frequent type of emergency response call and account for 35.3% of all emergency calls. Medical calls are the second most frequent type of emergency response call and comprise approximately 16.0 percent of the total emergency calls. The fire calls represent approximately 11.4 percent of the total calls.

FIGURE 11: PERCENTAGE OF CALL BY OFMEM RESPONSE TYPE (2009-2014)



7.7.6 Response Time Assessment

Response times within the fire service are commonly measured and analyzed according to percentile ranking (i.e. percentage of responses meeting a specified timeframe). The analyses of relevant PFSGs, NFPA Standards, and OSHA Section 21 Guidance Notes within this MFP recommend that the Township of Puslinch should be striving to achieve the response time performance objective of the NFPA 1720 Rural Area Demand Zone including a minimum of six firefighters responding within a 14 minute response time (turnout time + travel time) with an 80% performance objective.

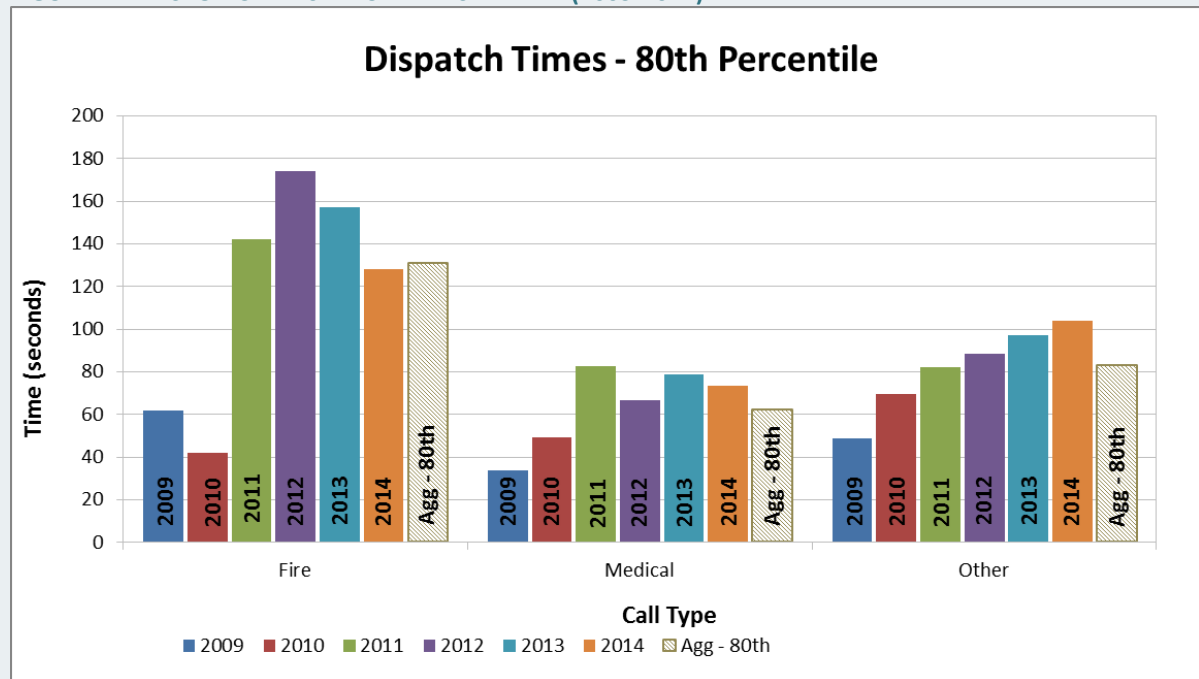
The 80th percentile (i.e., where 80% or 80 out of 100 responses meet a specific response time target) is a common industry best practice for assessing and reporting capabilities of a fire department operated by volunteer firefighters. Fire services commonly utilize 80th percentile response time data for system planning and resource deployment purposes. Aggregate 80th percentiles across the historical years are displayed and discussed for comparison purposes.

7.7.7 Dispatch Times

Dispatch Time within the fire service is defined as: *The time that it takes for the person responsible for “alarm answering”, and “alarm processing” to be able to receive the call, and dispatch the appropriate apparatus and staff to respond to the emergency.”*

The 80th percentile dispatch times for the Puslinch Fire and Rescue Services are displayed in **Figure 12**. In general dispatch times have been increasing over the past six years. Fire calls have experienced a slight decrease since the peak in 2012, and medical calls have similarly decreased slightly since a peak in 2011.

FIGURE 12: HISTORICAL DISPATCH TIMES BY TYPE (2009-2014)



The aggregate 80th percentile dispatch time ranged from 62 to 131 seconds for all call types between 2009 and 2014. In 2013, the 80th percentile dispatch time for fire calls was 131 seconds. This is 71 seconds above the NFPA performance standard of 60 seconds. Dispatch for fire calls have dramatically increased from 2010 when it took 42 seconds to complete fire dispatch.

In 2013, the 80th percentile dispatch time for medical calls was 62 seconds. This is 2 seconds above the 60 second performance measure target.

Dispatching for “other” call types has also increased, from 49 seconds in 2009 to 104 seconds in 2014. The 80th percentile does remain 23 seconds over the performance measure target.

The analysis indicates that dispatch times have regressed during the period that was reviewed. As a component of the overall total response time the current dispatch times are higher than the best practices identified within the NFPA 1221 standard.

Attaining the performance objectives for dispatching as identified within the *NFPA 1221 Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems* should be considered **a priority in developing and operating within a new fire dispatch agreement.**

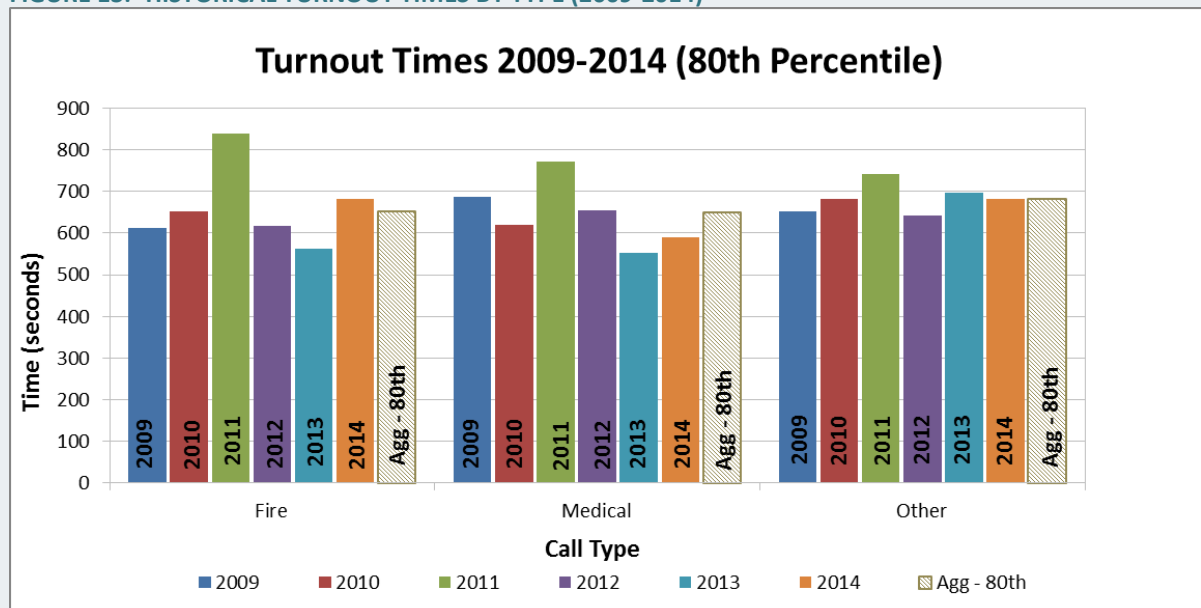
Turnout Times

Turnout Time within the fire service is defined as: “the time interval that begins from when the emergency response staff receives the required dispatch notification, and ends at the beginning point of travel time.”

Turnout times can vary significantly based on the use of either full-time or volunteer firefighters. Full-time firefighters have the benefit of being located within the fire station and are able to receive the call and safely staff the apparatus ready for response in a very short time frame. Best practices reflect a 60 to 80 second turnout time for full-time firefighters depending on the nature of the call.

In comparison, volunteer firefighters must first receive the call to respond (via pager) travel to the fire station and then safely staff the apparatus in preparation for response. Volunteer firefighter turnout times can vary significantly depending on the location and availability of the individual when the call is received. This variable can have a significant impact on a fire department’s response time and therefore should be monitored on an ongoing basis. **Figure 13** presents a summary of the PFRS historical turnout times from 2009 to 2014.

FIGURE 13: HISTORICAL TURNOUT TIMES BY TYPE (2009-2014)



For fire calls the aggregate 80th percentile turnout time is approximately 652 seconds. For medical calls the aggregate 80th percentile turnout time is approximately 651 seconds, and for other calls the aggregate 80th percentile turnout time is approximately 682 seconds.

Our analysis compared the turnout times for the PFRS volunteer firefighters to a sample group of six municipalities within Ontario utilizing volunteer fire departments where we have conducted similar analysis. **Table 16** represents a comparison of the average 80th percentile turnout times of the six municipalities with those of the PFRS.

TABLE 16: COMPARISON TURNOUT TIMES

	Comparison Municipalities	Puslinch	+ or – Percentage Difference
Fire Calls	394 seconds (6.6 minutes)	652 seconds (10.8 minutes)	65.5% higher
Medical Calls	320 seconds (5.3 minutes)	651 seconds (10.8 minutes)	103.4% higher
Other Calls	404 seconds (6.7 minutes)	682 seconds (11.4 minutes)	68.8% higher

This analysis highlights the higher turnout times for the volunteer firefighters in Puslinch in comparison to a group of six other municipalities utilizing volunteer firefighters. In our view this is primarily as a result of one significant factor. In comparison to the six municipalities assessed the Township of Puslinch does not have a central urbanized area where the volunteer firefighters live within close proximity to the fire station that would reduce the travel time of the volunteers to the fire station.

The current PFRS volunteer firefighter recruitment process relies on recruiting volunteer firefighters from across the Township, placing no restrictions on the proximity of where a volunteer firefighter may live or work in relation to the fire station, or a performance objective for turnout time. In our view the current volunteer firefighter turnout times are one of the most significant challenges facing the Township in achieving the proposed performance objective of the NFPA 1720 (Rural Area Demand Zone including a minimum of six firefighters responding within a 14 minute response time (turnout time + travel time) with an 80% performance objective).

The current recruitment process has served the Township well in developing a dedicated and experienced complement of volunteer firefighters. The current complement of volunteer firefighters is also an important component of sustaining and achieving the proposed depth of response performance objectives. These performance measures include striving to achieve a depth of response deployment to all fire related emergency calls of four firefighters to low risk occupancies, 14 firefighters to moderate risk occupancies, and 24 firefighters to high risk occupancies.

The Township should consider revising the current volunteer firefighter recruitment process in developing a strategy to reduce the turnout time of volunteer firefighters. This strategy should consider elements such as targeting potential volunteer firefighters that live or work within close proximity to the fire station and considering options to increase the number of volunteer firefighters focusing on availability to reduce turnout times.

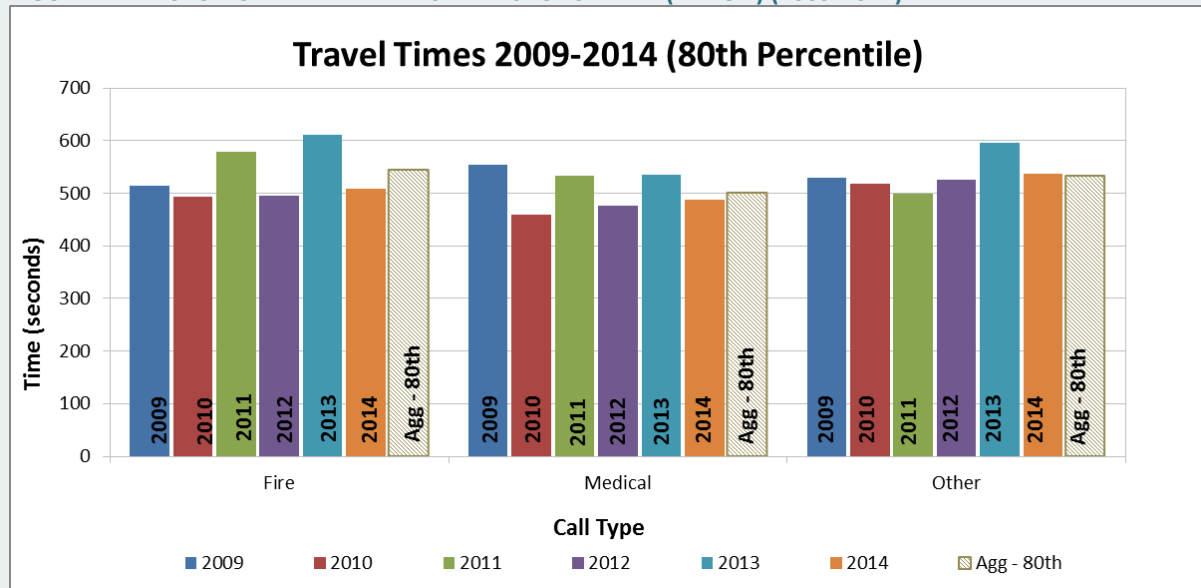
7.7.8

Travel Times

Travel Time within the fire service has been defined as: *“The travel time interval begins when the assigned emergency response apparatus begins the en-route travel to the emergency, and ends when the apparatus arrives at the scene.”*

Travel times for emergency response vehicles can be impacted by many factors such as traffic congestion, traffic management systems (including traffic lights and stop signs), and extended travel times due to coverage of large geographic areas. Many areas of the Township of Puslinch have extended travel times given the large geographic coverage area of the PFRS.

FIGURE 14: HISTORICAL TRAVEL TIMES BY RESPONSE TYPE (DILLON) (2009-2014)



The aggregate 80th percentile travel time, shown in **Figure 14**, ranged from 500 to 544 seconds for all call types between 2009 and 2014. The 80th percentile travel time for fire calls was 544 seconds.

In 2013, the 80th percentile travel time for medical calls was 500 seconds. Travel time for “other” call response types was 533 seconds. Our analysis indicates that travel times have remained relatively consistent over the past six years.

7.7.9

Travel and Turnout Time (Response Time)

The proposed performance objective for assessing the PFRS fire suppression capabilities is represented in the NFPA 1720 Rural Area Demand Zone including a minimum of six firefighters responding within a 14 minute time frame for 80% of the emergency calls responded to that is defined as **turnout time + travel time = response time**.

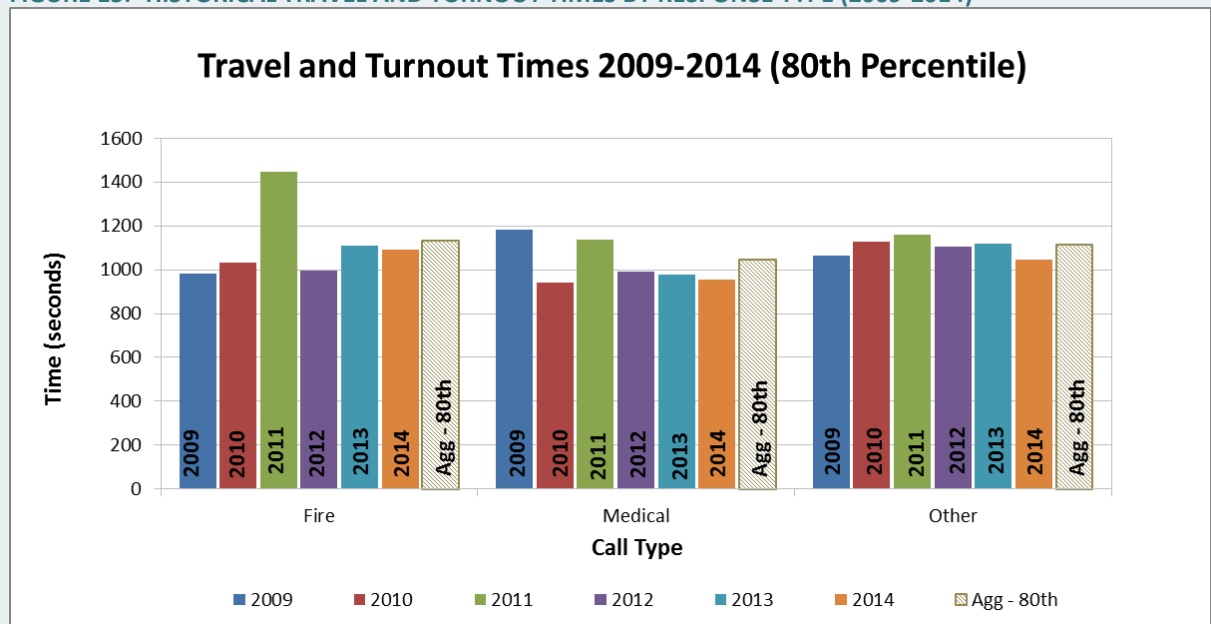
Analyzing this **“response time”** provides the opportunity to assess the historical performance of the PFRS in comparison to a recognized industry best practice.

The six year 80th percentile “*response time*” including the turnout time and travel time for the PFRS initial apparatus responding to fire calls was approximately 1130 seconds (18.8 minutes). In comparison to the performance objective of the NFPA 1720 Rural Area Demand Zone the historical performance of the PFRS is approximately 290 seconds, or 5 minutes greater than the performance expectation of this standard.

The 80th percentile for medical calls was approximately 1042 seconds (17.4 minutes) and approximately 1113 second (18.5 minutes) for other calls during the same time period.

Figure 15 presents a summary of the historical PFRS “*response time*” including the turnout time and travel time for the initial apparatus response for the period 2009 to 2014. As the data shows the PFRS is currently not achieving the performance objective of a “*response time*” of 14 minutes or less to 80% of the fire incidents.

FIGURE 15: HISTORICAL TRAVEL AND TURNOUT TIMES BY RESPONSE TYPE (2009-2014)



Our analysis also compared the response times for the PFRS volunteer firefighters to the same sample group of six municipalities within Ontario utilizing volunteer fire departments where we have conducted similar analysis. **Table 17** represents a comparison of the average 80th percentile response times of the six municipalities with those of the PFRS.

TABLE 17: COMPARISON RESPONSE TIMES

	Comparison Municipalities	Puslinch	+ or – Percentage Difference
Fire Calls	756 seconds (12.6 minutes)	1130 seconds (18.8 minutes)	49.8% higher
Medical Calls	638 seconds (10.6 minutes)	1042 seconds (17.4 minutes)	63.3% higher
Other Calls	774 seconds (12.9 minutes)	1113 seconds (18.5 minutes)	43.8% higher

In our view there are two major factors impacting the PFRS ability to achieve the performance objective of the NFPA 1720 standard presented. These include:

- *Greater turnout times for the volunteer firefighters to respond to the fire station as a result of their proximity to the fire station, thus limiting the amount of time within the performance objective to travel to the incident; and*
- *Longer travel times to incidents as a direct result of the large geographical area of the Township.*

7.7.10 Total Response Time

In comparison to “**response time**” presented as the performance objective of the proposed NFPA 1720 Rural Area Demand Zone, “**total response time**” includes **dispatch time + turnout time + travel time = Total Response Time**.

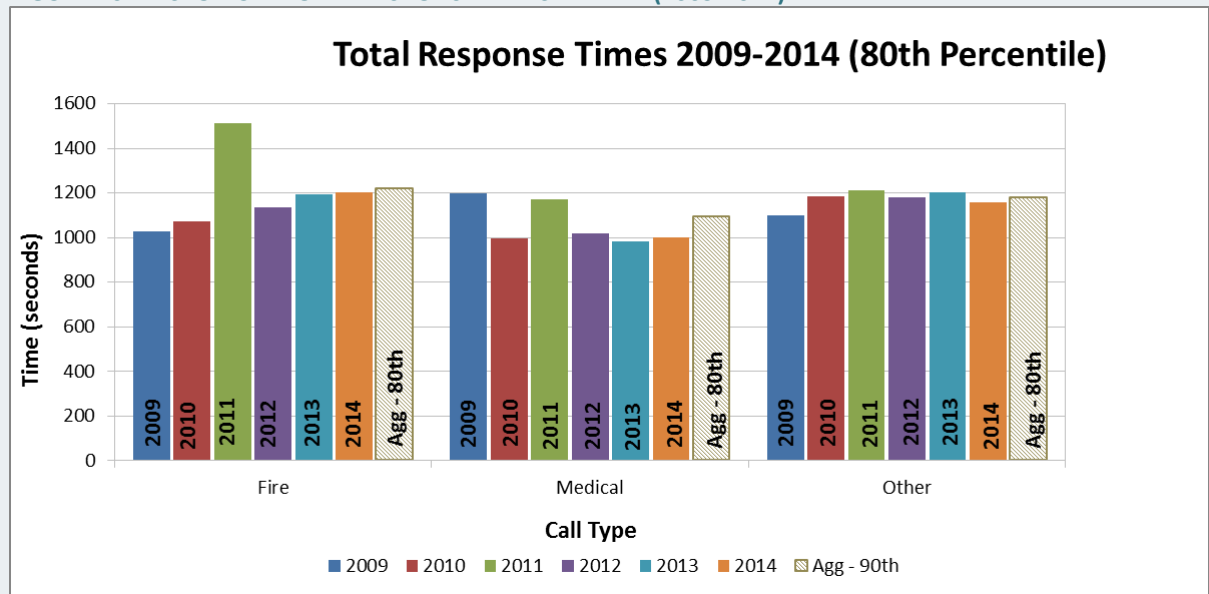
Within the fire service **Total Response Time** reflects the total amount of time that expires from the point of time when the initial call or notification of an emergency incident is received by the authority having jurisdiction for dispatching emergency services, until such time as the initial responding fire apparatus arrives on the scene of the emergency incident.

The Township of Puslinch is currently in the process of contracting out the provision of dispatching for the PFRS. Including and monitoring a performance objective for providing dispatching services should be considered a priority of the agreement for providing dispatching services.

The aggregate 80th percentile total response time ranged from 1095 to 1220 seconds for all call types between 2009 and 2014. The 80th percentile total response time for fire calls was 1220 seconds. The 80th percentile total response time for medical calls was 1095 seconds and for other calls was 1176 seconds.

Figure 16 presents a summary of the historical total response time for the initial response for the period 2009 to 2014.

FIGURE 16: HISTORICAL TOTAL RESPONSE TIMES BY TYPE (2009-2014)



7.8 Satellite Station Trial

The delivery of fire protection services within the western area of the Township, and specifically the Puslinch Lake area, has been a topic of much discussion and several reports in the past. This includes the 1982 OFMEM recommendation to construct an additional two-bay fire station in the Puslinch Lake District, and the purchase of a triple combination pumper and 2200 litre tanker to be located in the proposed Puslinch Lake Station.

As indicated previously within this report, further correspondence from the OFMEM on August 9th, 2004 with respect to providing fire protection services to structure fires, the OFMEM staff stated that they “*agreed that a **rural designation** more accurately depicts the layout of the Township.*” Although continuing to reference the 04-08-12 PFSG the recommendation of this more recent report concluded that “*The Office of the Fire Marshal continues to recommend that the Township of Puslinch take the appropriate steps to ensure the best possible response to their rural area.*”

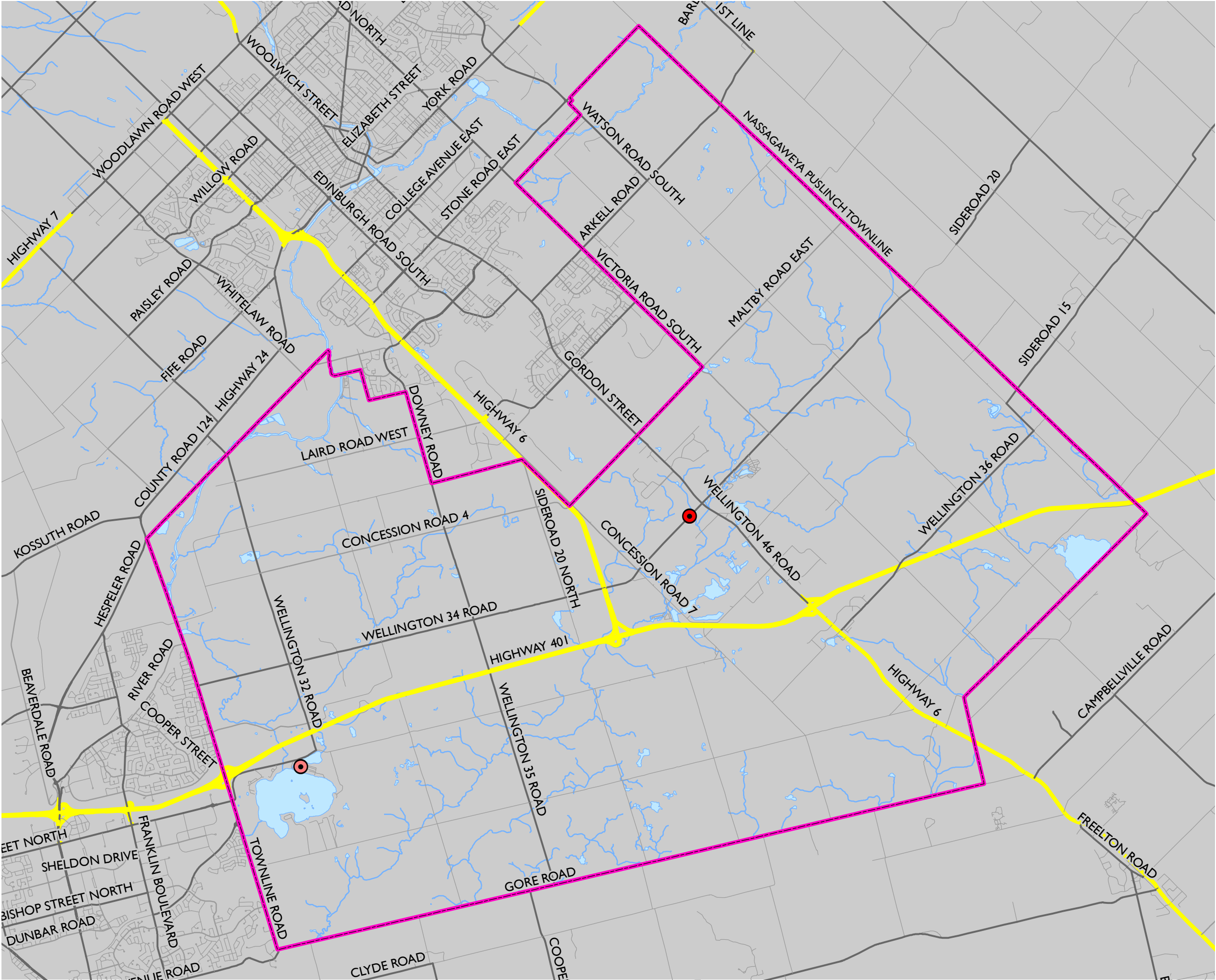
In preparation for this master fire planning process Council endorsed a staff recommendation on April 17th, 2013 to conduct ‘West End Fire Protection Response Trial’. The purpose of this response trial was to conduct a six month response trial of providing initial response fire suppression services from a temporary fire station located in the western end of the Township.

The satellite station, shown on **Figure 17** was set up at McClintock Drive and Elm Street from May 1st, 2013 to October 15th, 2013. Fire suppression services were provided by relocating the mini-pump from the main Aberfoyle Station to the satellite station. Nine volunteer firefighters from the Aberfoyle Station who live in close proximity to the satellite station were also assigned to this response trial.

The response trial included having the mini-pump and volunteer firefighters assigned to the satellite station respond to all emergency calls within this area of the Township that the PFRS would normally respond to. The response trial did not include responding to emergency calls within the Puslinch Lake Area contracted to the Cambridge Fire Department.

The response trial included 106 emergency responses during the test trial period. The trial was valuable in confirming the following to inform this fire master planning process:

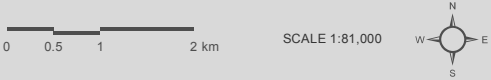
- *The turnout time for the volunteer firefighters assigned to the satellite station improved. In our view this was as a direct result of the volunteer firefighters assigned to the response trial living in closer proximity to the satellite station than those assigned to the Aberfoyle Station. This confirms the relevance of volunteer firefighters living or working in close proximity to the fire station and being available to respond;*
- *Response time (turnout time + travel time) also improved. In our view the response time to the 106 emergency calls responded to decreased as a direct result of the satellite station being located in closer proximity to the 106 emergency calls. This confirms the relevance of fire station location in reducing travel time; and*
- *There was also an improvement in morale within the PFRS. In our view this reflects the high degree of dedication and commitment of the volunteer firefighters in seeking to provide the most effective fire suppression services possible in making their community as safe as possible.*



TOWNSHIP OF PUSLINCH
MASTER FIRE PLAN

SATELILITE STATION TEST TRIAL LOCATION
FIGURE #17

- MUNICIPAL BOUNDARY
- FIRE STATION
- TRIAL FIRE STATION
- HIGHWAY
- ARTERIAL ROAD
- COLLECTOR ROAD
- LOCAL ROAD
- WATERBODY



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR AND THE COUNTY OF WELLINGTON

MAP CREATED BY: SB
MAP CHECKED BY: SC
MAP PROJECTION: NAD 1983 UTM Zone 17N

\\dillon.ca\\DILLON_DFS\\Toronto\\Toronto CAD\\GIS\\141138 - Puslinch Fire and Rescue



PROJECT: 14-1138
STATUS: DRAFT
DATE: 8/18/2015

In addition to these findings our review of the test trial analysis identified a number of areas of concern including the following:

- *Our findings indicate the test trial fire station site was not selected based upon an assessment of the most optimal location but rather based upon availability of a building capable of housing the fire apparatus assigned to the trial. As a result the potential impact of a satellite station to the contracted area and broader western portion of the Township was not fully tested.*
- *The taxpayer benefits suggested by the PFRS include cost savings as a result of eliminating the fire protection agreement costs associated with the area contracted to the City of Cambridge. The recommendations within this MFP suggest a portion of these costs would continue to be required to support the proposed automatic aid agreement with the City of Cambridge even if a satellite station was to be constructed.*
- *The taxpayer benefits also suggest a source of revenue from emergency responses to the Highway 401 corridor currently included within the City of Cambridge fire protection agreement. This revenue is included to assist in the capital expenditures of the proposed satellite station. In our view fees associated with responding to the Highway 401 corridor are intended to be a cost recovery and not a source of revenue.*
- *At the request of the PFRS an analysis of the satellite station financial impacts was conducted by RLB Chartered Accountants and Business Advisors. The conclusion of this analysis indicates that “we cannot reasonably assess the reliability of the cost estimates and assumptions made by Puslinch Fire and Rescue.”*

The analysis within this report is intended to provide Council with recommendations and options in determining the level of fire protection services required within the Township of Puslinch. Consideration of the need for a satellite station (second station) is presented within Section 8.12 *Options for Enhancing Fire Suppression Services* of this MFP.

7.9 Superior Tanker Shuttle Accreditation

The Superior Tanker Shuttle Accreditation is a proprietary process managed by the Fire Underwriters Survey™ (FUS), a national organization administered by SCM Risk Management Services Inc. formerly CGI Insurance Business Services, formerly the Insurers' Advisory Organization and Canadian Underwriters Organization.

As a method to provide water for firefighting in areas without municipal water supply the Superior Tanker Shuttle Accreditation includes a process that includes the following:

- *set up pumper apparatus at fire event and deliver water from temporary storage facility (ex. portable tank) through fire pump to fire;*
- *draft water (from a location where water supplies are known to be reliable and accessible) into a mobile water supply apparatus;*
- *move water from source location to fire event using mobile water supply apparatus;*

- *dump water into temporary storage facility (ex. portable tank) at fire event location; and*
- *repeat shuttle cycle.*

The levels of service assigned with the Tanker Shuttle Accreditation (e.g. Standard Tanker Shuttle Service or Superior tanker Shuttle Accreditation) are determined by the alternative water supply performance and capabilities provided by the fire services.

As stated by the FUS: *“To be recognized for Standard Tanker Shuttle Service, the fire department must have adequate equipment, training and continuous access to approved alternative water supplies to deliver standard tanker shuttle service in accordance with NFPA 1142, Standard on Water Supplies for Suburban and Rural Fire Fighting.”*

The PFRS was accredited by FUS on May 8th, 2013 having achieved the requirements of the Superior Tanker Shuttle Accreditation. **Figure 18** reflects the fire insurance grades for areas of the Township impacted by the accreditation. The following fire insurance grades are of specific importance to this review as they relate to the location of approved alternative water supplies, and the current fire station including:

Rating 3B(S): *That indicates the area of the Township with the Superior Tanker Shuttle Accreditation within five kilometres by road of an approved dry hydrant location, and within eight kilometres by road of the current fire station; and*

Rating 3B: *That indicates the area of the Township without the Superior Tanker Shuttle Accreditation beyond five kilometres by road of an approved dry hydrant location, but within eight kilometres by road of the current fire station.*

In our experience the Superior Tanker Shuttle Accreditation can relate to a reduction in home ownership insurance premiums of 5% to 10% depending on the applicable fire insurance grading and the insurance provider.

The PFRS recognizes the importance of the Superior Tanker Shuttle Accreditation as a component of providing the most cost effective and efficient level of fire protection services providing the most value to the community. In our view the PFRS should continue to identify locations for alternative water supplies that may further improve the coverage and fire insurance gradings identified within the current accreditation.

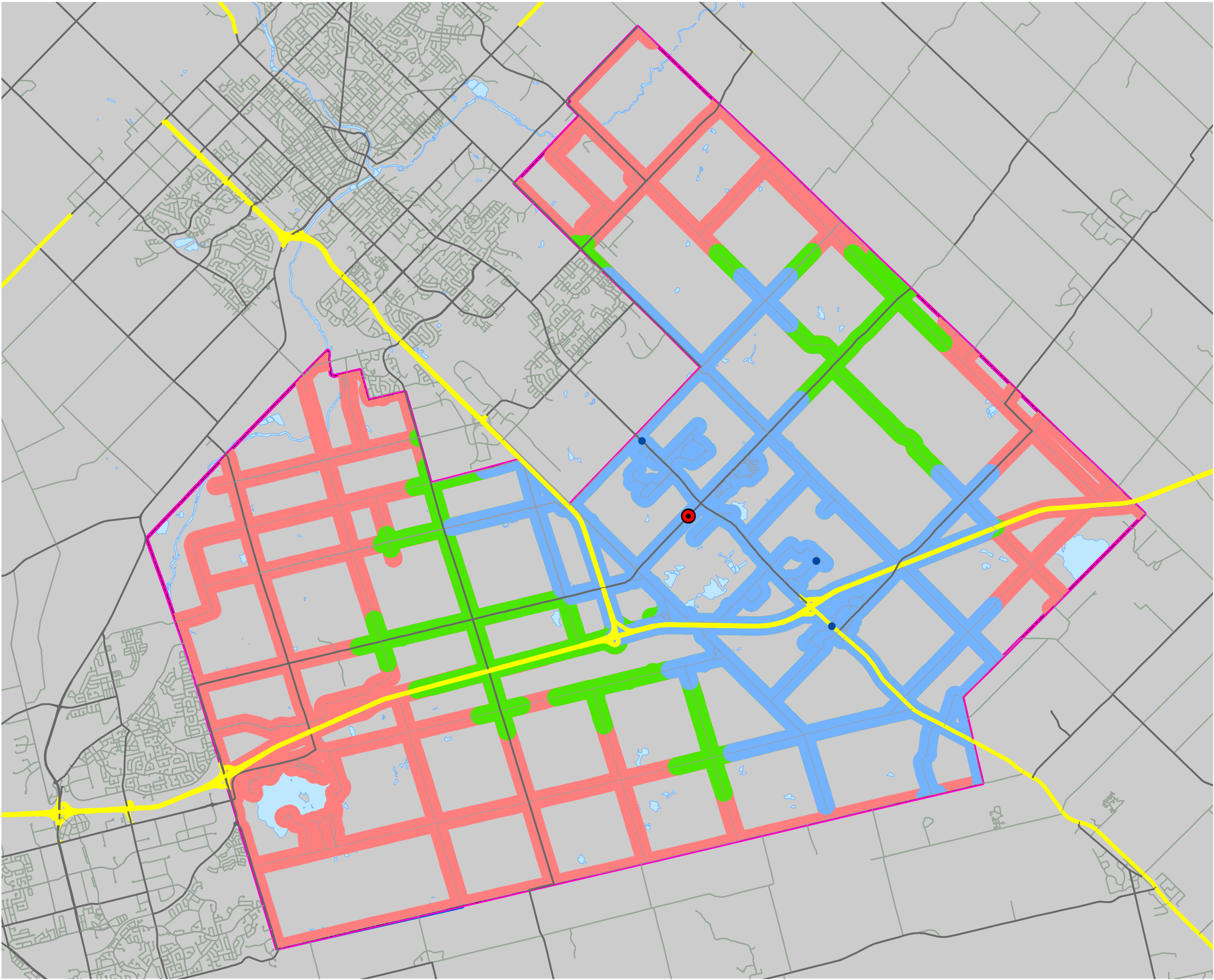
It is recommended that the PFRS continue to participate in the Superior Tanker Shuttle Accreditation process, and where possible, identify additional alternative water supply locations to provide further enhancements to the accreditation.

7.10 Medical Responses

As referenced previously within this review the PFRS participates in a Tiered Response Agreement with the Guelph Wellington Emergency Medical Service. To respond to the incidents identified within this agreement, and other medical emergencies, the PFRS has

strategically located medical equipment (such as an oxygen unit, automatic defibrillator, general first aid supplies and a portable radio) at a number of locations within the Township. This is in addition to the medical equipment and emergency response apparatus located at the fire station.

Volunteer firefighters identified within SOG #6-113 are authorized to respond directly to the medical equipment staging location, pick up the medical equipment and respond directly to the incident in their personal vehicle. This SOG is currently under review by the PFRS as it provides a broader definition of the types of responses than just medical responses (such as motor vehicle collisions).



TOWNSHIP OF PUSLINCH
MASTER FIRE PLAN

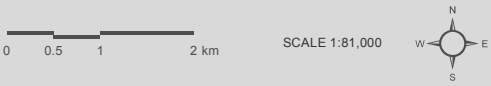
CURRENT SUPERIOR TANKER SHUTTLE
ACCREDITATION
FIGURE #18

- FIRE STATION
- DRY HYDRANT
- HIGHWAY
- ARTERIAL ROAD
- COLLECTOR ROAD
- LOCAL ROAD
- MUNICIPAL BOUNDARY
- CAMBRIDGE CONTRACTED AREA
- WATERBODY

FIRE UNDERWRITERS SURVEY CLASSIFICATION

- 3B(S)
- 3B
- 5

*NOTE: CLASSIFICATIONS WERE TAKEN FROM THE
FIRE UNDERWRITERS SURVEY LETTER ADDRESS TO
THE PUSLINCH FIRE AND RESCUE SERVICES DATED
JUNE 14, 2013.



MAP DRAWING INFORMATION:
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MAP CREATED BY: SB
MAP CHECKED BY: SC
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In our view this practice of responding to medical responses reflects the high degree of commitment and dedication that the PFRS has towards providing emergency services in addition to firefighting. However, in sustaining this practice there are a number of elements that in our view require further consideration, these include:

- **Update of Establishing and Regulating By-Law #12-10:** *This by-law should be updated to specifically identify and authorize the PFRS to provide this service. This should include the location and number of staging locations, type of equipment, and specifics of the types of medical responses that firefighters are authorized to respond to utilizing their personal vehicles and mandatory requirements for the use of flashing green lights when responding.*
- **Specific Department Policy:** *A detailed Department Policy should be developed to reflect the purpose, scope and department procedures to be adhered to in providing this service. This DP should include reference to PFSG 04-89-03 Use of Flashing Green Lights in Personal Vehicles, including compliance requirements of the Highway Traffic Act (HTA). Specific reference should also be given to the Insurance Act, 1990 including considerations that should be addressed before installing and using a flashing green light.*
- **Emergency Services Notification:** *Subject to the Council's approval of this service within the proposed Establishing and Regulating By-Law and the approval of a new DP, the new DP should be distributed to the other emergency services that may be impacted by delivering this service. Special consideration should be given to meeting with and informing the Guelph Wellington Emergency Medical Services with respect to this service.*
- **Statistical Analysis:** *Specific reporting and data collection with respect to this service should be completed to provide insight into the effectiveness of this service. Detailed reports should be developed to quantify performance measures including the number of incidents, turnout time, travel time, number of volunteer firefighters responding including their time of arrival and overall response time of the volunteer firefighters responding. Detailing actions taken on arrival, including when actual patient contact was made in advance of another emergency service and what actions were taken should be tracked. This information should then be included within the proposed Fire Department Annual Report for Council's review and consideration.*

It is recommended that the Fire Chief be directed to develop a department policy for responding to medical responses that details the types of medical responses, requirements for volunteer firefighters responding, and requirements for data collection to be presented to Council for consideration and approval and inclusion within the recommended updated Establishing and Regulating By-law.

7.11 Assessment of Existing Fire Suppression Coverage

7.11.1 Historic Call Locations

Figure 19 shows the location of all geocoded emergency calls responded to by PFRS from January 2009 to October 2014. The Township of Puslinch covers a large geographic area and is predominantly rural, as such calls are evenly distributed across the Township. There are small concentrations of calls along Brock Road where the two main urban areas of Aberfoyle and Morriston are located. The existing station is centrally located to respond to the historic calls. Emergency calls within the Cambridge contracted area are not included.

7.11.2 Existing Automatic Aid and Fire Protection Agreements

The delivery of fire suppression services within the Township is currently supported by an automatic aid agreement with the Township of Guelph Eramosa and a fire protection agreement with the City of Cambridge.

Township of Guelph Eramosa Automatic Aid Agreement

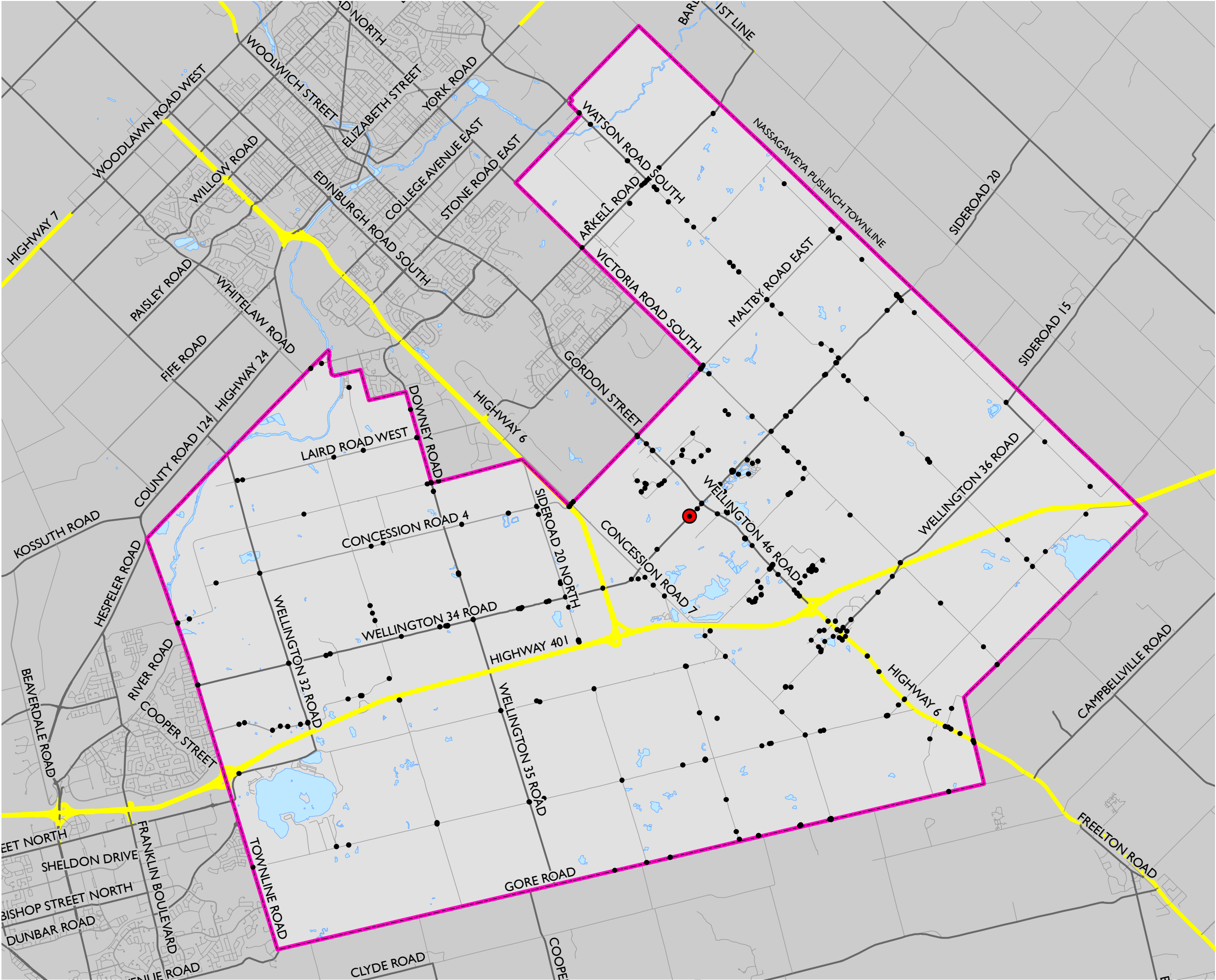
The automatic aid agreement with the Township of Guelph Eramosa states that:

“Each Party shall provide the simultaneous response of a fire apparatus to a fire in the other Party’s Aid Area if:

- a) A 911 caller reports a fire within a structure;*
- b) The fire requires an immediate emergency response by a fire department; or*
- c) The structure is located in the other “Party’s Aid Area.”*

This is a reciprocal agreement whereby the two Townships have agreed that there is an equal benefit to both Townships and therefore there are no fees or charges associated with the implementation of this agreement.

Figure 20 presents the area of the Township of Puslinch that is covered by the Automatic Aid Agreement with the Township of Guelph Eramosa with fire suppression services provided by the volunteer firefighters responding from the Rockwood Fire Station.

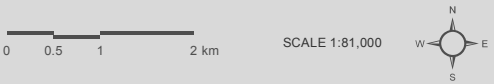


TOWNSHIP OF PUSLINCH
MASTER FIRE PLAN

HISTORICAL CALLS (JANUARY 2009 -
OCTOBER 2014)
FIGURE #19

- MUNICIPAL BOUNDARY
- FIRE STATION
- HISTORIC CALL
- HIGHWAY
- ARTERIAL ROAD
- COLLECTOR ROAD
- LOCAL ROAD
- WATERBODY

*NOTE: DUE TO MISSING ADDRESS RANGES AND ROADS ON THE DATA ONLY 33% OF THE HISTORIC CALLS (JANUARY 1, 2009 - OCTOBER 5, 2014) WERE MATCHED. SINCE THIS IS NOT AN ACCURATE REPRESENTATION OF THE PFRS EMERGENCY RESPONSE THE FOLLOWING TYPES OF CALL WERE INDIVIDUALLY GEOCODED: MEDICAL, ALARM ACTIVATION, CO READINGS, SMOKE INVESTIGATION, FIRE, HYDRO, HAZMAT TOXIC, WATER RESCUE, HIGH ANGLE, AND PLANE CRASH.



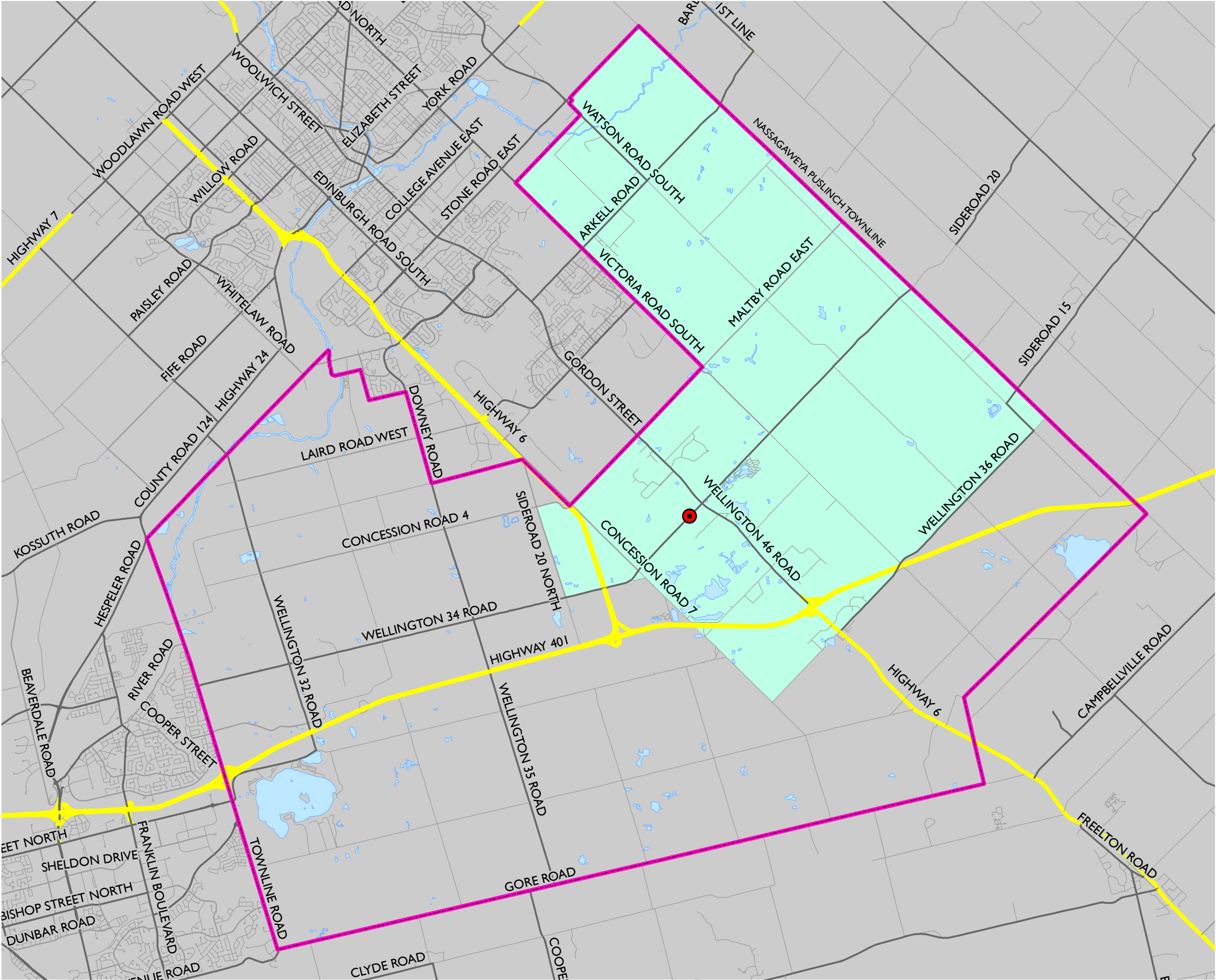
MAP DRAWING INFORMATION:
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TOWNSHIP OF PUSLINCH
MASTER FIRE PLAN

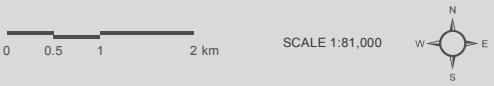
ROCKWOOD AUTOMATIC AID COVERAGE

AREA

FIGURE #20

- MUNICIPAL BOUNDARY
- ROCKWOOD AUTOMATIC AID AREA
- FIRE STATION
- HIGHWAY
- ARTERIAL ROAD
- COLLECTOR ROAD
- LOCAL ROAD
- WATERBODY

*NOTE: THE ROCKWOOD AUTOMATIC AID AREA
INCLUDES BOTH SIDES OF THE STREET



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City of Cambridge Fire Protection Agreement

The Township of Puslinch currently purchases fire and emergency services from the City of Cambridge for responses within a defined area of the south-western portion of the Township, specifically the Puslinch Lake District. The service area defined by this agreement is shown in **Figure 21**.

The current agreement dated February 1st, 2012 was approved by Council resolution on February 15th, 2012 for a duration starting February 1st, 2012 to December 31st, 2015. The agreement requires the City of Cambridge to receive all alarms for fires and other emergencies within the contracted area and dispatch the required emergency vehicles and staff in keeping with the established practices of the Cambridge Fire Department.

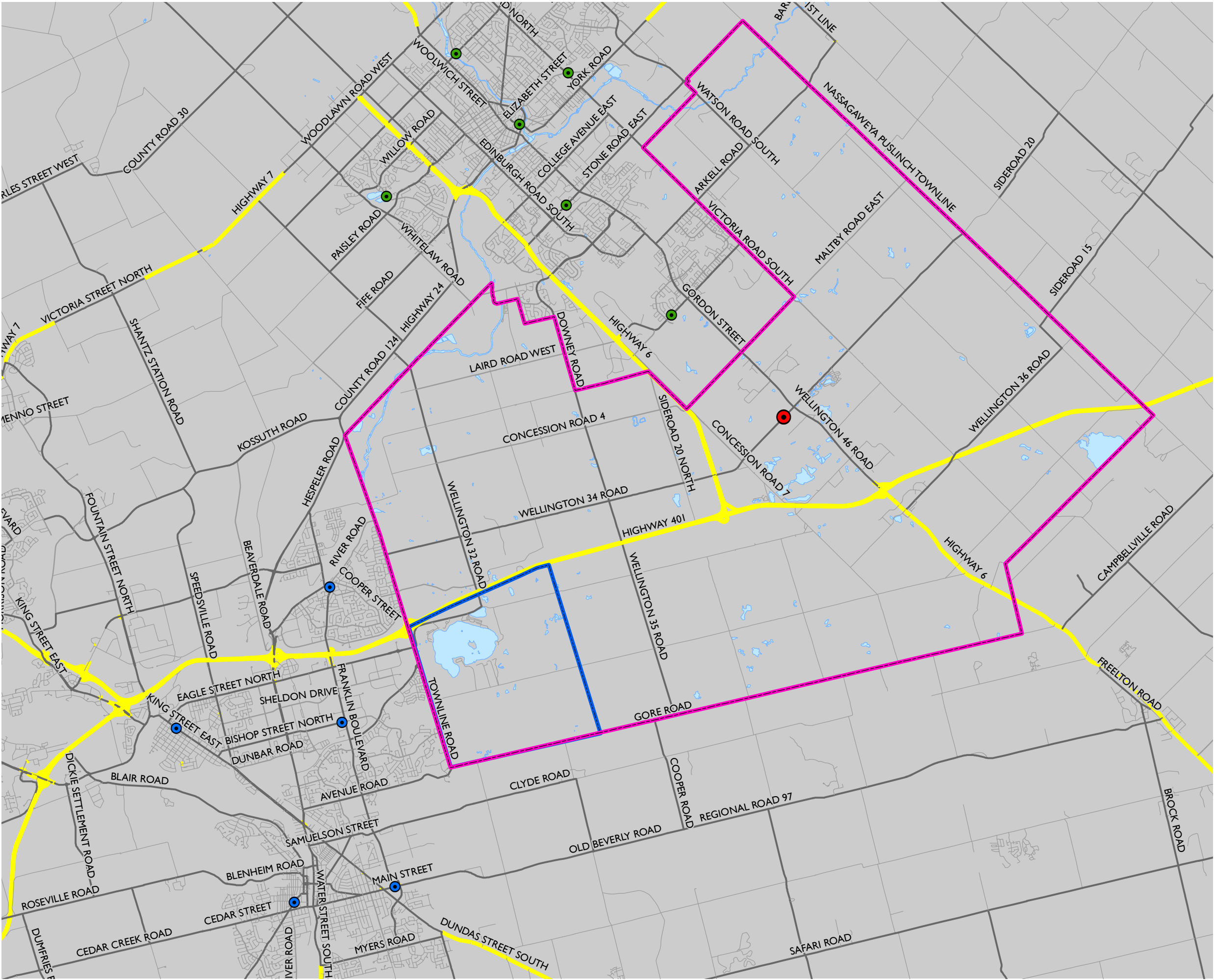
Within the agreement the Cambridge Fire Department response is defined as a maximum of six vehicles and sixteen full-time firefighters responding on the first alarm. The Township is required to relieve the Cambridge Fire Department vehicles and staffing from the incident as soon as reasonably practical should the estimated duration of the incident exceed one hour in duration.

The costs associated with this agreement are currently recovered from residents within the contracted service area by the Township. The special area levy for this agreement was \$108,000 in 2014 and will be \$115,100 in 2015.

Table 18 summarizes the number of emergency calls responded to by the Cambridge Fire Department for the 5-year period 2010 to 2014.

TABLE 18: CAMBRIDGE FIRE DEPARTMENT RESPONSES

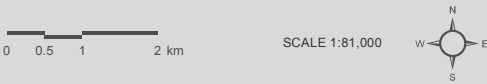
Year	Number of Emergency Responses
2010	73
2011	60
2012	59
2013	59
2014	71



TOWNSHIP OF PUSLINCH
MASTER FIRE PLAN

CAMBRIDGE FIRE PROTECTION AGREEMENT
FIGURE #21

- MUNICIPAL BOUNDARY
- CAMBRIDGE CONTRACTED AREA
- FIRE STATION
- CAMBRIDGE FIRE STATION
- GUELPH FIRE STATION
- HIGHWAY
- ARTERIAL ROAD
- COLLECTOR ROAD
- LOCAL ROAD
- WATERBODY



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Based on the cost of this agreement in 2014 of \$108,000 and the 71 responses in that year the average cost of each response was calculated as \$1,521.13 per response. It should be recognized that these costs reflect the established level of fire suppression services that the Cambridge Fire Department delivers within its own municipality. This includes the use of full-time firefighters and an initial response of six vehicles to a reported structure fire. This level of service is consistent with a large urban municipality such as Cambridge, but it is not consistent with the level of fire protection services that would be found in a typical rural community such as the Township of Puslinch.

Fire Suppression Modelling Methodology

This section provides a brief outline of the scope and methodology used in order to provide insight into the modeling procedures adopted to assess the existing emergency response coverage.

A Geographic Information System (GIS) program was used to assess the fire service's response coverage. Digital copies of GIS layers were provided by the Ministry of Natural Resources (2015) and Wellington County. Relevant base road information, such as road length, address ranges, and speed, was extracted from the GIS data to create the existing conditions model.

Historic call locations (calls from January 2009 – October 5, 2014) were geocoded and added to the network to calibrate the model. An iterative process was used to adjust the speeds throughout the road network and calibrate the model to accurately reflect historic travel times of first responding units for all emergency calls. A large number of the historic calls are motor vehicle collisions (MVCs) which do not have an exact address assigned. These calls cannot be coded into the model without address information. As MVCs comprise a large percentage of PFRS's historic call volumes, the number of geocoded calls (with address information) was a smaller sample size. To supplement the calibration, a review of past calibrations in similar municipalities was conducted and travel times to key areas within the municipality were cross-referenced using travel times generated by Google Maps route planning online tool.

TABLE 19: CALIBRATED SPEED

Road Class	Modelled Speeds (km/h)
Highway	90
Arterial	55
Collector	45
Local	25

The model scenarios were prepared to represent the 2014 existing conditions of the fire service. The service area within the model consisted of the entire extent of the Township. The calibrated road network, combined with the station location, was used to build graphical "response polygons" around the station. These polygons represent the initial response coverage the station can provide in the specified amount of time. The polygon coverage can also represent the number of firefighters able to respond in a set amount of time.

Analysis was carried out to determine the PFRS's ability to meet the NFPA 1720 Rural Area Demand Zone performance targets. **Table 20** summarizes the performance standards applied throughout the assessment.

TABLE 20: NFPA 1720 RURAL AREA DEMAND ZONE ASSESSMENT

Demand Zone	Demographics	Minimum # of Firefighters Responding	Response Time (Turnout + Travel) in Minutes	Performance Objective (%)
Rural Area	<500 people per square mile	6	14	80

7.11.3

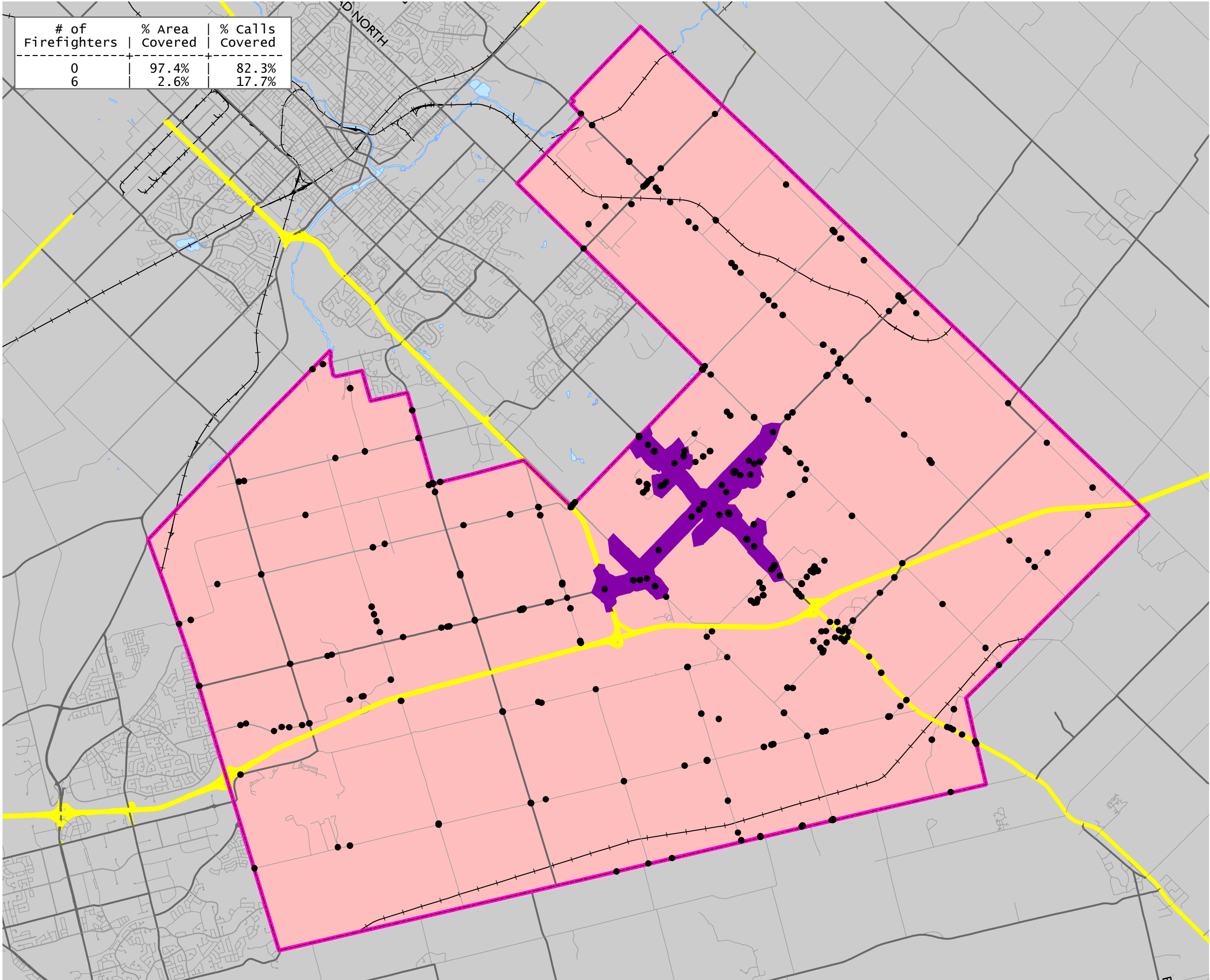
Existing Conditions – NFPA 1720 Rural Area Demand Zone

The existing fire suppression capabilities of the PFRS were assessed in comparison to the NFPA 1720 Rural Area Demand Zone performance target shown in **Figure 22**. Within a fourteen minute turnout and travel time (response time), a minimum of six firefighters is able to respond to 3% of the Township's geography and 18% of the geocoded historic emergency call locations.

The two most significant challenges, or gaps, in achieving the 80% performance objective include:

- *The existing turnout time of the volunteer firefighters in responding to the station; and*
- *The extended travel times that are present within the Township due to the large geographical coverage area.*

Options to assist the PFRS in achieving a higher percentage of performance in comparison to the NFPA 1720 Rural Area Demand Zone are included within the proposed options for delivery of fire suppression services.

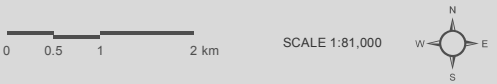


TOWNSHIP OF PUSLINCH
MASTER FIRE PLAN

EXISTING CONDITIONS - NFPA 1720
RURAL AREA DEMAND ZONE COVERAGE
FIGURE #22

- MUNICIPAL BOUNDARY
 - FIRE STATION
 - HISTORIC CALL
 - HIGHWAY
 - ARTERIAL ROAD
 - COLLECTOR ROAD
 - LOCAL ROAD
 - RAILWAYS
 - WATERBODY
- TOTAL NUMBER OF FIREFIGHTERS REACHING AREA
WITHIN 14 MINUTES (TURNOUT AND TRAVEL TIME)
- 6 FIREFIGHTERS
 - 0 FIREFIGHTERS

*NOTE: THE 80th PERCENTILE TURNOUT TIME
FOR FIRE CALLS WAS USED (10.9 MINUTES)



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7.12

Options for Enhancing Fire Suppression Services

The analyses within this report indicate that the PFRS has, since its inception in 1968, utilized a wide range of strategies in attempting to provide the most cost effective and efficient level of fire suppression services within the Township. These strategies include the use of automatic aid agreements, mutual aid agreements and fire protection agreements in support of the core services provided by the dedicated group of volunteer firefighters comprising the PFRS.

In comparison to the NFPA 1720 Rural Area Demand Zone performance measures, a recognized standard for delivering fire suppression services, the PFRS is unable to achieve the performance objectives of having six volunteer firefighters arrive on scene within a fourteen minute response time to 80% of the calls received.

As indicated within this report the most significant challenges in achieving this performance objective are the current turnout time of the volunteer firefighters in responding to the fire station and the large geographical area of the Township that results in extended travel times.

The recommendations and options for the delivery of fire suppression services presented within this report places significant emphasis on minimizing the impacts of these two challenges through the optimization of the strategic priorities previously presented. These include:

- *The utilization of a Community Risk Profile to determine the fire safety risks within the Township as the basis for developing clear goals and objectives for all fire protection services to be provided by the Puslinch Fire and Rescue Services;*
- *The optimization of the first two lines of defence, including public education and fire prevention, and the utilization of fire safety standards and fire code enforcement to provide a comprehensive fire protection program within the Township, based on the results of the Community Risk Profile;*
- *Emphasis on the value of all services that are provided by the Puslinch Fire and Rescue such as responses to motor vehicle accidents and medical responses that enhance life safety within the community; and*
- *Emphasis on strategies that support the sustainability of fire protection services that provide the most cost effective and efficient level of fire protection services resulting in the best value for the community.*

In our view the recommendations and options for the delivery of fire suppression services presented within this report provide Council with the ability to determine the local needs and circumstances of the Township as per the FPPA, and respond to the OFMEM's recommendation that stated *"The Office of the Fire Marshal continues to recommend that the Township of Puslinch take the appropriate steps to ensure the best possible response to their rural area."*

7.12.1

Optimizing the Utilization of Automatic Aid Agreements

Our analysis indicates that the most effective short-term strategy to enhance the level of fire suppression services within the Township of Puslinch is through optimizing the use of automatic aid agreements.

In our view the Township should prioritize the development of a revised automatic aid agreement with the City of Cambridge, and a new automatic aid agreement with the City of Guelph. At a minimum the Township should approach these cities to pursue automatic aid agreements with a term of not less than three years and if possible for a term of five years.

The proposed automatic aid agreements provide the most immediate improvement to the provision of fire suppression services within the Township by optimizing the “closest station response model” and utilizing existing fire suppression resources within the these two cities.

Proposed City of Cambridge Automatic Aid Agreement

The current fire protection agreement with the City of Cambridge extends the level of fire suppression services provided within that City to the contracted area within the Township of Puslinch. The costs for these services are directly recovered via a special area levy, collected in addition to the regular residential tax levy that includes the fire protection services provided by the PFRS. Our analysis indicates that these residents are not receiving any fire insurance benefit as this area does not qualify for the Superior Tanker Shuttle Accreditation.

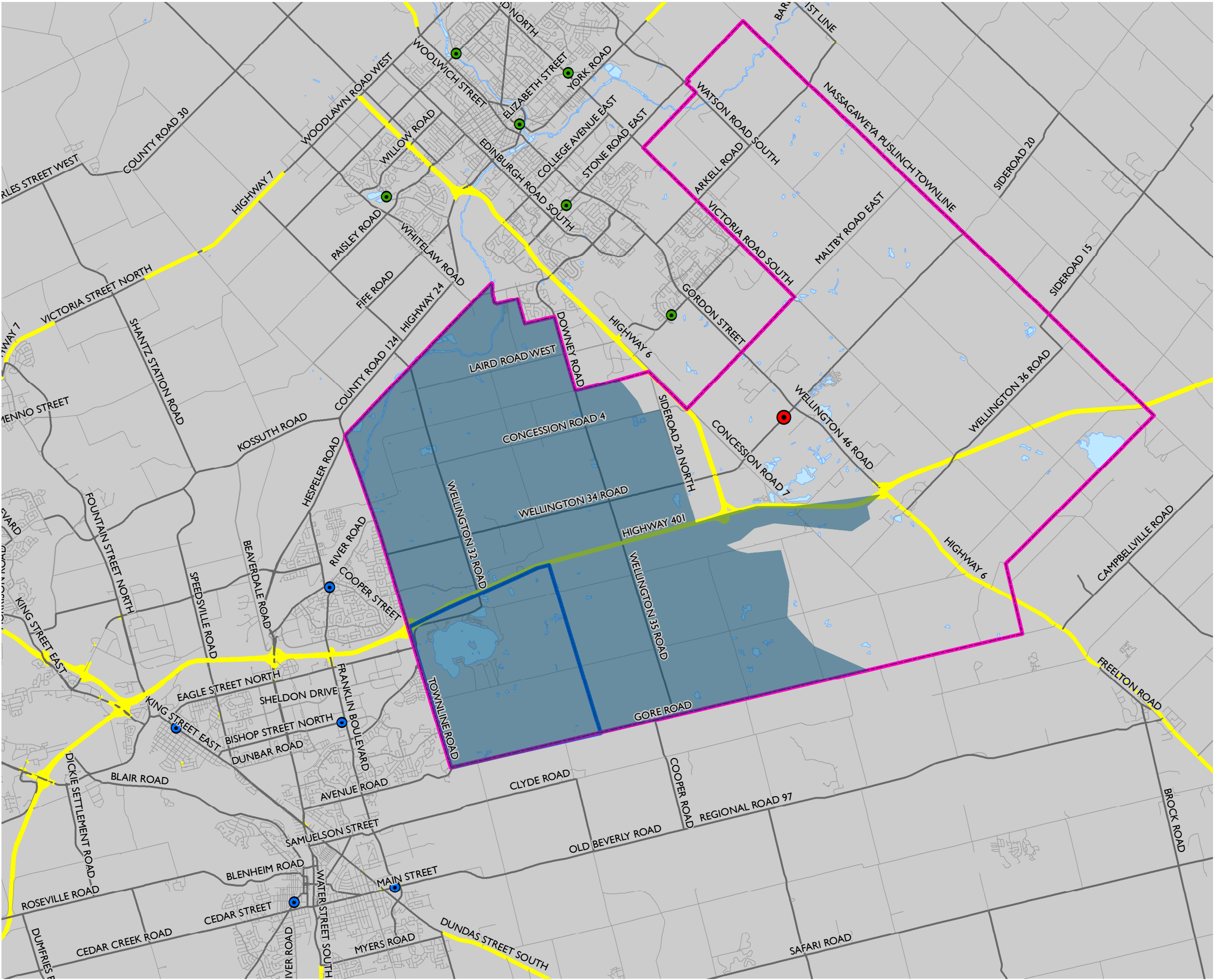
Our analysis indicates that there is a large portion of the western area of the Township, including the contracted area where the initial response apparatus from the Cambridge fire stations can arrive sooner than those of the PFRS representing the closest fire station response.

Figure 23 presents the modelled area where an initial response apparatus (pumper with crew of four firefighters) from a Cambridge fire station can arrive prior to a PFRS fire apparatus based on current PFRS response time data. Revising the current contract with the City of Cambridge to reflect an automatic aid agreement which provides an initial response of one pumper apparatus and crew of four firefighters would sustain the initial response performance (to reported structure fires) which is included within the current contracted area agreement. In addition, the proposed automatic aid agreement would expand the area where Cambridge would provide the initial response from the closest fire station to reported structure fires in support of the PFRS.

Within the proposed automatic aid agreement the City of Cambridge would provide the initial response of four firefighters and a pumper apparatus to reported structure fires, with the depth of response required based on the type of incident provided by the PFRS. All other response types would be responded to by the PFRS, similarly to all other areas of the Township. This reduces the requirements of the current contract whereby Cambridge provides the full response to all incidents. Similarly to the current contract Cambridge vehicles and staffing would be released from the incident as soon as reasonably practical should the estimated duration of the incident exceed one hour in duration.

The resulting financial impacts would be the removal of the special area levy of \$115,100 in 2015, and an increase in the operating costs of the PFRS as a result of the proposed automatic aid agreement. Our projected costs for the proposed automatic aid agreement were calculated based on current Ministry of Transport fire apparatus rates of \$410.00 per vehicle for the first hour. Based on the 2014 contracted area responses of 71 calls of which approximately 12% were fires or fire related (OFMEM definition of fire, pre-fire and false alarms) equaling 8.5 or 9 calls, and including the larger geographical coverage area of the proposed automatic aid agreement we project that there will be approximately 15 incidents per year that would activate the proposed automatic aid agreement resulting in a total annual operating cost of approximately \$6,150.00 for the proposed automatic aid coverage.

It is recommended that Council authorize the Chief Administrative Officer and Fire Chief to approach the City of Cambridge to negotiate a revised Automatic Aid Agreement for the provision of fire suppression services as reflected in the proposed Master Fire Plan.

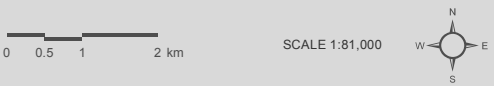


TOWNSHIP OF PUSLINCH
MASTER FIRE PLAN

**PROPOSED CITY OF CAMBRIDGE AUTOMATIC
AID COVERAGE**
FIGURE #23

- MUNICIPAL BOUNDARY
- CAMBRIDGE CONTRACTED AREA
- CAMBRIDGE COVERAGE
- FIRE STATION
- CAMBRIDGE FIRE STATION
- GUELPH FIRE STATION
- HIGHWAY
- ARTERIAL ROAD
- COLLECTOR ROAD
- LOCAL ROAD
- WATERBODY

*NOTE: THE MAP SHOWS A BORDER WHERE
CAMBRIDGE WOULD MEET PUSLINCH IF BOTH FIRE
SERVICES RECIEVE A CALL AT THE SAME TIME
(TURNOUT TIME AND TRAVEL TIME).



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Proposed City of Guelph Automatic Aid Agreement

The Township of Puslinch does not currently have any form of agreement for fire suppression services with the City of Guelph. The Guelph Fire Department represents a very modern urban fire service operated by full-time firefighters providing similarly high-quality fire suppression services as those provided by the Cambridge Fire Department.

Our fire suppression modelling reflects a unique finding with respect to the close proximity of Guelph Fire Station #6 located on Clair Road and the Puslinch Fire Station. Fire Station #6 is staffed with one crew of four firefighters operating 24 hours a day, seven days a week. Our modelling applied a projected turnout time of 90 seconds (the same as applied for Cambridge Fire Department response modelling) for a crew from Station #6 to respond into the Township.

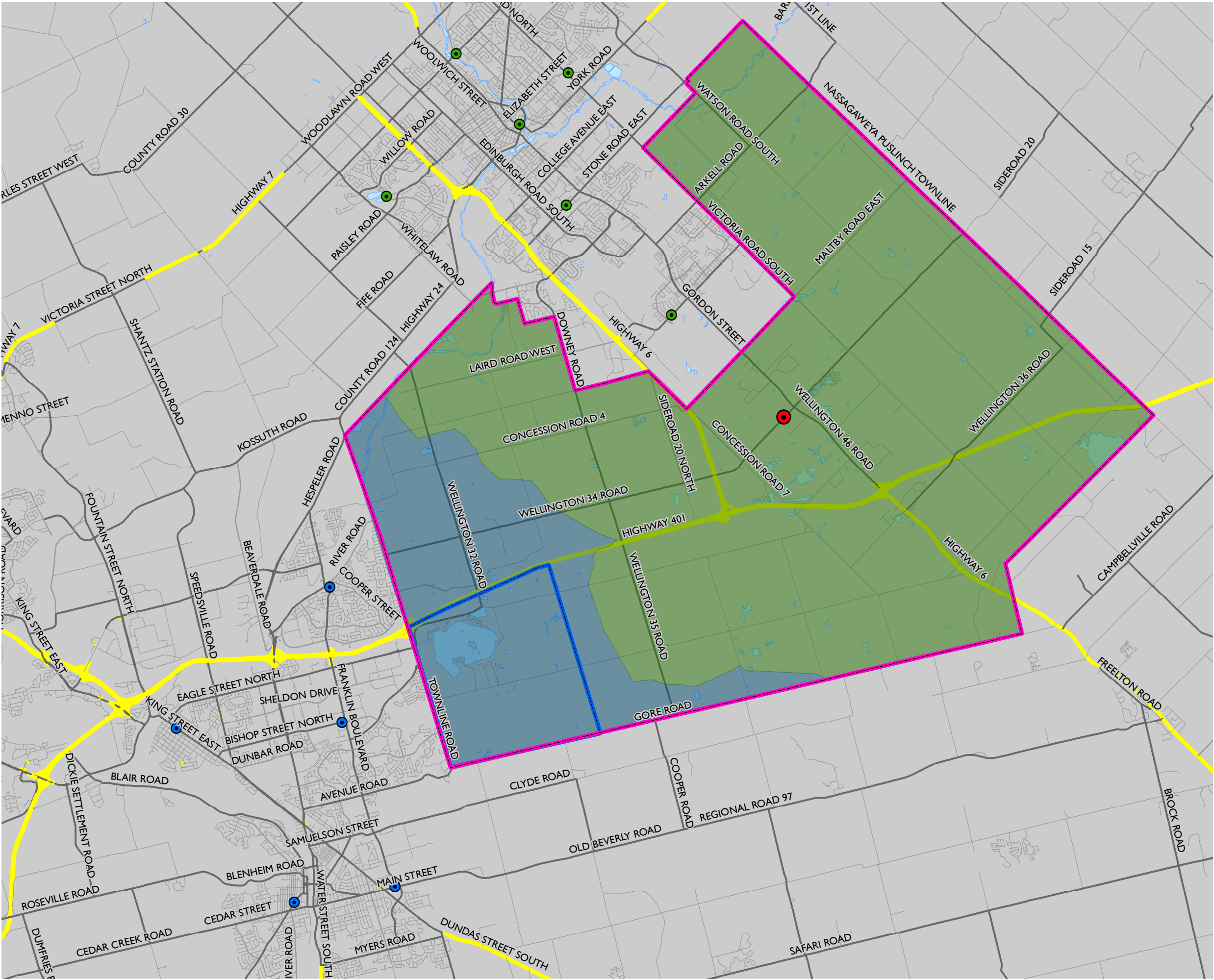
Our analysis indicates that there is a large portion of the Township where a fire apparatus from a Guelph fire station can arrive sooner than PFRS apparatus, based on current turnout time and response time.

Figure 24 presents the modelled area where an initial response apparatus (pumper with crew of four firefighters) from a Guelph fire station can arrive prior to a PFRS fire apparatus based on current response time data.

Within the proposed automatic aid agreement the City of Guelph would provide the initial response of four firefighters and a pumper apparatus to reported structure fires, with the depth of response required (based on the type of incident) being provided by the PFRS. All other response types would be responded to by the PFRS similarly to all other areas of the Township. Responding Guelph vehicles and staffing would be released from the incident as soon as reasonably practical should the estimated duration of the incident exceed one hour in duration.

Our projected cost estimates for the proposed automatic aid agreement were also calculated based on current Ministry of Transport fire apparatus rates of \$410.00 per vehicle for the first hour. Based on the OFMEM criteria of fire, pre-fire and false alarm calls the PFRS responded to 51 incidents in 2014. Deducting the average of approximately nine fire-related incidents that the City of Cambridge would respond to under the proposed automatic aid agreement, the City of Guelph would respond to approximately 42 calls annually. This would represent an annual operating budget cost increase of approximately \$17,220 to the Township.

It is recommended that Council authorize the Chief Administrative Officer and Fire Chief to approach the City of Guelph to negotiate an Automatic Aid Agreement for the provision of fire suppression services as reflected in the proposed Master Fire Plan.

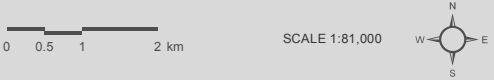


TOWNSHIP OF PUSLINCH
MASTER FIRE PLAN

PROPOSED CITY OF GUELPH AUTOMATIC
AID COVERAGE
FIGURE #24

- MUNICIPAL BOUNDARY
- CAMBRIDGE CONTRACTED AREA
- FIRE STATION
- CAMBRIDGE FIRE STATION
- GUELPH FIRE STATION
- Guelph Coverage
- CAMBRIDGE COVERAGE
- HIGHWAY
- ARTERIAL ROAD
- COLLECTOR ROAD
- LOCAL ROAD
- WATERBODY

*NOTE: THE MAP SHOWS A BORDER WHERE GUELPH
WOULD MEET CAMBRIDGE IF BOTH FIRE SERVICES
RECEIVE A CALL AT THE SAME TIME (TURNOUT TIME
AND TRAVEL TIME).



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7.12.2

Optimizing the Volunteer Firefighter Recruitment Process

The analysis within this report identifies the turnout time of the current volunteer firefighters as one of the most significant challenges in achieving the performance measures identified within the NFPA 1720 Rural Area Demand Zone.

The 2013 PFRS Recruitment Manual includes an overview of the extensive recruitment process that the department engages in to recruit potential volunteer firefighters. The minimum qualifications are listed as:

- *Physically fit and able to work under arduous conditions and in extreme temperatures;*
- *A motivated person who challenges themselves with life-long learning;*
- *Someone who enjoys helping others in their time of need;*
- *Able to respond to emergencies with no prior notice;*
- *Able to work in a team environment; and*
- *18 years of age or older.*

The Township currently recruits volunteer firefighters from across the entire geographical area of the Township with no preference or priority given to proximity to the fire station. This process has served the Township well in developing a core of dedicated volunteer firefighters.

In our view the Township needs to consider further strategies within the recruitment process in order to reduce the turnout time of the volunteer firefighters. In working with other similar communities utilizing volunteer firefighters we have found it quite common to have recruitment requirements for volunteer firefighters to live and or work within a specified distance from the fire station. This strategy has been proven to be effective in managing turnout times.

Building on the success of the current volunteer firefighter recruitment process we recommend implementation of the following strategies:

- *That the Township increase the complement of volunteer firefighters from the current 28 to 34, an increase of six volunteer firefighters;*
- *That the Township target an area not greater than five kilometres from the fire station to recruit these additional volunteer firefighters. This may include their residence or place of work in an attempting to reduce the turnout times of the PFRS from the current 80th percentile for fire calls of 10.8 minutes to the comparator municipalities identified of 6.6 minutes.*

Subject to the success of this strategy in reducing the turnout times of the volunteer firefighters these strategies should be reassessed with respect to the required complement of volunteer firefighters.

It is recommended that Council implement the strategies to optimize the volunteer firefighter recruitment process identified within the proposed Master Fire Plan, including increasing the approved complement of the PFRS by six volunteer firefighters.

7.12.3 Proposed Organizational Structure

To achieve the proposed strategic priorities and implement the recommendations identified within this MFP it is our view that a revised organizational structure, including revised hours of work for the part-time resources, is required.

Based on the analyses within this MFP this includes the following:

Part-time Fire Chief

It is recommended that the hours of the part-time Fire Chief be reduced from the current 30 hours per week to 24 hours per week. Through our consultation with the part-time Fire Chief and our analysis of the current strategy of operating with two temporary Deputy Fire Chiefs, it is our view that there is significant benefit in having two Deputy Fire Chiefs.

This strategy has been very beneficial in providing more senior qualified staff to respond to the operational and administrative needs of the department. In our view it has also been beneficial to supporting the work life balance of the part-time Fire Chief who also sustains a full-time job.

Having three senior staff available to participate in the rotating on call process requiring a senior officer to be available to respond to emergencies on a 24 hour per day, seven days per week (365 days a year), schedule is also more practical within a three person senior staff operating model.

In addition to having overall responsibility for all activities of the department it is recommended that the part-time Fire Chief maintain direct responsibility for the Administrative Services Division. Further responsibility for participating in optimizing the use of part-time resources to support the department's fire suppression capabilities is discussed within a following section of this MFP.

It is recommended that consideration be given to reducing the hours of work for the part-time Fire Chief from the current 30 hours per week to 24 hours per week.

Part-time Deputy Fire Chief/Administration

In addition to the divisional roles and responsibilities identified it is expected that this position would also sustain an active operational emergency response role including participation in the senior officer on call process. Further responsibility for participating in optimizing the use of part-time resources to support the department's fire suppression capabilities is discussed within a following section of this MFP.

It is recommended that consideration be given to making the position of part-time Deputy Fire Chief of Administration permanent with direct responsibility for the Fire Prevention, Public Education and Training Divisions with a set schedule of 24 hours per week.

Part-time Deputy Fire Chief/Operations

In addition to the divisional roles and responsibilities identified it is expected that this position would also sustain an active operational emergency response role including participation in the senior officer on call process. Further responsibility for participating in optimizing the use of part-time resources to support the department's fire suppression capabilities is discussed within a following section of this MFP.

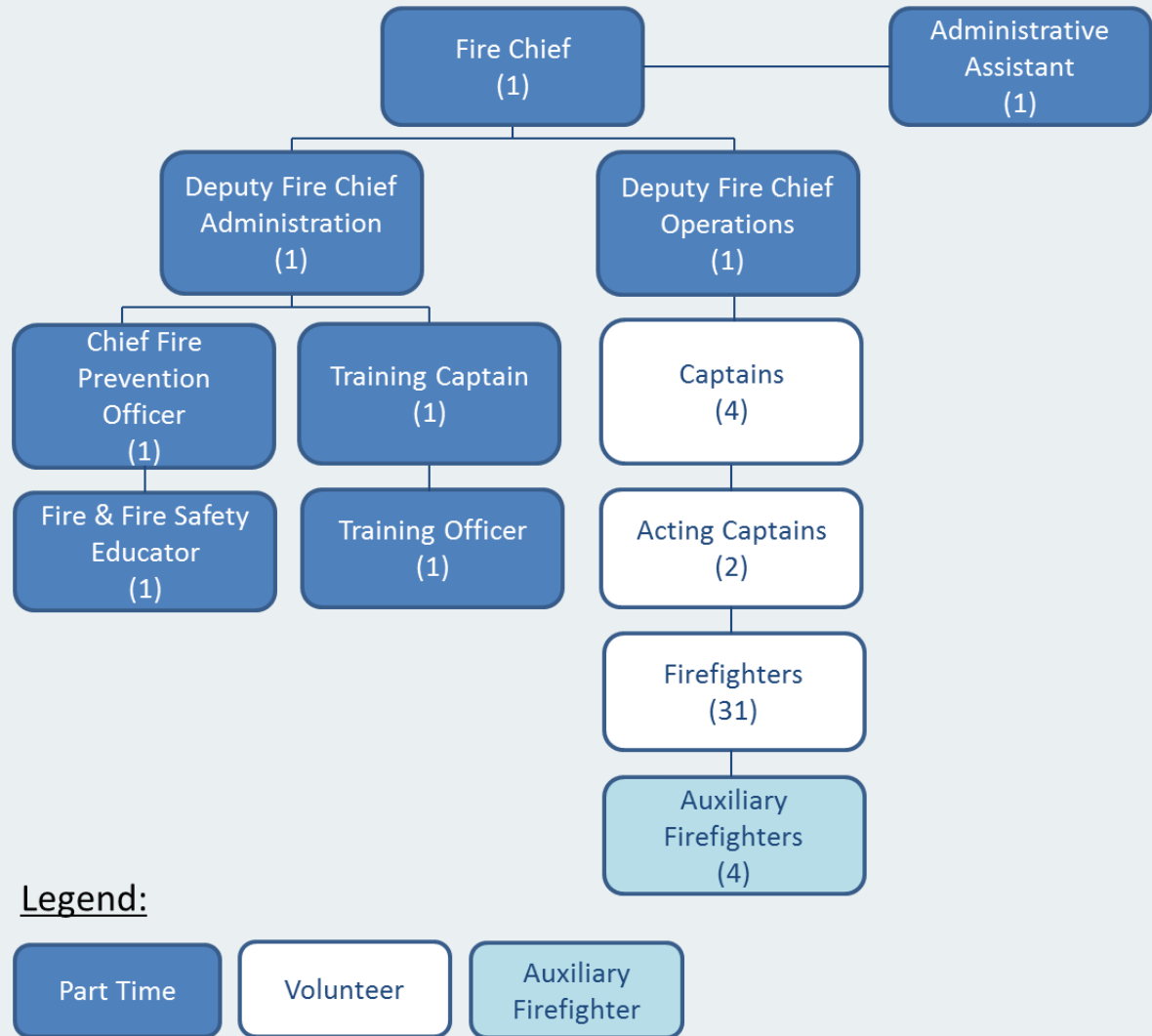
It is recommended that consideration be given to making the position of part-time Deputy Fire Chief of Operations permanent with direct responsibility for the Fire Suppression Division with a set schedule of 24 hours per week.

7.12.4

Proposed Organizational Structure

Figure 25 presents the proposed organizational structure of the PFRS including making the two part-time Deputy Fire Chief positions permanent, implementing the part-time position of Fire and Life Safety Educator, and increasing the approved complement of volunteer firefighters by six.

FIGURE 25: PROPOSED ORGANIZATIONAL STRUCTURE



7.12.5 Optimizing the Use of Part-time Resources

The analysis within this report proposes a number of revisions to the part-time hours currently assigned to positions within the PFRS to support the strategic priorities of this MFP. In addition to these current part-time positions this MFP also proposes the new part-time position of Fire and Life Safety Educator.

Extending the current roles and responsibilities of the current and proposed part-time positions to include scheduling their hours to be available to participate in fire suppression activities would significantly enhance the Township's capabilities during normal business hours, Monday through Friday.

Developing a schedule whereby a minimum of four part-time positions would be working at the fire station, or be readily available to respond to an emergency, at all times during normal

business hours Monday through Friday would provide the recognized initial response staffing level of the NFPA 1720 Rural Area Demand Zone.

This strategy would require that all part-time positions, including the Administrative Assistant be trained to the competencies of a volunteer firefighter.

Table 21 presents the estimated operating budget cost increase of this strategy.

TABLE 21: ESTIMATED OPERATING BUDGET INCREASE

Position	Existing (Maximum) Part-time Hours Per week	Existing Hourly Wage (Job Rate)	Proposed Part-time Hours Per Week	Estimated Annual Operating Budget Cost Increase
Fire Chief	30	\$38.34	24	(\$7,667)
Deputy Chief of Administration	10	\$34.91	24	\$22,976
Deputy Chief of Operations	10	\$34.91	24	\$22,796
Administrative Assistant	10	\$19.30	24	\$14,334
Chief Fire Prevention Officer	16	\$29.01	24	\$12,863
Fire and Life Safety Educator (new)	---	\$24.94	20	\$25,667
Training Captain	10	\$26.26	10	---
Training Officer	10	\$24.94	10	---
Total	96		160	\$91,149

It is recommended that Council implement the strategy to optimize the use of part-time resources included within the proposed Master Fire Plan.

7.12.6 Optimizing the Current Scheduling and Call-out Process

The PFRS currently utilizes a scheduling process of assigning volunteer firefighters to one of four crews that are each lead by a Volunteer Captain. The current process schedules crews on a monthly rotation for weekend availability from 23:00 hours Friday night until 06:00 hours Monday morning.

While on-call crews are responsible for conducting the weekly vehicle checks and inspections as per SOP #1-101. Crews are also required to be readily available to respond to reported emergencies during these times. A similar schedule is in place for weekday coverage from 23:00 hours in the evening until 06:00 hours in the morning.

In the past the PFRS has applied a number of different scheduling models in attempting to find the most optimal level of emergency response coverage as well as balancing the work-life priorities of the volunteer firefighters.

In our view consideration should be given to revising the current scheduling process to align with the proposed option to optimize the use of part-time resources. Aligning these strategies to provide an on-call schedule that ensures a minimum response of 6 volunteer firefighters at all times would further enhance the operational capabilities of the PFRS.

In our view this strategy should include a requirement for one of the proposed senior officers (part-time Fire Chief, part-time Deputy Fire Chief of Administration or part-time Deputy Fire Chief of Operations) to be on-call at all times. This would ensure a senior officer with more incident command experience, and a broader understanding of the Townships policy's and liabilities would be available at all times.

In our view consideration should also be given to implementing a revised call out process to alert the on-call crew and senior officer as the initial response to all incidents. This revised call out process should consider the ability to alert (page) the on-call resources, and then subject to the severity of the emergency incident provide the capability to provide a second alert (page) should all of the fire suppression resources of the department be required.

It is recommended that a revised on-call process be implemented to ensure a minimum response to include a minimum of six volunteer firefighters and a senior officer at all times.

It is recommended that a revised call-out process be considered to provide an option for alerting either the on-call crew, our alternatively all of the fire suppression resources of the PFRS.

7.13 Satellite Station Option

The Township, under the leadership of Council and staff, have considered the option of a satellite fire station for many years, including the most recent 2013 response trial. In our view the recommendations included within this proposed MFP if successfully implemented will respond to the OFMEM's 2004 statement that they *"agreed that a **rural designation** more accurately depicts the layout of the Township"* and the recommendation of that report that concluded that *"The Office of the Fire Marshal continues to recommend that the Township of Puslinch take the appropriate steps to ensure the best possible response to their rural area."*

We believe the option of a satellite station provides Council with the opportunity to enhance the level of fire suppression services in excess of the minimum requirements of the FPPA, and in response to the previous recommendation of the OFMEM in providing the best possible response.

As indicated previously within this report our analysis of the satellite station test trial results identified a number of informative findings, as well as a number of areas of concern. Each of these findings and areas has been considered in developing this option for Council's consideration.

7.13.1 Staffing Requirements

The requirements identified to staff the proposed satellite station **are in addition** to the recommendation of this MFP to increase the complement of volunteer firefighters at the current station by 6 to improve the current turn out time of the PFRS.

The PFRS satellite station test trial suggests that 11 of the current volunteer firefighters could transfer from the current station to the proposed satellite station. This would reduce the number of volunteer firefighters (Captains, Acting Captains and firefighters) at the current station from 34 to 23.

The test trail further suggests that an additional four volunteer firefighters would be required to achieve the proposed FUS total complement required of 15 volunteer firefighters at the satellite station (including transferring the current 11 plus 4 additional).

In our experience it requires a minimum of 24 volunteer firefighters to consistently staff the triple combination pumper with four volunteer firefighters, and the 2,200 litre tanker with two volunteer firefighters as proposed to be located at this station. This would require the recruitment of nine additional volunteer firefighters to achieve the proposed complement of 24 volunteer firefighters, in comparison the PFRS test trail proposal of four additional volunteer firefighters to achieve the FUS proposal of 15.

The estimated operating cost increase of nine volunteer firefighters was calculated using the PFRS actual 2014 total operating cost of \$6,270 per firefighter.

Applying this cost to the proposed requirement of nine volunteer firefighters reflects a total operating budget increase of $\$6,270 \times 9 = \$56,430$. We have increased this amount as a result of inflation to an estimated \$60,000.

7.13.2 Station Design and Construction

Our analysis of the satellite station test trail analyses conducted by the PFRS, including the minimum FUS apparatus requirements, PFRS station requirements and the previous 1982 OFMEM station recommendation, find consensus with building a satellite station capable of housing a triple combination pumper and 2200 litre tanker. At a minimum this would require an apparatus room floor space of approximately 150 square metres. The station should be planned to include washrooms with showers, space for storing firefighters' protective clothing, a small office and meeting area, and an area for general storage/utilities. At a minimum this would require an additional 90 square metres. These areas reflect a minimum fire station size of approximately 240 square metres or approximately 2,600 square feet.

In our experience working with other smaller municipalities it is common to find fire stations that have been developed through the design/build process, including the use of prefabricated steel structures. There are many examples of these fire stations across Ontario. More recent examples of these fire stations have reflected total capital costs for design, servicing, construction, landscaping, and construction management of approximately \$250.00 per square foot. This would relate to an estimated design and construction cost of approximately \$650,000. These costs do not include land or the option of a water storage tank to support the Superior Tanker Shuttle Accreditation.

Additional capital funding would be required for furnishings, including extending the radio system, computers, furniture and racking for the firefighters protective clothing. The PFRS satellite station test trail estimated these capital costs at \$26,500. We have increased this amount to an estimated \$30,000 as a result of inflation and our review of station needs.

Capital funding was also identified within the test trial analysis for volunteer firefighters' pagers, protective clothing and uniforms. These costs were updated in 2014 representing a cost of approximately \$5,500 per volunteer firefighter. Applying this capital cost to the nine volunteer firefighters proposed this represents a total of \$49,500 funding required. We have also increased this amount as a result of inflation to an estimated requirement of \$50,000.

7.13.3 Land and Water Storage Tank

To provide sufficient space for the proposed fire station of approximately 2,600 square feet, parking for the volunteer firefighters and required landscaping and setbacks, a site of approximately 1.5 to 2 acres would be required. As a proposed satellite station this site size does not provide space for any exterior training and assumes that these types of activities would be coordinated at the current fire station. We have applied the same proposed land costs as included within the satellite station test trial of approximately \$300,000.00.

The success of the current Superior Tanker Shuttle Accreditation can in part be associated with the department's ability to identify alternative water supplies, typically associated with the municipal water supply system, or through an alternative water source, including a dry hydrant system. The FUS has indicated in previous correspondence that consideration should be given to including the design and construction of a water storage tank capable of holding a minimum of 25,000 gallons within the proposed satellite station.

This could be included as an external water cistern or designed as an integral component of the foundation of the station. The PFRS satellite station test trail estimated the costs of the proposed water tank as \$25,000. In our view, subject to the design and construction for locating this size of water tank on the proposed satellite station site to allow for filling trucks under fire conditions a more appropriate budget is estimated at \$40,000.

The alternative to including a water storage tank as part of the design and construction of the proposed satellite station would be for PFRS to investigate other sites where a dry hydrant system could be located. In our view this strategy has worked well for the Township in the past and should be included in considering the option of developing the proposed satellite station.

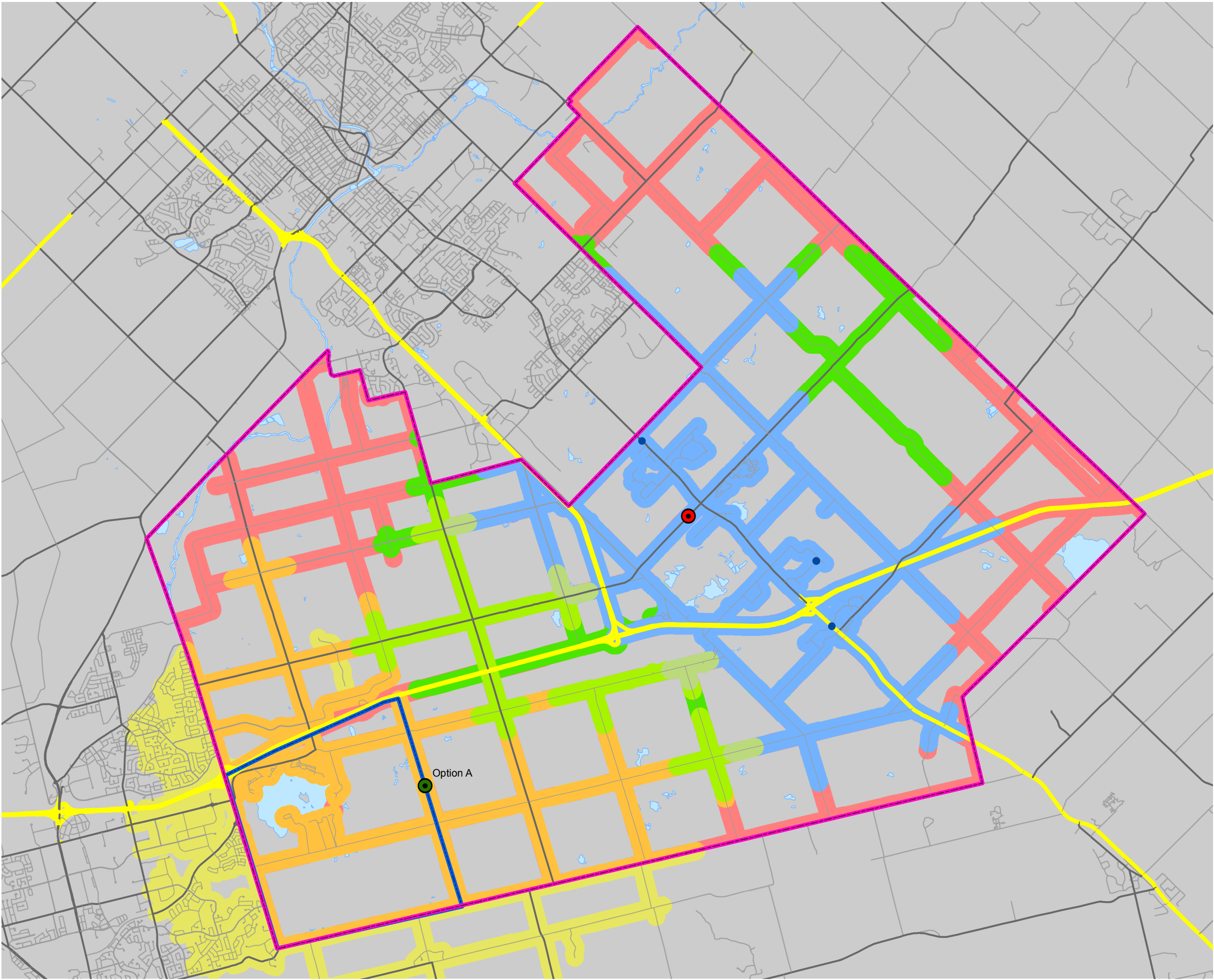
7.13.4 Optimal Satellite Station Location Analysis

Option "A"

Utilizing GIS modelling of the five kilometre and eight kilometre Superior Tanker Shuttle Accreditation road travel distances, three optional sites were selected in determining the most optimal coverage area. **Figure 26** presents Site Option "A" located along Sideroad 10S, midway between Concession 1 and Concession 2. Sideroad 10S is gravel road. Sideroad 10S does not travel over Highway 401. This site extends the 3B(S) fire insurance grading to a large portion of the Puslinch Lake District and the south western portion of the Township. This includes the majority of the moderate risk (single family dwellings) located within the Puslinch Lake District, however there is an area of moderate risk adjacent to the western portion of the Township that is not included. As this model shows there is also some extension of the 3B(S) fire insurance grading capability outside of the Township on the southern limits.

Option "B":

Figure 27 presents Site Option "B" located near the intersection of Ellis Road and Wellington County Road 32. Both Ellis Road and Wellington County Road 32 are paved and Wellington County Road travels over Highway 401. This site also extends the 3B(S) fire insurance grading to a large portion of the western portion of the Township including the majority of the moderate risk (single family dwellings) located within the Puslinch Lake District. This option does provide coverage to the moderate risk area identified adjacent to the western portion of the Township. This option creates a large area of overlap into the east side of the City of Cambridge.



TOWNSHIP OF PUSLINCH
MASTER FIRE PLAN

OPTION "A" SATELLITE STATION LOCATION

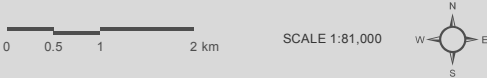
FIGURE #26

- MUNICIPAL BOUNDARY
- CAMBRIDGE CONTRACTED AREA
- FIRE STATION
- SECOND STATION OPTIONS
- DRY HYDRANT
- HIGHWAY
- ARTERIAL ROAD
- COLLECTOR ROAD
- LOCAL ROAD
- WATERBODY

FIRE UNDERWRITERS SURVEY CLASSIFICATION

- 3B(S)
- 3B
- 5
- COVERAGE FROM OPTION A

*NOTE: CLASSIFICATIONS WERE TAKEN FROM THE
FIRE UNDERWRITERS SURVEY LETTER ADDRESS TO
THE PUSLINCH FIRE AND RESCUE SERVICES DATED
JUNE 14, 2013.



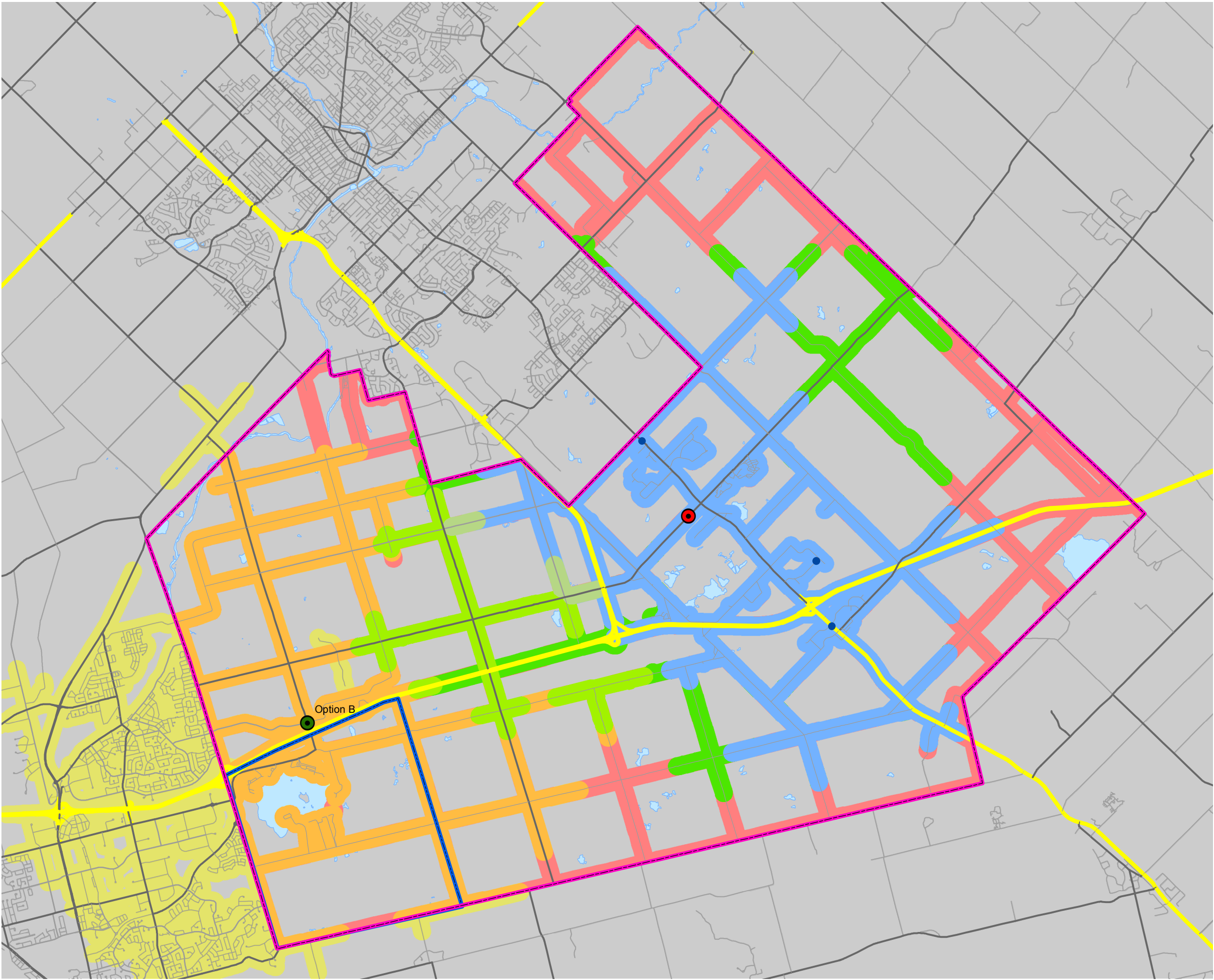
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR AND THE COUNTY OF WELLINGTON

MAP CREATED BY: SB
MAP CHECKED BY: SC
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: \\DILLON.CA\DILLON_DFS\LONDON\LONDON CAD\GIS\



PROJECT: 14-1138
STATUS: DRAFT
DATE: 9/18/2015



TOWNSHIP OF PUSLINCH
MASTER FIRE PLAN

OPTION "B" SATELLITE STATION LOCATION

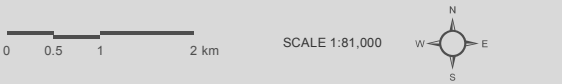
FIGURE #27

- MUNICIPAL BOUNDARY
- CAMBRIDGE CONTRACTED AREA
- FIRE STATION
- SECOND STATION OPTIONS
- DRY HYDRANT
- HIGHWAY
- ARTERIAL ROAD
- COLLECTOR ROAD
- LOCAL ROAD
- WATERBODY

FIRE UNDERWRITERS SURVEY CLASSIFICATION

- 3B(S)
- 3B
- 5
- COVERAGE FROM OPTION B

*NOTE: CLASSIFICATIONS WERE TAKEN FROM THE
FIRE UNDERWRITERS SURVEY LETTER ADDRESS TO
THE PUSLINCH FIRE AND RESCUE SERVICES DATED
JUNE 14, 2013.



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR AND THE COUNTY OF WELLINGTON

MAP CREATED BY: SB
MAP CHECKED BY: SC
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: \\DILLON.CA\DILLON_DFS\LONDON\LONDON CAD\GIS\



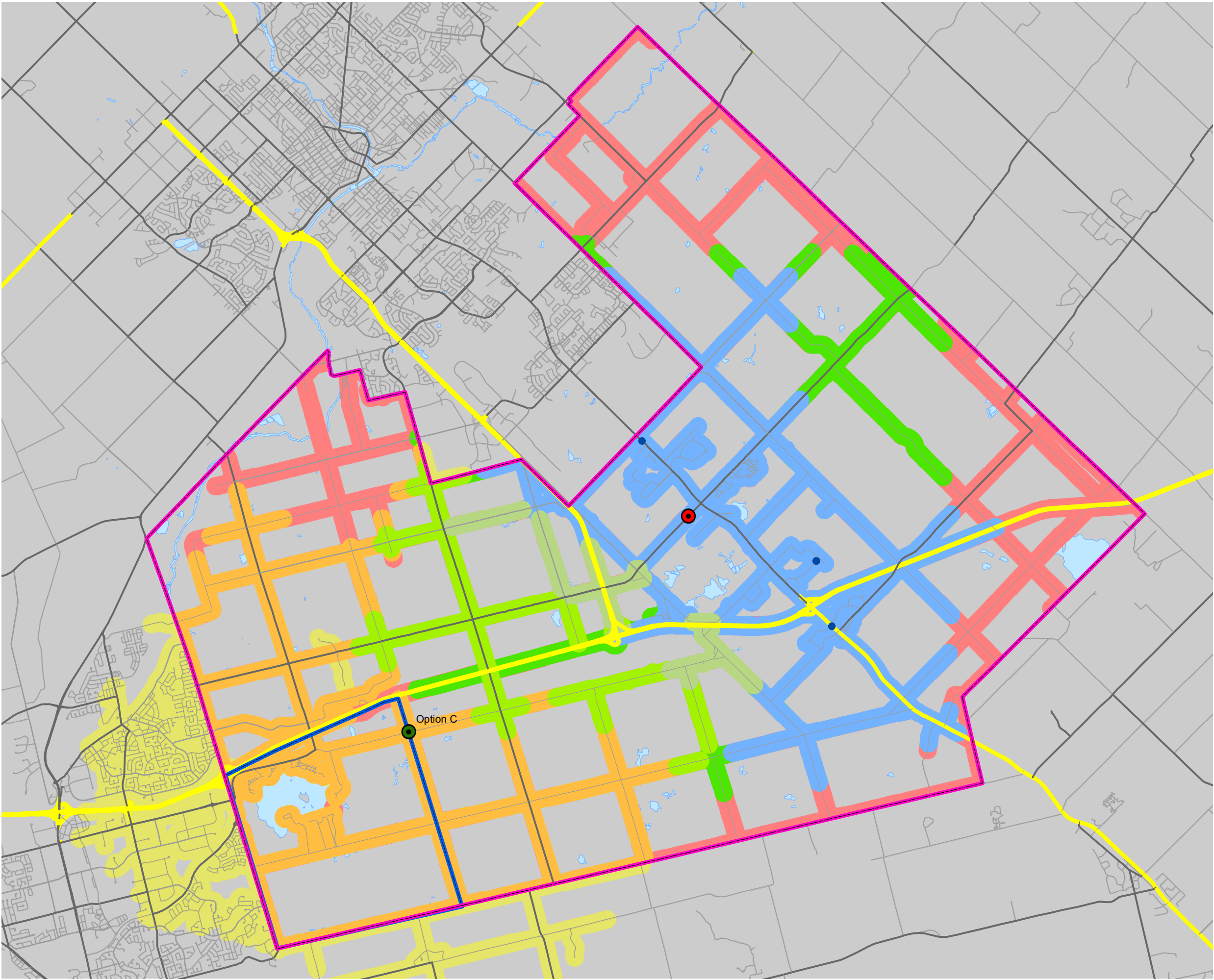
PROJECT: 14-1138
STATUS: DRAFT
DATE: 9/21/2015

Option “C”

Figure 28 presents Site Option “C” located in the area of Concession 2 and Sideroad 10S. Concession 2 is a paved road and Sideroad 10S is a gravel road. This site also extends the 3B(S) fire insurance grading to a large portion of the western portion of the Township including the majority of the moderate risk (single family dwellings) located within the Puslinch Lake District and the moderate risk area identified at the western portion of the Township.

This option limits the overlap of response coverage areas extending into the surrounding communities and optimizes the coverage with the Township itself.

Our analysis of locating a satellite station within the western area of the Township did not identify specific available sites. This analysis is intended to provide the Township with insight into the varying degrees of coverage that can be associated with alternative locations. In our view this analysis indicates that a satellite station located near the intersection of Concession 2 and Sideroad 10S, as presented in Option “C,” would provide the Township with the optimal response coverage improvement.



TOWNSHIP OF PUSLINCH
MASTER FIRE PLAN

OPTION "C" SATELLITE STATION LOCATION

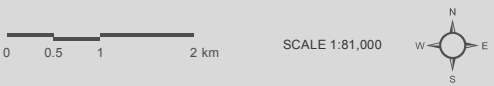
FIGURE #28

- MUNICIPAL BOUNDARY
- CAMBRIDGE CONTRACTED AREA
- FIRE STATION
- SECOND STATION OPTIONS
- DRY HYDRANT
- HIGHWAY
- ARTERIAL ROAD
- COLLECTOR ROAD
- LOCAL ROAD
- WATERBODY

FIRE UNDERWRITERS SURVEY CLASSIFICATION

- 3B(S)
- 3B
- 5
- COVERAGE FROM OPTION C

*NOTE: CLASSIFICATIONS WERE TAKEN FROM THE
FIRE UNDERWRITERS SURVEY LETTER ADDRESS TO
THE PUSLINCH FIRE AND RESCUE SERVICES DATED
JUNE 14, 2013.



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR AND THE COUNTY OF WELLINGTON

MAP CREATED BY: SB
MAP CHECKED BY: SC
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: \\DILLON.CA\DILLON_DFS\LONDON\LONDON CAD\GIS\



PROJECT: 14-1138
STATUS: DRAFT
DATE: 9/18/2015

7.13.5

Satellite Station Operating and Capital Cost Summary

As indicated previously the option of a satellite station provides Council with the opportunity to enhance the level of fire suppression services **in excess of the minimum requirements of the FPPA**, and in response to the previous recommendation of the OFMEM in providing the best possible response.

The PFRS satellite station test trail estimated the annual operating cost increase excluding staffing (payroll) as \$51,300.00. We have increased this amount as a result of inflation and our analysis to an estimated \$60,000.

The 2013 satellite station test trail included an in-depth analysis of the capital and operating cost associated with considering a satellite station. The analysis within this report has assessed the findings of the 2013 test trial, identified areas for consideration, and provided an updated analysis of the potential capital and operating financing required.

Table 22 presents the estimated updated capital and operating budget financing requirements for the proposed satellite station option.

TABLE 22: ESTIMATED UPDATED CAPITAL AND OPERATING FINANCING REQUIREMENTS

Description	2013 Test Trial		Updated Costs	
	Capital	Operating	Capital	Operating
Design/Construction	\$578,000	----	\$650,000	----
Furnishings	\$34,500	----	\$30,000	----
Land Purchase	\$300,000	----	\$300,000	----
Water Tank	\$25,000	----	\$40,000	----
Operating Costs (excluding staff)	----	\$51,300	----	\$60,000
Operating Costs (additional staff)	----	\$18,500 ¹	----	\$60,000
Clothing/Pagers (additional staff)	\$14,600	----	\$50,000	----
Total Costs	\$952,100	\$69,800	\$1,070,000	\$120,000

Note: ¹ excludes cost of current staff payroll of \$8,600

It is recommended that, subject to Council's desire to enhance the level of fire suppression and emergency services, that site Option "C," as presented within the proposed Master Fire Plan, including the addition of nine volunteer firefighters be considered for a satellite station (second station).

7.14

Fire Suppression Division Summary and Recommendations

In considering the appropriate level of fire suppression services to be provided it is first important to understand the characteristics of a fire, and specifically the growth rate of a fire in terms of time. Research indicates that a fire can spread from the room of origin in ten minutes or less. Under certain conditions this time can be less than three minutes.

Our review indicates that in the past the Office of the Fire Marshal and Emergency Management has agreed that a rural designation accurately depicts the Township of Puslinch. This is consistent with our findings that identified the population density of the Township as 32.9 people per square mile. In comparison to recognized industry standards provided by the National Fire Protection Association (NFPA) this represents application of the NFPA 1720 Rural Area Demand Zone for comparative analyses.

Our analysis indicates that there are two major factors impacting the PFRS's ability to achieve the performance objectives of the NFPA 1720 Rural Area Demand Zone. These include:

- *Greater turnout times for the volunteer firefighters to respond to the fire station as a result of their proximity to the fire station, thus limiting the amount of available time within the performance objective to travel to the incident; and*
- *Longer travel times to incidents as a direct result of the large geographical area of the Township.*

These factors further emphasize the importance of optimizing the first two lines of defence including pro-active public education and fire prevention programs, and the use of standards and fire code enforcement in reducing the probability and consequences of a fire. As the third line of defence, fire suppression is the failsafe in providing fire protection services.

The analyses and recommendations contained within this MFP are presented to provide Council with the appropriate information in determining the local needs and circumstances as identified by the FPPA. This is consistent with the conclusions of the OFMEM that stated "*The Office of the Fire Marshal continues to recommend that the Township of Puslinch take the appropriate steps to ensure the best possible response to their rural area.*"

In addition to providing recommendations in response to the minimum requirements of the FPPA this MFP provides an option for Council's consideration in developing a satellite fire station to further enhance the delivery of fire suppression and emergency response services to medical incidents and motor vehicle accidents.

Recommendations for the Suppression Division include the following:

28. *That the emergency response performance objectives identified within the proposed Master Fire Plan be considered and approved by Council and included within the new Establishing and Regulating By-law including:*

Initial Response Staffing Performance Objective:

That the Township of Puslinch should be ***striving to achieve an initial response deployment of four firefighters to all fire related emergency calls.***

Depth of Response Staffing Performance Objective:

That the Township of Puslinch should be ***striving to achieve a depth of response deployment to all fire related emergency calls of four firefighters to low risk occupancies, 14 firefighters to moderate risk occupancies, and 24 firefighters to high risk occupancies.***

Response Time Performance Objective:

That the Township of Puslinch should be **striving to achieve the response time performance objective referenced within the NFPA 1720 Rural Area Demand Zone including a minimum of six firefighters responding within a 14 minute response time (turnout time + travel time) with a performance objective of 80%.**

29. That the PFRS continue to participate in the Superior Tanker Shuttle Accreditation process, and where possible identify additional alternative water supply locations to provide further enhancements to the accreditation.
30. That the Fire Chief be directed to develop a department policy for responding to medical responses that details the types of medical responses, requirements for volunteer firefighters responding, and requirements for data collection to be presented to Council for consideration and approval and inclusion within the recommended updated Establishing and Regulating By-law.
31. That Council authorize the Chief Administrative Officer and Fire Chief to approach the City of Cambridge to negotiate a revised Automatic Aid Agreement for the provision of fire suppression services as reflected in the proposed Master Fire Plan.
32. That Council authorize the Chief Administrative Officer and Fire Chief to approach the City of Guelph to negotiate an Automatic Aid Agreement for the provision of fire suppression services as reflected in the proposed Master Fire Plan.
33. That Council implement the strategies to optimize the Volunteer Firefighter Recruitment Process identified within the proposed Master Fire Plan including increasing the approved complement of the PFRS by 6 volunteer firefighters.
34. That consideration be given to reducing the hours of work for the part-time Fire Chief from the current 30 hours per week to 24 hours per week.
35. That consideration be given to making the position of part-time Deputy Fire Chief of Administration permanent with direct responsibility for the Fire Prevention, Public Education and Training Divisions with a set schedule of 24 hours per week.
36. That consideration be given to making the position of part-time Deputy Fire Chief of Operations permanent with direct responsibility for the Fire Suppression Division with a set schedule of 24 hours per week.
37. That Council implement the strategy to optimize the use of part-time resources included within the proposed Master Fire Plan.
38. That a revised on-call process be implemented to ensure a minimum response to include a minimum of six volunteer firefighters and a senior officer at all times.
39. That a revised call-out process be considered to provide an option for alerting either the on-call crew, or alternatively all of the fire suppression resources of the PFRS.
40. That subject to Council's desire to enhance the level of fire suppression and emergency services that site Option "C," as presented within the proposed Master Fire Plan, including the addition of nine volunteer firefighters be considered for a satellite station (second station).

8.0

Station, Apparatus & Equipment

8.1

Fire Station

The PFRS currently operates from one fire station located at 7404 Wellington County Road adjacent to the Township offices. The fire station includes office space, a radio/control room, kitchen, training/meeting room, storage room, male and female washroom and capacity for six fire apparatus.



Based on our review the station appears to have been well maintained and is in good condition. As indicated previously within this review the current administrative workspace has reached its capacity. Where possible the department is sharing space between multiple functions (positions) in order to complete the administrative functions.

This MFP recommends that the administrative workspace for the PFRS be reviewed in consideration of the recommendations of this MFP and the current facilities review of the Township administrative offices.

8.2

Staffing and Responsibilities

The part-time Deputy Fire Chief of Operations is responsible for coordinating all maintenance and repair of apparatus and equipment. All maintenance, routine and unscheduled, is contracted to 'C-MAX Fire Solutions' that specializes in fire industry apparatus and equipment. C-MAX is available 24 hours a day seven days a week for any emergency repairs on PFRS vehicles. The following Standard Operating Guidelines are in place regarding apparatus and equipment:

- #1-100 – Daily Vehicle Inspections
- #1-101 – Weekly Vehicle Check-off and Inspection
- #1-106 - Putting Apparatus Back in Service
- #1-107 – Breathing Air Compressor Maintenance
- #1-108 – SCBA Maintenance
- #1-109 – SCBA Air Bottle Filling
- #1-111 – Ladder Maintenance and Testing
- #1-113 – Fire Hose Testing Procedures

8.3 Types of Major Fire Apparatus

PFSG 04-07-12 *Types of Fire Apparatus and Equipment* was developed to provide smaller communities, such as the Township of Puslinch, with options to follow in determining the level of fire suppression and types of fire apparatus and equipment that should be available within the community. PFSG 04-07-12 provides the following information for consideration:

- *Demands on municipal resources force all communities to re-evaluate the level and nature of services they provide;*
- *Traditional approaches to the delivery of fire suppression with full-size triple combination pumpers may not necessarily be the most appropriate way to deliver this component of community fire safety, particularly in small communities with limited availability of firefighting personnel;*
- *The primary mission of all fire departments should be to ensure that the community is provided with an optimal level of fire protection in a cost effective and efficient manner. **This optimal level may require a much greater emphasis on fire prevention and public education activities - with residents being responsible for protection within their own residences;***
- *New technology provide options;*
- *Must be appropriate to the fire suppression needs of the community;*
- *Dependent upon availability of human resources*
needs to work closely with neighbouring communities; and
- *Focus must still be on community fire safety initiatives.*

PFSG 04-07-12 refers to the NFPA 1901 *Standard for Automotive Fire Apparatus* (2009 Edition) as a reference for the standards that should be considered in determining the appropriate apparatus for a community. NFPA 1901 provides the following definitions of major fire apparatus:

Pumper: Fire apparatus with a permanently mounted fire pump of at least 750 gpm (3000L/min) capacity, water tank and hose body whose primary purpose is to combat structural and associated fires. Pumper #31 would meet the qualifications of a 'Pumper' as defined by the NFPA 1901 standard.

Initial Attack Apparatus: Fire apparatus with a fire pump of at least 250 gpm (1000L/min) capacity, water tank, and hose body whose primary purpose is to initiate a fire suppression attack on structural, vehicular, or vegetation fires and to support associated fire department operations. Pumper #32 would meet the qualifications of an 'Initial Attack Apparatus' as defined by the NFPA 1901 standard.

Mobile Water Supply Apparatus (Tanker): A vehicle designed primarily for transporting (pick-up, transporting, and delivering) water to fire emergency scenes to be applied by other vehicles or pumping equipment. Tankers #38 and #39 would meet the qualifications of 'Tankers' as defined by the NFPA 1901 standard.

Quint: Fire apparatus with a permanently mounted fire pump, a water tank, a hose storage area, an aerial ladder or elevating platform with a permanently mounted waterway, and a complement of ground ladders. Aerial #33 would meet the qualifications of a 'Quint' as defined by the NFPA 1901 standard.




Special Services Fire Apparatus: A multipurpose vehicle that primarily provides support services at emergency scenes. Rescue #35 would meet the qualifications of a 'Special Services Fire Apparatus' as defined by the NFPA 1901 standard.




8.4

PFRS Major Apparatus

Overall, the major apparatus and equipment within the department are in good condition with the exception of Aerial #33. **Table 23** reflects the current major apparatus used by the department. In our view the current complement and profile of the major apparatus within the department reflects the operational capabilities required based upon the results of the Community Risk Profile within the Township.

TABLE 23: APPARATUS AND MODEL YEAR

Apparatus	NFPA 1901	Year	Picture
Pumper #31	Pumper	2005	
Pumper #32	Initial Attack Apparatus	2012	
Aerial #33	Quint	1991	

Apparatus	NFPA 1901	Year	Picture
Rescue #35	Special Services Fire Apparatus	2000	
Tanker #38	Mobile Water Supply Apparatus	2007	
Tanker #39	Mobile Water Supply Apparatus	2010	

8.5 Apparatus Replacement Plan

Our review of the major apparatus replacement and equipment replacement plans for municipalities with similar types of use and wear reflect a best practice strategy of 15 years of service as front-line apparatus and a further five years of service in a reserve capacity reflecting a 20 year overall life cycle for major apparatus such as pumpers and tankers. **Table 24** summarizes the current replacement schedule of the Township for the existing PFRS major apparatus replacement.

TABLE 24: PFRS MAJOR APPARATUS REPLACEMENT PLAN

Apparatus	Year	Replacement Year
Pumper #31	2005	2025
Pumper #32	2012	2032
Aerial #33	1991	2016
Rescue #35	2000	2020
Tanker #38	2007	2027
Tanker #39	2010	2030

Our review indicates that the Township has recognized the importance of life cycle planning and has been moving towards a major apparatus replacement plan that reflects the industry best practices of a 20 year life cycle for major fire apparatus with the exception of Aerial #33.

8.5.1 Aerial #33 Replacement Strategy

In our view Aerial #33 has exceeded its life expectancy. Our review indicates that there have been previous reports from the department recommending its replacement, and that these have been directed to the analysis within this MFP for Council's consideration.

This major apparatus was purchased in 1990 at the request of the Fire Chief. At that time the Fire Chief expressed to Council that *"The Aerial truck will be very advantageous when fighting a fire in a building with a large roof expanse (e.g., the industrial park north of Highway 401 and some commercial buildings in Morriston)."* The Community Risk Profile contained within this MFP indicates that this fire risk remains today, and that future community growth indicates that this type of fire risk will continue to increase in the future.

Traditionally an aerial device such as Aerial #33 was purchased to provide the operational capabilities of performing a rescue from higher elevations not accessible by typical ground ladders, and for providing an elevated master stream for firefighting purposes. A master stream is a large fire hose line and nozzle combination capable of applying a large volume of water, typically in excess of 1,000 gpm, on a major fire. With the advantage of height provided by the aerial ladder the master stream is able to reach higher points on a building or alternatively farther distances over a large building floor plan.

Similarly to the Superior Tanker Shuttle Accreditation referenced within this MFP the presence of an aerial device such as Aerial #33 does have a bearing on the insurance grading of a community and specifically the commercial insurance grading. It is important to note that the

current insurance gradings within the Township have been based on the presence of Aerial #33 that includes a 50 foot telescoping ladder device.

Our review indicates that Aerial #33 currently provides the following operational functions for the PFRS:

- *As the only aerial device within the Township it is relied upon to provide the operational capabilities of performing a rescue from an elevated area or to gain access to an elevated area, and to provide an elevated master fire stream in the event of a large fire; and*
- *This apparatus is also relied upon as a reserve pumper in the event Pumper #31 is out of service for maintenance or as a result of a breakdown.*

In response to the findings of the Community Risk Profile and to sustain the operational capabilities of the PFRS, as presented within the most recent FUS insurance grading, it is recommended that Aerial #33 be replaced as soon as possible with a Quint having a larger aerial ladder capability (75 foot) and a larger water tank (500 gallons) than Aerial #33.

In our view there are two options for purchasing this type of apparatus, tendering and purchasing a new apparatus, or alternatively purchasing a used apparatus. In consultation with apparatus manufacturers a new 75 foot Quint is estimated to cost between \$750,000 and \$900,000 (Canadian) subject to the specifications, and exchange rate of the Canadian dollar that has a major bearing on the U.S. manufacturers.

Depending on the age of a used 75 foot Quint the price can range significantly. If the Township chooses to purchase a used 75 foot Quint we suggest that it have a minimum of 10 years life expectancy remaining of its 20 year life cycle. This would suggest an apparatus built no later than 2005. Used apparatus of this age are currently selling in the range of \$400,000 to \$550,000 (Canadian).

There is typically no warranty stated or provided when purchasing a used fire apparatus. Due diligence should be applied in seeking the assistance of a qualified Emergency Vehicle Technician (EMT) or alternatively a mechanic familiar with major fire apparatus. Consideration should also be given to purchasing an apparatus originally designed and built by a major fire apparatus manufacturer in compliance with the applicable Canadian and NFPA standards for fire apparatus.

It is recommended that the Township of Puslinch prioritize the purchase of a replacement 75 foot Quint for Aerial #33.

It is recommended that subject to the purchase of a new or used 75 foot Quint that the Township revise the major apparatus replacement plan to accommodate a 20-year life cycle from the time of construction for the purchased apparatus.

8.5.2 Additional Multi-use Vehicle

Our review indicates that the department currently utilizes Pumper #32 (Initial Attack Apparatus) to facilitate a number of non-fire suppression activities such as fire inspections and public education programs. There are also a number of fire suppression related tasks where the department relies on personal vehicles (Volunteer Firefighters) to move equipment and additional resources to and from emergency scenes.

In our view there is a current need within the department to have access to a multiuse vehicle such as a 4-wheel drive pick-up truck capable of carrying 5 to 6 volunteer firefighters, their personal protective clothing and other fire suppression equipment to and from an emergency call. Providing this type of vehicle would eliminate the need for using Pumper #32 in non-fire suppression activities, and the use of personal vehicles.

It is recommended that the Township of Puslinch purchase a 4-wheel drive pick-up truck capable of carrying 5 to 6 volunteer firefighters and associated department equipment.

8.6 Satellite Station Major Apparatus Strategy

The analysis within this MFP provides Council with an option to develop a satellite fire station. This decision will require consideration of the major apparatus to be deployed to this proposed station. Previous input from the OFMEM and FUS have indicated that this should include a triple combination pumper and 2,200 litre tanker.

Subject to the purchase of the proposed 75 foot Quint, deployment of the current Pumper #31 and Tanker #39 to the satellite station would achieve the OFMEM and FUS major apparatus requirements. This would leave the proposed 75 foot Quint and Tanker #38 at the current station.

In our view the most significant challenge in implementing this strategy is the reduction of reserve apparatus at the current station as a result of purchasing the proposed 75 foot Quint.

In our view the proposed satellite station will enhance the fire suppression capabilities of the PFRS. A previous financial analysis conducted by the PFRS has identified that, in part, the proposed satellite station and major apparatus are eligible for development charge funding.

In our view consideration should be given to purchasing a new or used triple combination pumper, similar to Pumper #31, for the proposed satellite station. This would provide the opportunity to leave Pumper #31 at the current station and sustain the proposed 75 foot Quint as the Township's only reserve major apparatus and aerial device.

As indicated within the Aerial #33 Replacement Strategy there are two options for purchasing this type of apparatus, tendering and purchasing a new apparatus, or alternatively purchasing a used apparatus. In consultation with apparatus manufacturers a new triple combination pumper is estimated to cost between \$500,000 and \$750,000 (Canadian) subject to the

specifications, and exchange rate of the Canadian dollar that has a major bearing on the U.S. manufacturers.

Depending on the age of a used triple combination pumper the price can range significantly. If the Township chooses to purchase a used triple combination pumper we suggest that it also have a minimum of 10 years life expectancy remaining of its 20 year life cycle. This would suggest an apparatus built no later than 2005. Used apparatus of this age are currently selling in the range of \$150,000 to \$300,000 (Canadian).

Subject to Council's consideration of the proposed Satellite Station it is recommended that the Township purchase a new or used triple combination pumper for operation from the proposed station.

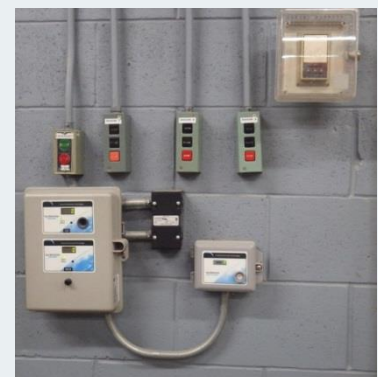
8.7 Diesel Emissions

The Ontario Fire Service has identified health and safety concerns related to diesel exhaust emissions from major apparatus stored within a fire station. In response, the Ministry of Labour, Section 21 Guidance Note #3-1 was developed to assist municipalities in responding to these concerns raised.

This guidance note includes a number of actions that should be taken to limit the exposure of the diesel emissions. The following is an excerpt from Guidance Note #3-1 that states:

"The Section 21 Committee strongly recommends the installation of direct capture type exhaust system extractors when stations are being renovated or newly constructed. Consideration should be given to having direct capture type exhaust extractors installed in all existing fire stations".

The fire service industry has responded to the need to limit diesel emission exposure by identifying monitoring equipment and technologies other than direct capture to address this concern. The Township of Puslinch has installed diesel emission monitoring equipment that automatically activates fans to exhaust any emissions. Regular maintenance of the sensors and equipment is required to ensure this equipment is functioning as designed at all times to sustain compliance with the Ministry of Labour, Section 21 Guidance Note #3-1.



8.8 Equipment

Where life cycles and conditions warrant, small equipment replacement (e.g., portable pumps, generators, etc.), should coincide with the apparatus capital replacement plan. The department should also budget for equipment replacement within the annual operating budget for smaller equipment replacement.

Industry best practices and manufacturers' directions suggest personal protective equipment, such as firefighters bunker gear, should be replaced based on a ten-year life cycle.

Targeting an annual replacement strategy of six to ten sets per year is one way to manage the capital costs of this strategy, as well as maintain an appropriate life cycle replacement plan. Life cycle planning is currently utilized where possible for other equipment replacement subject to some equipment that may have significant wear and tear as a result of higher than anticipated use through training or emergency response. In these situations the PFRS attempts to complete replacement as soon as possible, but may be required to identify specific operating budget funding for replacement.

It is recommended that the PFRS develop a life cycle replacement plan for all equipment including firefighters bunker gear and self-contained breathing apparatus based on industry best practices and manufacturers' directions.



8.9 Fire Station, Major Apparatus, & Equipment Summary and Recommendations

Our review of the major apparatus and equipment used by the PFRS reflects that of a well-equipped and maintained fire department. The PFRS faces similar challenges to many smaller fire departments in completing repairs in a timely fashion without impacting the level of services provided. Standardizing equipment through enhanced life cycle planning and developing a reserve major apparatus policy consistent with the life cycle planning identified within this review will assist the department.

Recommendations for the Fire Station, Major Apparatus and Equipment include the following:

41. *That the Township of Puslinch prioritize the purchase of a replacement 75 foot Quint for Aerial #33.*
42. *That subject to the purchase of a new or used 75 foot Quint that the Township revise the major apparatus replacement plan to accommodate a 20 year life cycle from the time of construction for the purchased apparatus.*
43. *That the Township of Puslinch purchase a 4-wheel drive pick-up truck capable of carrying 5 to 6 volunteer firefighters and associated department equipment.*

- 44. Subject to Council's consideration of the proposed Satellite Station it is recommended that the Township purchase a new or used triple combination pumper for operation from the proposed station.*
- 45. That the PFRS develop a life cycle replacement plan for all equipment including firefighters bunker gear and self-contained breathing apparatus based on industry best practices and manufacturer's directions.*

9.0

Communications & Technology

Communications within the Township's Fire and Rescue Services consists of dispatch procedures and equipment for rescue operations as well as internal communication between the members of the fire and rescue services.

9.1

Fire Dispatch

9.1.1

Existing Dispatch

The initial dispatch component is outsourced to the Guelph Department. Guelph pages the PFRS volunteer firefighters and the firefighters respond to the page. The 'IamResponding' screen shows who is coming to the emergency call. The first firefighter in the fire station takes over dispatch from Guelph and remains as dispatcher until the call is done. All firefighters are trained in this dispatch function.



9.1.2

New Dispatch

The Puslinch Fire and Rescue Service will be transferring their entire dispatch service to the Guelph Fire Department in 2015. This transfer of service will give Puslinch the ability to provide an increase in both initial response and depth of response because it puts their first responding firefighter arriving at the fire station on the first truck leaving the station instead of sitting in station functioning as a dispatcher.

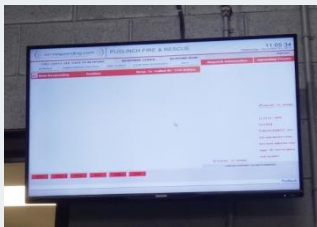
9.2

Radio Communications

PFRS uses Motorola portable radios for hand-held and in-vehicle communications. The department has an SOG and provides targeted training for radio operations. The PFRS uses a voice recorder system to record radio traffic and Town-owned phone lines (with the exception of the Simplex Channel).

9.3

Internal Department Communications



All firefighters carry pagers and personal cell phones to activate a screen in the fire station which identifies that they are responding to the call ("IamResponding" cell phone application and in-station interface). This system is working very well for the department. The PFRS hopes to improve the use of this technology by adding

onboard tablets within the front-line responding apparatus to connect this information to trucks and crews beyond the station.

9.4**Communications and Technology Summary and Recommendations**

Revising the dispatch services agreement with Guelph Fire Department is expected to serve the Township well and meet the needs of the Puslinch Fire and Rescue Services.

10.0 Economic Circumstances

The detailed analysis of the current economic circumstances of the Township of Puslinch is contained within **Appendix H**. This appendix relates to PFSG 02-03-01 “Economic Circumstances” located in **Appendix E**.

10.1 Summary of Economic Circumstances

The Township of Puslinch has taken proactive and creative steps to introduce financial strategies targeted at sustainably managing property tax increases, while sustaining appropriate service levels in all areas to meet the community’s needs.

Information provided by the County of Wellington indicates that the Township of Puslinch will continue to experience population growth, totaling approximately 31.8% between 2011 and 2041.

The Township’s overall municipal operating costs (excluding amortization) grew from \$3,477,522 in 2009 to \$4,406,331 in 2014, representing a 26.7% increase; in comparison, operating costs relating to fire services increase by 1.77% over the same period, from \$725,243 in 2009 to \$738,045 in 2014.

Over a similar period, the cost to deliver fire services per capita reduced by 4.46%, from \$105.21 in 2009 to \$100.52 in 2014. Costs per \$1,000 of assessed property value lessened by 30.45% between 2009 and 2014, while costs per household decreased by 1.81% between 2009 and 2014.

Relative to a sample of nine comparable municipalities across Ontario using 2014 data, the cost of fire protection services per capita in the Township of Puslinch were 43% above the sample average, costs per \$1,000 of assessed property value were 19.61% lower than the sample average. Costs per household were 22.95% higher than the average of sampled municipalities.

This analysis demonstrates that the cost of fire protection services rendered by the Township of Puslinch in relation to the overall Township operating budget have increased slightly in the past several years, and range in comparison to similar communities.

Considering the financial realities and sustainability of delivering fire protection services is an integral element of the master fire planning process. This MFP includes recommendations that, subject to Council’s consideration and approval, will result in further increase to the cost of fire protection services within the Township.

11.0 Public Consultation Process

The process of developing a Master Fire Plan for the Township of Puslinch involved various consultation activities. Effective communication and consultation with stakeholders and the community is essential to ensure that those responsible for implementing this Master Fire Plan, and those with a vested interest, understand the basis on which certain decisions are made and why particular actions are required.

11.1 Steering Committee

The Steering Committee was comprised of the following members, including Township staff and Council members:

- Fire Chief
- Deputy Fire Chief of Administration
- Chief Administrative Officer (CAO) / Clerk
- Director of Finance / Treasurer.

11.2 Project Meetings

Throughout this study, the Dillon team met with the Steering Committee to keep them abreast of study progress. The following meetings took place:

- Project Meeting #1 Project Initiation – December 3, 2014;
- Project Meeting #2 Preliminary Findings & Recommendations – April 1, 2015;
- Project Meeting #3 Second Preliminary Findings & recommendations – June 11, 2015;
- Project Meeting #4 Present Draft Report – October 8, 2015;
- Project Meeting #5 Present Final Report to Council – TBD.

11.3 Stakeholder Consultation

Stakeholders can provide valuable input at each step of the process, providing information about context and background from different perspectives. This helps to identify issues and needs associated with the fire rescue service. As well it provides information that is used for study analysis and recommendation phases. Engaging stakeholders helps ensure that multiple perspectives can be brought to the master fire planning process.

11.3.1 Interviews with Key Staff and Stakeholders

Information and feedback was collected from key staff and stakeholders via informal interviews held following the Project Initiation Meeting. This was an opportunity to gather background information for the environmental scan and input on strengths, opportunities, challenges and threats from the point of view of these key staff and stakeholders. This was an

essential stage in developing strategic goals and objectives for the master fire planning process. The following key staff and stakeholders were interviewed:

- Fire Chief;
- Deputy Fire Chief of Administration;
- Fire Prevention Officer;
- Chief Administrative Officer (CAO)/Clerk; and
- Director of Finance/Treasurer.

11.3.2 Volunteer Firefighter Stakeholder Session

A stakeholder session was held at the Puslinch Fire and Rescue Services fire stations. The session was held on Wednesday December 3, 2014.

A presentation was delivered to stakeholder group to introduce the master fire planning process. This was followed by open discussion to gather feedback from these key stakeholders regarding the strengths, weaknesses, opportunities and challenges of the fire department for consideration in the Master Fire Plan.

11.3.3 Targeted Stakeholder Telephone Consultation

The purpose of the targeted stakeholder telephone consultation was to solicit feedback from key stakeholders regarding their experiences and understanding of the current services PFRS provides. The key stakeholders contacted included a mix of institutions, businesses, and community organizations.

Seven key community stakeholders were identified by PFRS staff. These stakeholders were contacted via telephone and asked to participate in a survey. These telephone surveys were carried out to develop an understanding of the services provided by Puslinch Fire and Rescue Services to provide input to the Master Fire Plan. The stakeholder engagement is on-going and the results will help enhance the assessment of the department's strengths and weaknesses and will feed into the development of recommendations throughout the Master Fire Plan.

The survey was structured in three main sections: (1) general information, (3) core services, and (3) general comments. General information gathered included the name of the business or community group and the core services provided or accessed by the group or business. The service level section was composed of one to three questions for each of the seven core services: fire suppression, rescue, training, fire medical response, public education, fire investigation, and fire inspection. The last section provided opportunity for general comments related to the services provided by PFRS.

Results for General Information

Table 25 illustrates whether the external stakeholders have used any services as provided by PFRS within the past five years. Nearly all respondents made use of some form of services provided by PFRS.

TABLE 25: BUSINESS/COMMUNITY GROUP/INSTITUTION USE OF PFRS'S FIRE SERVICES IN PAST 5 YEARS

Available Responses	Frequency
Yes	5
No	2

Table 26 summarizes the level of awareness that PFRS is operated by part-time and volunteer department. All respondents were aware.

TABLE 26: AWARENESS OF PFRS OPERATION AS A PART-TIME AND VOLUNTEER DEPARTMENT

Available Responses	Frequency
Yes	7
No	0

Table 27 summarizes the level of awareness of the PFRS test trail to ascertain the need for a satellite fire station to be located in the western portion of the Township.

TABLE 27: AWARENESS OF PFRS'S TEST TRIAL STATION

Available Responses	Frequency
Yes	4
No	3

Table 28 indicates that each core service has been accessed at least once by an external stakeholder. (Stakeholders were permitted to indicate use of multiple services if appropriate). The most frequently accessed service included Public Education, followed by Fire Suppression.

TABLE 28: PFRS'S CORE SERVICE ACCESSED IN PAST 5 YEARS

Services	Frequency
Fire Suppression	1
Emergency Medical Services	1
Rescue	0
Training	0
Public Education	2
Fire Investigation	1
Fire Inspection	2

Results for Core Services

The results presented in this section address the questions pertaining to each of the seven core services provided.

Fire Suppression

Table 29 indicates that stakeholders rate fire suppression services very highly - six respondents indicated that fire suppression services are very reliable.

TABLE 29: RELIABILITY OF RESPONSES TO FIRE INCIDENTS

Available Responses	Frequency
Very Reliable	6
Somewhat Reliable	0
Unreliable	0
No Opinion	1

Table 30 summarizes the impact of the existing fire station location and its proximity to the respondents. The majority of stakeholders do not consider the current location of the fire station to have a negative impact,

TABLE 30: IMPACT OF THE EXISTING FIRE STATION LOCATION

Available Responses	Frequency
Yes	1
No	5
Other	1

Table 31 indicates whether respondents found that PFRS policies or procedures negatively impacted the stakeholder's ability to successfully carry out their organization's mandate. All respondents indicated that they had positive, good working relationship with PFRS.

TABLE 31: IMPACT OF PFRS'S POLICIES/PROCEDURES ON STAKEHOLDER'S MANDATE

Available Responses	Frequency
Yes	0
No	7

Rescue

Rescue related core services include water rescue, confined space, high or low slope rescue, motor vehicles and hazardous material. **Table 32** summarizes the stakeholders' perception of the value of these services as part of the PFRS core services delivered. All seven respondents indicated that Rescue services are a valuable component of the PFRS core services.

TABLE 32: PERCEPTION OF VALUE OF RESCUE-RELATED SERVICES AS PART OF PFRS'S CORE SERVICES

Available Responses	Frequency
Yes	7
No	0

Training

Respondents were asked whether or not they or their Business/Community Group/Institution participates in familiarization training with PFRS. **Table 33** summarizes the results with three of the seven stakeholders responding "yes".

TABLE 33: BUSINESS/COMMUNITY GROUP/INSTITUTION USE OF PFRS'S TRAINING

Available Responses	Frequency
Yes	3
No	4

Table 34 indicates how effective the stakeholders thought the training was, all of the respondents that have participated in training thought it was very effective.

TABLE 34 RELIABILITY OF RESPONSES TO FIRE INCIDENTS

Available Responses	Frequency
Very Effective	3
Somewhat Effective	0
Ineffective	0
N/A	4

Respondents that answered no to participating in familiarization training with the PFRS were asked whether or not they or their Business/Community Group/Institution would benefit from familiarization training with PFRS. **Table 35** summarizes the results with three of the seven stakeholders responding "yes".

TABLE 35: BUSINESS/COMMUNITY GROUP/INSTITUTION USE OF PFRS'S TRAINING

Available Responses	Frequency
Yes	4
No	0
N/A	3

Public Education

Respondents were asked if they or their business/community group/institution has ever received public education services. **Table 36** illustrates that of the seven respondents five have received public education services from PFRS.

TABLE 36: RECEIVED FIRE EDUCATION SERVICES FROM PFRS'S

Available Responses	Frequency
Yes	5
No	2

Respondents were asked to indicate if they have ever requested public education services from PFRS. **Table 37** illustrates that one respondent has requested fire education service needs from PFRS.

TABLE 37: SATISFACTION WITH PFRS'S FIRE EDUCATION SERVICES

Available Responses	Frequency
Yes	1
No	6

Respondents were asked to indicate if PFRS was meeting their needs for fire education services. **Table 38** illustrates that six respondents felt that PFRS was meeting their fire education service needs. Where gaps were identified included educating the businesses on fire safety.

TABLE 38: SATISFACTION WITH PFRS'S FIRE EDUCATION SERVICES

Available Responses	Frequency
Yes	6
No	1

Respondents were asked to rate the Fire Prevention strategies of Puslinch Fire and Rescue Services. **Table 39** illustrates that three respondents felt that PFRS had in place effective Fire Prevention strategies.

TABLE 39: SATISFACTION WITH PFRS'S FIRE PREVENTION STRATEGIES

Available Responses	Frequency
Very effective	2
Somewhat effective	1
Ineffective	1
Undecided	3

Fire Investigation

Respondents were asked to indicate whether they were aware of PFRS's capabilities to investigate the cause and determination of fires within the Township of Puslinch. **Table 40** summarizes the state of awareness of various stakeholders to PFRS's investigation capabilities. Six respondents were aware of this PFRS service.

TABLE 40: AWARENESS OF PFRS'S INVESTIGATION CAPABILITIES

Available Responses	Frequency
Yes	6
No	1

Fire Inspection

Table 41 indicates when stakeholders had been last inspected by PFRS. The table illustrates that three respondents were inspected within the past year, one within the last two years, two within the past five years, and one were never inspected.

TABLE 41: STAKEHOLDERS INSPECTED WITHIN THE PAST FIVE YEARS

Available Responses	Frequency
Yes, within the past 5 years	2
Yes, within the past 2 years	1
Yes, within the past year	3
Unsure	0
No	1

Respondents were asked if they have ever requested an inspection. **Table 42** illustrates that two stakeholders have requested an inspection.

TABLE 42: REQUESTED AN INSPECTION

Available Responses	Frequency
Yes	2
No	5

Respondents who were not inspected were asked for comments. The most common reason was that inspections were not warranted.

11.4 Results for General Comments

The results presented in this section address the questions pertaining to the general operation of Puslinch Fire and Rescue Services.

Respondents were asked to comment on concerns or issues related to any of the services provided by PFRS. Five stakeholders did not express any issues or concerns. Of the comments, concerns raised were regarding the department being overworked, if two fires happen simultaneously there will not be enough resources, and a concern there is no need for a second fire station.

Respondents were asked to comment on what PFRS does well. All seven stakeholders responded. Common themes indicated related to professionalism, reliability, and community presence.

Respondents were asked whether the core services described in this survey align with the needs of the community. **Table 43** illustrates that all stakeholders agree with the community's need for the core services described.

TABLE 43: AWARENESS OF PFRS'S INVESTIGATION CAPABILITIES

Available Responses	Frequency
Yes	7
No	0

11.5 Summary

The overall results of engagement with seven stakeholders were overwhelmingly positive. Stakeholders were aware of the roles and structure of PFRS, with much appreciation for the value that PFRS adds to the community through its core services. Many of the stakeholders maintain strong, working relationships with PFRS. The primary gaps addressed included suggestions to place greater emphasis on public education.

12.0

Implementation Plan

Included within the identified outcomes of this master fire planning process were the objectives to identify strategic priorities, including detailed action plans for the 1-5 year, 5-10 year, and 10-20 year planning horizons. In our view this is a common objective of municipalities that have been conducting this planning process on an ongoing process including regular updates at five year intervals.

It is our understanding that this is the first time the Township of Puslinch has undertaken the development of a Master Fire Plan. In our experience working with other municipalities considering their first master fire plan, it is typical to see a greater number of recommendations impacting the short-term (1-3 year) planning horizon than those that would relate to the longer planning horizons. As such the strategies and recommendations contained within this MFP focus on establishing strategic priorities, service delivery performance measures, and operational strategies to respond to previous reviews such as those completed by the Office of the Fire Marshal and Emergency Management.

Where possible this proposed MFP has considered the five, 10 and 20 year planning horizons related to future community growth and community planning. However, the strategies and recommendations presented focus on the short-term (2015, 2016 and 2017).

This proposed MFP is intended to provide Council with a strategic framework for the delivery of fire protection and emergency services in seeking the most cost effective and efficient level of fire protection and emergency services resulting in the best value for the community.

To assist Council and staff in the process of considering both the short-term operational and financial impacts of the proposed MFP we have found the following implementation strategy to be very effective. This strategy has been successful in achieving the objective of Council approving the proposed Master Fire Plan while recognizing Council's commitment to fiscal management in the delivery of all municipal services.

The following two strategies are presented for consideration to guide the next steps of implementing the proposed Master Fire Plan:

- 1. That the proposed Master Fire Plan be approved by Council as the strategic framework for the delivery of fire protection and emergency services within the Township of Puslinch; and***
- 2. That the Fire Chief and Director of Finance/Treasurer be directed to develop a detailed implementation plan for the Master Fire Plan including the operational and financial impacts for Council's consideration.***

To assist in determining the operational and financial priorities/impacts related to implementing the proposed Master Fire Plan the following implementation plan is provided below in **Table 44**. Estimated operating and capital expenses have been provided (where

possible) to provide information based on the level of analysis completed, and based on our experience in working with other similar communities.

TABLE 44: PROPOSED IMPLEMENTATION PLAN

Operational Priority	Recommendation	Estimated Funding Required	
		Operating Budget	Capital Budget
2016	<i>That the Mission Statement of the Puslinch Fire and Rescue Services be updated to include a Vision Statement and to reflect the framework of the OFMEM PFSG 03-02-13 "Master Planning Process for Fire Protection" subject to approval of the proposed Master Fire Plan by Council.</i>	----	----
2016	<i>That consideration be given to increasing the hours of work for the part-time Administrative Assistant from the current 10 hours per week to 24 hours per week to support the administrative needs of the PFRS.</i>	\$14,334	----
2016	<i>That the administrative workspace for the PFRS be reviewed in consideration of the recommendations of the Master Fire Plan and the current facilities review of the Township administrative offices.</i>	To be determined	To be determined
2015	<i>That the Fire Chief be directed to prepare a fire department Annual Report including an updated Community Risk Profile for consideration by Council.</i>	----	----
2015	<i>That the Establishing and Regulating By-Law #12/10 be reviewed and revised subject to the consideration and approval of the proposed Master Fire Plan by Council.</i>	----	----
2016	<i>That the part-time Deputy Fire Chief Appointment By-law #019/14 be reviewed and revised subject to the consideration and approval of the proposed Master Fire Plan by Council.</i>	----	----
2015	<i>That following Council's consideration of the proposed Master Fire Plan that the Fire Chief be directed to review the current Mutual Aid Agreements in consideration of the fire suppression deployment options and utilization of automatic aid presented within the proposed Master Fire Plan.</i>	----	----
2015	<i>That the Township prioritize the full implementation of the updated fire dispatch services agreement with the City of Guelph including the provisions of performance measures similar to those identified within the NFPA 1221 standard, or alternatively begin investigating alternative solutions for the provisions of full fire dispatch services.</i>	Current Rate	Current rate
2015	<i>That the PFRS develop distinct formats for both Standard Operating Guidelines and Department Policies.</i>	----	----
	<i>That the format for all PFRS Department Policies and Standard Operating Guidelines be revised to include a date of approval and signed approval by the Fire</i>	----	----

Operational Priority	Recommendation	Estimated Funding Required	
2015	<i>Chief or designate, and that all Department Policies and Standard Operating Guidelines be reviewed on annual basis as required by SOG #0-103.</i>		
2016	<i>That additional licensing be provided for the FIREHOUSE records management software program to further enhance the records management practices of the PFRS.</i>	One-time fee of \$675 and \$120 on-going cost per license	---
2015	<i>That Council approve the strategic priorities identified within the proposed Master Fire Plan to guide the development and delivery of fire protection and emergency services within the Township of Puslinch.</i>	----	----
2015	<i>That subject to Council's consideration and approval of the proposed Master Fire Plan that a Fire Prevention Policy be created utilizing the framework of PFSG 04-45-12 "Fire Prevention Policy" for consideration and approval by Council, and attached as an appendix to the fire department Establishing and Regulating By-law.</i>	----	----
2015	<i>That subject to the consideration and approval of the proposed public fire safety education activities and program cycle objectives by Council that they be included within the proposed Fire Prevention Policy and proposed Establishing and Regulating By-Law.</i>	----	----
2016	<i>That Council consider the provision of 20 hours per week to support a dedicated position of part-time Public Fire and Life Safety Educator reporting to the part-time Chief Fire Prevention Officer with the responsibility to coordinate and optimize the public fire safety education objectives of the PFRS.</i>	\$25,667	To be Determined
2015	<i>That the PFRS Smoke Alarm Program be updated as a department Standard Operating Guideline and included within the proposed Fire Prevention Policy for consideration and approval by Council.</i>	----	----
2015	<i>That PFSG OFM-TG-01-2012 be considered in developing the proposed Fire Prevention Policy for consideration and approval by Council.</i>	----	----
2015	<i>That subject to the consideration and approval of the proposed fire inspection goals and objectives by Council that they be included within the proposed Fire Prevention Policy and proposed Establishing and Regulating By-Law.</i>	----	----
2016	<i>That consideration be given to increasing the hours of work for the part-time Chief Fire Prevention Officer from the current 16 to 24 hours per week to achieve the proposed fire inspection frequencies identified within the proposed Master Fire Plan.</i>	\$12,863	----
2016	<i>That the PFRS develop a comprehensive annual training program based on the NFPA Professional Qualifications Standards and the core functions of a comprehensive annual training program identified</i>	----	----

Operational Priority	Recommendation	Estimated Funding Required	
	<i>within the proposed Master Fire Plan.</i>		
2016	<i>That the Fire Chief be directed to review the participation of the PFRS in joint training initiatives with the other Fire Department within Wellington County in seeking efficiencies in the provision of training programs for the PFRS.</i>	----	----
2016	<i>That the PFRS include live fire training as a required element within the proposed comprehensive annual training program.</i>	----	----
2016	<i>That the PFRS investigate the use of an online firefighter training program as a component of delivering the proposed comprehensive annual training program.</i>	----	----
2016	<i>That the PFRS reduce the current level of emergency response services to Confined Space Rescue and Slope/High Angle Rope Rescue incidents from an operational capability to an awareness level of response, and that these service levels be reflected in the proposed Establishing and Regulating By-law.</i>	----	----
2016	<i>That the Fire Chief be directed to investigate the options available for the delivery of operational level emergency response for incidents including Confined Space Rescue, Slope/High Angle Rope Rescue, HAZMAT response, and Trench Rescue.</i>	To be determined	----
2016	<i>That the PFRS enhance the training opportunities for Company Officers to achieve the competencies identified within the new NFPA 1021 Standard – Level II for Company Officers.</i>	----	----
2016	<i>That the PFRS consider adoption of the Blue Card Fire Command Training Program as a component of the proposed Comprehensive Annual Training Program.</i>	One-time fee of \$19,865 and \$2,437 on-going cost	----
2017	<i>That the PFRS develop a succession plan for the PFRS including opportunities to enhance the leadership and management training available for all Officers.</i>	----	----
2015	<i>That the emergency response performance objectives identified within the proposed Master Fire Plan be considered and approved by Council and included within the new Establishing and Regulating By-law.</i>	----	----
2016/2017	<i>That the PFRS continue to participate in the Superior Tanker Shuttle Accreditation process, and where possible identify additional alternative water supply locations to provide further enhancements to the accreditation.</i>	----	----
2016	<i>That the Fire Chief be directed to review the elements presented within the proposed Master Fire Plan for sustaining medical responses, including reporting to Council on the actions to be taken for each element</i>	----	----

Operational Priority	Recommendation	Estimated Funding Required	
	<i>presented.</i>		
2016	<i>That consideration be given to reducing the hours of work for the part-time Fire Chief from the current 30 hours per week to 24 hours per week.</i>	(\$7,667)	----
2016	<i>That consideration be given to making the position of part-time Deputy Fire Chief of Administration permanent with direct responsibility for the Fire Prevention, Public Education and Training Divisions with a set schedule of 24 hours per week.</i>	\$24,432	----
2016	<i>That consideration be given to making the position of part-time Deputy Fire Chief of Operations permanent with direct responsibility for the Fire Suppression Division with a set schedule of 24 hours per week.</i>	\$24,432	
2016	<i>That Council implement the strategies to optimize the Volunteer Firefighter Recruitment Process identified within the proposed Master Fire Plan including increasing the approved complement of the PFRS by 6 volunteer firefighters.</i>	\$37,620	\$24,000
2016	<i>That Council implement the strategy to optimize the use of part-time resources included within the proposed Master Fire Plan.</i>	----	----
2016	<i>That a revised on-call process be implemented to ensure a minimum response to include a minimum of six volunteer firefighters and a senior officer at all times.</i>	----	----
2016	<i>That a revised call-out process be considered to provide an option for alerting either the on-call crew, or alternatively all of the fire suppression resources of the PFRS.</i>	----	----
2015	<i>That Council authorize the Chief Administrative Officer and Fire Chief to approach the City of Cambridge to negotiate a revised Automatic Aid Agreement for the provision of fire suppression services as reflected in the proposed Master Fire Plan.</i>	\$6,150	----
2015	<i>That Council authorize the Chief Administrative Officer and Fire Chief to approach the City of Guelph to negotiate an Automatic Aid Agreement for the provision of fire suppression services as reflected in the proposed Master Fire Plan.</i>	\$17,220	----
2016/2017	<i>That subject to Council's desire to enhance the level of fire suppression and emergency services that site Option "C" as presented within the proposed Master Fire Plan including the addition of nine volunteer firefighters be considered.</i>	\$120,000	\$1,070,000
2016	<i>That the Township of Puslinch prioritize the purchase of a replacement 75 foot Quint for Aerial #33.</i>	----	Used \$400,000 to \$550,000 New \$750,000 to \$900,000
2016	<i>That the Township of Puslinch purchase a 4-wheel</i>	\$5,000	\$30,000

Operational Priority	Recommendation	Estimated Funding Required	
	<i>drive pick-up truck capable of carrying 5 to 6 volunteer firefighters and associated department equipment.</i>		
2016	<i>That subject to the purchase of a new or used 75 foot Quint that the Township revise the major apparatus replacement plan to accommodate a 20 year life cycle from the time of construction for the purchased apparatus.</i>	----	To be determined
2017	<i>Subject to Council's consideration of the proposed Satellite Station it is recommended that the Township purchase a new or used triple combination pumper for operation from the proposed station.</i>	----	Used \$150,000 to \$300,000 New \$500,000 to \$750,000
2016/2017	<i>That the PFRS develop a life cycle replacement plan for all equipment including firefighters bunker gear and self-contained breathing apparatus based on industry best practices and manufacturer's directions.</i>	To be determined	To be determined

Appendix A

Comprehensive Fire Safety Effectiveness Model (PFSG 01-02-01)

Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

Comprehensive Fire Safety Effectiveness Model Considerations

Public Fire Safety Guidelines

Subject Coding

PFSG 01-02-01

Section

Date

General

January 1998

Subject

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Comprehensive Fire Safety Effectiveness Model Considerations

Comprehensive Fire Safety Effectiveness Model Considerations For Fire Protection & Prevention In Your Community



Fire Protection & Prevention In Your Community

Every day, local elected leaders, managers and fire chiefs are faced with decisions relating to the provision of fire and other related emergency services for their community. Now, more than ever there are constant pressures of doing "more with less". Many government officials are hard-pressed to justify any increase in expenditures unless they can be attributed directly to improved or expanded service delivery in the community. This effort has often been hampered by the lack of criteria by which a community can determine the level and quality of fire and other related emergency services it provides to its residents. The *Comprehensive Fire Safety Effectiveness Model* is a document which can assist communities in evaluating their level of fire safety.

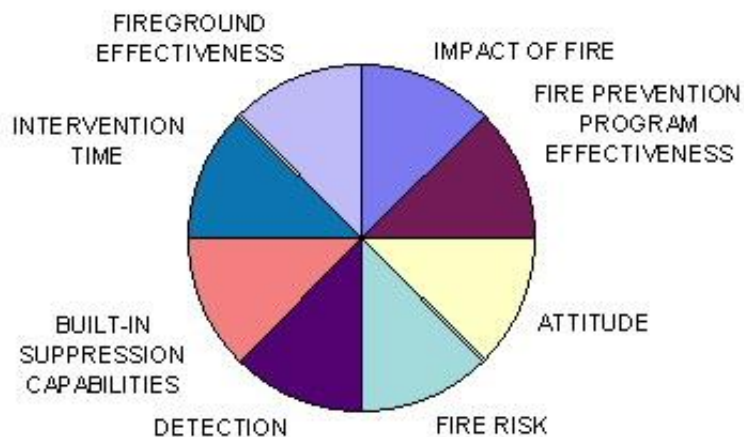
The provision of fire protection in Ontario is a municipal responsibility. The level and amount of fire protection provided is determined by the residents of the community through decisions made by and support provided by the local municipal council. Due to a wide variety of factors, the Ontario fire service finds itself in a period of change. Increased community expectations coupled with

reduced financial resources are forcing all communities to critically assess their fire protection needs and to develop new and innovative ways of providing the most cost effective level of service. A refocus on fire protection priorities is providing progressive fire departments and communities throughout Ontario with an exciting opportunity to enhance community fire safety. There is more to providing fire protection than trucks, stations, firefighters and equipment.

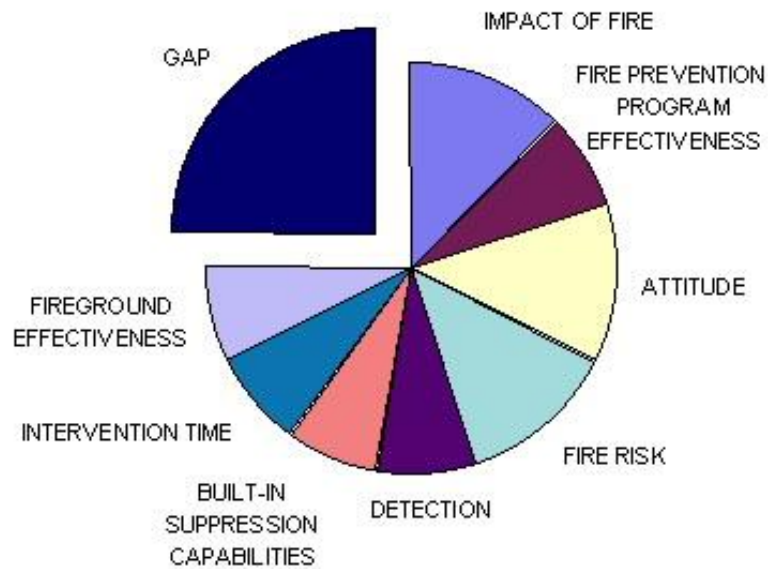
The Office of the Fire Marshal has developed the *Comprehensive Fire Safety Effectiveness Model* which can be used as a basis for evaluating fire safety effectiveness in your community. This model looks at community fire protection as the sum of eight key components, all of which impact on the fire safety of the community. Deficiencies in one of the components can be offset by enhancements in another component or components.

Community Master Fire Protection Plan

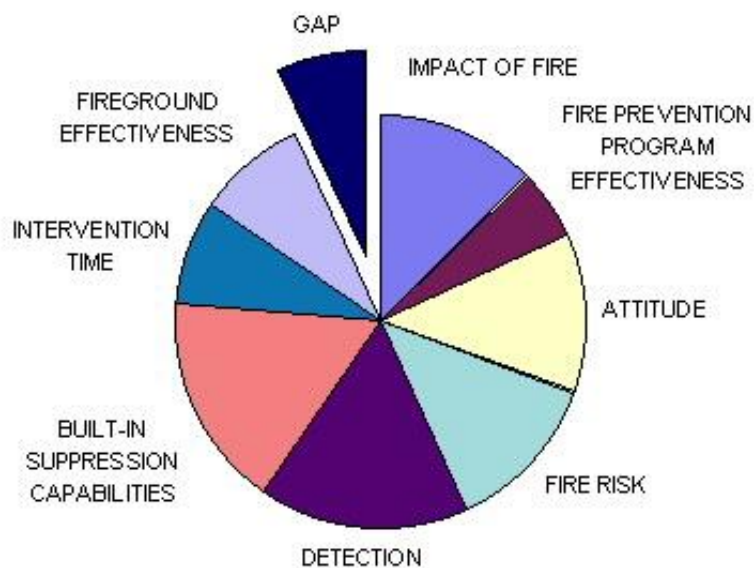
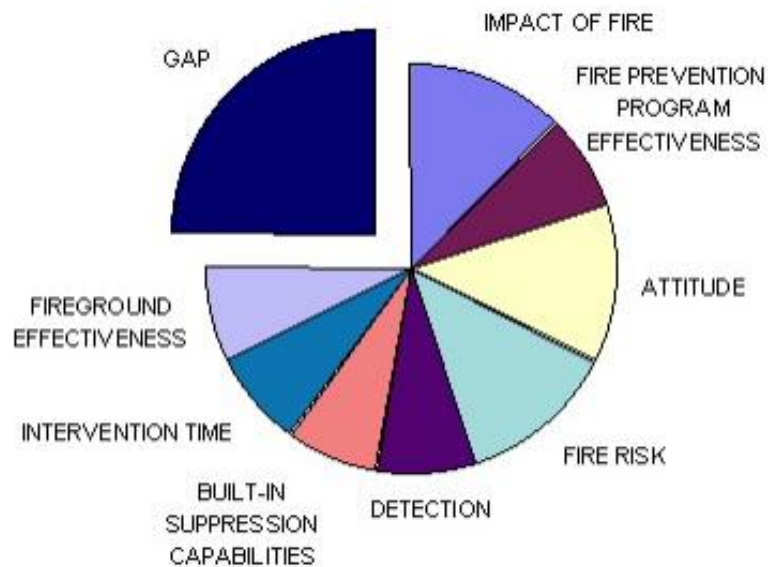
Every fire department should be guided by a master or strategic plan. This *Community Master Fire Protection Plan* traditionally focused on the identification of fire hazards and planning an appropriate suppression force response. Today, hazard or risk assessment has expanded well beyond the fire problem in the community to include emergency medical incidents, hazardous materials incidents and many other emergency situations. Paradigms are being shifted to emphasize the concept of fire prevention and control systems as communities attempt to effectively reduce losses experienced. This document should include plans for human resources and program financial support as well as the many external influences that impact on the fire service. The information contained with the *Community Master Fire Protection Plan* should provide a clear and concise overview of the most recently adopted organizational goals and objectives, budgetary commitments, mission statements and assessments of organizational activity. The document should cover a long range planning period of five to ten years.



This chart shows each of the factors which make up the comprehensive model. Although the chart is divided equally, each factor will in reality contribute differently to the total level of protection provided to a community.



This chart shows how the comprehensive model can be applied to a typical fire department. The "gap" depicts the difference between the existing level of protection and the ideal.



This chart shows how the "gap" can be reduced by

strengthening a number of factors in order to increase the overall level of protection provided to the community.

It is critical that the fire department be guided by a written philosophy, general goals and specific objectives which are consistent with the legal mission of the department and are appropriate for the community it serves. These should all be integral components of the Community Master Fire Protection Plan.

Application of the Comprehensive Fire Safety Effectiveness Model will enable municipalities to make informed choices by providing an objective and innovative approach to public fire protection - a new way of thinking. Communities are able to determine if the level of service provided matches the risk in the community.

1. Impact Of Fire:

The impact of fire in any community can be significant with far reaching consequences. Not only do fires result in deaths and personal injuries but they also cause substantial property and environmental loss. Often overlooked are factors such as the historical value of unique local properties as well as the potential for lost tax assessment. There are many communities in Ontario where the loss of a particular occupancy will have a serious impact on the local economy. Involvement in fire often has a negative psychological impact on those affected.

Every community should carefully assess the total impact of fire. This assessment should be used as a basis for a Community Master Fire Protection Plan that addresses all areas of community fire safety including fire prevention and life safety as well as the delivery of suppression and rescue services.

- Does your community have a property whose loss would result in a significant financial burden to the community?
- Does your community have a property whose loss would result in a significant impact of local employment?
- Does your community have a property which if involved in fire would pose a significant environment risk?
- Does the master fire protection plan adequately consider the impact of a major fire?

2. Fire Prevention Program Effectiveness:

- Perhaps the most important component of and community's fire protection services is the effectiveness of it's fire prevention program. Legislation, regulations and standards pertaining to fire safety focus primarily on fire prevention. Enforcement of these codes is one of the most effective ways of reducing the loss of life and property due to fire. In addition, public fire safety education programs have the potential to substantially reduce the loss of life and property due to fire.

Every community should strive to provide an adequate, effective and efficient program directed toward fire prevention, life safety, risk reduction of hazards, the detection, reporting of fire and other emergencies, the provision of occupant safety and exiting and the provisions for first aid firefighting equipment.

- Does your community have a fire prevention and public education policy that adequately

addresses:

- inspections?
 - public education?
 - code enforcement?
 - investigation?
-
- Does your community provide inspections upon request?
 - Does the fire department respond to complaints?
 - Does your community's fire prevention program address public life safety in structures from pre-construction planning until demolition through application of the Building Code and Fire Code?

3. Public Attitude:

North Americans tend to be more complacent about fires and the resulting losses than other parts of the industrialized world. Communities often accept the consequences of fire and provide community support. Comprehensive insurance packages are available to mitigate damages.

Communities need to assess the resident's attitudes toward fire to determine what role it plays in determining the extent of fire losses. Properly designed public fire safety education programs will significantly improve public attitudes toward the prevention of fire. This will result in lower fire losses.

Every community should assess public attitudes toward fire and life safety issues. This assessment should be used to develop and deliver public fire safety education programs to enhance community fire safety.

- Do the residents of your community demonstrate an interest in public fire safety?
- Is there a general awareness of fire safety in your community?
- Is there a sense of personal responsibility for one's own safety within the community?

4. Fire Risk:

The characteristics of your community affect the level of fire risk that needs to be protected against. Older buildings pose a different set of problems than newer buildings constructed to current construction codes. High rise, commercial and industrial occupancies each present unique factors which must be considered. Construction, occupancy type, water supply, exposure risks, furnishings and the risk which the combination of these factors pose to the occupants must be assessed. The presence of effective built-in suppression and/or protection measures can reduce the fire risk.

36% of all structural fire alarms and 46% of all structural fire deaths in Ontario during the period 1990-1994 occurred in single family, detached, residential occupancies.

Every community should carefully assess its fire risk. The results of this risk assessment should be used as a basis for determining the level, type and amount of fire protection provided and should be a critical factor in the development of the community master fire protection plan.

- Has your community assessed the fire risk?
- Does your community have a master fire protection plan which takes into account the results of your fire risk analysis?
- Has the fire department identified all the possible actions it could take to reduce the number of fire incidents that occur in the community?
- Does your community planning process consider the impact of new developments and industries

on the fire department?

5. Detection Capabilities:

The presence of early warning detection capabilities notifies occupants and allows them sufficient time to escape. It also allows for earlier notification of the fire department. Communities who encourage the widespread use of early warning detection systems have the potential of significantly reducing notification time, which, when coupled with effective fire department suppression, results in a corresponding reduction of loss of life, injuries and damage to property from fire.

Every community should develop and implement programs that promote the use of early warning detection systems in all occupancies. These programs should be a fire protection priority.

- Does your community have a program to ensure that all occupancies are provided with adequate early warning detection devices?
- Does your community have a program to ensure that residents are familiar with the importance and proper maintenance of early warning detection devices?
- Does your community promote the use of direct connect early warning detection devices in residential as well as commercial, industrial and assembly occupancies.

6. Built-In Suppression Capabilities:

Traditionally, the use of built-in suppression has been limited to fixed fire protection systems associated with assembly, commercial, industrial and manufacturing occupancies. Application of this concept has been limited in the residential environment. These systems, particularly the use of automatic sprinkler systems play an important role in minimizing the effects of fire by controlling its spread and growth. This enables the fire department to extinguish the fire more quickly and easily.

Although effective in newer buildings, it is often difficult if not impossible to provide for built-in suppression systems that effectively control fires in wall cavities and concealed spaces associated with certain older types of construction or reconstruction.

The use of built-in suppression systems should be a fire safety priority in all communities. Programs should be developed and delivered that promote the advantages of built-in suppression systems for residential, commercial, industrial and assembly occupancies.

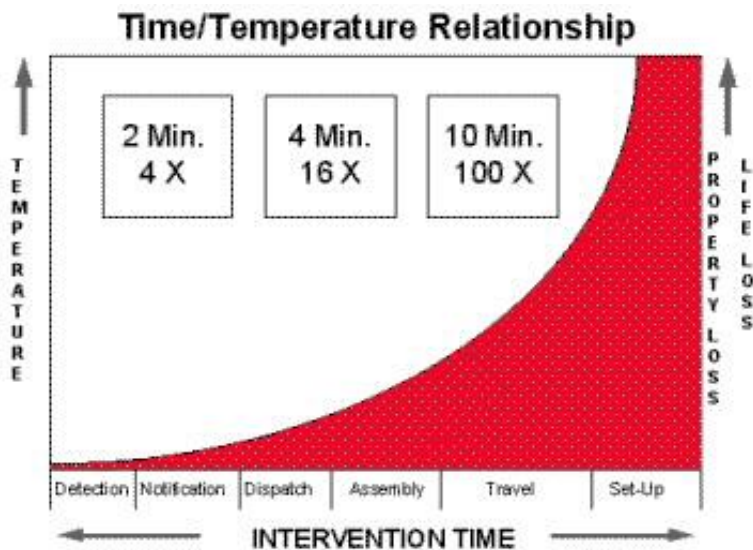
- Does your community promote the use of built-in suppression devices in all types of occupancies
 - residential?
 - commercial?
 - industrial?
 - assembly?
 - institutional?
- Does your community consider built-in suppression devices and early warning detection as an alternative to traditional concepts of fire protection?

7. Intervention Time:

This is the time from ignition until effective firefighting streams can be applied to the fire. There are many factors influencing this component of the model:

- the time required to detect the fire
- notification time from the public
- notification time to the firefighters
- preparation time for the firefighters to leave the station
- the distance between the fire station and the response location
- the layout of the community
- impediments such as weather, construction, traffic jams, lack of roads, etc.
- set-up time

Fire department intervention time is crucial in determining the consequences of a fire in terms of deaths, injuries and loss of property and damage to the environment. Effective fire prevention and public education programs can reduce intervention time which will result in increased fire department effectiveness.



Every community should develop and implement a range of programs and initiatives that reduce intervention time. These programs and initiatives should address all aspects of intervention time from the time required to detect the fire to the set-up time of the fire department.

- Are all occupancies in your community equipped with suitable smoke alarms and provided with fire emergency escape plans?
- Do all residents in your community know how to report a fire or other emergency?
- Does your community have a common fire emergency reporting number?
- Is the fire department dispatched by an appropriate dispatch facility?
- Does the community's master fire protection plan consider the different turn-out times for volunteer and/or full-time firefighters?
- Has the department instituted an appropriate fire department training and education program?
- Are all structures within the community clearly identified using an accepted numbering system?
- Has the department instituted a policy of having the closest fire department respond even though that fire department may be from another municipality?

8. Fireground Effectiveness:

The fireground effectiveness of the fire department has a wide range of benefits for your community. Not only does the fire department's performance affect the degree of damage to the environment and property, it also has a direct relationship to personal injury and death from fire. Many factors influence the effectiveness of any fire department. Included in these factors are:

- fire department organization
- community support of fire department
- firefighter availability
- firefighter and fire officer training
- adequate resources which are properly maintained
- time effective response to emergency incidents

The fire department should strive to provide an adequate, effective and efficient fire suppression program designed to control/extinguish fires for the purpose of protecting people from injury, death or property loss.

- Does your fire department have a comprehensive training program and evaluation system for all positions?
- Does the fire department have a system to ensure that an adequate number of trained personnel respond to all emergencies within a reasonable time period?
- Is your fire department provided with adequate resources to safely and effectively handle the risks it will be called upon to mitigate?
- Does the fire department use standard operating guidelines to define expected fire department actions for the wide variety of situations it might encounter?
- Does your fire department have automatic response agreements to guarantee an adequate level of personnel at all times?

The answers to the questions in this document will provide you with some indication of the level of fire safety in your community, however this is only the start. Application of the OFM Comprehensive Fire Safety Effectiveness Model will permit you to develop a plan for the safe, effective and economical delivery of fire protection services in your community.

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.

Further assistance is available from your local OFM representative

Appendix B

Framework for Setting Guidelines within a Provincial-Municipal Relationship (PFSG 00-00-01)

Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

Framework For Setting Guidelines Within A Provincial- Municipal Relationship

Public Fire Safety Guidelines

Subject Coding
**PFSG 00-00-
01**

Section

Date

General

**January
1998**

Framework For Setting Guidelines Within A Provincial-Municipal Relationship

Page

Purpose

To assist municipalities in making informed choices for providing public fire protection through objective and innovative approaches. Guidelines will be developed for municipal councilors and senior officials as well as municipal fire departments.

Background

The Fire Protection and Prevention Act places new responsibilities on municipalities. The Office of the Fire Marshal has a mandate to assist municipalities to fulfill these responsibilities by providing information which will enable municipalities to make informed choices based on an objective analysis. Municipalities are compelled to establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention. The act also states that municipalities are responsible for arranging such other fire protection services as they determine may be necessary according to their own needs and circumstances. The relationship between the province and municipalities is based on the principle that municipalities are responsible for arranging fire protection services according to their own needs and circumstances. The primary roles of the province are to provide leadership and support to municipalities in the exercise of this responsibility, and to ensure public safety is not compromised. Guidelines, developed by the Office of the Fire Marshal in consultation with municipalities, the fire service and others, will be a key vehicle for fulfilling the provincial role to support municipalities. This consultation process will continue on an ongoing basis to ensure the guidelines change and evolve to reflect trends, changing circumstances and new technology. To be useful, the guidelines must remain current, and must have the support and acceptance of municipalities. The province will retain an interest in the development of guidelines and monitoring of their application. However, day-to-day management and delivery will be municipal responsibilities.

Principles

The key principles which will be used to develop the guidelines are as follows:

- Municipal councils are directly accountable to their constituents and municipalities are also accountable to the province.
- There will be opportunities for appropriate stakeholder involvement and consultation during the development stages.
- Local needs and circumstances vary widely across the province. Therefore, the measures required to address these needs and conditions will also vary.

- There are many ways in which individual needs and circumstances can be addressed. Therefore, municipalities require flexibility to employ different strategies to achieve similar objectives.
- Local council, in consultation with the fire chief, will determine the extent to which their needs and circumstances will be addressed. Some may choose to address specific risks more comprehensively than others. Provided serious threats to public safety are addressed, this is a reasonable and legitimate exercise of municipal responsibility.

Content and Implementation

The guidelines will provide:

- The key concepts of risk assessment and risk management
- The factors that affect the level of fire protection in any community
- The options municipalities may wish pursue in addressing risks
- The information required to evaluate those options

Municipalities will be able to use the guidelines in a variety of ways:

- They can assign knowledgeable local officials to gather the necessary data and conduct appropriate cost/benefit analysis internally.
- They can commission independent reviews of their fire protection activities and use the guidelines to monitor the consultant's activities and evaluate its conclusions.
- Staff of the OFM will continue to be available to assist municipalities in the use of the guidelines.

In addition, the OFM will be re-focusing its training and education services to provide municipal and fire department officials with the skills needed to utilize the guidelines effectively.

Basis of Development

The guidelines will be based on the Comprehensive Fire Protection Effectiveness Model. Fire protection in any community is determined by:

1. The risk of a fire occurring
2. The impact a fire may have on the community
3. Public attitude toward fire
4. The effectiveness of its fire prevention activities
5. The deployment of automatic fire detection systems
6. The deployment of automatic fire suppression systems
7. The effectiveness of its fire department's suppression activities
8. The time period between when the fire starts and when the fire department begins suppression activity

The level of fire protection in a given community will reflect an appropriate balance of all of these factors. Changes in any one factor will affect the overall level of protection.

For example, if the general public is complacent about the risk of fire, there will be a greater risk of a fire occurring in the community. A municipality may choose to address the risk by enhancing its fire suppression capability, by deploying more automatic detection and suppression systems, or a combination of any or all of the other factors affecting fire protection. It may also choose to address the issue head on - by raising awareness of public fire safety through effective public education. In short, there are many valid ways of addressing a problem of poor public attitude toward fire. The guidelines will not make value judgments on which course of action is the best, but they will help municipalities evaluate the efficiency and effectiveness of each option, and choose a course of action that suits its needs.

The guidelines will also serve as a tool for improving the overall efficiency and effectiveness of a municipality's fire protection system. If a municipality is generally satisfied with the overall level of protection it provides, the model can help it improve efficiency by demonstrating that there are alternatives which may cost less, while achieving a similar level of protection. For example, it may find that through effective public education, it can reduce the number of fire code violations that persist throughout the community. This may lead to a reduction in the cost of inspecting properties and prosecuting offenders.

The guidelines will also help municipalities to make adjustments to existing services to improve effectiveness and reduce costs. By thoroughly analyzing costs and benefits, municipalities can initiate new work assignments with confidence. For example, fire departments with full-time fire suppression staff can reduce the workload of the fire prevention division by conducting in-service fire safety inspections. Without objective tools for analyzing such innovations, those opposed can prevent change by appealing to public fears and misapprehensions.

The guidelines will also facilitate fire department reorganization and restructuring on a much broader scale. Many smaller municipalities focus almost exclusively on fire suppression. This is often based on limited availability of volunteers' time to carry out prevention activities. The guidelines will help municipalities to see areas where resources can be shared and services can be provided over broader geographic areas. Inter-municipal co-operation will ensure that effective fire prevention and public education are both viable and affordable.

Collectively, these measures can improve public fire safety while, at the same time, stabilizing or reducing costs.

The guidelines are designed to provide municipalities with a new way of thinking about public fire protection. It will encourage them to consider all aspects of fire safety and not just fire stations, fire trucks and firefighters. Each guideline will assist municipalities to apply the Comprehensive Model by expanding further on each concept, outlining decision-points and indicating the information they will require to analyze their options.

Municipalities will have the means to make objective choices about public fire protection, and implement significant changes with confidence.

Overall Strategy

The guidelines represent one component of the strategy the Ministry is proposing for public fire protection in Ontario. This strategy includes:

- Clarifying municipal responsibility for local fire protection, while protecting the provincial interest in public fire safety.
- Removing remaining legislative barriers which forestall the restructuring and reorganization of municipal fire services.
- Facilitating a shift in focus which places priority on fire prevention and public education as opposed to fire suppression.
- Providing municipalities with decision-making tools to help them provide services according to their own needs and circumstances.
- Facilitating more active involvement of the private sector and other community groups in fire prevention and public education through the Fire Marshals Public Safety Council.

This strategy recognizes that municipalities, with the aid of appropriate tools and support, are fully capable of ensuring adequate fire protection for their communities.

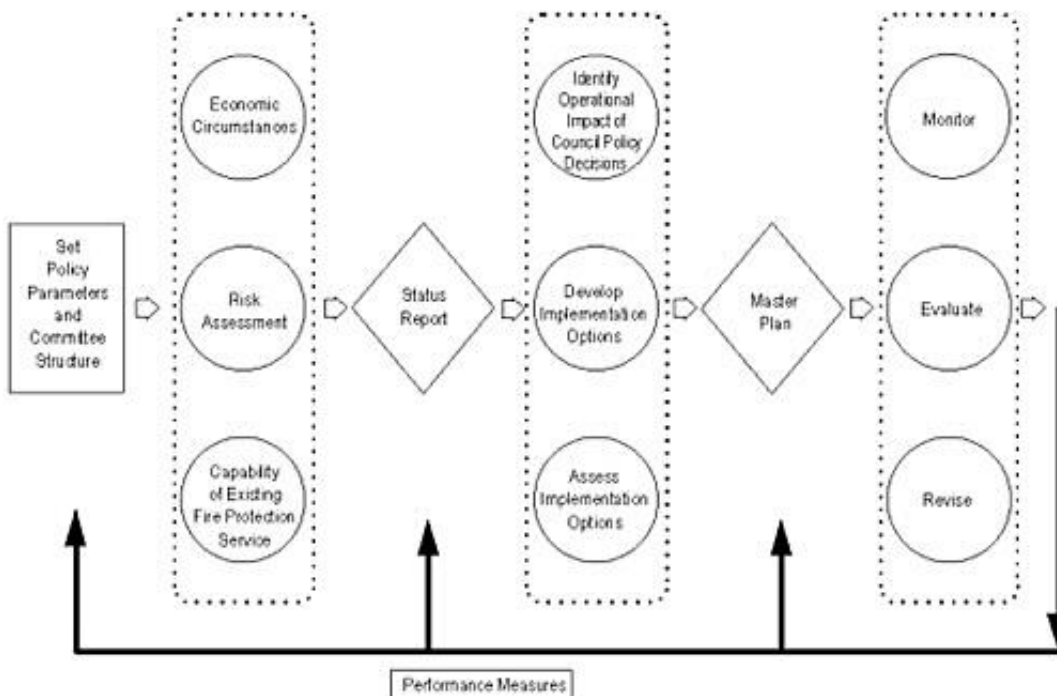
At the same time, this strategy recognizes that the provincial interest would not be met if the level of service provided by a municipality jeopardized public fire safety.

- The guidelines will provide the means for municipalities to make informed choices about public fire protection - responsible choices that will not compromise public safety.
- They are the foundation for measuring and determining adequate fire protection.
- Provincial regulatory authority would be exercised only where there was a clear and identifiable threat to public safety that a municipality or municipalities fail to address.
- Good guidelines, and responsible local government, will ensure that this authority need not be exercised.

Application Options

The model - "Optimizing Public Fire Safety" is intended to be a companion to the guidelines. Its intended use is to provide consistency in application and to ensure all aspects are considered when applying the guidelines.

Optimizing Public Fire Safety



Appendix C

Master Planning Process for Fire Protection Services (PFSG 03-02-13)

Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

Master Planning Process for Fire Protection Services

Public Fire Safety Guidelines

Subject Coding

PFSG 03-02-13

Section

Date

General**March, 2000**

Subject

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Master Planning Process for Fire Protection Services

Under Review

Purpose:

To outline a process and identify the components that may be used in the development and preparation of an effective master fire plan for approval by council and implementation by appropriate persons.

Introduction:

This guideline is a framework for municipal decision making which should link council policy setting responsibility and the fire service operational expertise to accommodate short, medium or long term planning.

Principles:

Goal:

The master fire plan is a strategic blueprint for fire protection that addresses all local needs and circumstances based upon costs the community can afford

Guiding Principles:

- The residents of any community are entitled to the most effective, efficient and safe fire services possible
- The content of existing collective agreements will be respected and the collective bargaining process will be recognized as the appropriate channel for resolving labour relations issues under collective agreements and the Fire Protection and Prevention Act
- Collective bargaining issues affecting public safety will be identified
- Those responsible must work within these parameters in making recommendations for improving municipal fire services

Process:

The master fire plan is a component of the optimizing public fire safety model and the master fire plan process should generate the following:

- a stated council commitment sanctioning development and preparation of the plan
- identification of council approved fire protection options and the operational impacts of the policy decisions on providing services
- identification of persons responsible for preparation of the draft plan for council approval with

appropriate time lines

Components:

The master fire plan components should include:

- the mission statement, values and roles of the department
- the necessary programs or projects approved by council
- projected expenditures that the public can afford
- schedules for developing, implementing and maintaining appropriate services

Are the RESULTS what we wanted?

NOTE: See [PFSG #01-01-01](#) for the complete Optimizing Model

Codes, Standards, Best Practices:

Codes, Standards, and Best Practices resources available to assist in establishing local policy on this assessment are listed below. All are available at www.ontario.ca/firemarshal. 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.

See also PFSG

[01-01-01](#) Fire Protection Review Process

[02-04-01](#) & [23](#) Capabilities of Existing Fire Protection Services

[02-03-01](#) Economic Circumstances

[02-02-12](#) & [03](#) Risk Assessment

[03-01-13](#) Report on Existing Fire Protection Services

[04-39-12](#) Fire Prevention Effectiveness Model

Appendix D

Fire Protection Review Process (PFSG 01-01-01)

Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

Fire Protection Review Process

Public Fire Safety Guidelines

Subject Coding

PFSG 01-01-01

Section

Date

General

January 1998

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Fire Protection Review Process

Purpose

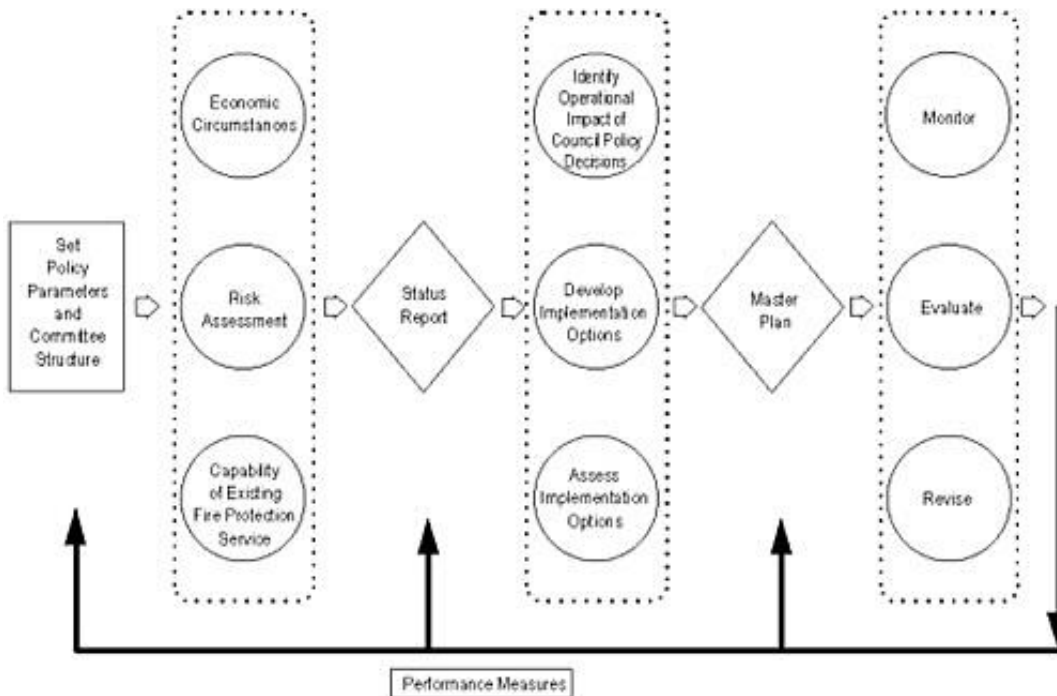
To provide a description of a simple and practicable system to enable decision makers to make informed choices.

It ensures formal interaction between council with its policy setting responsibilities, the municipality with its corporate management objectives, and the fire department with its operational expertise.

Introduction

- The overall objective of any fire protection program is to provide the optimum level of protection to the community, in keeping with local needs and circumstances.
- Extensive research has demonstrated that there are a variety of factors that will have an impact on the fire department's capacity to fulfil this objective.
- Conversely, there are many different options that a municipality may pursue to improve the efficiency and effectiveness of its fire protection system.
- Local circumstances will have a profound effect on which factors are most important for any one municipality, and what options are available for its fire protection system.
- Selecting among these options is an extremely complex task.
- Success will require a combination of specialized expertise in fire protection, and a thorough appreciation of your municipality's economic, social and political circumstances.

Optimizing Public Fire Safety



Overview

Stage 1: Set Policy Parameters

Stage 2: Determine Local Circumstances

Stage 3: Status Report

Stage 4: Determine Fire Protection Strategy

Stage 5: Develop Master Fire Plan

Stage 6: Monitor, Evaluate and Revise

Stage 7: Performance Measures

- Every municipality operates under a specific set of policy parameters -- basic tenets that define the role of the municipal government in the community.
- In essence, it is the political philosophy of the municipality.
- These parameters reflect the culture of the local community and will have a profound impact on the fire protection strategy that you develop.
- Policy parameters include, for example:
 - *Public Expectations* -- does the public expect the municipality to address its needs or is there a fairly high level of personal self reliance?
 - *Service Delivery Strategy* -- how open is your community to alternate forms of service delivery and financing such as out-sourcing or fee-for-service?
 - *Level of Satisfaction* -- are you satisfied with the level of fire protection in your community, and the efficiency and effectiveness of the fire protection system?
 - *Funding Policies* -- what impacts do your funding policies and practices have on the services you deliver? How do you account for capital expenditures? Are you prepared to issue debentures?

- *Competing Priorities* -- what priority does public fire safety have in your community in comparison to the other services that you provide?
- *Receptiveness to Change* -- does the public recognize the need for change, and would they accept the implications of such change?
- It is extremely important that you work through these questions from a fire protection perspective, and that you include all of the key participants in the process.
- It need not be an excessively formal process, but everyone involved in the review should have an opportunity to discuss the broader context within which the fire department must operate.
- The results of this discussion should be reflected in the "terms of reference" for the review.
- It will help to ensure that the review remains focused.

It will also encourage participants to be open to innovations, and conversely, it will help to ensure that staff involved in the review do not spend unnecessary time and resources analyzing options that are not viable.

Stage 2:

Analyse Local Circumstances

Separate guidelines are available that address each of the three main issues that define the local circumstances of a municipality:

- Assessing Economic Circumstances from a Fire Protection Perspective (PFSG 02-03-01)
- Assessing Fire Risk (PFSG 02-02-12)
- Assessing the Existing Fire Protection Services (PFSG 02-04-01)

The following is an overview of the issues that these three guidelines address.

Economic Circumstances

- What are your expectations for economic growth?
- How much development do you expect to occur?
- What type of development do you expect?
- How is your population changing? (Demographics)
- If the fire department receives the bulk of its financing from the tax base;
 - is the tax base increasing, shrinking, or relatively steady?
 - is the tax base shifting?
- Describe the assessment
- A review of your economic circumstances should involve more than just an assessment of future demand and available resources:
- A growing community creates new demand for emergency services, but the type of growth you are experiencing may require a very different kind of response. For example, growth resulting from an in-migration of newly retired residents will create very different demands than growth resulting from the recovery of the local resource industry.
- There are many more ways in which your fire protection system can address new residential development than there are for older neighbourhoods. An initial investment in sprinkler and/or detection systems when new developments are being planned can reduce the need for new fire stations in the future.

- Economic development and expansion may have a significant impact on the availability of resources for fire protection. It tends to be easier to attract volunteers in a self-contained community than in a similar-sized area that serves as a bedroom community for a large city. Is the make-up of your community changing?
- This stage of the review is the first opportunity for you to co-ordinate your planning strategy with your fire protection strategy. Accordingly, it is very important for both fire and planning officials to work closely together on this aspect of the review, perhaps by way of a sub-committee

Fire Risk

The Fire Risk in your community is a function of:

- *Potential for Loss*, which depends on the extent to which buildings comply with relevant fire and building codes, how buildings are used, the public's attitude toward fire, and the use of special measures such as automatic detection and/or suppression systems.
- *Consequences of Fire*, such as the effect of a fire at a major industry on local employment, assessment and economic activity. This also includes social impacts resulting from the loss of an historic or recreational facility, or the impact of fire on a sensitive environmental area.
- *Local Infrastructure*, such as water supply, communications, the quality of roads, and physical barriers such as rivers or railroads.
- *Building Stock*, including the age of buildings, the density and type of construction, their height, and the mix of commercial, industrial and residential uses.
- Since there are so many factors that affect fire risk, it tends to vary considerably from location to location. In fact, fire risk in one part of a municipality will often be very different from in another, particularly in rural areas. Accordingly, there is no need for the fire department to provide a uniform level of service throughout the municipality. The service you provide should be tailored to the risks faced.

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 good risk assessment will ensure that such comparisons are valid. By providing a valid basis for comparison, a good risk assessment can also provide confidence that innovations introduced elsewhere can be successfully applied in your municipality.

Existing Fire Protection System

- Examining the existing fire protection system is perhaps the most time consuming component of the assessment process. The objective is to obtain a clear picture of the nature of the fire protection system as it exists today. The following broad areas should be examined:

Role and Mandate -- What range and scope of services is the department expected to provide (fire suppression, rescue, hazmat, etc)? How does it relate to neighbouring fire departments (mutual-aid, automatic aid)? How does it relate to other sections of the municipality?

Structure and Organization -- What type of department is it (full-time, composite, volunteer)? What is its total staff, facilities, apparatus and equipment? How many layers of management?

Services and Support -- Briefly describe the services provided by the various functional sections of the fire department and describe the support mechanisms for these services.

Emergency Operations -- Describe the types and extent of emergency operations conducted by the

fire department and include such things as incident command systems and operational support.

Financial & Resource Analysis -- Describe in detail the funding, budgeting and resource allocation of the fire department, including the individual functional divisions.

Fire Protection and Prevention Act - indicate whether or not the department/municipality is in compliance with this Act.

Stage 3:

Status Report

- The purpose of this stage is to assist in the preparation of a report to council outlining the findings of the analysis of the following:
- economic circumstances
- risk assessment
- capabilities of existing fire protection service
- The report will include details of the existing circumstances
- The report will also include and identify strengths, limitations, threats and opportunities respecting the existing fire protection services.
- The purpose of the report is also to elicit the expectations of the decision makers, and confirm their commitment to proceeding to the master planning process.

Stage 4:

Determine Fire Protection Strategy

- This stage of the process involves a review team assisting council in making a determination of the future fire protection strategy.
- The procedure involves analyzing economic circumstances, risk assessment and the capabilities of the existing fire protection service (including core services). This is accomplished in three levels, as follows:
 - council considerations
 - administrative considerations
 - fire department considerations
- Your review should consider, and perhaps emphasize the need for residents, industry and others to accept increased responsibility for the improvement of public safety.
- The review must look beyond the fire department's fire fighting capability in fulfilling its responsibility to provide for public safety.
- Today's economic conditions - evidenced by reduced budgets, revenues, hiring freezes, reductions in staffing levels through attrition or otherwise, delayed apparatus and equipment purchases - forces the making of hard decisions about the resources required for local fire protection.
- Options and alternatives are therefore essential. For example, it may be considered appropriate to re-focus on developing fire prevention and public education programs rather than expanding fire fighting forces, or consider resources in surrounding communities and how those resources might be utilized to meet your needs.
- Determining the future fire protection strategy of your municipality is accomplished by way of

providing options for the consideration of council.

- For this process to be successful, it is imperative that there be full and open consultation with all of the stakeholders.
- Stakeholders are the people and organizations with an interest in the fire service, including:
 - fire department staff and management
 - municipal staff and management
 - municipal administrators
 - council
 - residents
 - business
 - industry
 - planning and co-ordinating agencies and organizations
 - provincial government ministries
 - county/district/regional organizations
 - other municipalities
- Schematic diagram of the model: Optimizing Public Fire Safety highlighting Stage 3.
 - police
 - ambulance
- other umbrella organizations:
 - firefighter associations (full time and volunteer)
 - AMO
 - OAFC
 - CAFC
- Consultation with stakeholders during the development, assessment and operational impact of various options is necessary for three reasons.
- First the review team will obtain expert advice on key elements of the various options.

Obtaining expert advice from all stakeholders ensures that all parties to the process:

- fully appreciate why the process is being carried out
- clearly understand the strategy, initiative or option that will be evaluated
- participate in identifying potential evaluation questions or issues, and
- help shape the options
- Second, it will help ensure a surprise-free environment for all parties to the review process.

Ensuring a surprise-free environment is necessary for the review team facilitator(s) to create a receptive, productive environment for the option evaluation process. Except in extremely rare cases, stakeholders should be aware of the option evaluation process. Nothing is more damaging to such a process than to spring it on stakeholders. They will usually react suspiciously and defensively, see the process as an intrusion, find fault with it, and actively lobby to circumvent its recommendations.

- Finally, the stakeholders will use the consultation as an opportunity to market the various options.

Marketing the various options and their potential is essential if it is expected that they will lead to program or service changes, particularly significant ones. Change is not an event, but a process, and usually a slow process, and conditions generally need to be cultivated. Like a building, the

foundation for change needs to be laid well in advance of its construction. Stakeholders must accept the need to change before it can occur. For the review team and its facilitator(s), creating this comfort level is an essential ingredient of success.

- The review team and facilitator(s) usually consult with the stakeholders through established committees. Primary discussions between the facilitators and the stakeholders are usually conducted on an individual basis, with the committee acting as a clearinghouse. Facilitators, who almost always shun formal committees and attempt to consult by **only** using individual or team interviews, enjoy limited success. While individual consultation may provide a more direct and confidential input into the process, this practice has drawbacks. It often results in stakeholders seeing the process as the product and possession of the facilitator. Stakeholders often feel that they have not participated fully and equally in planning the study. And, there is the chance they can complain that the facilitators have filtered their concerns
- This review process will result in alternatives for your existing fire protection services, and options and considerations for council's vision of the future of the fire service.
- All options will be prioritized, assessed, costed where appropriate and clearly indicate the operational impact.
- Then council will be in a position to make better informed decisions for creation of your master fire plan.

Stage 5:

Develop Master Fire Protection Plan

- Master fire plans, properly introduced, are a valuable tool in identifying management options for providing desired fire protection levels to a community. Ultimately, a good plan will lead to a more fire safe community.
- A master plan, pared to its essentials, presents the programs or projects, the costs, and the schedules for developing and maintaining the fire protection system that has been accepted and approved by council on behalf of the community, based on a price which the public can afford.
- Master planning itself is not a new concept. Many municipalities are involved in the process with varying degrees of success.
- Master planning for fire protection allows each community to determine the best allocation of resources to achieve an acceptable level of fire protection.
- An appropriate plan can only be developed under the following conditions.
- Schematic diagram of the model: Optimizing Public Fire Safety highlighting Stage 5.
- The plan forms the basis for the fire protection budget, through identification and description of time-phased programs and projects to be implemented throughout the planning period.
- The plan considers the following factors.
 - The current and future fire protection environment by establishing and maintaining a comprehensive data base.
 - The acceptable life and property risks by setting goals and objectives.
 - The fire protection system that provides the level of service commensurate with the level of accepted risk.
 - The funding required to implement the plan.

- The assignment of authority and responsibility.
- The procedures for carrying out and updating the plan.
- The master fire plan defines the community fire problem and provides the future direction of the delivery of fire protection services.
- The plan will require continuous updating to provide a current picture of the needs of the community.
- There are several benefits to developing a master fire plan.
- Supports the risk management program by identifying programs and levels of service.
- Improves public relations and promotes interest and direct involvement within the community.
- Sets standards of service the fire department is capable of providing.
- Potentially decreases costs, for fire protection and/or insurance coverage.
- Contributes to a reduction in the number of fires, fire deaths, fire injuries and property loss.
- Makes best use of available resources.

Defines by policy of council the types, level and quality of fire protection services to be provided to the community.

Stage 6:

Monitor, Evaluate & Revise

Introduction:

This stage of the municipal fire protection review process involves three parts:

- Monitor
- Evaluate
- Revise
- Just as the type and level of fire services provided are a municipal responsibility, so are the evaluation, monitoring and revision of such services a municipal responsibility.
- They **may**, however, be subject to outside scrutiny.

Objectives:

- The objectives of the municipality, as mirrored in the fire department master plan, are the starting point for any evaluation.
- These objectives should be consistent with the review process mission statement and express what the process is to accomplish.
- The objectives should be both specific and measurable.

Activities:

- The activities are the operational aspects of the identified objectives.
- Activities should be logically related to objectives.
- **Immediate Outcomes** are the effects that are expected to occur as a direct result of activities. These outcomes may include changes that affect people or processes. For example, an immediate outcome might be the improved delivery of a specific service.
- **Ultimate Outcomes** include the larger societal level changes that are expected from the activities. An example would be an expected improvement in compliance with the Fire Code.

Ultimate outcomes are often dependant on immediate outcomes. In this example, success might be dependent on providing an appropriate public education program.

Monitor:

- Notwithstanding it is considered prudent for municipalities to monitor programs, services and activities, the Fire Protection and Prevention Act includes the following:
- **PART II (7)** "The Fire Marshal may monitor and review the fire protection services provided by municipalities to ensure that municipalities have met their responsibilities under this section and, if the Fire Marshal is of the opinion that, as a result of a municipality failing to comply with its responsibilities under subsection (1), a serious threat to public safety exists in the municipality, he or she may make recommendations to the council of the municipality with respect to possible measures the municipality may take to remedy or reduce the threat to public safety." and,
- **PART III FIRE MARSHAL 9.** (1) The Fire Marshal has the power, (a) to monitor, review and advise municipalities respecting the provision of fire protection services and to make recommendations to municipal councils for improving the efficiency and effectiveness of the services."
- Program monitoring is a systematic attempt to measure both of the following:
 - a. program effectiveness -- are the programs and services reaching their intended marks?, and
 - Program delivery -- does the service being provided match what was intended to be delivered?
Program monitoring need not always be complicated and complex, as it often can be as simple as keeping track of the activities involved
 - Program monitoring concentrates on program service outputs rather than program outcomes

Evaluate:

- Programs adopted and implemented through the master fire plan should have built-in evaluation procedures
- Evaluations are not simply the responsibility of municipal politicians and or administrators, but additionally, is an administrative function of the fire department.

Internal Evaluators

- as employees of the fire department, internal evaluators have intimate knowledge of the department's policies, procedures, politics and people
- they know both the formal and informal channels for communicating and accomplishing tasks.
- this knowledge permits them to select methods that fit the unique situation of the department
- internal evaluators long term commitment to the fire department can lend credibility to their efforts and help forge positive working relationships with managers and staff
- they can build trust over time that helps reduce the anxiety normally associated with evaluation activities
- because they are employees, internal evaluators are available as an on going corporate resource
- this puts internal evaluators in an excellent position to communicate relevant information in a timely fashion
- it also permits internal evaluators to participate actively in long-range planning by making crucial evaluative information available for strategic planning and policy decisions
- it affords internal evaluators the opportunity to consult with and provide information to various

management levels within the organization, enabling them to enhance the utilization of evaluation information

- internal evaluators are often responsible for correcting problems and advocating change rather than only identifying difficulties and making recommendations
- the focus of internal evaluation often includes not only program outcomes and processes, but also the factors that influence program performance, such as structure, operations and management
- the use of internal evaluators, some of whom could conceivably be part of the problem, then can become part of the solution

External Evaluators

- are usually perceived as being more objective because they are not fire department employees and are therefore not subject to all of the pressures of organizational life
- Internal evaluators now often work in partnership with external evaluators to obtain the external evaluators' specialized skill and objectivity while retaining the internal evaluators' knowledge of the department
- All evaluators, whether internal or external, have their biases.

Revise:

- Consider the benefits and results of the foregoing monitoring and evaluation processes to assist in determining if any revisions are necessary.
- Some of the principal benefits are:
 - any gap between goals and performance
 - cost effectiveness and efficiency of the program/service
 - how is the program operating/functioning?
 - issues that could jeopardize the program/service
 - program/services strengths
 - program/services weaknesses
 - to what extent are the citizens being served
 - whether desired and/or undesired outcomes have taken place
- This information is useful for:
 - clarifying the mission, purpose and goals
 - describing the programs and services
 - facilitating the refinement and modification of program or service activities
 - fulfilling accountability requirements
 - guiding allocation of resources and personnel
 - maintaining quality of services and programs
 - program decision making, such as continue, cancel, cut back, change, expand
 - setting priorities
 - weighing costs and benefits of alternatives

Stage 7:

Performance Measures

Purpose

- The purpose of this section of the guideline is to assist in developing and using performance measures.
- The guide answers the following questions:
 - What are performance measures?
 - How can they be used
 - What is the best way of doing this?
 - Where does one start?

Introduction

- Data and information collected and used by managers in the public sector usually pertain to inputs, outputs and processes.
- Examples of these measures are as follows:

INPUTS :

Amount of money spent on training
Number of staff assigned to fire prevention
Number of staff assigned to training

PROCESS

Number of firefighters at O.F.C.
Number of days to complete a project
Length of time to conduct an inspection

OUTPUTS

Number of training manuals produced
Number of inspections completed
Number of plans reviewed
Number of emergency responses

- Many managers judge their effectiveness by counting and tabulating these inputs, processes and outputs.
- These are measurements of the **process** rather than the measurement of **performance**
- They measure what was done, rather than the impact of the action.

Without meaningful performance measures that directly link the impact of your actions to clear goals and objectives, it may be difficult, if not impossible, to provide a sound and supportable justification for the continued existence of your program or service

Goals and Objectives:

- It is imperative that there is a clearly stated goal and objective for every program, service, and activity.
- Once the goals are clarified in a meaningful way, specific objectives can then be made to operationalize the program.
- For example, the vague goal of improved fire safety can be made more meaningful and specific as follows:

- ***"Increased number of working smoke alarms in the home"***

- With the goal specifically defined, it provides direction and guidance as to what objectives must be achieved in order to reach this goal. For example:

Goal

Increased number of working smoke alarms in the home

Objectives

Public awareness of the value of smoke alarms through media advertising

Promotional campaign as part of Fire Prevention Week

Provide quality smoke alarms to the public at a reduced price

Measuring Performance

- There is merit in linking the results of programs, services and activities to clearly defined objectives.
- It is not sufficient that the goal be achieved; it is necessary to show that the activities of the program were responsible for the achievement of the goal by establishing cause and effect.
- The key questions to determine the **impact** of actions are:

Do you have the resources to achieve the goal?

Why are you doing this?

Are you achieving what you are supposed to be doing?

How do you know? "

- Managers must develop meaningful performance measures and report on their success by measuring performance.
- Decisions on program direction can then be made based on this information

What are Performance Measures?

- The quantitative and qualitative measures which assess the effectiveness and efficiency of a product, service or process
- They are the key indicators of success.
- Performance measures generally fall into six primary categories:
 - Time
 - Effectiveness
 - Quality
 - Efficiency
 - Costs and
 - Productivity Safety

To clarify these six categories of performance measures, each is defined on the following page.

Time :

- Time it takes to complete a process (cycle time) or deliver a service or product
- Effectiveness: Doing the right things, meeting corporate objectives and strategic directions
- Quality: A measure of the extent to which a thing or experience (service) meets a need, solves a problem or adds value for someone (client, stakeholder, taxpayer)
- Efficiency: Outputs relative to inputs; doing things right every time
- Costs & Productivity: Cost to provide a product or service; the relationships among costs, inputs and outputs
- Safety: The extent to which important assets (personnel, property, records) are safeguarded so that the organization is protected from danger of losses that could threaten its success, credibility, continuity, etc.

Why

Why do you use performance measures?

- To demonstrate success
- To identify problems
- To evaluate goal achievement
- To determine whether or not there is performance improvement

Codes, Standards and Best Practices

Codes, Standards and Best Practices available to assist in establishing local policy on the delivery of this service are listed below. All are available at <http://www.mcscs.jus.gov.on.ca/> **<<http://www.mcscs.jus.gov.on.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.

See also

[02-04-01](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-01.html>](#) & [23](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-23.html>](#) Capabilities of Existing Fire Protection Services

[02-03-01](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-03-01.html>](#) Economic Circumstances

[02-02-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-12.html>](#) & [03](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html>](#) Fire Risk Assessment

[03-01-13](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/03-01-13.html>](#) Preparation of Draft Report

[04-39-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-39-12.html>](#) Fire Prevention Effectiveness Model

Appendix E

Economic Circumstances (PFSG 02-03-01)

Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

Economic Circumstances

Public Fire Safety Guidelines

Subject Coding

PFSG 02-03-01

Section

Date

General

January 1998

Subject

Page

Economic Circumstances

Purpose

To identify considerations for analyzing municipal economic circumstances.

Introduction

Elected officials are responsible for the economic well-being of the community, and measure this in a number of ways. One such way would be with a balanced budget containing no tax increases. This does not necessarily give a complete or clear picture of the community's economic circumstances. For many years various budgetary systems, approaches, and formats have been developed in the continuing quest for political objectivity by elected officials. By the very nature of democracy, which is based on representative elections and the "politics" associated with them, mitigates against objectivity in the usual sense. Such budgeting and/or financial planning could be therefore defined as a rational decision making system working within a less than rational political process.

It is therefore essential that the economic circumstances of a community be thoroughly and objectively analyzed, in addition to the assessment of the existing fire protection system, and risk assessment, if an accurate representation is to be made of the community.

Economic Considerations

Factors to be considered in assessing the local economic circumstances, include the following:

- assessment:
 - residential/farm
 - industrial
 - institutional
 - business/commercial
 - increases (decreases) in past 5 and 10 years
- tax rates :
 - show local and regional/county purposes
 - 5 and 10 year history of increases (decreases)
 - urban and rural service areas, if any
 - municipal debt
 - revenues

- reserve funds
- other monetary assets
such as development charge accounts
- total fire protection system costs
- per capita basis
- assessment basis
- per household
- employment, unemployment conditions
- relationship of all of the above in the general area of the local community
- affect on the ability of the municipal tax base to fund appropriate fire protection services
- relationship of all of the above with similar communities
- past and present political philosophy respecting
- budget increases/decreases
- pay as you go
- debenturing/borrowing
service (budget reductions) necessitated by reduced revenues
- loss impact of single employer, major industry, institution
- barriers to rebuilding, such as zoning and environmental requirements

Related Functions:

- [Fire Risk Assessment](#)
[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html)
- [Capabilities of Existing Fire Protection Services](#)
[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html)

Codes, Standards, Best Practices:

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[<http://www.ontario.ca/firemarshal>](http://www.ontario.ca/firemarshal). 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.

See also PFSG

[02-04-01](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-01.html)
[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-01.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-01.html) & [23](#)
[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-23.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-23.html) Capabilities of existing Fire Protection Services
[02-02-12](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-12.html)
[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-12.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-12.html) & [03](#)
[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html) Risk Assessment

Appendix F

Comprehensive Community Fire Risk Assessment (PFSG 02-02-03)

Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

Fire Risk Assessment

Public Fire Safety Guidelines

Subject Coding

PFSG 02-02-03

Section

Date

General

January 1998

Subject

Page

Fire Risk Assessment

Purpose:

To identify considerations for persons conducting municipal fire risk assessments.

Ambient Factors of Risk Assessment:

The following factors should be considered in assessing the local fire risk.

- the municipality:
 - urban
 - rural
 - metropolitan
 - other, such as a bedroom community, border community
 - predominantly dependent upon a single employer, business, or institutional operation or activity
 - describe its uniqueness
 - describe its geography
 - describe its demographics
 - outline current development and development trends
 - describe street network and traffic patterns
 - describe traffic barriers
 - consider applicable by-laws
 - labour relations climate and history
- historical
 - indicate emergency call volume last year, last 5 years
 - the number of fire casualties in the past year, past 5 years
 - identify any trends respecting cause and location
 - the fire loss for the past year, past 5 years
 - indicate trends respecting call types for the past 5 years
- comparisons with other like municipalities should be considered for the following factors:
 - population (static/subject to seasonal or other fluctuations)
 - geographical area and size of municipality
 - type of municipality
 - number of residential dwellings

- assessment
- development trends
- growth history and trends
- demographics
- equalized assessment and tax base

- residential/farming vs industrial/commercial assessment

- building stock

- identify, as accurately as possible, the number and percentage of the following:
 - single family residences
 - multi-unit residences
 - high-rise buildings
 - large complexes
 - farms/agricultural buildings
 - commercial buildings
 - industrial buildings
 - institutional
 - business buildings
 - storage facilities
 - other special buildings
 - hospitals
 - nursing homes
 - with respect to building type, identify specific problems, such as access, density and age
 - with respect to building type, identify significant and associated outside storage areas

- building occupancies

- identify, as accurately as possible, the number and percentage of the following occupancies:
 - assembly
 - institutional
 - residential
 - commercial
 - industrial
 - business
 - storage
 - vacant
 - other

- prevention and public education

- if, for example, the municipality does not have a fire department, but purchases fire suppression services, describe what fire prevention and public education initiatives, if any, are undertaken by the community. Describe the significance and impact, or lack of same, of such initiatives.

- public and political resolve
- what is the perceived awareness of fire safety by the general public and the corporate sector?
- what are the expectations for fire protection by the general public, and the corporate sector?
- what is the general tone of press and media coverage of fire related matters?
- how are fire prevention, fire safety, and public education programs generally received and accepted by the community at large?
- what is the local political climate respecting:
 - cost cutting/no budget increases?
 - preserving the status quo?
 - maintaining/improving essential services such as the fire department?
- public and private protection systems
- independent of the assessment of (Analyzing Local Circumstances - Assessing Existing Fire Protection Services), identify and describe:
 - private fire brigades
 - industrial/commercial fire brigades
 - private water supplies and water supply systems

Related Functions:

Click on the related function below to view that function:

- Economic Circumstances
- Capabilities of Existing Fire Protection Services

Codes, Standards, and Best Practices:

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See also PFSG

[01-02-01](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/01-02-01.html>](#) Comprehensive Fire Safety Effectiveness Model Considerations

[02-04-01](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-01.html>](#) & [23](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-23.html>](#) Capabilities of Existing Fire Protection Services

[04-39-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-39-12.html>](#) Fire Prevention Effectiveness Model

Appendix G

Capabilities of Existing Fire Protection Services (PFSG 02-04-01)

Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

Capabilities of Existing Fire Protection Services

Public Fire Safety Guidelines

Subject Coding

PFSG 02-04-01

Section

Date

General

January 1998

Subject

Page

Capabilities of Existing fire Protection Services

Purpose:

To identify methods to accurately assess existing capabilities of available fire protection services.

This section is a companion to Risk Assessment Analysis and Economic Circumstances Analysis, which are used to provide policy makers with a report on existing fire services. This is a fact finding exercise only and decisions, conclusions, judgments, recommendations, and options are not to be made at this stage, nor on the basis of this section only.

Fire Department:

Is the fire protection for the municipality provided by:

- a fire department organized for the municipality?
- an unorganized community?
- a fire department jointly managed and operated with other municipality(ies)?
- an agreement to purchase protection from another jurisdiction?
- a combination of the above ?

Factors Involved In Assessing The Fire Department:

Regardless of how the fire protection is organized and delivered, the following factors must be considered in assessing the protection services;

- mission statement and mandate
- goals and objectives
- organization
- administration
- by-laws and agreements
- fire prevention, public information, public education
- investigations
- communications
- emergency operations
- training and education
- vehicles and equipment
- financial management and budgeting
- automatic aid and "mutual aid"
- building and facilities
- pre-emergency planning
- disaster planning

- risk management planning
- human resources
- maintenance
- records, reports, data
- water supplies

Related Functions:

- [Fire Risk Assessment](#)
[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html)
- [Economic Circumstances](#)
[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-03-01.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-03-01.html)

Codes, Standards, Best Practices:

Codes, Standards, and Best Practices resources available to assist in establishing local policy on this assessment are listed below. All are available at www.ontario.ca/firemarshal [<http://www.ontario.ca/firemarshal>](http://www.ontario.ca/firemarshal). 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.

See also PFSG

[02-03-01](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-03-01.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-03-01.html) [Economic Circumstances](#)

[02-02-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-12.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-12.html) & [03](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html) [Fire Risk Assessment](#)

[04-39-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-39-12.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-39-12.html) [Fire Prevention Effectiveness Model](#)

[04-61-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-61-12.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-61-12.html) [Human Resources Practices](#)

[04-64-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-64-12.html>](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-64-12.html) [Communications/Resource Centre](#)

Appendix H

Economic Circumstances

1.0

Appendix H Economic Circumstances

1.1

Introduction

Assessing the economic conditions related to the provision of municipal services, and specifically fire protection services is a core element in determining the “local needs and circumstances” as defined by the FPPA.

This analysis reviews the costs and revenues of the Township and its fire rescue services and compares a number of key indicators with a peer group of municipalities to illustrate the current economic circumstances of the Township of Puslinch. The methodology contained within PFSG 02-03-01 “Economic Circumstances” has been applied as the template for assessing the current economic circumstances of the Township of Puslinch.

1.2

Growth and Assessment

In 1998 the Province of Ontario adopted Current Value Assessment (CVA). Value-based assessment systems, such as CVA, are the assessment standard used by most assessment jurisdictions in North America. The CVA process utilizes three to five years of open market arm’s length sales in market areas to determine the current assessed value of a particular property within a community.

The Township of Puslinch assessment comparison for the period 2009 to 2014 is provided in **Table H1** below. Overall the Township has a relatively small assessment base so a change in assessment, as a result revaluation on a commercial or industrial property or new assessment growth, can have a major impact in any given year. The lower than average 3.19% assessment growth in 2013 is an example of these impacts.

TABLE H1: TOWNSHIP OF PUSLINCH 2009 – 2014 CURRENT VALUE ASSESSMENT COMPARISON

Year	Assessed Value (\$)	Change over previous year (\$)	Change over previous year (%)
2009	1,212,653,429	-	-
2010	1,332,264,863	119,611,434	9.87%
2011	1,459,271,407	127,066,544	9.53%
2012	1,586,185,578	126,914,171	8.70%
2013	1,636,717,122	50,531,544	3.19%
2014	1,774,379,583	137,662,461	8.41%

(Information provided by Township of Puslinch Finance Department)

The Township of Puslinch projects that it will continue to experience population growth in the next several decades, totaling approximately 36.0% growth between 2011 and 2041. These growth projections are summarized below in **Table H2**.

TABLE H2: POPULATION PROJECTIONS, 2011-2041

Year	Population Projection	% Growth (from previous year listed)
2011	7,030	-
2016	7,550	7.40%
2021	8,150	7.95%
2026	8,890	9.08%
2031	9,130	2.70%
2036	9,160	0.33%
2041	9,560	4.37%

(Source: Wellington County Forecast Update)

1.3 Municipal Revenues

Revenues to support the capital and operating requirements of the Township of Puslinch are derived from a number of sources including property taxes, user fees, operating grants, licensing, payments in lieu (PIL) and other sources. In addition to following municipal financial best practices the Township utilizes municipal performance measures as part of their commitment to financial management.

Table H3 below provides a summary of the Township of Puslinch's revenues for the period 2009 to 2014.

TABLE H3: TOWNSHIP OF PUSLINCH 2009 – 2014 REVENUE SUMMARY

Year	Property Tax	Payments-in-Lieu	Grants	User Fees, Licenses and Fines	Revenue from other Municipalities	Other	Total
2009	2,461,514	62,132	653,000	1,249,175	345,574	222,233	\$4,993,628
2010	3,086,575	76,191	1,721,976	1,171,503	0	512,160	\$6,568,405
2011	3,069,989	88,131	608,802	958,364	0	41,497	\$4,766,783
2012	3,172,207	93,679	660,580	1,259,487	75,818	323,503	\$5,585,274
2013	3,214,325	71,594	1,039,225	1,095,370	20,000	257,913	\$5,698,427
2014	3,362,229	87,941	1,048,339	1,220,727	35,000	372,600	\$6,126,836

(Information provided by 2009-2014 Financial Information Returns)

Fire user fees include recoveries from the Ministry of Transport for emergency responses on provincial highways and specifically the Highway 401 corridor. Prior to 2013, these cost recoveries were allocated directly to the fire department's development charges reserve fund. In 2014 the PFRS submitted a number of outstanding invoices to the Ministry of Transport for prior year's emergency responses. The result was a one-time higher recovery of user fees in 2014.

The CPI or inflation rate for the Province of Ontario for the period 2009 to 2014 is presented in **Table H4** below.

TABLE H4: PROVINCE OF ONTARIO CPI 2009 - 2014

Year	2009	2010	2011	2012	2013	2014	6-Year Average
Consumer Price Index	113.7	116.5	120.1	121.8	123	125.9	
CPI Inflation Rate		2.5%	3.1%	1.4%	1.0%	2.4%	1.8%

(Information provided by Statistics Canada)

As noted in the above table, consumer price inflation rates in Ontario began to decline after peaking in 2011.

1.4

Fire Protection Costs as a Percentage of the Overall Municipal Operating Costs

Table H5 provides a comparison between the Township of Puslinch's overall annual municipal operating costs relative to the annual operating costs specific to the provision of fire services.

TABLE H5: TOWNSHIP OF PUSLINCH ANNUAL OPERATING BUDGET IN COMPARISON TO FIRE PROTECTION COSTS, 2009 – 2014

Year	Annual Municipal Operating Costs	Annual Fire and Rescue Operating Costs	Fire Costs as % of Municipal Costs
2009	3,477,522	725,243	20.9%
2010	3,286,492	596,953	18.2%
2011	3,258,880	584,502	17.9%
2012	3,634,183	670,530	18.5%
2013	3,718,552	644,985	17.3%
2014	4,406,331	738,045	16.7%

(Information provided by 2009-2014 Financial Information Returns)

Over the period 2009 through 2014 the annual municipal operating costs have increased from \$3,477,522 to \$4,406,331 representing an increase of 26.7%. During the same period the operating costs for fire protections services have increased from \$725,243 to \$738,045 or 1.77%.

1.5 Fire Protection Costs Per Capita Basis

Assessing the costs associated with providing fire protection services on a per capita basis (per person) provides one performance measurement tool for comparing fire protection costs of one municipality to those of comparable municipalities. Utilizing comparisons such as this are consistent with PFSG 02-03-01 *“Economic Circumstances.”* Under the section *“Factors to be Considered in Assessing the Local Economic Circumstances”* the document identifies a wide range of factors including *“per capita basis, assessment basis and per household”* and a further factor that states these are to be considered with regard to the *“relationship of all of the above with similar municipalities.”*

The per capita cost for fire protection services for the period 2009 to 2014 are included within **Table H6** below.

TABLE H6: TOWNSHIP OF PUSLINCH PER CAPITA COSTS FOR FIRE PROTECTION SERVICE FOR THE PERIOD 2009 -2014

Year	Population	Annual Fire and Rescue Operating Costs	Per Capita Cost
2009	6,894	725,243	\$105.21
2010	6,982	596,953	\$85.75
2011	7,030	584,502	\$83.14
2012	7,134	670,530	\$93.99
2013	7,238	644,985	\$89.11
2014	7,342	738,045	\$100.52
Six-Year Average			\$92.95

(Information provided by Township of Puslinch Finance Department)

Over the period 2009 through 2014 the population of the Township of Puslinch increased from 6,894 to 7,342 representing an increase of 6.5%. During the same period the cost per capita fluctuated although in 2014 it was slightly higher than the 6-year average of \$92.95.

1.6 Fire Protection Costs Assessment Basis

Evaluating the costs for fire protection, based on an assessment basis, provides another consistent performance measurement tool for comparing the costs of fire protection services in relation to similar municipalities.

Table H7 provides an evaluation of the assessment cost for fire protection services from 2009 to 2014.

TABLE H7: TOWNSHIP OF PUSLINCH ASSESSMENT COSTS FOR FIRE PROTECTION SERVICE FOR 2009 – 2014

Year	Total Assessed Value	Fire and Rescue Operating Costs	Operating Cost per \$1,000 Assessed Value
2009	1,212,653,429	725,243	\$0.60
2010	1,332,364,863	596,953	\$0.45
2011	1,459,271,407	584,502	\$0.40
2012	1,586,185,578	670,530	\$0.42
2013	1,636,717,122	644,985	\$0.39
2014	1,774,379,583	738,045	\$0.42

(Information provided by 2009-2014 Financial Information Returns)

Over the period 2009 through 2014 the cost per \$1,000 of assessed value for providing fire protection services decreased from \$0.60 to \$0.42 representing a decrease of 30.45%.

A similar measure is given by account for the cost to provide fire services per household. These values for the period 2009 to 2014 are shown in **Table H8**.

**TABLE H8: TOWNSHIP OF PUSLINCH COSTS PER HOUSEHOLD FIRE PROTECTION SERVICE
FOR THE PERIOD 2009 -2014**

Year	Total Residential Assessment	Total Assessment	Residential Share of Assessment	Fire Department Operating Budget	Residential Share of Costs	Households	Cost per Household
2009	972,537,963	1,212,653,429	80.2%	725,243	581,638.85	2,798	\$207.88
2010	1,184,496,855	1,332,364,863	88.9%	596,953	530,702.19	2,849	\$186.28
2011	1,146,133,151	1,459,271,407	78.5%	584,502	459,076.44	2,849	\$161.14
2012	1,237,860,329	1,586,185,578	78.0%	670,530	523,282.08	2,925	\$178.90
2013	1,484,976,545	1,636,717,122	90.7%	644,985	585,188.23	2,943	\$198.84
2014	1,510,181,804	1,774,379,583	85.1%	738,045	628,153.15	2,968	\$211.64

(Information provided by Township of Puslinch Finance Department)

Over the period 2009 through 2014 the cost per household for providing fire protection services increased from \$207.88 to \$211.64 representing an increase of 1.81%.

1.7

Comparable Communities

To conduct the analysis of comparable communities, consideration was first given to developing a list of indicators that would reflect an accurate representation for comparison analysis. The indicators identified included the following:

- ✓ Population
- ✓ Number of Residential Dwellings
- ✓ Geographic Area of the Municipality
- ✓ Density Per Square Kilometre
- ✓ Simplified Risk Assessment

The Statistics Canada “*Municipal Census Profiles*” and the Ministry of Municipal Affairs and Housing “*2014 FIR Data*” were the data sources used to research these indicators in order to identify the list of comparable communities utilized within this report.

In developing the list of comparable communities, priority was given to building a sample of municipalities in geographic proximity to the Township of Puslinch and those of comparable population size. Variation within the sample set allows for consideration of a variety of possible long-term outcomes.

Table H9 provides a summary of the comparable indicators, and the representative comparable communities that were identified.

TABLE H9: SUMMARY OF SIMILAR COMMUNITIES ANALYSES

Community	Population (2014)	Households (2014)	Land Area (km²)	Population Density (km²)
<i>Township of Guelph/Eramosa</i>	13,030	4,280	291.71	44.67
<i>Town of Erin</i>	12,220	4,046	297.75	41.04
<i>Township of Wellington North</i>	12,170	4,540	526.28	23.12
<i>Township of Wellesley</i>	10,713	1,825	277.79	38.57
<i>Town of Mono</i>	8,895	2,965	277.78	32.02
<i>Town of Minto</i>	8,880	3,221	300.57	29.54
<i>Township of Champlain</i>	7,711	4,021	207.24	37.21
<i>Town of Plympton-Wyoming</i>	7,452	3,458	318.76	23.38
<i>Township of Puslinch</i>	6,369	2,968	214.61	29.68
<i>Township of East Zorra-Tavistock</i>	6,200	2,645	242.30	25.59

(Source: Ministry of Municipal Affairs and Housing 2014 FIR Data, and Statistics Canada)

1.8 Comparable Communities Fire Protection Model

The next step of analysis included an evaluation of the fire protection model (staffing) and operating costs based on three primary factors: cost per capita; cost per \$1,000 of assessed value; and cost per household. To ensure consistency this analysis was conducted using OFMEM's "Municipal Emergency calls, personnel, response time by Month Weekday Hour" and the Ministry of Municipal Affairs and Housing's "2014 FIR Data". The results of this analysis are summarized in **Table H10**.

The average cost per capita for fire protections services of the nine communities compared was \$76.87 in comparison to the cost per capita within the Township of Puslinch of \$115.88 or 51% higher.

The average cost per \$1,000 assessed value for fire protections services of the nine communities compared was \$0.51 in comparison to the cost per \$1,000 assessed value within the Township of Puslinch of \$0.41 or 7% lower.

The average cost per dwelling unit for fire protections services of the nine communities compared was \$175.54 in comparison to the cost per dwelling unit within the Township of Puslinch of \$211.64 or 21% higher.

TABLE H10: SUMMARY OF COMPARABLE COMMUNITIES ANALYSIS

Community	Full-time Staff	Volunteer Staff	Part-time Staff	Operating cost	Cost Per Capita	Cost Per \$1,000 Assessment	Cost Per Household
<i>Township of Guelph/Eramosa</i>	0	43	2	\$725,343.00	\$55.67	\$0.33	\$146.32
<i>Town of Erin</i>	0	57	4	\$931,336.00	\$76.21	\$0.47	\$204.97
<i>Township of Wellington North</i>	1	42	1	\$667,938.00	\$54.88	\$0.48	\$107.50
<i>Township of Wellesley</i>	1	60	0	\$671,265.00	\$62.66	\$0.44	\$282.55
<i>Town of Mono</i>	0	90	0	\$800,686.00	\$90.02	\$0.50	\$240.78
<i>Town of Minto</i>	2	80	1	\$753,994.00	\$84.81	\$0.89	\$175.54
<i>Township of Champlain</i>	0	28	0	\$386,786.00	\$50.16	\$0.47	\$80.88
<i>Town of Plympton-Wyoming</i>	0	60	0	\$530,483.00	\$71.19	\$0.44	\$128.93
Township of Puslinch	0	34	7	\$738,045.00	\$115.88	\$0.41	\$211.64
<i>Township of East Zorra-Tavistock</i>	1	58	0	\$663,867.00	\$107.08	\$0.59	\$176.28
Average				\$686,974.30	\$76.87	\$0.51	\$175.54

(Source: Ministry of Municipal Affairs and Housing 2014 FIR Data, OFMEM Standard Incident Reporting, and the Township of Puslinch Finance Department)

1.9 Summary of Economic Circumstances – Township of Puslinch

The Township of Puslinch Council has taken proactive steps to introduce financial strategies targeted at managing property tax increases, while sustaining appropriate service levels, in all areas to meet the community's needs. The ongoing operating costs for fire protection, as presented within this analysis, continues to represent a significant portion of the overall cost of providing services within the Township.

In our view this analysis confirms that the current economic circumstances of the Township of Puslinch, with regard to the costs for fire protection, reflect higher costs than those of a representative group of comparable municipalities in both the cost per capita (51% higher) and

the cost per dwelling unit (21% higher). In comparison to the cost per \$1,000 assessed value the Township is providing fire protection services at a lower cost (7%).

Considering the financial realities and sustainability of delivering fire protection services is an integral element of the master fire planning process. This MFP includes recommendations that, subject to Council's consideration and approval, will result in further increase to the cost of fire protection services within the Township.

Appendix I

Selection of Appropriate Fire Prevention Programs (PFSG 04-40-03)

Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

Selection of Appropriate Fire Prevention Programs

Public Fire Safety Guidelines

Subject Coding

PFSG 04-40-03

Section

Date

Fire Prevention and Public Fire Safety Education

March 2001

Subject

Page

Selection of Appropriate Fire Prevention Programs

Purpose:

To assist in developing or selecting programs to meet the four minimum fire prevention and public education requirements of the Fire Protection and Prevention Act.

Introduction:

Municipalities must develop a fire prevention and fire safety education program that addresses their needs and circumstances, as determined by the application of sound risk management principles.

Minimum Required Services:

Section 2. (1) of the Fire Protection and Prevention Act states:

(1) Every municipality shall,

1. establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention; and
2. provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances.

Therefore, as a minimum acceptable model municipalities must provide the services listed below. The simplified risk assessment should identify the extent to which additional services may be required to meet the local needs and circumstances of specific municipalities.

Municipalities may develop a different model for fire prevention and public education services provided they are able to demonstrate that their model meets the mandated requirements of the community's local needs.

3. Simplified risk assessment
4. A smoke alarm program
5. Fire safety education material distributed to residents/occupants
6. Inspections upon complaint or when requested to assist with code compliance

Simplified Risk Assessment:

A simplified risk assessment must be done for the community to determine the needs and circumstances of the municipality and to establish the level of fire prevention and public fire safety education required. Any significant risks identified through the analysis should be addressed. For

example; if the risk assessment indicates a significant life or fire loss in multi-unit residential buildings, a program that will adequately improve their fire safety - such as routine inspections - would be appropriate to address the specific need of the community. The scope and extent of the remaining three required programs can be determined by the results of the simplified risk assessment.

Smoke Alarm Program:

The objective of a smoke alarm program is the provision and maintenance of working smoke alarms and home escape planning activities for all residential occupancies in the municipality. The activities associated with the program may include any combination of the following:

- community surveys
- distribution of pamphlets or other education material
- instruction to residents regarding smoke alarms
- providing smoke alarms at reduced or no cost
- installation of smoke alarms
- inspecting premises to determine compliance with the smoke alarm provisions of the Fire Code.

Fire Safety Material:

Fire safety education material may be distributed to residents and/or occupants consistent with the community's needs and circumstances by any combination of the following activities:

- distribution of pamphlets or other education material
- public service announcements utilizing the available media
- instruction to residents/occupants on fire safety matters
- presentations to resident groups
- attendance at public events

Fire safety education material addresses such issues as preventing fire occurrence, the value of smoke alarms, planning escape from fire, and being prepared to deal with a fire incident. The OFM Regional Office can provide assistance with fire safety education material for the public. Fire safety education material may also be found on the OFM website.

Public Fire Safety Education:

For public fire safety education, the following should be established:

- the audience to be targeted
- the message that needs to be delivered to improve the fire safety situation must be determined.
- an inventory of the available or required resources and programming.
- the most appropriate method of delivering the message.
- the duration or frequency of the message delivery.

Inspections:

Inspections of properties must be done, or arranged for, by the municipality when:

- a complaint is received regarding the fire safety of a property
- a request is made to assist a property owner or occupant to comply with the Fire Code and the involvement of the Chief Fire Official is required by the Ontario Fire Code

Any inspection conducted must include notification of the property owner or responsible person and

appropriate follow-up with enforcement, if necessary.

Inspection Program Considerations:

For inspections, the following factors should be considered:

- The type of inspections to be conducted and the buildings to be inspected. For example: routine inspections of all multi-unit residential buildings, new construction inspections of all buildings, smoke alarm checks of single family residential buildings.
- The methods of inspection appropriate for the circumstance. This will have implications for the amount of time required to inspect, as more comprehensive inspections require more time.
- The category of buildings being inspected and the skills and knowledge required to inspect them. The more complicated the building, the more skill and knowledge required.
- The frequency that the properties will be subject to inspection

Program Selection:

In addition to the minimum services outlined above, programs need to be selected, developed and implemented that address any risks identified through needs analysis. Programs being considered need to be effective for the type of concerns identified. For example; a routine inspection program would be effective to address concerns for the fire safety of a group of buildings that demonstrate poor performance during fire incidents. Similarly, a public fire safety education program such as Older and Wiser would be effective where there is a lack of knowledge of fire safety behaviour by the elderly and this lack causes them to suffer significant fire losses.

Each area of program activity has a number of factors which need to be considered.

Service Delivery Options:

The Fire Prevention Effectiveness Model may also assist with informed decision making about fire prevention and public education programs. Once the needs analysis component of the model has been completed, fire department managers can decide what programs are appropriate to address their identified local risks.

There are a number of options for delivery of selected fire prevention programs. They can be provided by fire department staff - personnel dedicated to fire prevention and/or fire suppression staff. Other persons in the community may be used. Agreements with other communities may be made for provision of services. The OFM provides assistance in delivery of fire prevention programs through the Assist Program.

Policy Requirements and Other Relevant Issues:

Any selected/mandated programs must have sufficient resources, human and others, to be effectively delivered.

Persons assigned responsibility for delivering programs must be adequately trained.

Policy decisions must be made with appropriate authority and records made of the level of service decreed.

Appropriate program guidelines must be established for each program to be delivered.

Any fees for services should be discussed and decided upon at the policy level.

Legal counsel should be consulted regarding any changes to the delivery of services to the community.

Codes, Standards, and Best Practices:

Codes, Standards and Best Practices resources available to assist in establishing local policy on this assessment are listed below. All are available at <http://www.mcscs.jus.gov.on.ca/>.
<<http://www.mcscs.jus.gov.on.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.

See also PFSG

[01-02-01](#)

<[../..../..../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/01-02-01.html](#)> Comprehensive Fire Safety Effectiveness Model

[04-12-13](#)

<[../..../..../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-12-13.html](#)> Core Services

[04-40A-03](#)

<[../..../..../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40a-03.html](#)> Simplified Risk Assessments

[04-40B-12](#)

<[../..../..../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40b-12.html](#)> Smoke Alarm Programs

[04-40C-12](#)

<[../..../..../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40c-12.html](#)> Public Education Programs

[04-40D-12](#)

<[../..../..../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40d-12.html](#)> Inspection Programs

Appendix J

Sample Establishing and Regulating By-law (PFSG 01-03-12)

Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

Sample Establishing and Regulating By-law

Public Fire Safety Guidelines

Subject Coding

PFSG 01-03-12

Section

Date

General

March 2000

Subject

Page

Sample Establishing and Regulating By-law

Purpose: To assist in the preparation of a by-law, which will provide clear and accurate policy direction reflecting how council wants their fire department services to function and operate.

Introduction: A municipality has responsibility to determine the types and extent of fire protection services necessary to meet their specific needs and circumstances. It is not practical to produce a sample that identifies the needs of every municipality..

Development: An analysis must be made to determine if each clause is appropriate for the particular municipality. Unless otherwise noted in the margin, the OFM regards each clause as a necessary component for a complete by-law.
In preparing by-laws, consideration must be given to the provisions of any collective agreement formulated under the Fire Protection and Prevention Act that supersedes establishing and regulating by-laws.

The municipal solicitor, prior to enactment, should review any draft by-laws prepared by council.

Related Functions: The primary issues addressed in an establishing and regulating by-law may include policy direction in these areas:

- general functions and services to be provided
- the goals and objectives of the department
- general responsibilities of members
- method of appointment to the department
- method of regulating the conduct of members
- procedures for termination from the department
- authority to proceed beyond established response areas
- authority to effect necessary department operations

**Codes,
Standards and
Best Practices:**

Codes, Standards, and Best Practices resources available to assist in establishing local policy on this assessment are listed below. All are available at www.ontario.ca/firemarshal <<http://www.ontario.ca/firemarshal>> 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.

See also PFSG

[02-02-12](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-12.html) <[../.../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-12.html](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-12.html)> Fire Risk Assessment

[02-03-01](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-03-01.html) <[../.../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-03-01.html](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-03-01.html)> Economic Circumstances

[04-01-12](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-01-12.html) <[../.../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-01-12.html](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-01-12.html)> Selecting a Fire Suppression Capability

[04-02-01](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-02-01.html) <[../.../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-02-01.html](http://www.ontario.ca/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-02-01.html)> Service Delivery Considerations

fire department

SAMPLE ESTABLISHING AND REGULATING BY-LAW

corporation of the Town of Anywhere

By-Law No.

Whereas the Municipal Act, R.S.O. 1990 c., as amended, and the Fire Protection and Prevention Act, 1997, S.O. 1997, c.4 as amended, permits the council to enact a by-law to establish and regulate a *fire department*;

BE IT THEREFORE ENACTED by the Municipal council of the corporation of the Town of Anywhere, as follows:

1. In this by-law, unless the context otherwise requires,

<i>Definitions: define any terms or positions which may be of concern to users of the by law</i>	
--	--
- a. approved
means approved by the council
- b. chief administrative officer
means the person appointed by council to act as chief administrative officer for the corporation
- c. corporation
means the Corporation of the Town of Anywhere
- d. council
means the council of the Town of Anywhere
- e. deputy chief
means the person appointed by council to act on behalf of the fire chief of the fire department in the case of an absence or a vacancy in the office of fire chief

- f. fire chief
means the person appointed by council to act as fire chief for the corporation and is ultimately responsible to council as defined in the Fire Protection and Prevention Act
 - g. fire department
means the Town of Anywhere fire department
 - h. fire protection services
includes fire suppression, fire prevention, fire safety education, communication, training of persons involved in the provision of fire protection services, rescue and emergency services and the delivery of all those services
 - i. member
means any persons employed in, or appointed to, a fire department and assigned to undertake fire protection services, and includes officers, full time, part time and volunteer firefighters
 - j. volunteer firefighter
means a firefighter who provides fire protection services either voluntarily or for a nominal consideration, honorarium, training or activity allowance
2. A fire department for the Town of Anywhere to be known as the Town of Anywhere Fire Department is hereby established and the head of the fire department shall be known as the fire chief.
3. The *fire department* shall be structured in conformance with the *approved* Organizational Chart, Appendix A, forming part of this by law. *Approved Organizational Chart*
4. In addition to the fire chief, the council shall appoint a deputy chief and such number of other officers and members as may be deemed necessary by the council *Identifies appointment of other officers and members without listing all specifically*
5. The *fire chief* may recommend to the *council* the appointment of any qualified person as a *member* of the *fire department*, subject to the *approved* hiring policies of the Town of Anywhere *Appointment via approved Hiring Policy*
6. Persons appointed as *members* of the *fire department* to provide *fire protection services* shall be on probation for a period of 12 months, during which period they shall take such special training and examination as may be required by the *fire chief*. *Probationary Members*

7. If a probationary member appointed to provide *fire protection services* fails any such examinations, the *fire chief* may recommend to the *council* that he/she be dismissed.
8. The remuneration of the volunteer members shall be as determined by the *council*. *Remuneration and working conditions*
9. Working conditions and remuneration for all firefighters defined in Part IX of the Fire Protection and Prevention Act shall be determined by *council* in accordance with the provisions of Part IX of the Fire Protection and Prevention Act.
10. If a medical examiner finds a member is physically unfit to perform assigned duties and such condition is attributed to, and a result of employment in the *fire department*, *council* may assign the member to another position in the *fire department* or may retire him/her. *council* may provide retirement allowances to members, subject to the Municipal Act. *Other employment, retirement options and/or allowances*
11. The *fire chief* is ultimately responsible to *council*, through the (insert appropriate position for the municipality) for proper administration and operation of the *fire department* including the delivery of *fire protection services*. *Chief ultimately responsible to council through FPPA (via chief administrative officer, clerk, fire committee or specify appropriate position)*
12. The *fire chief* shall implement all *approved* policies and shall develop such standard operating procedures and guidelines, general orders and departmental rules as necessary to implement the *approved* policies and to ensure the appropriate care and protection of all *fire department* personnel and *fire department* equipment. *Developing SOP's, guidelines, rules and regulations*
13. The *fire chief* shall review periodically all policies, orders, rules and operating procedures of the *fire department* and may establish an advisory committee consisting of such members of the *fire department* as the *fire chief* may determine from time to time to assist in these duties. *Advisory Committee*
14. The *fire chief* shall submit to the (insert appropriate position) and *council* for approval, the annual budget estimates for the *fire department*; an annual report and any other specific reports requested by the *Budgets and reports*

(insert appropriate position) or *council*.

- | | |
|---|--|
| 15. Each division of the <i>fire department</i> is the responsibility of the <i>fire chief</i> and is under the direction of the <i>fire chief</i> or a member designated by the <i>fire chief</i> . Designated members shall report to the <i>fire chief</i> on divisions and activities under their supervision and shall carry out all orders of the <i>fire chief</i> . | <i>Divisional responsibilities designated by chief</i> |
| 16. Where the <i>fire chief</i> designates a member to act in the place of an officer in the <i>fire department</i> , such member, when so acting, has all of the powers and shall perform all duties of the officer replaced. | |
| 17. The <i>fire chief</i> may reprimand, suspend or recommend dismissal of any member for infraction of any provisions of this by law, policies, general orders and departmental rules that, in the opinion of the <i>fire chief</i> , would be detrimental to discipline or the efficiency of the <i>fire department</i> . | <i>Discipline</i> |
| 18. Following the suspension of a member, the <i>fire chief</i> shall immediately report, in writing, the suspension and recommendation to the (insert as appropriate) and <i>council</i> . | <i>Suspension of members</i> |
| 19. The procedures for termination of employment prescribed in Part IX of the Fire Protection and Prevention Act shall apply to all firefighters defined in Part IX of the Fire Protection and Prevention Act. | <i>Termination procedures</i> |
| 20. A volunteer firefighter shall not be dismissed without the opportunity for a review of termination, if he/she makes a written request for such a review within seven working days after receiving notification of the proposed dismissal. A person appointed by the municipality, who is not employed in the <i>fire department</i> , shall conduct the review. | <i>Provides volunteers with the same opportunity for review as full-time members</i> |
| 21. The <i>fire chief</i> shall take all proper measures for the prevention, control and extinguishment of fires and the protection of life and property and shall exercise all powers mandated by the Fire Protection and Prevention Act, and the <i>fire chief</i> shall be empowered to authorize: | <i>Prevention, control and extinguishing fires</i> |

- a. pulling down or demolishing any building or structure to prevent the spread of fire *Pulling down structures*
 - b. all necessary actions which may include boarding up or barricading of buildings or property to guard against fire or other danger, risk or accident, when unable to contact the property owner *Boarding up or barricading*
 - c. recovery of expenses incurred by such necessary actions for the *corporation* in the manner provided through the Municipal Act and the Fire Protection and Prevention Act *Recovery of expenses*
22. The *fire department* shall not respond to a call with respect to a fire or emergency outside the limits of the municipality except with respect to a fire or emergency:
- a. that, in the opinion of the *fire chief* or designate of the *fire department*, threatens property in the municipality or property situated outside the municipality that is owned or occupied by the municipality *Authority to leave municipal limits*
 - b. in a municipality with which an *approved* agreement has been entered into to provide *fire protection services* which may include *automatic aid*
 - c. on property with which an *approved* agreement has been entered into with any person or *corporation* to provide *fire protection services*
 - d. at the discretion of the *fire chief*, to a municipality authorized to participate in any *county, district or regional* mutual aid plan established by a fire co-ordinator appointed by the fire marshal or any other similar reciprocal plan or program
 - e. on property beyond the municipal boundary where the *fire chief* or designate determines immediate action is necessary to preserve life or property and the appropriate department is notified to respond and assume command or establish alternative measures, acceptable to the *fire chief* or designate

AN APPROVED ORGANIZATIONAL CHART FORMS PART of THIS BY LAW AS Appendix A
Goals and objectives of the fire department may also be added as an appendix to the

By-law

This by-law comes into effect the day it is passed by council, in the manner appropriate to the municipality.

Appendix K

*Co-ordination, Development, Approval
and Distribution of Standard Operating
Guidelines for Various Disciplines (PFSG
04-69-13)*

Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

Co-ordination, Development, Approval and Distribution of Standard Operating Guidelines for Various Disciplines

Public Fire Safety Guidelines

Subject Coding

PFSG 04-69-13

Section

Date

Fire Administration

March 2000

Subject

Page

**Co-ordination, Development, Approval and
Distribution of Standard Operating Guidelines for
Various Disciplines**

Purpose:

The purpose of this guideline is to assist fire departments to develop written operational guidelines.

Guideline:

A statement written to guide the performance or behaviour of departmental staff, whether functioning alone or in groups.

These guidelines;

- enhance safety
- increase individual and team effectiveness
- allow for easier training and better entry level orientation
- improve risk management practices
- help to avoid litigation
- form the basis of objective post incident evaluations
- permit flexibility in decision making

Co-ordination:

- Fire department managers may consider creating and empowering a committee to research, develop, and draft operational guidelines.
- Committees should involve the members directly affected by various guidelines; examples include;
 - training personnel for live fire training guidelines,
 - fire Prevention personnel for inspection procedures, active firefighters for laying hose or taking hydrants.
 - two or three firefighters, two or three company officers and possibly a senior officer.
- The committee should select its own chair and establish a regular meeting schedule.
- The committee could become permanent, with membership assigned, as required, to assist the fire chief with the continuous improvement process demanded of modern fire departments.

- The permanent committee could also be comprised of all company or senior officers with the SOG's as part of the monthly officers meeting agendas.

Development:

- The order of developing procedures will be driven by local needs.
- Activities that impact on firefighter safety, the department's most common emergency operations, or high risk operation should be top priority.
- Each operational guideline should deal with a single objective and must describe what is to be accomplished, but not necessarily how to do the task.
- When the subject matter has been decided upon, the committee will begin to gather the resources needed to prepare the guideline.
- Each guideline can be broken into five basic components: purpose, scope, responsibility, performance and references.

Approval:

- Specific items should be assigned to each committee member by the chairperson for review.
- Each committee member will present a synopsis of the item at a future meeting for review, revision and refinement of the guideline.
- A written draft of the operational guideline should be prepared next.
- The draft should be posted for input from other department members. .

Distribution:

- A copy should be provided to each member of the department.
- Each of the guidelines should be printed on a standard form. An introductory statement should be developed for the operational guideline manual. Key information offered:
 - why the guidelines have been developed
 - why they are called guidelines
 - definition of the term "guidelines"

Responsibility:

- Guidelines, that have been finalized and approved by the fire chief, should be implemented by the staff members who are responsible for training.

DRAFT SOG #101: STATEMENT of INTENT**ISSUE DATE:****REVISION DATE:****PURPOSE:**

Standard operating guidelines (**SOG**) have been developed to provide information to all members of the fire department in a prompt and consistent manner.

SCOPE:

These guidelines are to be followed by all members of the department.

Every member has a responsibility to learn and understand what is required in performance of their duties and to stay current with information provided in standard operating guidelines.

Direction will be provided from officers and senior staff, as required.

POLICY:

Standard operating guidelines allow administrators to accurately predict how their resources will be mobilized when called upon under emergency circumstances.

Standard operating guidelines also act as a guide for officers to follow when assigning routine activities as well as emergency responses.

Standard operating guidelines will be reviewed annually by the fire chief and all officers, updated or amended as required to improve fire protection and will be circulated for all members to reference.

Please reference SOG #102: DISTRIBUTION and SOG #103: DEVELOPING STANDARD OPERATING GUIDELINES.

NOTE:

These guidelines have been developed to be consistent with those recommended by various evaluating agencies of fire protection in the province and for the safety of firefighters and residents while endeavouring to protect life and property from fire.

DRAFT SOG #102: DISTRIBUTION O STANDARD OPERATING GUIDELINES**ISSUE DATE:****REVISION DATE:****PURPOSE:**

To implement a standard procedure for consistent transfer of information to all members of the fire department.

SCOPE:

These guidelines are to be followed by all members of the department.

Every member has a responsibility to learn and understand what is required in performance of their duties and to stay current with information provided in standard operating guidelines with direction from officers and senior staff, as required.

POLICY:

New and revised standard operating guidelines will be circulated to all members through the shift and station officers in charge.

At the **beginning** of their tour of duty, shift officers will read or summarize the content of a new or revised SOG, which has been issued for all on-duty personnel. Where necessary, the SOG will be discussed with on-duty persons to ensure understanding and methods of implementation.

At the **beginning** of the first scheduled training or meeting night, volunteer station officers will read or summarize the content of a new or revised SOG which has been issued for all on-duty

personnel. Where necessary, the SOG will be discussed with on-duty persons to ensure understanding and methods of implementation.

The SOG will then be circulated and each member will read and sign the acknowledgement log book maintained by the shift or station officer.

Shift and station officers will review the acknowledgement log book monthly and every three months will provide the training officer with a list of persons and the SOG numbers they have not acknowledged.

Shift and station officers will also post a notice of receipt for a new or revised SOG on the station bulletin board for persons not present when the SOG is initially circulated.

DRAFT SOG #103: DEVELOPING & REVISING STANDARD OPERATING GUIDELINES

ISSUE DATE:**REVISION DATE:****PURPOSE:**

To implement a consistent method of developing new standard operating guidelines and revising existing guidelines to improve fire protection services.

SCOPE:

These guidelines are to be followed by all members of the department.

POLICY:

All standard operating guidelines will be reviewed annually by the fire chief and all officers for necessary updates or amendments.

Where any officer or member of the department identifies a procedure or operation which may require new or revised standard instructions for end users, the person will notify the shift or station officer in charge as soon as possible following this recognition.

The shift or station officer will first review existing SOGs for content that may apply to the reported need and discuss their findings with other on-duty officers and members.

The officer in charge will notify the chief or deputy by written memo on the same or next business day of any immediate action taken and if a new or revised procedure is recommended.

Where safety of firefighters or potential damage to department equipment is imminent, the fire chief or deputy will issue interim written guidelines until the normal process for developing or revising SOGs is initiated.

Where interim written guidelines are temporary or not necessary for safety or damage to fire department equipment, the following process will be followed:

1. The fire chief or deputy will circulate draft SOGs to each shift and station officer to discuss with all available members for their suggestions as end users,
2. shift or station officers will add appropriate comments and return the draft to the training officer

within the specified time,

3. all draft SOGs will be discussed at the next scheduled officers meeting for final approval of the fire chief and/or deputy, and,
4. approved standard operating guidelines, replacing interim guidelines, will be circulated as described in SOG #102: DISTRIBUTION.

Codes, Standards and Best Practices:

Codes, Standards and Best Practices resources available to assist in establishing local policy on this assessment are listed below. All are available at <http://www.mcscs.jus.gov.on.ca/> .

~~<http://www.mcscs.jus.gov.on.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.

See also;

Health and Safety Guidelines for Ontario's Fire Services

Additional Reference:

Standard Operating Procedures and Guidelines, Cook, John Lee Jr., Saddle Brook NJ: PenWell Pub. Co. 1998

Appendix L

Community Risk Profile (Township of Puslinch) & Operational Planning: An Official Guide to Matching Resource Deployment and Risk (PFSG 04-08-10)

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1.0

Detailed Community Risk Assessment

1.1

Introduction

The Office of the Fire Marshal and Emergency Management, Ontario (OFMEM) provides a number of tools to assist municipalities, and ultimately municipal councils, in determining local needs and circumstances as required by the FPPA. These tools include the Comprehensive Fire Safety Effectiveness Model; the Fire Risk Sub-Model and Public Fire Safety Guideline 01-01-01 “Fire Protection Review Process.”

PFSG 01-01-01 “Fire Protection Review Process” further identifies the three primary components of assessing community needs and circumstances including:

- ✓ *Assessing Economic Circumstances from a Fire Protection Perspective (PFSG 02-03-01) (Appendix E)*
- ✓ **Assessing Fire Risk (PFSG 02-02-03)** (Appendix F)
- ✓ *Assessing Capabilities of the Existing Fire Protection Services (PFSG 02-04-01) (Appendix G)*

This section provides a detailed assessment of the current and future (planned growth) fire risk within the Township of Puslinch.

1.2

OFMEM Fire Risk Sub-Model

The community fire risk analysis within this report follows the OFMEM framework and specifically the OFMEM Fire Risk Sub-Model. The model identifies the importance of community risk in the following introductory paragraphs:

“Assessing the fire risk within a community is one of the seven components that comprise the Comprehensive Fire Safety Effectiveness Model. It is the process of examining and analyzing the relevant factors that characterize the community and applying this information to identify potential fire risk scenarios that may be encountered. The assessment includes an analysis of the likelihood of these scenarios occurring and their subsequent consequences.”

“The types of fire risks that a community may be expected to encounter are influenced by its defining characteristics. For example, a “bedroom community” presents a different set of circumstances over one that is characterized as an “industrial town.” Communities that are distinguished by older buildings will pose a different set of concerns over those that are comprised of newer buildings constructed to modern building codes. Communities populated by a high percentage of senior citizens present a different challenge over ones with a younger population base.

Assessing fire risk should begin with a review of all available and relevant information that defines and characterizes your community. Eight key factors have been identified that contribute to the community's inherent characteristics and circumstances. These factors influence events that shape potential fire scenarios along with the severity of their outcomes:

- *Property Stock*
- *Building Height and Area*
- *Building Age and Construction*
- *Building Exposures*
- *Demographic Profile*
- *Geography/Topography/Road Infrastructure*
- *Past Fire Loss Statistics*
- *Fuel Load"*

Using the framework provided within the OFMEM's Fire Risk Sub-model the potential fire risk scenarios present within the community can be assessed by creating a Community Fire Risk Profile. The profile can then be applied to assess the current level of fire protection services provided, and identify where, if any, potential gaps exist, or identify areas that a municipal Council may want to consider in determining its own 'needs and circumstances', as defined by the Fire Protection and Prevention Act (FPPA).

1.3 Assessing Fire Risk Scenarios

The Fire Risk Sub-Model provides communities with the flexibility to determine how their municipality should be defined in terms of fire risk scenarios. Specifically, the model states that:

"For analyses purposes, the community being assessed can be defined as the municipality in its entirety or as a particular segment of it that distinguishes it from other parts. For smaller municipalities, it may be sufficient to simply define the community based on town boundaries. For larger municipalities, it may be appropriate to subdivide it into separate and distinct components to permit more detailed analysis. For example, it may be convenient to subdivide a municipality based on residential subdivision, downtown sections, industrial park, and a rural area. Hence, the first step in conducting a fire risk analyses is to identify and define the community (s) being analyzed."

The analyses within this Master Fire Plan utilize the major occupancy classifications of the Ontario Building Code (OBC) to define the fire risk scenarios within the Township of Puslinch.

1.4 Property Stock

The OBC categorizes buildings by their major occupancy classifications. Each classification has inherent definitions that distinguish it from other occupancy classifications. Utilizing the OBC

as the source for defining the occupancy classifications provides a recognized definition and baseline for developing the Community Risk Profile.

The OBC major occupancy classifications are divided into six major building occupancy classifications (groups). Within each group the occupancies are further defined by division. The OBC major classification groups and divisions are presented in **Table L-1**.

TABLE L-1: OBC MAJOR OCCUPANCY CLASSIFICATION

Group	Division	Description of Major Occupancies
Group A Assembly	1	<i>Assembly occupancies intended for the production and viewing of the performing arts</i>
Group A	2	<i>Assembly occupancies not elsewhere classified in Group A</i>
Group A	3	<i>Assembly occupancies of the arena type</i>
Group A	4	<i>Assembly occupancies in which occupants are gathered in the open air</i>
Group B Assembly	1	<i>Detention occupancies</i>
Group B	2	<i>Care and treatment occupancies</i>
Group B	3	<i>Care occupancies</i>
Group C	---	<i>Residential occupancies</i>
Group D	---	<i>Business and personal services occupancies</i>
Group E Assembly	---	<i>Mercantile occupancies</i>
Group F	1	<i>High hazard industrial occupancies</i>
Group F	2	<i>Medium hazard industrial occupancies</i>
Group F	3	<i>Low hazard industrial occupancies</i>

1.4.1

Community Risk Profile – Major Occupancy Classifications

The Fire Risk Sub-model developed by the Office of the Fire Marshal utilizes the major group classifications only (Group A, B, C, D, E, F). The Fire Risk Sub-model does not use the detailed “Division” classifications provided for the respective occupancy groups.

This strategy provides the ability to assess property stock within a community comparatively by major occupancy groups thus providing a consistent and recognized definition for each major occupancy type. Where necessary this strategy provides the opportunity for further analysis of a specific occupancy group. For example a 'Group F Industrial' that is a 'Division 1' is a 'High hazard industrial occupancy.' Subject to any site specific hazards or concerns individual occupancies within this group can be assessed individually and then included where required within the scope of the broader community risk profile.

The following describes the major occupancy classifications used within the Fire Risk Sub-model.

1.4.2 Assembly Occupancies (Group A)

Assembly occupancies are defined by the OBC as the "*occupancy or the use of a building or part of a building by a gathering of persons for civic, political, travel, religious, social, educational, recreational or similar purposes or for the consumption of food or drink.*"

Risks within these occupancies can include:

- overcrowding by patrons;
- lack of patron familiarity with emergency exit locations and procedures;
- staff training in emergency procedures; and
- large quantities of combustible furnishings and decorations.

Proactive measures for reducing risks can include:

- ✓ *regular fire prevention inspection cycles;*
- ✓ *automatic fire detection and monitoring systems;*
- ✓ *approved Fire Safety Plan and staff training; and*
- ✓ *pre-planning by fire suppression staff.*

1.4.3 Care and Detention Occupancies (Group B)

"A care or detention occupancy means the *occupancy or use of a building or part thereof* by persons who;

- *are dependent on others to release security devices to permit exit;*
- *receive special care and treatment; or*
- *receive supervisory care."*

Risks within these occupancies can include:

- inability to evacuate or relocate patients;
- presence of flammable/combustible gases;
- vulnerable occupants; and
- combustible furnishings.

Proactive measures for reducing risks can include:

- ✓ *regular fire prevention inspection cycles;*
- ✓ *automatic fire detection and monitoring systems;*
- ✓ *approved Fire Safety Plan and staff training; and*
- ✓ *pre-planning by fire suppression staff.*

1.4.4

Residential Occupancies (Group C)

The Fire Risk Sub-Model defines a residential occupancy “as one that is used by persons for whom *sleeping accommodation* is provided but who are not harboured or detained there to receive medical care or treatment or who are not involuntarily detained there.”

Within this occupancy classification both the Ontario Fire Code (OFC) and the Ontario Building Code classify residential low-rise buildings as up to and including six stories in building height. Buildings in excess of six stories are considered as high-rise buildings. Comparatively Statistics Canada defines low-rise buildings as being less than five stories in building height and high-rise as five stories and greater.

Another example of a use within this occupancy group would be mobile homes or travel trailers. The common factor is overnight accommodation (sleeping) when an occupant can be at the greatest risk.

As the primary source for data regarding community risk factors is provided by Statistics Canada this analysis utilizes the Statistics Canada definitions for residential occupancies. Risks within these occupancies can include:

- overnight accommodation (sleeping);
- combustible furnishings;
- secondary units (basement apartments);
- high density development; and
- human behavior (cooking, use of candles, etc.).

Proactive measures for reducing risks can include:

- ✓ *Smoke Alarm Program;*
- ✓ *Public Education Programming (including Home Escape Planning);*
- ✓ *Retro-fit and compliance inspection cycles for OBC and OFC compliance; and*
- ✓ *Pre-planning by fire suppression staff.*

1.4.5

Business and Personal Services Occupancies (Group D)

“Business and personal services *occupancies* are defined as those that are used for the *transaction of business* or the *provision of professional or personal services.*”

These occupancies can be located within remodelled single family dwellings, low-rise and high-rise buildings. Each of these building types can present different risks, including egress for firefighting operations and evacuation by occupants.

Risks within these occupancies can include:

- high volume of occupants;
- high combustible loading;
- specialized equipment utilizing high risk substances such as radiation; and
- consumers unfamiliar with emergency exits and procedures.

Proactive measures for reducing risks can include:

- ✓ *regular fire prevention inspection cycles to sustain OFC compliance;*
- ✓ *targeted fire prevention inspections for OFC retro-fit compliance;*
- ✓ *staff training in fire prevention and evacuation procedures;*
- ✓ *public education; and*
- ✓ *pre-planning by fire suppression staff.*

1.4.6 Mercantile Occupancies (Group E)

This occupancy is “defined as one that is used for the *displaying or selling* of retail goods, wares, and merchandise.”

These occupancies range in size and potential risk from smaller neighbourhood corner stores to the large “big box” industrial style buildings that survive on the sale of large volume. Large volumes of combustibles are typically present in all applications.

Risks within these occupancies can include:

- high volume of occupants/staff;
- high volume of combustible loading/high rack storage;
- lack of occupant familiarity with emergency exit locations and procedures; and
- size of building.

Proactive measures for reducing risks can include:

- ✓ *regular fire prevention inspection cycles;*
- ✓ *automatic fire detection and monitoring systems;*
- ✓ *approved Fire Safety Plan and staff training; and*
- ✓ *pre-planning by fire suppression staff.*

1.4.7 High/Medium/Low Hazard Industrial Occupancies (Group F)

Industrial occupancies are “defined as those used for the *assembly, fabrication, manufacturing, processing, repairing or storing* of goods and materials. This category is divided into low hazard

(F3), medium hazard (F2) and high hazard (F1) based on its combustible content and potential for rapid fire growth.”

The potential for major fires within this occupancy type is related to the high levels of combustibles that are present in storage and utilized in the manufacturing process. This can include highly flammable and corrosive products.

Risks within these occupancies can include:

- large dollar loss as a result of a major fire;
- economic loss in the event of plant shut downs and job loss;
- environmental impacts; and
- presence of ignition sources related to processing activities.

Proactive measures for reducing risks can include:

- ✓ *regular fire prevention inspection cycles;*
- ✓ *staff training in fire prevention and evacuation;*
- ✓ *targeted public education;*
- ✓ *pre-planning by fire suppression staff;*
- ✓ *installation of early detection systems (smoke alarms, heat detectors);and*
- ✓ *installation of automatic sprinkler systems.*

1.4.8

Other Occupancies/Uses Not Listed Within the OBC (Not Classified)

There are other occupancies and uses not included within the OBC major building occupancy classifications that should be considered as part of developing the Community Risk Profile. These include occupancies that may be regulated under other legislation such as federally or provincially owned facilities.

Examples of these include:

- major railway lines;
- major highways and transportation corridors;
- outdoor tire / material storage facilities; and
- farm / agricultural buildings.

1.4.9

Property Stock Analysis

Utilizing the property stock classifications contained within the Fire Risk Sub-model **Table L-2** provides a summary of the property stock within the Township of Puslinch.

TABLE L-2: PROPERTY STOCK PROFILE TOWNSHIP OF PUSLINCH

Occupancy Classification (OBC)	Occupancy Definition Fire Risk Sub-model (OFM)	Number of Occupancies	Percentage of Occupancies

Group A – Assembly	<i>Assembly occupancies</i>	38	1.1%
Group B - Institutional	<i>Care or Detention occupancies</i>	1	0.1%
Group C - Residential	<i>Residential occupancies</i>	3090	93.0%
Group D/E -	<i>Business and Personal Services</i>	41	1.2%
Group F - Industrial	<i>Industrial occupancies</i>	78	2.3%
Other occupancies	<i>Not classified within the Ontario Building Code (i.e. farm buildings)</i>	76	2.3%
Totals		3324	100%

Note: There are 3 mixed occupancy buildings.

(Source: Township of Puslinch staff, reflects 2006 fiscal year data)

The majority (93.0%) of the Township of Puslinch property stock is Group C - Residential. The second largest percentage of property stock (2.3%) consists of both Group F - Industrial and other occupancies not classified within the Ontario Building Code (e.g. farm buildings, etc.).

The primary risks within the Township will relate to the residential occupancies. Residential occupancies include a majority of single family residences as well as multi-unit residences and a mobile home park. The building stock analysis indicates that as a community the Township of Puslinch typical levels of risk that would be found in comparable municipalities within the Province of Ontario. These include smaller urban centers surrounded by large tracts of agricultural and rural areas forming a larger community.

This particular analysis confirms that as a community the Township of Puslinch is primarily a “bedroom community” for many of Wellington County’s urban municipalities and other surrounding regional centres (e.g. Greater Toronto and Hamilton Area (GTHA)). Agriculture is also very prevalent throughout the Township. Farm buildings (not classified within the OBC) vary in size and use from small utility sheds to large livestock barns.

The Township’s other occupancies include industry and assembly occupancies. The industrial occupancies are mainly located in the Aberfoyle Industrial Area. The commercial occupancies in Puslinch are located in Aberfoyle, Morriston, around Puslinch Lake, and along Highway 401 and Highway 6. The commercial occupancies within the Township are limited and residents travel to neighboring communities for the majority of their commercial needs (i.e. Grocery stores).

1.4.10

Property Stock Profile Observations

The analysis of the Property Stock Profile for the Township of Puslinch confirms that the largest percentage of major occupancies (93.0%) is “Group C” residential. Significant priority should be

given to developing a Master Fire Plan that reflects the risks associated with this occupancy category. A key element in mitigating residential risks is maximizing the use of all three lines of defence.

The priority of addressing the residential fire risk is supported by the historic data provided by the OFMEM that reports for the period from 2008 to 2012 residential fires accounted for 72% of all structure fire losses and for the period from 2003 to 2012 residential fires accounted for 86% of all fire fatalities. As residential occupancies are where people sleep, there is an increased risk and vulnerability for fire loss injuries and fatalities.

The second largest percentage consists of Group F-Industrial occupancies (2.3%) and occupancies that are not classified within the Ontario Building Code (2.3%). Industrial occupancies are consistent in rural communities that are in close proximity to large cities. The large percentage of other occupancies is consistent with the large rural area of the Township that contains many farms and related buildings.

1.5 Building Height and Area

Buildings that are taller in height, or contain a large amount of square footage (footprint) can have a greater fire loss risk and life safety concern.

1.5.1 Building Height

One of the unique characteristics and risks of multi-storey buildings is known as the “stack effect.” This is characterized as vertical air movement occurring throughout the building, caused by air flowing into and out of the building typically through open doors and windows. The buoyancy resulting from the differences between the indoor and outdoor temperature and elevation differences causes smoke and heat to rise within the building. This can have a dramatic effect on smoke permeation throughout the common areas and individual units within these multi-storey buildings. This can be directly related to the high percentage of deaths that occur in high-rise buildings as a result of smoke inhalation.

The nature of taller buildings also results in the presence of higher occupant loads and higher fuel loads, due to the higher quantity of furnishings and building materials. Efficient evacuation can also be a challenge due to a lack of direction, insufficient signage and limited knowledge / building familiarity of the occupants which may result in overcrowding of stairways and exit routes.

Ensuring all required life safety systems are in place and functioning is a priority for these occupancies. Higher buildings can experience extended rescue / suppression response times for firefighters to ascend to the upper levels (vertical response). Options such as “shelter-in-place” whereby occupants are directed by the fire department to stay within their units can be

an effective strategy. However, ensuring internal building communications systems are in place and functioning is critical to the success of this strategy.

There are no residential high-rise buildings within the Township of Puslinch.

1.5.2 Building Area

Building area can cause comparable challenges as those present in taller buildings. Horizontal travel distances rather than vertical can mean extended response times by firefighters attempting rescue or fire suppression activities.

Large buildings, such as industrial plants and warehouses, department stores, and the new “big box” stores, can contain large volumes of combustible materials. In many of these occupancies the use of high rack storage is also present. Fires within this type of storage system can be difficult to access and cause additional risk to firefighter safety, due to collapse risks.

The Township has a small number of large industrial/commercial/mixed-use buildings. For example, the Nestle Water facility located at 101 Brock Road, is a very large building in terms of square footage (752,584 square feet), however, the contents of the building are considered to be low hazard in terms of a combustible load. Other examples of buildings with large areas and potential fire loss risk include:

- Maple Leaf Foods
- Royal Canin
- Barco Cherry Forest Products
- Ren’s Pet
- HP Polymers
- Schneider’s

1.5.3 Building Height and Area Observations

The analysis of the height and area of buildings within the Township indicates they represent a minimal risk, due to the limited number of these types of buildings. This includes all occupancy classifications. There are also a limited number of large area (by square footage) buildings with the exception of the industrial buildings mainly located in Aberfoyle.

The buildings which do exist should be considered for a pro-active fire inspection and compliance program. These strategies should be aligned with optimization of the first two lines of defence with the Master Fire Plan.

1.6

Building Age and Construction

As a community the Township of Puslinch began to develop during the late 1800s. Many of the older buildings within the central areas of Morriston and Aberfoyle have historic ties to this era. As the community has grown the majority of new construction has occurred outside of the downtown core. This includes both commercial and residential growth. Residential development has been mainly in the form of low density housing.

1.6.1

Building/Fire Code Application

The Ontario Building Code (OBC) was adopted in 1975, the Ontario Fire Code (OFC) was similarly adopted in 1981. Together these two documents have provided the foundation for eliminating many of the inconsistencies in building construction and maintenance that were present before their adoption.

The OBC and the OFC were developed to ensure uniform building construction and maintenance standards are applied for all new building construction. The codes also provide for specific fire safety measures depending on the use of the building. Examples of the fire safety issues that are addressed include:

- *Occupancy;*
- *exits/means of egress including signs and lighting;*
- *fire alarm and detection equipment;*
- *fire department access; and*
- *inspection, testing, and maintenance.*

In 1983 the OFC was further expanded to include retrofit requirements for many of the building constructed prior to adoption of the code. Retrofit requirements were established to ensure a minimum acceptable level of life safety is present. A number of occupancy types are included within the retrofit requirements including assembly, boarding, lodging and rooming houses, health care facilities, multi-unit residential, two-unit residential, and hotels.

1.6.2

Residential Buildings

The priority of addressing the residential fire risk is supported by the historic data provided by the Office of the Fire Marshal and Emergency Management, Ontario that reports² for the

² Source: "Fire Loss in Ontario 2008–2012 Causes, Trends and Issues." Office of the Fire Marshal and Emergency Management, 17 Dec. 2013. Web. 26 Sept. 2014.
<http://www.mcscs.jus.gov.on.ca/english/FireMarshal/MediaRelationsandResources/FireStatistics/OntarioFires/FireLossesCausesTrendsIssues/stats_causes.html>.

period from 2008 to 2012 residential fires accounted for 72% of all structure fire losses and for the period from 2003 to 2012 residential fires accounted for 85% of all fire fatalities³.

These facts make understanding the age and construction of a community's residential building stock an important component of developing a Community Risk Profile.

The Township of Puslinch's residential building structural dwelling types are summarized in **Table L-3**.

TABLE L-3: RESIDENTIAL STRUCTURAL DWELLING TYPE

Structural Dwelling Type	Township of Puslinch	% of Units	Ontario	% of Units
Single-Detached House	2,140	84.6%	2,718,880	55.6%
Semi-Detached House	15	0.6%	279,470	5.7%
Row House	0	0%	415,230	8.5%
Apartment-Duplex	15	0.6%	160,460	3.3%
Apartment-more than 5 Stories	0	0%	789,975	16.2%
Apartment-less than 5 Stories	30	1.2%	498,160	10.2%
Other single-attached House	0	0%	9,535	0.2%
Movable Dwelling	330	13%	15,795	0.3%
Total	2,530	100%	4,887,510	100%

(Source: Statistics Canada 2011 Census)

In comparison to the provincial data the Township of Puslinch percentage of single-detached housing of 84.6% represents a significantly larger component of the residential dwelling types than that of the province at 55.6%. Moveable houses are the second highest percentage of residential dwellings at 13% which is much higher than the provincial data of 0.3%. This relates to the rural and recreational nature of the vast tracts of land within the Township. Targeting

³ Source: "Ontario Fatal Fires: 10 years 2003 - 2012." Office of the Fire Marshal and Emergency Management, 17 Dec. 2013. Web. 27 Sept. 2014.
<http://www.mcscs.jus.gov.on.ca/english/FireMarshal/MediaRelationsandResources/FireStatistics/OntarioFatalities/FatalFiresSummary/stats_fatal_summary.html>.

the fire prevention and public education to residents living in mobile houses should be considered a priority within the Master Fire Plan.

Historical data provided by the Office of the Fire Marshal and Emergency Management indicates that fires in single-detached dwellings are responsible for nearly two thirds of all residential fires. The data further indicates that detached homes generally account for 80% of all single-family dwelling fires⁶.

The Township of Puslinch's residential buildings age are summarized in **Table L-4**.

TABLE L-4: AGE OF CONSTRUCTION (2011)

Period of Construction	Township of Puslinch	% of Units	Ontario	% of Units
Prior to 1960	515	20.3%	1,330,235	27.2%
1961 to 1980	635	25.0%	1,420,570	29.1%
1981 to 1990	310	12.2%	763,430	15.6%
1991 to 2000	350	13.8%	609,310	12.5%
2001 to 2005	485	19.1%	414,795	8.5%
2006 to 2011	245	9.6%	348,310	7.1%
Total	2,535	100%	4,886,655	100%

(Source: Statistics Canada 2011 National Household Survey)

An important component of this analysis is the percentage of residential buildings built prior to the adoption of the Ontario Fire Code in 1981. **Table L-4** indicates that 45.3% of the Township's residential buildings were built prior to 1981 in comparison to 56.3% of those in Ontario.

In relation to the OFC the Township has a relatively newer percentage of residential dwelling buildings than that of the province.

⁶ Source: "" Office of the Fire Marshal and Emergency Services. June 2009. Web. 8 Oct. 2014
[http://www.mcscs.jus.gov.on.ca/english/FireMarshal/FireServiceResources/ComprehensiveFireSafetyEffectivenessModel/FireRiskSub-Model/Fire_risk_submodel.html?__utma=1.1922286624.1408381222.1411748755.1412794948.9&__utmb=1.14.10.1412794948&__utmc=1&__utmx=-&__utmz=1.1412794948.9.8.utmcsr=mcscs.jus.gov.on.ca|utmccn=\(referral\)|utmcmd=referral|utmcct=/english/FireMarshal/MediaRelationsandResources/FireStatistics/FireStatisticsOverview/fire_statistics.html&__utmv=1.1=tag_visitor_type=external=1&__utmk=83975193](http://www.mcscs.jus.gov.on.ca/english/FireMarshal/FireServiceResources/ComprehensiveFireSafetyEffectivenessModel/FireRiskSub-Model/Fire_risk_submodel.html?__utma=1.1922286624.1408381222.1411748755.1412794948.9&__utmb=1.14.10.1412794948&__utmc=1&__utmx=-&__utmz=1.1412794948.9.8.utmcsr=mcscs.jus.gov.on.ca|utmccn=(referral)|utmcmd=referral|utmcct=/english/FireMarshal/MediaRelationsandResources/FireStatistics/FireStatisticsOverview/fire_statistics.html&__utmv=1.1=tag_visitor_type=external=1&__utmk=83975193)

1.6.3 Non-Residential Buildings

During the late 19th century and early 20th century's balloon frame construction was a common framing technique used in both residential and small commercial construction. This technique permitted the spread of fire and smoke to move rapidly from the lower floors to upper floors and the roof level. Understanding the age of construction of dwellings can assist in determining if balloon framing may have been utilized.

Modern construction techniques have introduced the use of platform construction whereby each level is built as a component of the overall structure. This technique in addition to the use of fire stops has reduced the extension of fire and smoke by creating horizontal barriers.

1.6.4 Building Age and Construction Observations

As a community the current building stock of the Township is representative of a small urban settlement area that has grown over the past century to the current mixed use urban/rural community.

Residential single-detached housing units represent 84.6% of the 2,140 residential dwelling structures. 45.3% of the residential building stock was built prior to adoption of the Ontario Fire Code in 1981.

The majority of the residential building stock is of newer construction technology including flame retardant materials and construction techniques. Buildings within the downtown cores of Morriston and Aberfoyle represent the highest fire loss risk due to age and construction.

1.7 Building Exposures

Closely spaced buildings, typical of historic downtown core areas, and newer infill construction, have a higher risk of a fire propagating (fire spreading to an adjacent exposed building). A fire originating in one building could easily be transferred to neighbouring structures due to the close proximity. The close proximity of buildings can also impede firefighting operations due to the limited access for firefighters and equipment.

Adoption of the OBC and the OFC has required spatial separations and the use of fire retardant materials and constructions methods to reduce the fire risks. In addition to the construction and planning requirements within the respective codes, basic firefighting practices consider the protection of exposures as a primary function and consideration in the event of a response by the fire and rescue services.

1.7.1**Building Exposures Observations**

The risk of exposures as a result of a fire can occur in incidents involving buildings that are in compliance with current OBC and OFC requirements as well as those that may have been constructed prior to these public safety initiatives.

As the majority of the building stock within the Township of Puslinch has been constructed utilizing the applicable code requirements the probability of a fire spreading to involve other exposures is limited.

The age and construction of the buildings within the downtown cores of Morriston and Aberfoyle present the most significant risk for fire spread both internally and to adjacent buildings due to the close proximity and combustible construction of many of these buildings.

1.8**Demographic Profile**

In terms of demographic profile, as it relates to community risk, it is important to understand a number of key factors related to residents of the community. Assessing these factors in relation to provincial statistics is an effective tool in understanding where there may be vulnerable groups in terms of fire or life risk, or barriers such as language that could affect communication of public education programs. The key factors within the demographic profile include:

- Population distribution by age group;
- Population shifts;
- Vulnerable individuals or occupancies;
- Language barriers to public education; and
- Income level.

1.8.1**Population Distribution by Age Group**

Within Canada our aging population has been recognized as one of the most significant demographic trends. Based on current data it is predicted that by the year 2026, one in every five Canadians will have reached the age 65. Seniors, those 65 and above represent one of the highest fire risk target groups in Ontario.

Information provided by the Office of the Fire Marshal and Emergency Management indicates that *“between 2000 and 2004 the leading cause of senior (aged 65 and over) fire deaths were attributed to “open flame tools/smoker’s articles” and “cooking equipment. These ignition sources were responsible for 35% and 10% respectfully of fire deaths for this age category during this period. It is believed that the decline in cognitive and physical abilities contributes to the frequency of fire incidents relating to careless use of these ignition sources.”*

Identifying a community's population by age category is a core component of developing the Community Risk Profile and identifying specific measures that may be required to mitigate risks associated with a specific age group, such as seniors.

Table L-5 provides a comparison of the Township's population by age group to that of the provincial statistics according to the 2011 census from Statistics Canada.

TABLE L-5: AGE GROUP⁷

Age Characteristics of the Population	Puslinch		Ontario	
	Total	% Total	Total	% Total
0 to 4 years	240	3.4%	704,260	5.5%
5 to 9 years	350	5.0%	712,755	5.5%
10 to 14 years	420	6.0%	763,755	5.9%
15 to 19 years	485	6.9%	863,635	6.7%
20 to 24 years	395	5.6%	852,910	6.6%
25 to 44 years	1,280	18.2%	3,383,890	26.3%
45 to 54 years	1,360	19.4%	2,062,020	16.0%
55 to 64 years	1,175	16.7%	1,630,275	12.7%
65 to 74 years	860	12.2%	1,004,265	7.8%
75 to 84 years	375	5.3%	627,660	4.9%
85 years and over	100	1.4%	246,400	1.9%
Total population	7,025	-	12,851,820	-
Median age of the population	47.6	-	40.0	-
% of the population aged 14 and under	1,010	14.4%	2,180,770	17.0%
% of the population aged 65 and over	1,335	19.0%	1,878,325	14.6%

(Source: Statistics Canada 2011 Census)

This comparison indicates that the age characteristics of the population within the Township are relatively consistent with that of the province. There is a slightly higher portion individuals aged 45-74, which is likely a result of residents living in the Township's senior facilities as well as older individuals and couples moving out of the city for retirement. This is particularly important when comparing the number of deaths as a result of a fire.

⁷ Source: Statistics Canada - 2011 Census Data

Table L-6 was prepared using information from the OFMEM's review of Ontario Fatal Fires during the ten year period from 2001 to 2010 (*revised October 2011*). Although no particular age group stands out as a significantly higher risk, when the number of fatalities per million population is calculated, the seniors age group are at the greatest risk of fire death compared to other age groups.

TABLE L-6: PROVINCIAL % OF FIRE FATALITIES BY AGE GROUP

Age Characteristics of the Population	% of Age Group
0 to 10 years	8%
10 to 19 years	6%
20 to 29 years	6%
30 to 39 years	10%
40 to 49 years	19%
50 to 59 years	14%
60 to 69 years	12%
70 to 79 years	13%
80+ years	12%

(Source: Office of the Fire Marshal and Emergency Management)

As indicated by the provincial data, seniors tend to be more at risk. In comparison, the senior's population of the Township of Puslinch as a percentage of the overall population is higher than the provincial data. The median age of the Township is also higher than the Province. This is consistent in smaller communities with multiple senior facilities.

1.8.2

Population Shifts

The population within a community can shift at various times during the day or week and throughout the year. This can be as a result of residents that are required to leave the community to seek employment as opposed to those having employment opportunities within the community. Other examples can include tourist and vacation destinations within a community. Large population shifts can occur during summer months as a direct result of seasonal attractions to the community.

Communities that are home to educational institutions such as colleges and universities can have a different population shift during the fall and winter months when students are attending school and residing in the community (e.g. student residences).

In both instances the increased risk due to overnight accommodation (sleeping) either in a trailer/hotel/or school residence can be a major factor which can impact the demand for fire protection services.

The Township of Puslinch experiences large population shifts during summer months as a direct result of seasonal residents in the two trailer parks in Puslinch. The average age of the seasonal residents is 65 and over. Specific fire protection strategies to address population shifts should be required. The Township uses this opportunity to educate seniors as well as any youth visiting the trailer parks.

1.8.3

Vulnerable Individuals or Occupancies

Identifying the location and number of vulnerable individuals, or occupancies within the community will provide insight into the magnitude of this particular demographic within a community. This demographic is typically defined as requiring some type of assistance due to physical/cognitive limitations, disabilities, drug or alcohol use and others that may require assistance to evacuate in the event of a fire.

Occupancies that should be considered when assessing this demographic include hospitals, seniors' apartments, group homes, rooming houses, residential care facilities, daycare centres and long-term care facilities. **Table L-7** lists the retirement homes and communities in Puslinch.

TABLE L-7: RETIREMENT HOMES AND COMMUNITIES IN PUSLINCH⁸

Community	Address
Mini Lake Residence	Park 1 Pavilion Road
Morrison Park Nursing Home	7363 Calfass Road

(Source: Puslinch Fire and Rescue Services)

1.8.4

Language Barriers to Public Education

Cultural diversity and ethnic background can be a factor that fire departments must consider in developing and delivering programs related to fire prevention and public education.

Communication barriers in terms of language and the ability to read written material can have an impact of the success of these programs. **Table L-8** provides a breakdown of the mother tongue of residents within the Township based on the 2011 Statistics Canada census

⁸ Source: Canpages.com

information. The majority of residents in Puslinch (86.8%) have English as their mother tongue, and 0.6% has both English and French.

TABLE L-8: MOTHER TONGUE OF PUSLINCH RESIDENTS

Language	Puslinch		Ontario	
	Total	% Total	Total	% Total
Total population	6995	-	12,028,895	-
English	6075	86.8%	8,230,705	68.4%
French	85	1.2%	488,815	4.1%
English and French	45	0.6%	32,685	0.3%
Other	790	11%	3,276,685	27.2%

(Source: Statistics Canada 2011 Census)

A total of 790 individuals (11.3%) have a non-official, non-Aboriginal language as a mother tongue. The top five languages in this category are German (1.7%), Italian (1.5%), Punjabi (0.86%), Dutch (0.79%), and Portuguese (0.79%). **Table L-9** provides a breakdown of knowledge of official languages of residents within the Township based on the 2011 Statistics Canada census information. The majority of residents in Puslinch (91.9%) know English, and 6.5% know both English and French.

TABLE L-9: KNOWLEDGE OF OFFICIAL LANGUAGES OF PUSLINCH RESIDENTS

Language	Puslinch		Ontario	
	Total	% Total	Total	% Total
Total population (non-institutional)	216,365	-	12,722,060	-
English Only	189,930	91.9%	10,984,360	86.3%
French Only	110	0.1%	42,980	0.3%
English and French	13,500	6.5%	1,395,805	11.0%
Other	3,820	1.8%	298,920	2.4%

(Source: Statistics Canada 2011 Census)

Language may be a barrier to public education in the community. It may be worthwhile to target specific populations with specialized outreach.

1.8.5

Income Levels

Table L-10 summarizes household data from the 2011 Census from Statistics Canada. Puslinch, as a Township, has a higher population density than the province. Puslinch also has a higher median income and a slightly higher average value of owned dwellings than the provincial average. These statistics are typical of a mostly rural community in close proximity to large cities and regional centres.

TABLE L-10: 2011 STATISTICS CANADA HOUSEHOLD DATA

Census Characteristic	Puslinch	Ontario
Population Density	32.8	14.1
Median Household Income	\$89,261	\$66,358
Average Value of Owned Dwelling	\$561,101	\$367,428
Total # of Dwellings Owned	2,375	3,235,495
% Owned Dwellings	94%	71%
% Rented Dwellings	6%	28%

(Source: Statistics Canada 2011 Census and 2011 National Household Survey)

1.8.6

Demographic Profile Observations

The demographic analysis of Puslinch indicates that by age category the Township is similar to the provincial statistics. However, the Township has a slightly higher population of seniors and as such should be considered as a vulnerable component of the population. There are a minimum number of buildings identified where this vulnerable demographic of the community reside (seniors). These buildings should be considered as high risk with regard to developing a pro-active fire prevention and protection program. The Township also has a large percentage (13%) of mobile homes where the majority of residents are seniors. Optimizing the first two lines of defence should be considered a priority for these residential and care occupancies as part of the Master Fire Plan.

English is the predominate language within the community representing 86.8% of the population's mother tongue. This indicates that there should be a very minimal language barrier in the delivery of fire prevention and public education programs.

In general income levels and the percentage of home ownership are higher than that of the provincial averages. These factors also relate to a lower percentage of rental housing compared to the provincial averages.

1.9

Geography / Topography / Road Infrastructure

The Township of Puslinch is located within Wellington County, directly south of the City of Guelph and east of the City of Cambridge. The Township is the southernmost municipality within the County and is the County's smallest Township with a geographic area of 215 square kilometres. The Township also has the smallest population. The Township's population was 7,029 in 2011.

The density of the Puslinch is higher than the Province but when compared to cities and suburbs is considered relatively low. The Township's density is representative of a rural community with small population centres. The large rural areas in the Township may result in longer response times from the fire station or automatic aid stations. The urban and settlement area are shown in the Township's Zoning By-laws Map, **Figure L-1**.

The road network within the Township is primarily laid out in a grid pattern of arterial rural roads and local roads which provide access to rural residential locations. Roads within the population centres and the newer commercial/industrial growth districts within the Township are well served and connected by the road network. There are two major highways that run through the Township: Highway 401 and Highway 6. Highway 401, which runs east-west, is a six lane freeway throughout the municipality and divides the Township. Highway 6 (Hanlon Parkway) runs north-south through the middle of Puslinch.

1.9.1

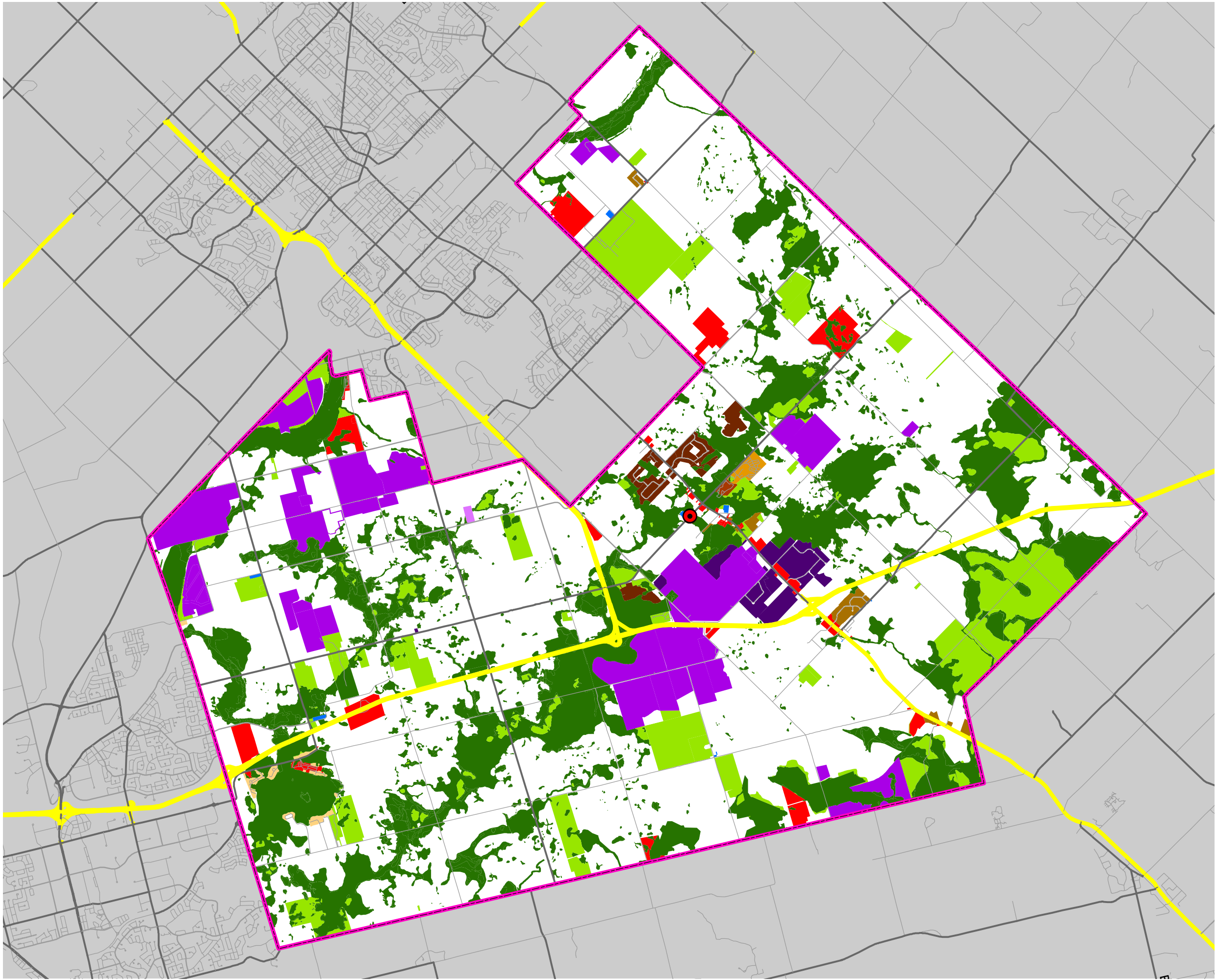
Geography/Topography/Road Infrastructure Profile Observations

The risks associated with the geography, topography and road infrastructure within the Township are predominantly those associated with the overall size of the municipality and the rural residential areas located outside of the built-up communities. This typically means longer emergency response times from the fire station, located in the urban area, out to the rural areas and occupancies. In developing the Master Fire Plan consideration should be given to prioritizing the delivery of public education and fire prevention programs in these areas. This should include optimization of the department's smoke alarm program and home fire safety planning for areas with extended emergency response travel times.

The road network layout is primarily a grid pattern of arterial rural roads and local roads which provide access to these rural residential locations. The population centres within the Township, including the settlement areas are well served and connected by the road network.

The following potential constraints within Puslinch have been identified:

- The large rural area may result in longer response times.
- Lack of snow removal may limit response times.
- There is only three interchanges to / from Highway 401. This may delay fire and rescue services on the section of Highway 401 the Township of Puslinch is responsible for.



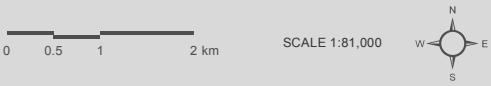
TOWNSHIP OF PUSLINCH
MASTER FIRE PLAN

ZONING BY-LAWS
FIGURE # L-1

- MUNICIPAL BOUNDARY
- FIRE STATION
- HIGHWAY
- ARTERIAL ROAD
- COLLECTOR ROAD
- LOCAL ROAD

ZONING

- AGRICULTURAL
- NATURAL ENVIRONMENT
- RURAL RESIDENTIAL
- MINI LAKES RESIDENTIAL
- HAMLET RESIDENTIAL
- MILL CREEK RESIDENTIAL
- ESTATE RESIDENTIAL
- COMMERCIAL
- DISPOSAL INDUSTRIAL
- EXTRACTIVE
- INDUSTRIAL
- INSTITUTIONAL
- OPEN SPACE



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR AND THE COUNTY OF WELLINGTON

MAP CREATED BY: SB
MAP CHECKED BY: SC
MAP PROJECTION: NAD 1983 UTM Zone 17N

\\dillon.ca\\DILLON_DFS\\Toronto\\Toronto CAD\\GIS\\141138 - Puslinch Fire and Rescue



PROJECT: 14-1138
STATUS: DRAFT
DATE: 7/16/2015

1.10

Past Fire Loss Statistics

Identifying and understanding trends through the analysis of historical data provides valuable insight into community's specific trends. Assessing the key factors of life safety risk and fire risk in relation to provincial statistics provides a foundation for evaluating where specific programs or services may be necessary.

1.10.1

Fire Loss by Occupancy Classification

For the period from 2008 to 2012 there were 61,742 fires within Ontario with a loss reported to the OFMEM. During this period 64% or 39,440 of these involved a structure and 27% or 16,929 of these fires involved a vehicle.

Table L-11 indicates the provincial fire loss by property classification for the period 2008 to 2012.

**TABLE L-11: PROVINCIAL FIRE LOSS BY OCCUPANCY CLASSIFICATION
PERIOD 2008 TO 2012**

Occupancy Classification (OBC)	Occupancy Definition Fire Risk Sub-model (OFMEM)	Ontario Fire Loss by Occupancy Classification
Group A – Assembly Assembly	<i>Assembly occupancies</i>	5%
Group B - Institutional Institutional	<i>Care or Detention occupancies</i>	1%
Group C - Residential Residential	<i>Residential occupancies</i>	72%
Group D - Business	<i>Business and Personal Services Occupancies</i>	3%
Group E - Mercantile	<i>Mercantile occupancies</i>	4%
Group F - Industrial	<i>Industrial occupancies</i>	7%
Other occupancies	<i>Not classified within the Ontario Building Code (i.e. farm buildings)</i>	8%
Reported fires	<i>Reported structure fires</i>	39,439

(Source: Office of the Fire Marshal and Emergency Management)

For this period 72% of the fires with a loss occurred within a Group C - residential occupancies.

In comparison to the provincial analysis the Township of Puslinch property loss as a result of fires is presented in **Table L-12** below (OFMEM data for Puslinch). For the same period the analysis indicates that 72% of the fires reporting a loss occurred in Group C - residential occupancies. During this time period the Township experienced a significantly higher percentage of fires with a loss in the 'Other Occupancies' classification compared to the Provincial statistics.

TABLE L-12: TOWNSHIP OF PUSLINCH FIRE LOSS BY PROPERTY CLASSIFICATION PERIOD 2008 TO 2012

Occupancy Classification (OBC)	Occupancy Definition Fire Risk Sub-model (OFMEM)	Township of Puslinch Fire Loss by Occupancy Classification
Group A – Assembly	<i>Assembly occupancies</i>	N/A
Group B – Institutional	<i>Care or Detention occupancies</i>	N/A
Group C – Residential	<i>Residential occupancies</i>	72%
Group D - Business	<i>Business and Personal Services Occupancies</i>	N/A
Group E - Mercantile	<i>Mercantile occupancies</i>	6%
Group F - Industrial	<i>Industrial occupancies</i>	6%
Other occupancies	<i>Not classified within the Ontario Building Code (i.e. farm buildings)</i>	17%
Reported fires	<i>excluding buildings under National Farm Building code (6 fires)</i>	18

(Source: Office of the Fire Marshal and Emergency Management)

1.10.2

Reported Fire Cause

Assessing the possible cause of the fires reported is an important factor in identifying any potential trends, or public education initiatives or fire prevention targets that may be considered as part of the community fire protection plan.

Table L-13 provides a summary of the reported possible cause of the 18 fires reported during the period 2008 to 2012 for the Township of Puslinch.

TABLE L-13: TOWNSHIP OF PUSLINCH 2008 TO 2012 REPORTED FIRE CAUSE

Nature	Fire Cause	Number of Fires	% of Cause
Intentional	Arson	N/A	0%
	Vandalism	2	9.5%
Unintentional	Children Playing	N/A	0%
	Design/Construction/Maintenance deficiency	2	9.5%
	Mechanical /Electrical failure	2	9.5%
	Misuse of ignition source	5	23.8%
	Other unintentional	1	4.8%
	Undetermined	6	28.6%
Other	Other	2	9.5%
Undetermined	Undetermined	1	4.8%
Total number of fires and percentage		18	100%

(Source: Office of the Fire Marshal and Emergency Management)

There are four categories used to classify the cause of a fire. These include intentional, unintentional, other, and undetermined.

The “intentional” category recognizes the cause of a fire to be started for a specific reason. These are typically classified as arson fires, and for example can be related to acts of vandalism, or to achieve personal gain through insurance payment. There were two fires (9.5%) caused by vandalism reported for this period.

The “unintentional” category recognizes a number of the common causes of a fire that represent both human behavioural causes such as playing with matches, and equipment failures such as a mechanical failure. Unintentional design/construction deficiencies represent 9.5% of the cause for the two unintentional fires during this period.

The cumulative percentage of “*unintentional–other unintentional (4.8%), unintentional-undetermined (28.6%), and other-other (9.5%), undetermined-undetermined (4.8%)*” represents a total of 47.7% of all fire causes. This indicates that there was no specific cause identified for approximately almost half of all fires during this period.

1.10.3

Reported Ignition Source

Table L-14 similarly provides the reported ignition source for the 18 fires that occurred during the period 2008 to 2013.

**TABLE L-14: TOWNSHIP OF PUSLINCH
2008 TO 2012 IGNITION SOURCE CLASS**

Reported Ignition Source	Number of Fires	% of Cause
Appliances	1	5.6%
Cooking equipment	1	5.6%
Electrical distribution	2	11.1%
Heating equipment chimney etc.	3	16.7%
Lighting equipment	1	5.6%
Open flame tools/smokers articles	2	11.1%
Other electrical/mechanical	1	5.6%
Processing equipment	N/A	0%
Miscellaneous	2	11.1%
Exposure	1	5.6%
Undetermined	4	22.2%
Total number of fires and percentage	18	100%

(Source: Office of the Fire Marshal and Emergency Management)

Undetermined ignition sources represent the largest percentage at 22.2%. Miscellaneous represented the second largest percentage at 19.2%. Out of the main categories of determined ignition sources, heating equipment, including chimneys, woodstoves, and fireplaces was the largest percentage at 12.7%.

1.10.4

Reported Civilian Injuries and Fatalities

Table L-15 indicates the number of fire related civilian injuries and fatalities that occurred within the Township of Puslinch during the period 2008 to 2012.

**TABLE L-15: TOWNSHIP OF PUSLINCH
2008 TO 2012 REPORTED CIVILIAN INJURIES AND FIRE DEATHS**

Occupancy Classification (OBC)	Occupancy Definition Fire Risk Sub-model (OFMEM)	Injuries	Fatalities
Group A – Assembly Assembly	<i>Assembly occupancies</i>	0	0
Group B - Institutional Institutional	<i>Care or Detention occupancies</i>	0	0
Group C - Residential Residential	<i>Residential occupancies</i>	0	0
Group D - Business	<i>Business and Personal Services Occupancies</i>	0	0
Group E - Mercantile	<i>Mercantile occupancies</i>	0	0
Group F - Industrial	<i>Industrial occupancies</i>	0	0
Other occupancies	<i>Not classified within the Ontario Building Code (i.e. farm buildings)</i>	0	0

(Source: Office of the Fire Marshal and Emergency Management)

During this period there were no reported fatalities or reported injuries.

1.10.5

Past Fire Loss Profile Observations

Based on the historical data for the period 2008 to 2012 the Township of Puslinch experienced the highest rate of fires within the Group C - residential occupancies. This result is consistent with that of the provincial profile. However, the rate of fires in the Other Occupancies Category at 17% was more than double the provincial rate.

Undetermined causes representing 33.4% and Misuse of Ignition Source representing 23.8% were the leading causes for fires during this period. The cumulative percentage of fire causes that could not be determined represented 47.7% of the 18 fires reported during this period.

Undetermined ignition sources at 22.2%, miscellaneous (11.1%), open flame tools/smokers articles (1.1%) and electrical distribution (11.1%) represented the top four leading ignition sources of the 18 fires reported during this period.

The analysis of the past fire losses within the Township of Puslinch further defines that Group C- Residential occupancies represent the highest level of risk within the community.

Enhancing the first line of defence, including pro-active prevention and education programs, targeted at the areas identified within this Community Risk Profile, should be considered a priority within the Master Fire Plan.

1.11 Fuel Load Profile

Fuel load typically refers to the amount and nature of combustible content and materials within a building. This can include combustible contents, interior finishes, as well as structural materials. Combustible content tends to create the greatest potential fire loss risk. This can include industrial materials, commercial materials or typical office furnishings. Higher fuel loads result in increased fire loss risk due to increased opportunity for ignition and increased fire severity.

In many communities large amounts of fuel load can be contained within a single occupancy such as a building supply business, or alternatively within a large multi-occupancy building such as a historical downtown core.

As presented previously within this report, age and construction of a building can also have an impact on fuel load given that older buildings likely have a larger volume of combustible construction such as wood framing rather than newer construction utilizing concrete and steel products.

Our analysis of fuel load within the Township of Puslinch indicates that there are a small number of buildings or occupancies where significant fuel loads are present that would be cause for any specific identification. **Table L-16** shows the buildings in Puslinch which are considered to exhibit high fuel loads. Maple leaf Foods having the highest food load due to the area of the building and the large amount of ammonia on site. The historic downtown areas of Aberfoyle and Morriston also present a high fuel load from the materials used to construct the buildings and the exposure to other buildings. Regular fire prevention inspection cycles and strategies to enforce continued compliance with the OFC are considered as best practices to achieving the legislative responsibilities of the municipality and providing an effective fire protection program to address fuel load risks.

TABLE L-16: PUSLINCH BUILDING WITH FUEL LOAD

Building	Location	Area (Square Metres)	Height (Metres)
Maple Leaf Foods	McLean Road and Brock Road	26,198.7 m ²	12 m
Nestle Water	101 Brock Road	69,917.3 m ²	7 m
Ren's Pet	20 Brock Road North	1,550 m ²	9 m
Royal Canin	100 Bieber Road	6,239 m ²	32 m
Barco Cherry Forest Products	24 Kerr Crescent	2,700 m ²	6 m
Schneiders	7475 McLean Road East	1,100 m ²	6 m
HP Polymers	32 Kerr Crescent	1,200 m ²	6 m

(Source: Puslinch Fire and Rescue Services)

1.11.1 Fuel Load Profile Observations

In comparison to the number of buildings within the Township of Puslinch there are a small number of buildings having a site specific fuel load concern. In addition to ensuring compliance to the requirements of the OBC and the OFC there are operational strategies that a fire department can implement to address fuel load concerns. These include regular fire inspection cycles and pre-planning of buildings of this nature to provide an operational advantage in the event of fire.

1.12 Community Growth & Development

1.12.1 Historic Growth

The following table indicates the historic populations within the Township of Puslinch, as provided by Statistics Canada, Census Profiles. Historic household population statistics are also included, where available.

TABLE L-17: HISTORIC GROWTH IN POPULATION AND HOUSEHOLDS

Year	Puslinch Population	% Change in Population	Puslinch Population by Household	% Change in Households
1996	5,416	-	1,895	-
2001	5,885	8.7%	1,955	3.2%
2006	6,689	13.7%	2,335	19.4%
2011	7,029	5.1%	2,619	12.2%

(Source: Statistics Canada 2011 Census and 2011 National Household Survey)

From 1996 to 2011 the population of Puslinch grew by 30.0%, approximately 2% per year. This is more than the population growth of the province over the same time period, which was 19.5%, closer to 1.3% per year.

1.12.2 Growth Projections

Table L-18 summarizes the growth projections for the Township from 2006 to 2031.

TABLE L-18: POPULATION AND EMPLOYMENT GROWTH PROJECTIONS

Year	2006	2011	2016	2021	2026	2031
Population	7,010	7,490	8,130	8,720	9,320	9,920
Household	2,340	2,520	2,730	2,920	3,100	3,290
Employment	4,210	4,510	4,850	5,240	5,500	5,760

(Source: County of Wellington Official Plan)

The population, household, and employment estimates shown in the table above predict that over the next 20 years the Township will experience population growth that is similar to the current rate at approximately 1.6% annually. This represents a 15.9% population increase over the next 10 years. Households are expected to increase in parallel with population increases.

Employment, is predicted to increase by approximately 36.8% from 2006 to 2031 or an average of 1.5% per year. This represents a modest increase in employment for the Township. The Township is actively moving towards providing more serviced industrial lands and is prepared to designate more lands should the need arise. These lands are primarily located along Brock Road and Mclean Road intersection, and the Highway 6 corridor between Concession Road 4 and Wellington County Road 34.

1.12.3 Growth Projections Profile Observations

The population of Township of Puslinch is anticipated to grow at a rapid rate of 1.6% annually over the coming 20 year period. This represents a 15.9% population increase over the next 10 years. The majority of this population increase is not expected to be accommodated in the urban centres of Aberfoyle and Morriston. This growth is expected to be supported by ongoing rural residential development. Therefore the future geographic locations of population are not expected to vary significantly within the 10 year study horizon.

1.13 Risk Profile Model

The OFMEM Fire Risk Sub-model defines risk “as a measure of the probability and consequence of an adverse effect to health, property, organization, environment, or community as a result of an event, activity or operation. For the purposes of the Fire Risk Sub-model, such an event refers

to a fire incident along with the effects of heat, smoke and toxicity threats generated from an incident.”

The OFMEM model develops an overall risk assessment *“by assigning probability and consequence levels to potential adverse events or scenarios due to fire and combining the two to arrive at an overall risk level.”* The OFMEM Fire Risk Sub-model provides a matrix as one option in arriving at the level of risk for a range of scenarios.

Alternatively the model provides the opportunity “for analysis purposes, the community being assessed can be defined as the municipality in its entirety or as a particular segment of it that distinguishes it from other parts.” The model further provides that “it may be convenient to subdivide a municipality based on residential subdivision, downtown sections, industrial park, and a rural area.”

For analytical purposes, the methodology within this study uses the OFMEM Fire Risk Sub-model major occupancy classifications as the basis for segmenting the community by primary building use. Each major occupancy classification is assigned a probability level based on the OFMEM Fire Risk Sub-model definitions. A consequence level also using the OFMEM Fire Risk Sub-model definition is then assigned for each major occupancy classification.

The methodology within this report includes a further process of assigning ‘weighting factor’ to each of the eight risk factor categories identified by the OFMEM Fire Risk Sub-model. Utilizing a range from 1 (lowest) to 3 (highest) each of the factors is assigned a weight factor, to calculate a weighted average. The weight factor assigns more or less priority to each of the given factors. For example, the demographic profile that identifies the number of vulnerable residents has been assigned the highest factor weight of 3. This process results in the most relevant categories having more impact on the risk priority level calculated.

The level of risk (Priority Level) for each major occupancy classification is determined by multiplying ***“probability x consequence = risk level (priority)”***. This provides the ability to determine an overall risk level for each major occupancy classification within the community.

This methodology then coordinates the assigned risk level for each major occupancy classification with the Council approved zoning by-law information and mapping. This process provides the opportunity to create a visual model (map) of the Community Risk Profile. This provides the opportunity to view both the current and projected level of risk within the community based on the Council approved Official Plan.

Creating the Community Risk Profile Model provides the opportunity to evaluate the current level of fire protection services provided. The model can further identify where risk levels may increase or change based on growth and long-term planning of the community.

1.13.1

Probability Levels

The probability of a fire occurring can in part be estimated based on historical experience of the community. The experience of other similar communities and that of the province as a whole can also provide valuable insight into the probability of a fire occurring. The experience of the evaluator and the local fire service staff in collaborating on determining probability is also a key factor.

The OFMEM Fire Risk Sub-model categorizes the probability of an event occurring into five levels of likelihood. **Table L-19** identifies the OFMEM Fire Risk Sub-model categories.

TABLE L-19: OFMEM FIRE RISK SUB-MODEL LIKELIHOOD LEVELS (PROBABILITY)

Description	Level	Specifics
<i>Rare</i>	1	- may occur in exceptional circumstances - no incidents in the past 15 years
<i>Unlikely</i>	2	- could occur at some time, especially if circumstances change - 5 to 15 years since last incident
<i>Possible</i>	3	- might occur under current circumstances - 1 incident in the past 5 years
<i>Likely</i>	4	- will probably occur at some time under current circumstances - multiple or reoccurring incidents in the past 5 years
<i>Almost Certain</i>	5	- expected to occur in most circumstances unless circumstances change - multiple or reoccurring incidents in the past year

1.13.2

Consequence Levels

The consequences as a result of a fire relate to the potential losses or negative outcomes associated should an incident occur. The Fire Risk Sub-model identifies four components that should be evaluated in terms of assessing consequence. These include:

- **Life Safety:** Injuries or loss of life due to occupant and firefighter exposure to life threatening fire or other situations.
- **Property Loss:** Monetary losses relating to private and public buildings, property content, irreplaceable assets, significant historic/symbolic landmarks and critical infrastructure due to fire.
- **Economic Impact:** Monetary losses associated with property income, business closures, downturn in tourism, tax assessment value, employment layoffs due to fire.

- **Environmental Impact:** Harm to human and non-human (i.e. wildlife, fish and vegetation) species of life and general decline in quality of life within the community due to air/water/soil contamination as a result of fire or fire suppression activities.

The OFMEM Fire Risk Sub-model evaluates the consequences of an event based on five levels of severity. **Table L-20** identifies the OFMEM Fire Risk Sub-model categories.

TABLE L-20: OFM FIRE RISK SUB-MODEL CONSEQUENCE LEVELS

Description	Level	Specifics
<i>Insignificant</i>	1	<ul style="list-style-type: none"> - no life safety issue - limited valued or no property loss - no impact to local economy and/or - no effect on general living conditions
<i>Minor</i>	2	<ul style="list-style-type: none"> - potential risk to life safety of occupants - minor property loss - minimal disruption to business activity and/or - minimal impact on general living conditions
<i>Moderate</i>	3	<ul style="list-style-type: none"> - threat to life safety of occupants - moderate property loss - poses threat to small local businesses and/or - could pose threat to quality of the environment
<i>Major</i>	4	<ul style="list-style-type: none"> - potential for a large loss of life - would result in significant property damage - significant threat to businesses, local economy and tourism and/or - impact to the environment would result in a short term, partial evacuation of local residents and businesses
Catastrophic	5	<ul style="list-style-type: none"> - significant loss of life - multiple property damage to significant portion of the municipality - long term disruption of businesses, local employment, and tourism and/or - environmental damage that would result in long-term evacuation of local residents and businesses

1.13.3**Risk Levels**

Once probability and consequence are determined for each major occupancy classification the level of risk is calculated by multiplying “**probability x consequence = risk level (priority).**”

Table L-21 identifies the four levels of risk identified within the OFMEM Fire Risk Sub-model including the lower and upper range of each risk classification and the relative definition of each.

TABLE L-21: OFMEM FIRE RISK SUB-MODEL RISK LEVELS

Risk Level	Priority Level	Lower – Upper Range	Definition
<i>Low Risk</i>	L1	0 to 6.3	- manage by routine programs and procedures, maintain risk monitoring
<i>Moderate Risk</i>	L2	6.4 to 12.5	- requires specific allocation of management responsibility including monitoring and response procedures
<i>High Risk</i>	L3	12.6 to 18.7	- community threat, senior management attention needed
<i>Extreme Risk</i>	L4	18.8 to 25.0	- serious threat, detailed research and management planning required at senior levels

1.13.4 Ontario Fire Code Compliance

A major determinate in assessing risk within a community and the major building classifications is compliance with the Ontario Fire Code. The Ontario Fire Code which was adopted in 1981 and the Ontario Building Code were developed to ensure uniform building construction and maintenance standards are applied for all new building construction. The codes also provide for specific fire safety measures depending on the use of the building. Examples of the fire safety issues that are addressed include:

- *occupancy*
- *exits/means of egress including signs and lighting*
- *fire alarm and detection equipment*
- *fire department access*
- *inspection, testing, and maintenance*

In 1983 the OFC was further expanded to include retrofit requirements for many of the building constructed prior to 1981. Retrofit requirements were established to ensure a minimum acceptable level of life safety is present. A number of occupancy types are included within the retrofit requirements including assembly, boarding, lodging and rooming houses, health care facilities, multi-unit residential, two-unit residential, and hotels.

Determining the status of compliance or non-compliance including the status of retrofit requirements particularly for major building occupancies is an important component of developing the Community Risk Profile. This is particularly important within the major occupancies classifications where there is a documented history of property loss as a result of fire, and/or injuries and fatalities as a result of fire. Group A – Assembly and Group B –

Institutional occupancies are the two primary occupancy types where more detailed analysis of compliance and non-compliance should be considered.

Where compliance has been achieved and documented these occupancy classifications can be considered as part of the standard risk identification methodology within this report. Where compliance has not been achieved including retrofit requirements these occupancies should be evaluated independently adding a further assessment of OFC compliance.

Completing the independent evaluation provides the opportunity to assess these buildings on a case by case basis and as such does not impact the overall risk level for the occupancy classification. In the event an individual property is assigned a higher level of risk as a result of non-compliance this methodology provides the opportunity for re-evaluating the risk level for that specific property once compliance is achieved.

1.14 Township of Puslinch Risk Evaluation

Table L-22 presents the completed risk evaluation for the Township of Puslinch. The evaluation utilizes the methodology described above following the framework of the OFMEM Fire Risk Sub-model.

The risk evaluation summary incorporates all community risk factors within the Township of Puslinch for each major occupancy classification. The summary identifies that the Township has no extreme risk occupancies. Institutional occupancies were assigned high risk. This should be reflected in the department's fire prevention and public education program planning. Assembly and residential occupancies are identified as moderate level risks. If, however, any buildings under this occupancy are non-compliant, they may be considered high risk. This would apply specifically to higher density residential units or assembly occupancies. Another consideration would be residential buildings which specifically house higher risk age-groups (e.g. seniors or vulnerable persons), which should be given a higher priority for programming based on increased risk. Business and mercantile occupancies in Puslinch represent a moderate risk.

TABLE L-22: RISK EVALUATION SUMMARY

Community Risk Profile Factors		Property Stock	Building Height / Area	Building Age	Building Exposures	Demographic Profile	Geography Topography	Past Fire Loss	Fuel Load	Prob. Level	Cons. Level	Priority Level	Risk Level
Weight Factor		1	2	3	1	3	1	3	2				
OBC Major Occupancy Classification		Risk Level Assessment											
Group A	Assembly	3	2	3	2	4	2	1	2	2.4	3	7.2	RL-2
Group B	Institutional	4	3	4	3	5	3	1	3	3.2	4	12.8	RL-3
Group C	Residential	4	2	3	3	5	2	3	2	3.1	3	9.3	RL-2
Group D	Business	2	2	3	3	2	2	1	3	2.2	3	6.6	RL-2
Group E	Mercantile	2	2	3	3	2	2	1	3	2.2	3	6.6	RL-2
Group F	Industrial	3	3	2	2	2	2	2	4	2.4	2	4.9	RL-1
Mobile Homes & Trailers		3	1	1	1	3	2	2	2	1.9	3	5.6	RL-1

Probability: 1 – Rare 2 – Unlikely 3 – Possible 4 – Likely 5 – Almost Certain	X	Consequence Level: 1 – Insignificant 2 – Minor 3 – Moderate 4 – Major 5 – Catastrophic	=	Priority Level 0 to 6.2 = Low 6.3 to 12.5 = Moderate 12.6 to 18.7 = High 18.8 to 25.0 = Extreme	=	Risk Level RL-1 – Low Risk RL-2 – Moderate Risk RL-3 – High Risk RL-4 – Extreme Risk
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1.14.1 TOWNSHIP OF PUSLINCH RISK MODEL

1.14.1.1 Methodology

This section provides a brief outline of the scope and methodology used in order to provide insight into the modeling procedures adopted to assess Township risk. A Geographic Information Systems (GIS) model was developed to assess risk based on historic call locations, risk geography, land use, the department's existing and predicted emergency response travel times relate to these risks, and the Fire Risk Sub-Model (Form 100).

The basis of the GIS risk model is to develop geographical risk zones that represent areas of low, moderate, high and extreme risk categories based on land use. The Township's existing land use zoning was used to determine the boundaries and building occupancies associated with each zone. Subsequently, all buildings located in areas outside of the Township's official land use zoning were identified using a buildings shapefile provided by the Ministry of Natural Resources and Forestry. The shapefile displays the buildings as points, thus each point/building was given a 25 metre buffer in order to approximate the building along with its corresponding property. All remaining un-zoned areas were given a land use classification of open space. Next, building occupancies were assigned to their associated land use in order to determine the base risk category (assumes that all buildings are in compliance). The base risk zones associated with each occupancy category are listed in **Table L-23**. Finally, several occupancies had their risk levels up-graded or down-graded based on the Fire Risk Sub-Model (Form 100).

TABLE L-23: BASE RISK ZONE CATEGORY BY OCCUPANCY

Occupancy Classification (OBC)	Occupancy Definition Fire Risk Sub-model (OFM)	Base Risk Zone Category Assigned
Group A – Assembly	<i>Assembly Occupancies</i>	<i>moderate</i>
Group B - Institutional	<i>Care or Detention Occupancies</i>	<i>high</i>
Group C - Residential	<i>Residential Occupancies</i>	<i>moderate</i>
Group D - Business	<i>Business and Personal Services Occupancies</i>	<i>moderate</i>
Group E - Mercantile	<i>Mercantile Occupancies</i>	<i>moderate</i>
Group F1 - Industrial	<i>Industrial Occupancies</i>	<i>low</i>
Group F2 - Industrial		<i>moderate</i>
Group F3 - Industrial		<i>high</i>
Other occupancies	<i>Not classified within the Ontario Building Code (i.e. farm buildings)</i>	<i>low</i>
Rail	<i>Unpopulated Areas</i>	<i>low</i>
	<i>Populated Areas</i>	<i>high</i>

1.14.1.2 Existing Risk and Response (Call Locations)

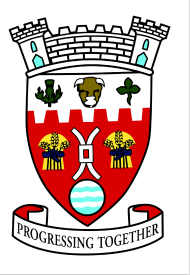
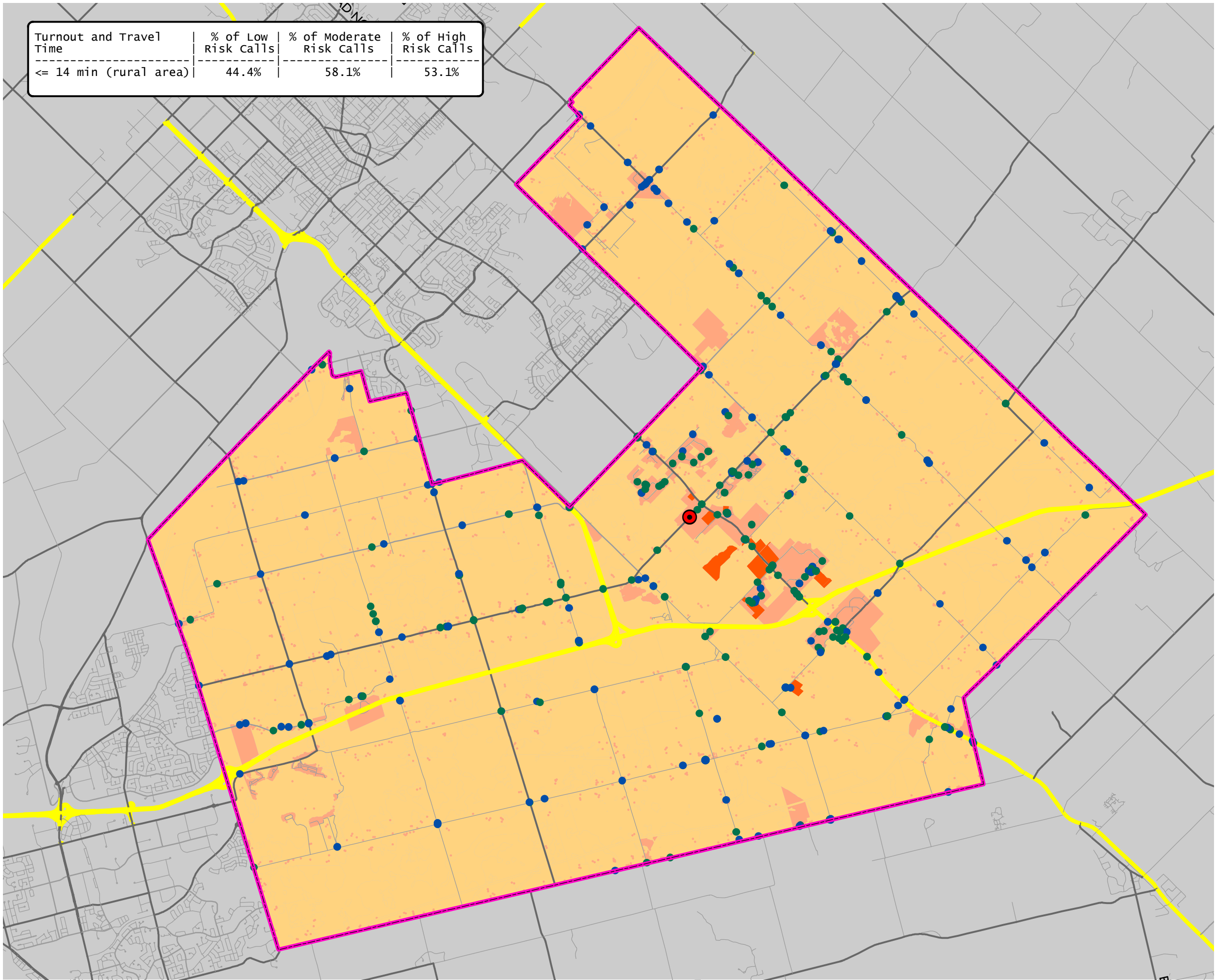
The existing risk zones and existing emergency response are presented in **Figure L-2**. This figure depicts historic call data from 2008 to 2013 overlaid onto the existing risk zones represented in the model. These calls were colour coded according to travel time. Calculations were carried out to estimate the number of calls within each risk zone category and the travel time associated. From the calculations table, 53.1% of high risk calls were responded to in fourteen minutes or less of turnout and travel time. The table indicates that 58.1% of the moderate risk calls were responded to in fourteen minutes or less of turnout and travel time. This also shows that 44.4% of the low risk calls were responded to in fourteen minutes or less of turnout and travel time. This indicates that based on where the majority of the calls occur, the department is able to respond to approximately half of the Township calls in a timely manner.

1.14.1.3 Existing Risk and Response (Township Geography)

The GIS model was used to approximate existing geographic coverage of the existing risk zone areas. The existing station locations were represented in this scenario, shown in **Figure L-3**. Travel times were estimated according to road network distance from the stations, with the travel speeds based on the actual posted speed limit of the road. These assumed travel speeds

(in minutes) are represented by the road network buffers surrounding the fire stations. The calculations indicate the percentage of the various risk zone categories that fall within the estimated travel time buffer. In this figure, 30.0% of the high risk geography, 12.3% of the moderate risk geography and 17.1% of the low risk geography is covered within fourteen minutes of predicted turnout and travel time.

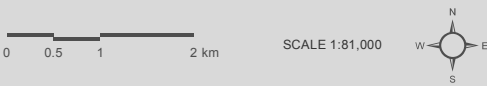
Turnout and Travel Time	% of Low Risk Calls	% of Moderate Risk Calls	% of High Risk Calls
<= 14 min (rural area)	44.4%	58.1%	53.1%



TOWNSHIP OF PUSLINCH
MASTER FIRE PLAN

**FIRE RISK AND RESPONSE
CALL LOCATIONS**
FIGURE # L-2

- MUNICIPAL BOUNDARY
- <=14 MINUTES TURNOUT AND TRAVEL TIME
- >14 MINUTES TURNOUT AND TRAVEL TIME
- FIRE HALL
- HIGHWAY
- ARTERIAL ROAD
- COLLECTOR ROAD
- LOCAL ROAD
- FIRE RISK**
 - High
 - Moderate
 - Low



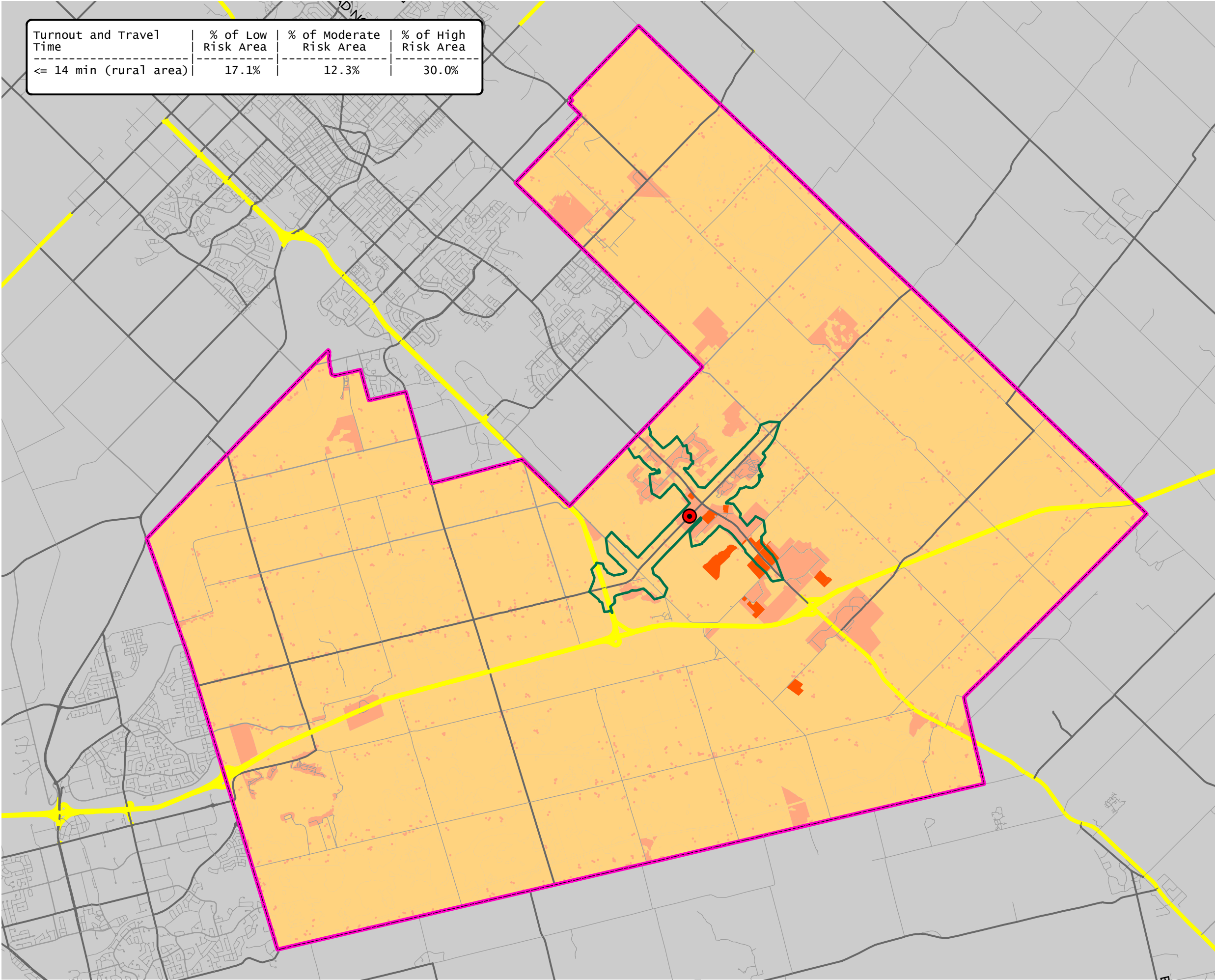
MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR AND THE COUNTY OF WELLINGTON

MAP CREATED BY: SB
MAP CHECKED BY: SC
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: \\DILLON.CA\DILLON_DFS\LONDON\LONDON CAD\GIS\



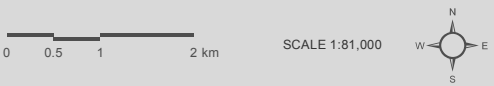
PROJECT: 14-1138
STATUS: DRAFT
DATE: 8/27/2015



TOWNSHIP OF PUSLINCH
MASTER FIRE PLAN

FIRE RISK AND RESPONSE
TOWNSHIP GEOGRAPHY
FIGURE # L-3

- MUNICIPAL BOUNDARY
- NFPA 1720 - RURAL AREA DEMAND ZONE
- FIRE HALL
- HIGHWAY
- ARTERIAL ROAD
- COLLECTOR ROAD
- LOCAL ROAD
- FIRE RISK**
 - High
 - Moderate
 - Low



MAP DRAWING INFORMATION:
DATA PROVIDED BY MNR AND THE COUNTY OF WELLINGTON

MAP CREATED BY: SB
MAP CHECKED BY: SC
MAP PROJECTION: NAD 1983 UTM Zone 17N

FILE LOCATION: \\DILLON.CA\DILLON_DFS\LONDON\LONDON CAD\GIS\



PROJECT: 14-1138
STATUS: DRAFT
DATE: 8/27/2015

Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

Operational Planning: An Official Guide to Matching Resource Deployment and Risk

Public Fire Safety Guidelines

Subject Coding

**PFSG 04-
08-10**

Section

Date

Emergency Response

**January
2011**

Operational Planning: An Official Guide to Matching Resource Deployment and Risk

1.0 Purpose

1.1 Municipalities are responsible for the funding and delivery of fire protection services in accordance with Section 2 of the *Fire Protection and Prevention Act, 1997* (FPPA).

In order to meet the intent of Section 2 of the FPPA, municipalities are expected to implement a risk management program.

The evaluation tool ***Operational Planning: An Official Guide to Matching Resource Deployment and Risk***, found in the Appendix, is to be used as part of a risk management program. The purpose of this guideline is to encourage municipalities and fire departments to use this tool so that they can make informed decisions regarding the delivery of fire suppression services.

2.0 Scope

2.1 This guideline applies to all municipalities.

3.0 Risk Management

3.1 In order to be in compliance with clause 2.(1)(a) of the FPPA, a fire department must have completed a simplified risk assessment, one of the four key minimum requirements for fire protection services. It is expected that this assessment be reviewed and updated periodically to support informed decision making and evaluation of program delivery.

4.0 Legislation

4.1 This guideline is issued under the authority of clause 9.(1)(d) of the FPPA.

4.2 Municipal Council, obligated by the FPPA to provide fire protection services, must

- establish levels of service commensurate with needs and circumstances; and

- provide fiscal resources for staffing, apparatus and equipment to support the established level of service.

4.3 Fire Chief

Person appointed by the council of a municipality, responsible for the delivery of fire protection services, and accountable to the council.

4.4 Fire Department

The fire department delivers the services as approved by municipal council and at the direction of the fire chief.

Operational Planning: An Official Guide to Matching Resource Deployment and Risk can help fire departments to

- assess and analyze fire risk;
- determine current capabilities: staffing, apparatus, equipment, etc.;
- find gaps; and
- work out options, develop recommendations and present them to municipal council using a standardized format.

4.5 Clause 2.(1)(b)

Every municipality shall provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances

4.6 Subsection 2.(7)

The Fire Marshal may monitor and review the fire protection services provided by municipalities to ensure that municipalities have met their responsibilities under this section and, if the Fire Marshal is of the opinion that, as a result of a municipality failing to comply with its responsibilities under subsection (1), a serious threat to public safety exists in the municipality, he or she may make recommendations to the council of the municipality with respect to possible measures the municipality may take to remedy or reduce the threat to public safety

4.7 Subsection 5.(1)

A fire department shall provide fire suppression services and may provide other fire protection services in a municipality, group of municipalities or in territory without municipal organization.

4.8 Clause 9.(1)(a)

The Fire Marshal has the power to monitor, review and advise municipalities respecting the provision of fire protection services and to make recommendations to municipal councils for improving the efficiency and effectiveness of those services.

4.9 Clause 9.(2)(b)

It is the duty of the Fire Marshal to advise municipalities in the interpretation and enforcement of this Act and the regulations.

4.10 Clause 9.(2)(d)

It is the duty of the Fire Marshal to develop training programs and evaluation systems for persons involved in the provision of fire protection services and to provide programs to improve practices

relating to fire protection services.

5.0 References

OFM documents, programs and courses

- Comprehensive Fire Safety Effectiveness Model
- Public Fire Safety Guidelines
- Shaping Fire Safe Communities – Phases 1 and 2
- Essentials for Municipal Decision Makers [course]
- Essentials for Fire Service Leaders [course]

National Fire Protection Association standards

- NFPA 1710 and NFPA 1720

6.0 Appendix

Evaluation tool:

Operational Planning: An Official Guide to Matching Resource Deployment and Risk.

Workbook

[PDF version](#)

[<../../../../stellent/groups/public/@mcscs/@www/@ofm/documents/webasset/ecofm001395.pdf>](#)

[HTML version](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-08-10at1.html>](#)

Appendix M

Fire Prevention Policy (PFSG 04-45-12)

Ministry of Community Safety and Correctional Services :: Public Fire Safety Guidelines

Fire Prevention Policy

Public Fire Safety Guidelines

Subject Coding

PFSG 04-45-12

Section

Date

Fire Prevention and Public Education

August 1998

Subject

Page

Fire Prevention Policy

Purpose:

To identify essential considerations for the development of a municipal fire prevention policy.

Service Delivery Implications:

- Fire prevention includes public fire safety education.

Fire prevention is an integral part of overall fire protection.

2(1) Fire Protection and Prevention Act

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

- the fire department establishing and regulating by-law provides direction from council and sets out the principal fire prevention responsibilities
- specific policy should be developed to establish:
 - level of service
 - types of activities and programs
 - responsibilities of personnel

Policy Requirements:

Policy statement should reflect the following fire prevention activities:

- inspection
- code enforcement
- fire and life safety education
- fire investigation and cause determination
- fire loss statistics
- Fire department operational guidelines will dictate how, when and where activities will be conducted.

Quality and Performance Measures:

The policy should:

- encourage the participation of all fire department personnel in prevention and fire and life safety education.
- provide clear direction from council to the chief, members of the department and the public.

Related Functions/ Considerations:

The fire prevention policy should describe:

- public fire and life safety education programs such as: *Learn Not To Burn; Older & Wiser; Alarmed For Life; The Arson Prevention Program For Children; and Risk Watch.*
- inspections, code enforcement programs such as: routine inspections; home safety checks; complaint inspections; request inspections; open air burning regulation; new construction inspection; and plans examination
- fire investigation / fire origin and cause determination - liaison with appropriate agencies

Codes, Standards, and Best Practices:

Codes, Standards and Best Practices resources available to assist in establishing local policy on this assessment are listed below. All are available at <http://www.mcscs.jus.gov.on.ca/>.
<<http://www.mcscs.jus.gov.on.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.

See also PFSG

[01-02-01](#)

<[../..../..../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/01-02-01.html](#)> Comprehensive Fire Safety Effectiveness Model

[02-02-12](#)

<[../..../..../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-12.html](#)> & [03](#)
<[../..../..../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-02-03.html](#)> Fire Risk Assessment

[02-03-01](#)

<[../..../..../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-03-01.html](#)> Economic Circumstances

[02-04-01](#)

<[../..../..../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-01.html](#)> & [02-04-23](#)
<[../..../..../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/02-04-23.html](#)> Capabilities of Existing Fire Protection Services

[04-12-13](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-12-13.html>](#) Core Services

[04-39-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-39-12.html>](#) Fire Prevention Effectiveness Model

[04-40-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40-12.html>](#) & [04-40-03](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-40-03.html>](#) Selection of Appropriate Fire Prevention Programs

[04-41-12](#)

[<../../../../english/firemarshal/fireserviceresources/publicfiresafetyguidelines/04-41-12.html>](#) Community Fire Safety Officer/Team

Appendix N

Definitions of the OFMEM Response Types

SUMMARY: REPORTING RESPONSE TYPE ON THE ONTARIO OFM STANDARD INCIDENT REPORT

WAS IT AN UNCONTROLLED FIRE OR AN EXPLOSION?

Response type codes: **1 or 2**

If there is a fire and an explosion at an incident, report as an Explosion – code 2
OR

NO LOSS OUTDOOR FIRE

No loss: no fatality, injury and no \$ loss.
Outdoor: open land, trash container, etc.
And not resulting in an exposure fire
Response type code: **3**

DID THE CALL OCCUR IN ANOTHER MUNICIPALITY AND THE LOCAL F.D. WAS PRESENT?

Response type codes: **910 to 913**

WAS IT A PRECONDITION TO AN UNCONTROLLED FIRE?

(smoke, steam, fireworks, etc. no evidence of uncontrolled burning or fire damage)
Response type codes: **21 to 29**

WAS IT A CONTROLLED FIRE?

The FD did not extinguish the fire.
Response type codes: **23 or 36**

DID THE CALL (non fire) OCCUR AT THE SITE OF AN ILLEGAL GROW OR DRUG OPERATION?

Response type codes: **921 or 922**

WAS IT A FALSE FIRE ALARM?

Response type codes: **31 to 35 or 39**
or

FALSE CO alarm (NO carbon monoxide present)?

Response type code: **37**

Another type of FALSE ALARM?

Response type codes: **58, 699, 899**

WAS IT A CO CALL, and CO WAS PRESENT?

Response type code: **53**

NON FIRE SITUATIONS (use where none of situations noted above are applicable)

What action did the fire department take? Rescue? Medical assistance?

If no "action" codes are applicable:

What was the type of emergency situation? (see shaded codes)

DID ANOTHER AGENCY ALREADY ON THE SCENE REQUEST ASSISTANCE?

Response type codes: **92 or 93**

IF **NO CODES** fit the emergency action or emergency incident use Code **99** Other response.
Do not file a report for non emergency FD activities.

RESPONSE TYPE CODES

Property Fires/Explosions

1	Fire
2	Explosion (exc. Codes 3, 11 to 13)
3	No loss outdoor fire (excluding arson, vandalism, children playing, recycling or dump fires)

Overpressure rupture/explosion (no fire)

11	Overpressure Rupture (no fire, e.g. steam boilers, hot water)
12	Munition Explosion - (no fire, e.g. bombs, dynamites)
13	Overpressure Rupture - gas pipe (no fire)

Pre fire conditions/no fire

21	Overheat (no fire, e.g. engines, mechanical devices)
22	Pot on Stove (no fire)
24	Other Cooking/toasting/smoke/steam (no fire)
25	Lightning (no fire)
26	Fireworks (no fire)
29	Other pre fire conditions (no fire)

Burning (controlled)

23	Open air burning/unauthorized controlled burning (no uncontrolled fire)
36	Authorized controlled burning - complaint

False fire calls

31	Alarm System Equipment - Malfunction
32	Alarm System Equipment - Accidental activation (exc. code 35)
33	Human - Malicious intent, prank
34	Human - Perceived Emergency
35	Human - Accidental (alarm accidentally activated by person)
39	Other False Fire Call

CO False calls

37	CO false alarm - perceived emergency (no CO present)
38	CO false alarm - equipment malfunction (no CO present)

Public Hazard

53	CO incident, CO present (NOT false alarm)
41	Gas Leak - Natural Gas
42	Gas Leak - Propane
43	Gas Leak - Refrigeration
44	Gas Leak - Miscellaneous
45	Spill - Gasoline or Fuel
46	Spill - Toxic Chemical
47	Spill - Miscellaneous
48	Radio-active Material Problem
49	Ruptured Water, Steam Pipe
50	Power Lines Down, Arcing
51	Bomb, Explosive Removal, Standby
54	Suspicious substance
57	Public Hazard no action required
58	Public Hazard call false alarm
59	Other public hazard

Rescue

61	Vehicle Extrication
62	Vehicle Collision
63	Building Collapse
64	Commercial/Industrial Accident
65	Home/Residential Accident
66	Persons Trapped in Elevator
67	Water Rescue
68	Water Ice Rescue
69	Other Rescue
601	Trench rescue (non fire)
602	Confined space rescue (non fire)
603	High angle rescue (non fire)
604	Low angle rescue (non fire)
605	Animal rescue
698	Rescue no action required
699	Rescue false alarm

Medical/Resuscitator

701	Oxygen administered
702	CPR administered
703	Defibrillator used
71	Asphyxia, Respiratory condition
73	Seizure
74	Electric shock
75	Traumatic shock
76	Chest pains or suspected heart attack
82	Burns
84	Medical Aid Not Required on Arrival
85	Vital signs absent, DOA
86	Alcohol or drug related
88	Accident or illness related – cuts, fractures, person fainted, etc.
89	Other Medical/resuscitator Call
898	Medical/resuscitator call no action required
899	Medical/resuscitator call false alarm

Other response

921	Illegal grow operation (no fire)
922	Illegal drug operation (no fire)
910	Assisting other FD: Mutual Aid
911	Assisting other FD: Automatic Aid
912	Assisting other FD: Fire Protection Agreement
913	Assisting other FD: Other
92	Assisting Police (exc 921, 922)
93	Assisting Other Agencies (exc 921, 922)
94	Other Public Service
96	Call cancelled on route
97	Incident not found
98	Assistance not required by other agency
99	Other Response

WAS THE CALL CANCELLED OR THE INCIDENT LOCATION INVALID?

Response type codes: **96 or 97**

