

City of Orillia

Technical Evaluation for Settlement Area Boundary Expansion

Fire and Emergency Services Assessment

October 2022

Prepared By



Executive Summary

It is anticipated that the City of Orillia's population will grow from 33,411 people to approximately 49,000 with an employment sector of 26,000 by the year 2051. While the population growth will be focused on development in the west portion of the city as well as through intensification of the downtown core, it has been determined that the municipality must expand outwards to accommodate this growth. In support of a future Settlement Area Boundary Expansion, the City will need to demonstrate adequate fire protection to any lands brought into the City's municipal boundary. Lands brought into the City's municipal boundary will be served by the City's fire department.

A western expansion of the Settlement Area Boundary and subsequent municipal boundaries west of Line 15 North into the Township of Oro-Medonte will require the addition of a staffed fire station to provide fire protection based on similar levels being provided into the rest of the station. This station should be in the vicinity of Old Barrie Road and University Avenue/Line 15 North.

A Settlement Area Boundary Expansion northwest of Highway 12/Highway 11 into the Township of Severn would have adequate fire response from the current Orillia Fire Station #2 providing travel time between 4 and 6 minutes to the area. As these areas develop over time, a staffing review would be required to determine if there is adequate staffing to cover the additional call volume in the expansion area.

Following completion of the Settlement Area Boundary Expansion process and subsequent annexation of lands into the City of Orillia, it is recommended that the City's Fire Services Master Plan be updated to consider provision of fire services to these new areas.

Table of Contents

- 1.0 Introduction 1**
 - 1.1 Overview 1
 - 1.2 Study Purpose 1
- 2.0 Approach 2**
 - 2.1 GIS Response Time Assessments 2
- 3.0 Policy Context 2**
 - 3.1 Fire Protection Review 2
 - 3.2 City of Orillia Fire Master Plan 3
- 4.0 Orillia Fire Department Overview 3**
- 5.0 Fire Station Considerations 6**
- 6.0 Focused Study Area Analysis 11**
- 7.0 Conclusion and Recommendations 13**

1.0 Introduction

This City of Orillia (“the City”) is undertaking a technical evaluation project (the “Technical Evaluation”) to consider a Settlement Area Boundary Expansion (SABE) to identify potential locations for settlement area boundary expansions to accommodate community and employment growth to the year 2051. The City’s Land Needs Assessment has determined that the City needs to expand its municipal boundary to accommodate Orillia’s projected population and employment growth to 2051.

The main objective of this Technical Evaluation is to identify a location, or locations, surrounding the City of Orillia that are suitable for expanding the City’s settlement area. As part of this Technical Evaluation process, the City will need to demonstrate, among other matters, adequate ability to provide fire protection to any lands brought into the City’s municipal boundary.

1.1 Overview

The City of Orillia is a community of 33,411 people (2021 Stats Canada) in the heart of Ontario's Lake Country on the shores of Lake Couchiching and Lake Simcoe. Orillia is less than 90 minutes from the Greater Toronto Area, heading north along Highway 11 with a land mass of 26.5 km².

It is anticipated that the City of Orillia’s population will grow from 33,411 people to approximately 49,420 with an employment sector of 26,200 by the year 2051. While growth will be focused on development in the west portion of the city, as well as intensification its downtown core, it has been determined through the City’s Land Needs Assessment that the municipality will need to expand its municipal boundary outwards to accommodate this growth.

This anticipated growth will create a challenge for the City’s Fire Department in its goal to meet the needs of the community including ensuring rapid response times to the newly annexed areas as well as adequate resources to meet the anticipated call volume growth from the increased residential and employment areas.

1.2 Study Purpose

The inclusion of additional land to the City’s boundaries, including the allocation of land for a new hospital, will create constraints with regards to fire suppression and emergency services response.

The Orillia Fire Department falls within the 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. This standard sets out best practices and goals that fire services work towards within the fiscal realities of a small city, including parameters around response and travel times and ensuring adequate numbers of firefighters based on the community risk.

2.0 Approach

Emergency Management Group (EMG) started the review of fire protection services within the Focused Study Area by undertaking a review of the City's current Fire Protection Services Master Plan (the "Master Plan"). The current Master Plan identifies that as the city grows, an additional station will be required to protect development occurring on the west side of Highway 11. This area has an extended response time from the current two fire stations, as well as increased call demands due to the growth in greenfield areas.

The assessment of the Focused Study Area, being a potential continuum of the current western and northern zones of the city, provides an opportunity to address fire protection to address anticipated growth within the existing municipal boundary and the FSA.

2.1 GIS Response Time Assessments

Using GIS mapping software, this report assesses the response capability of the City's fire department from its two existing fire stations and examines the option to add a third station. The response time grids are based on National Fire Protection Association (NFPA) 1710 standards of having a first response apparatus on scene within 4 minutes (travel time) 90% of the time.

3.0 Policy Context

A Place to Grow: A Growth Plan for the Greater Golden Horseshoe, 2020 (the 2020 Growth Plan) guides and manages growth to create compact, complete communities across the Greater Golden Horseshoe, including the City of Orillia. These Provincial policies and directions are to be implemented by municipalities through their official plans and other land use planning instruments.

Specifically, Policy 2.2.8 of the 2020 Growth Plan outlines an extensive list of requirements that must be satisfied when considering a Settlement Area Boundary Expansion. These requirements involve both justifying the need for the expansion by conducting a land budgeting exercise and by also demonstrating that the expansion is technically feasible. Policy 2.2.8.3 a) requires demonstration there is sufficient capacity in existing or planned infrastructure or public service facilities.

3.1 Fire Protection Review

Fire protection is a municipal responsibility, governed directly by the city. Therefore, the city has direct responsibility, authority, and control over the level of services provided. There is no provincial or federal responsibility providing direction on the level of response. Although there are NFPA standards, these are best practices and have no regulatory authority.

Emergency Medical Services are a responsibility of the County of Simcoe, in partnership with the province who provides partial funding as well as dispatch control.

Policing in the City of Orillia is contracted to the Ontario Provincial Police (OPP). While the city has a contract with the OPP with a specific funding model, the resources may be called upon to support areas outside the municipality depending on the calls occurring. The OPP resources are dispatched by the OPP, and the municipality has no direct control over the policing services.

As annexation occurs, the City must engage the County EMS services along with the OPP to ensure that the provision of their services keeps pace with city growth.

3.2 City of Orillia Fire Master Plan

The current City of Orillia Fire Protection Services Master Plan was developed in 2016 for the purpose of providing high quality fire services to the residents of the city and its visitors. The current Master Plan allows for operating and capital budget forecasting over the following five to ten years.

This review examined and researched all aspects of the Fire Department operations, planning, fire prevention, training and education, communications, apparatus and equipment, maintenance, human resources, station suitability (accommodations) and locations, budgets, and large-scale emergency preparedness.

While the 2016 Master Fire Plan did consider the development of lands within the city's boundaries, including downtown intensification and development of land west of Highway 11, the annexation of additional residential and employment lands was not considered at that time or as part of the Plan.

4.0 Orillia Fire Department Overview

The Orillia Fire Department presently consists of 40 full-time firefighters who cover the city from two stations, 24-hours a day, seven days a week. In addition, there are twenty (20) volunteer firefighters. The Department has a full-time Fire Chief, Deputy Fire Chief, Executive Assistant to the Fire Chief, Fire Prevention Officer, two (2) Fire Inspection Officers, four (4) full-time Communicators and three (3) part-time Communicators.

The Fire Chief also holds the position of CEMC (Community Emergency Management Coordinator) for the City of Orillia with the Deputy Fire Chief and the Assistant Chief being the Alternate CEMCs.

It is the mission of the Orillia Fire Department to preserve life and property, and to promote public safety. The Department strives in its efforts to respond rapidly to all emergencies, to provide the appropriate intervention, and to provide continuing community fire and safety education.

Figure 1 shows the current fire station locations for the city.

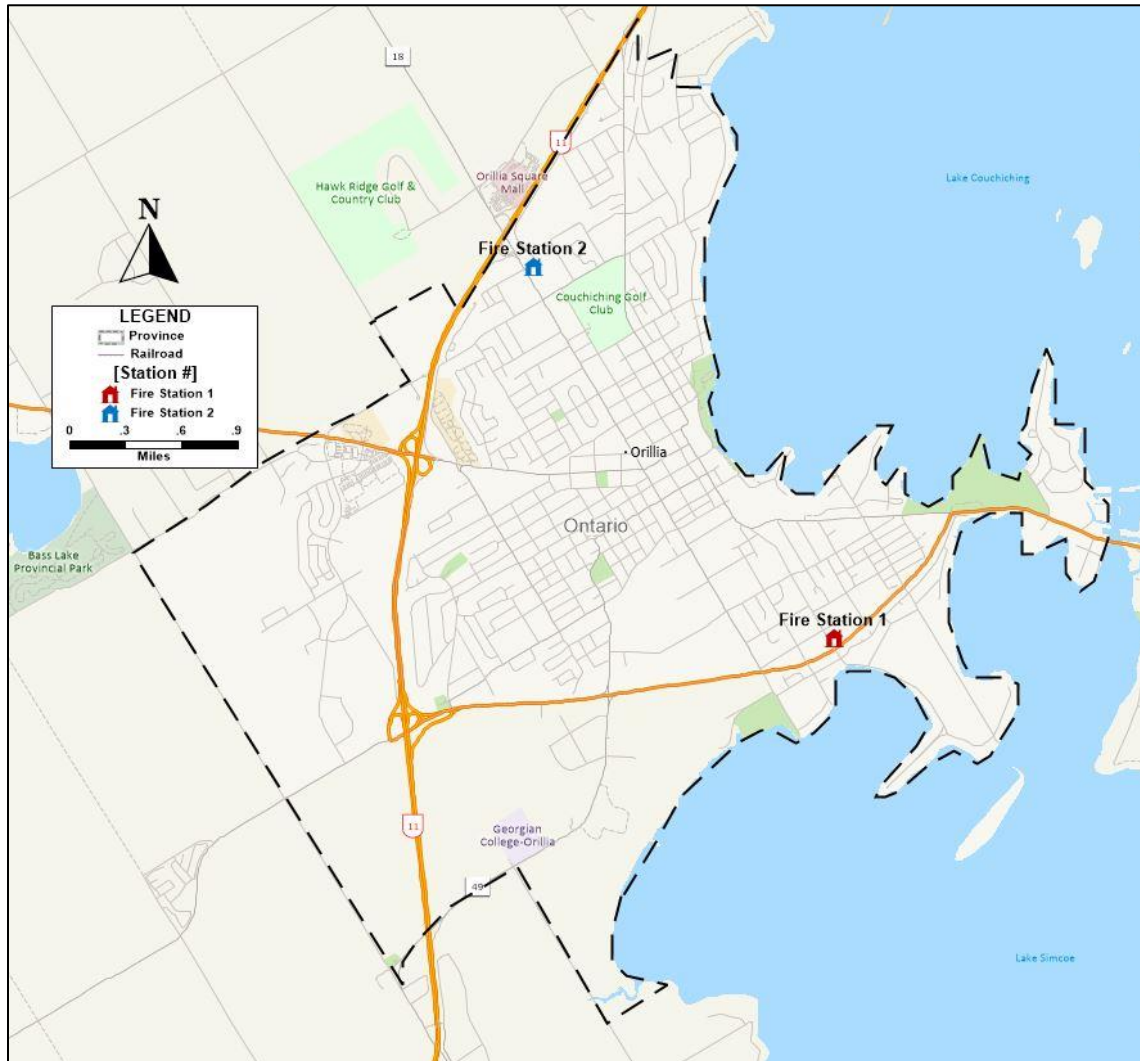


Figure 1 – Existing City of Orillia Fire Stations

Fire Station #1 (Fire Department Headquarters) is located at 500 Gill Street in the south end of Orillia. Fire Station #2 is located at 1 Commerce Road in the north end of the city. Highway 11 and the Trans-Canada Highway run through the centre of Orillia.

Figure 2 demonstrates the current 4- and 6-minute travel time capabilities from the current stations within the current city boundaries. Most of the city has a response time capability within 6 minutes. Some areas on the west end of the current city boundaries exceed a 6-minute response time. Calculations are made using the current road network and based on the posted speed limit.

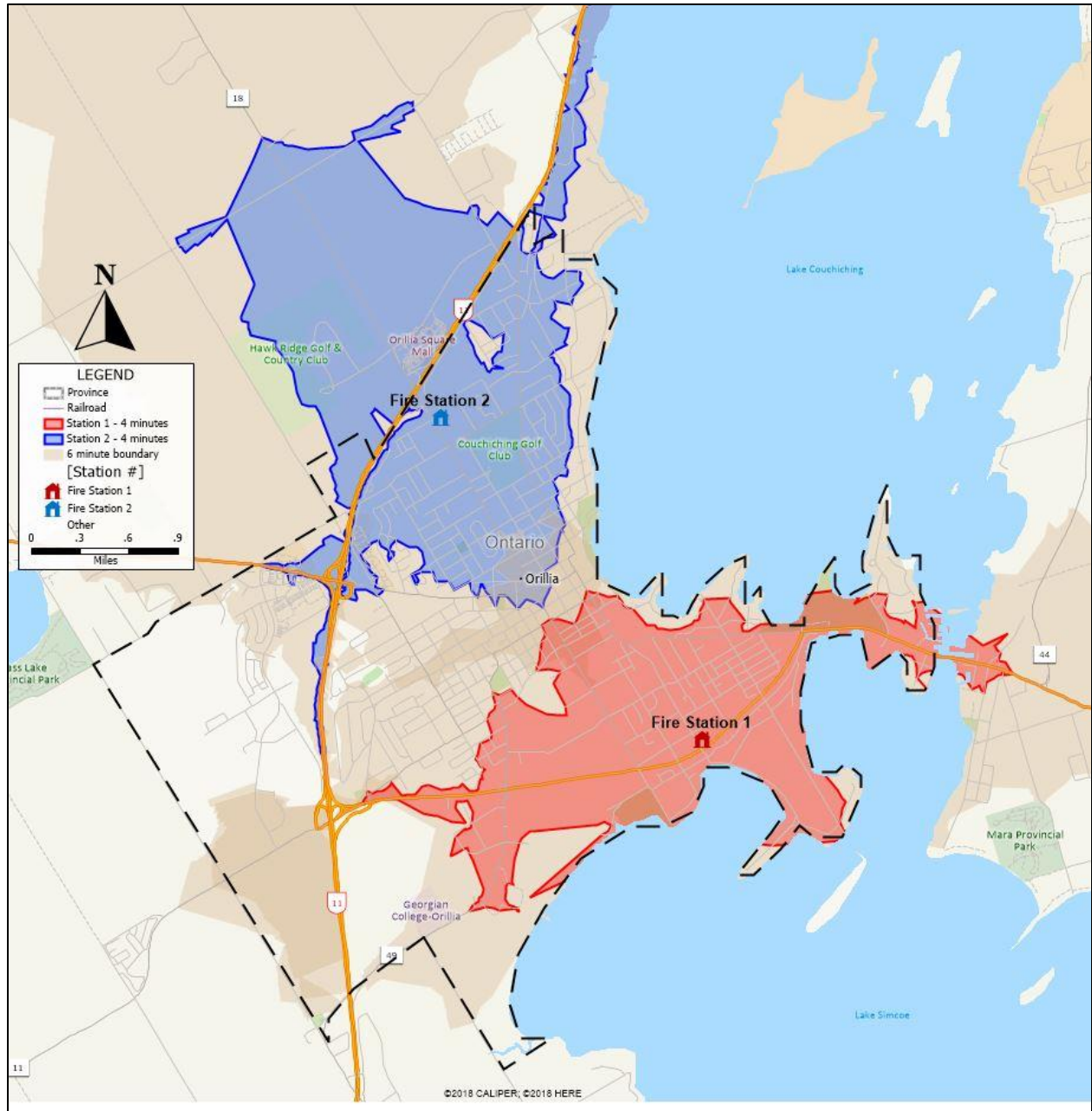


Figure 2 – 4- and 6-Minute Travel Time

NFPA 1710 standards recommend that fire departments target having the first fire truck on the scene of a fire within 4 minutes 90% of the time. Due to the rapid growth and spread of fire and its by-products (toxic smoke), the more rapid the faster fire services can be on scene to attend to fire, the incidence of fire-related injuries, deaths, and property damage is greatly reduced.

While this standard is a best practice, NFPA 1710 is used as a planning benchmark to identify response capabilities within a community and to identify station locations.

5.0 Fire Station Considerations

In consideration of the Settlement Area Boundary Expansion, the City must consider the potential need for a new fire station.

The 2017 Fire Protection Services Master Plan for the City of Orillia establishes the following recommendation:

24. It is recommended that a third fire station be considered in the western portion of the community, close to Highway 11, as this is where many of the department's motor vehicle responses are occurring. It is also an area of future growth potential.

The recommended timeline for implementing this recommendation was mid- to long-term (approximately 4-10 years).

With the City's continued population growth and future Settlement Area Boundary Expansion, the need for an additional fire station may become more pronounced. Further, with a new hospital being built, it is recommended that a fire station be within a four-minute travel time to the facility.

Desirable Fire Station Site Criteria

During the review of existing and potential future fire station locations, many factors were considered such as the size of community the Fire Department would serve, call volumes of the area, staffing, and equipment.

The following criteria were utilized as a basic checklist for the selection of any fire station site:

- Reasonable access to a major street or road
- Appropriate sight lines (i.e., no hills, physical obstacles)
- No traffic impediments at any time of day
- Ability to have a second access to the site (e.g., off Second Street)
- Maintained access (snow clearance, etc.)
- Assembly time for volunteer firefighters must not be negatively impacted
- Impact on adjacent properties needs to be considered
- Size of site must accommodate all expected activities of the fire service and allow for future expansion (parking, training, apparatus maintenance and equipment testing, etc.)
- Proximity to municipal services and required utilities (water, sewer, hydro, telephone, gas, etc.)
- Costs
- Acquisition of land
- Site preparation
- Building (leasing/renting may also be a consideration)

Building Attributes for a Fire Station

In developing the plans for a new fire station, should Council approve its construction, the following building attributes and information should be considered in the station's design.

- The apparatus bay: this is where the firefighting and emergency response vehicles are stored.
- Apparatus bay support and vehicle maintenance: these industrial spaces are where the vehicles and other firefighting equipment are cleaned, maintained, and stored.
- Administrative and training areas: these include offices, training, and conference rooms.
- Residential areas: these include the day room/kitchen, and other areas such as showers and bathrooms.

The primary consideration in the design and layout of a fire station and its functional space is to separate the function of industrial maintenance spaces from residential areas. These spaces need to be separated to eliminate the transmission of vehicle exhaust and other possible contaminants (such as dust and water) into the residential/office areas.

Type of Buildings and Options for Fire Stations

A traditional emergency response station has often been a stand-alone fire station. Municipalities have been moving towards integrating municipal services into shared use buildings with emergency service response stations being built into community centres, libraries, public works buildings, etc.

It is common across Canada to have different emergency services co-located in the same building whether they be fire/police, fire/paramedics, or all three integrated into the same building. These stations normally have separate quarters within the same building, with separate entrances and facilities. This functional design permits each service area to operate independently, while taking advantage of the efficiencies of a single structure.

Municipalities are looking for opportunities to create more efficient use of space and financial resources while integrating municipal services within the community. Several co-location models are being used in different jurisdictions, including public/private partnerships, partnerships with non-profit organizations, and leasing of available commercial space.

As technology, community demographics, and operational requirements change, maintaining an ability to be flexible in the station design, construction, and location, will benefit the community in the long-term.

Leasing reduces the initial capital outlay, places building maintenance responsibility on the landlord, and allows the City the flexibility to move should there be a change in community development.

Figure 3 illustrates the City of Vancouver's new Fire Station #5 which has been integrated into a community housing project operated by the YWCA. The first two floors of the building make

up the fire station while the upper four floors of the six-storey building provide 31 affordable housing units for single mothers and their children.

While the fire station was funded solely by the City of Orillia, the YWCA housing received funding from all three levels of government (the City, Province, and Federal government), as well as the YWCA,. Co-locating the two services provided the tenants an added sense of safety and security.



Figure 3 – City of Vancouver Fire Station #5

In Calgary, a unique fire station exists that includes a two-storey podium building with two separate high-rise towers (**Figure 3A and 3B**). The 11-storey east tower contains 88 affordable housing units with the 18-storey west tower containing 132 market housing units. The fire hall is at the base of the building, composing two-storeys. This fire station was built under a public/private partnership model.



Figure 3a – City of Calgary Louise Station



Figure 3b – City of Calgary Louise Station

In Montreal, a fire station (**Figure 4**) has been built into the ground floor of the Palais des congrès de Montréal, a convention centre that includes a transit hub and retail space. This fire station was developed under a public/private partnership model, including the city and Province of Quebec.



Figure 4 – Palais des congrès de Montréal Fire Station

The City of Barrie has leased the end unit of a commercial strip mall as a fire station (**Figure 5**). The unit was constructed by the landlord to meet the City's requirements. Having a leased unit gives the City the flexibility to move/relocate the station should there be a change in the community development.



Figure 5 – Barrie Fire and Emergency Services Station 5

Assumptions

This Report is based on the following assumptions:

- The lands brought into Orillia's Settlement Area Boundary will be served by a municipal water system with fire hydrants.
- The new station recommended will be staffed with career firefighters on the first run apparatus.

Together, these considerations and assumptions can be leveraged by the City of Orillia in the planning and design of future fire stations. As the City continues to grow, there is an opportunity to consider the integration of future fire stations into buildings which house other community services and amenities and/or housing to achieve multiple City priorities.

6.0 Focused Study Area Analysis

The best assessment of station locations based on the high-level options is to plot the potential travel times based on the NFPA 1710 best practice of 4 minutes for the first responding truck.

Figure 6 highlights the Focused Study Area and demonstrates that the City's current Fire Station #2 provides a 4-minute travel time to approximately 50% of the Focused Study Area north of Highway 12, with the remainder of the area being with 6 minutes. Therefore, an expansion into this area would not require an additional fire station should the City find that a 6-minute response time is acceptable. As the population and commercial use of the area increases, a staffing review will be necessary to determine if an additional fire apparatus is required to cover this area.

It is recommended that a future hospital site be within the 4-minute response time. If a new hospital is built, west of Uthhoff Line and north of Murphy Road, a fire station should be constructed to provide a 4-minute response time.

Figure 7 provides an example of a station in the vicinity of Bass Lake Side Road East and West Ridge Road. This would provide a 4-minute response for most of the additional Settlement Area as well as for the current area of Orillia. This exceeds 6-minute response time addressing the recommendation in the Master Fire Plan.

Figure 6 further demonstrates that a station in the vicinity of University Avenue /Line 15 North and Old Barrie Road would be capable of providing a 4-minute travel time the majority of the Focused Study Area. **Figure 6** also explains the increased coverage to the current portion of the city, that is west Highway 11 and south of Highway 12. Therefore, an additional station in this area would both service the city's additional Settlement Area, as well as address the recommendation in the Master Fire Plan for a third station.

Note: mapping calculations are made using existing road networks. Re-evaluation will be required once the future road networks are designed.

Figure 6 - Potential Third Fire Station for Western Settlement Area Boundary Expansion

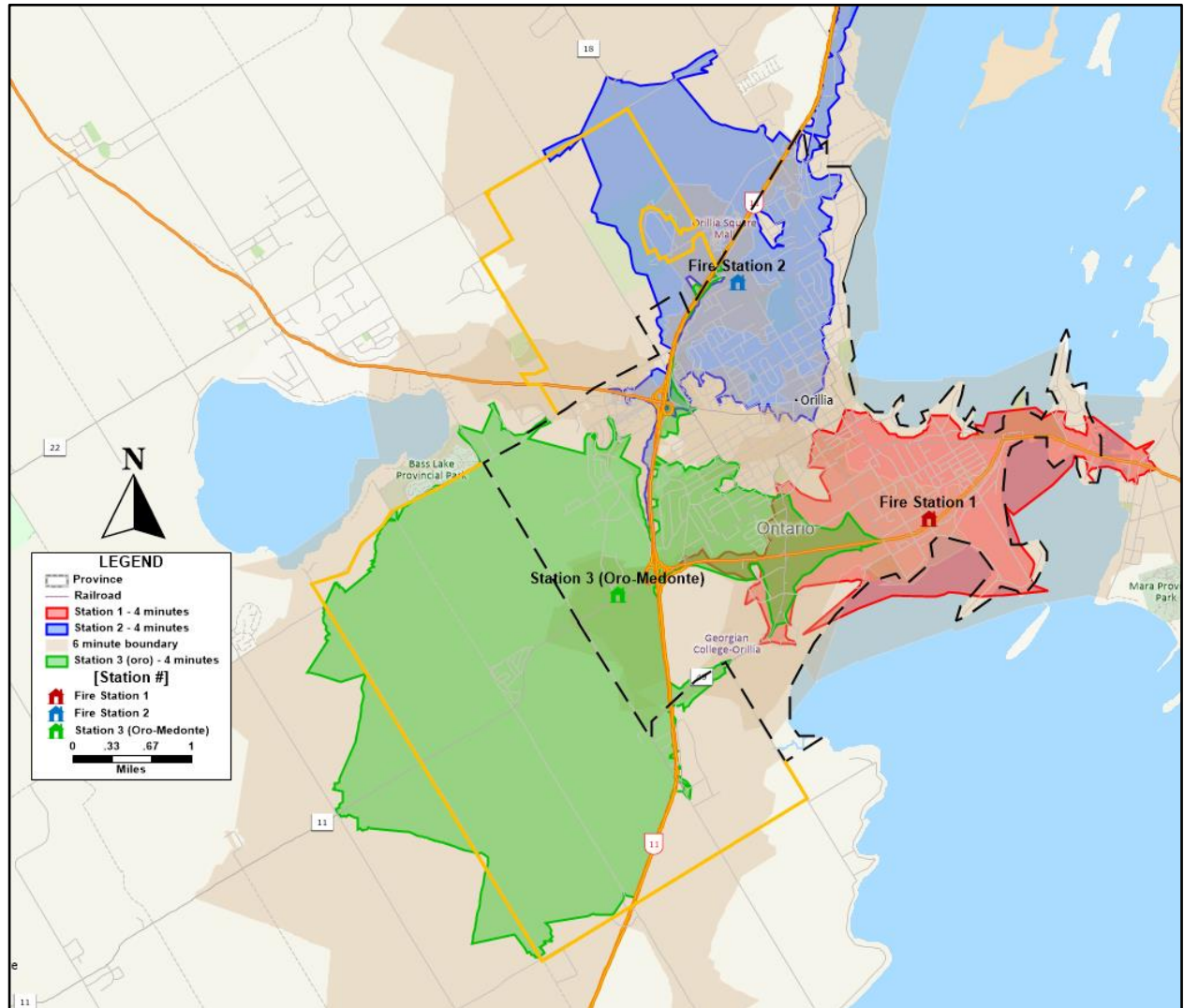
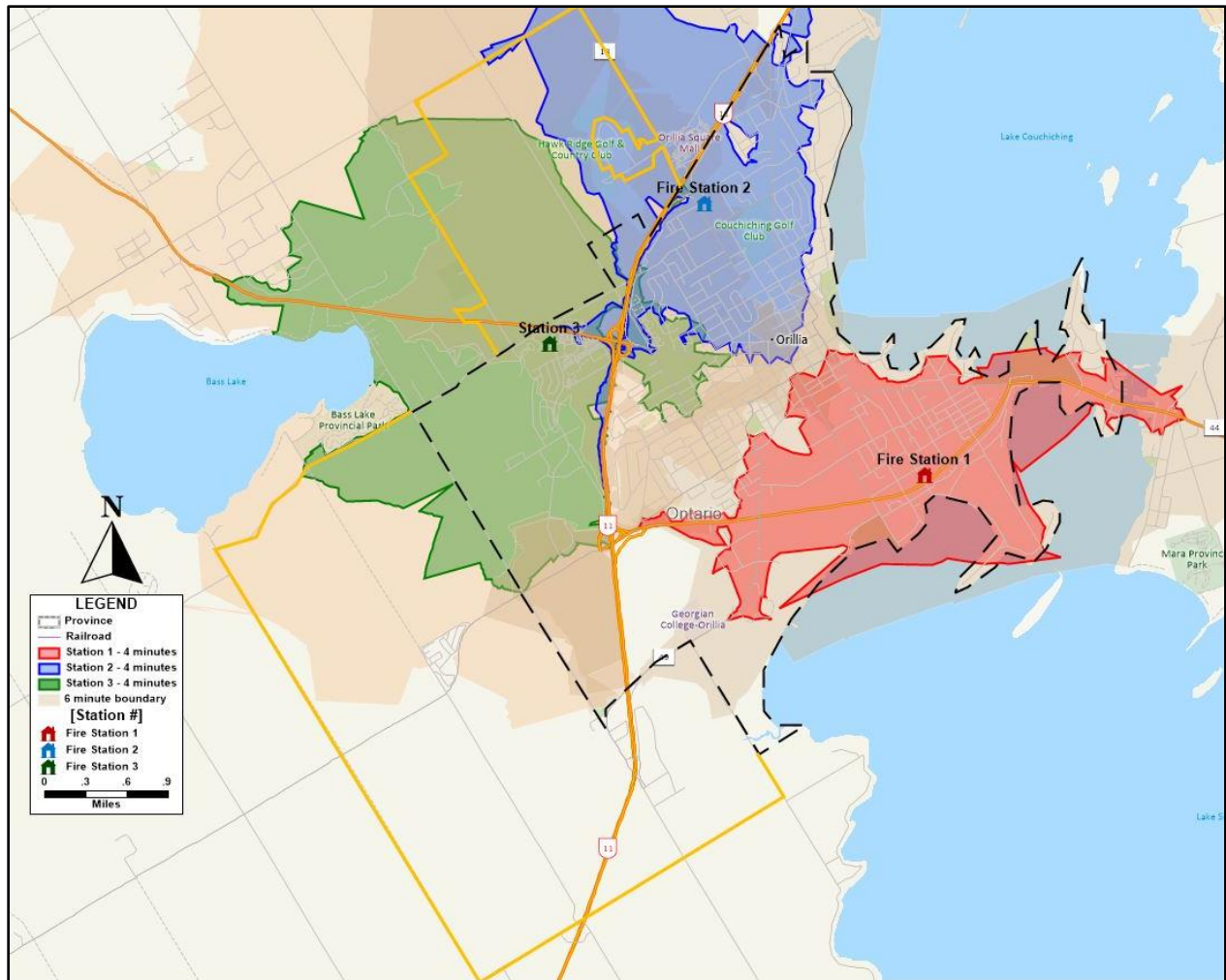


Figure 7 - Potential Third Fire Station for Northern Settlement Area Boundary Expansion



7.0 Conclusion and Recommendations

Expansion of the Settlement Area Boundary and subsequent municipal boundaries west of Line 15 North will require the addition of a staffed fire station. This will provide fire protection based on similar levels being supplied into the rest of the city. This station should be in the vicinity of Old Barrie Road and University Avenue/ Line 15 North.

A Settlement Area Boundary Expansion northwest of Highway 12/Highway 11 would have an acceptable fire response from the current Orillia Fire Station #2 providing travel time between 4 and 6 minutes to the area. As the areas develop, a staffing review would be required to determine if there is adequate staffing to cover the additional call volume. If a new hospital site was selected to be west of Uthoff Line and north of Murphy Road an additional fire station should be considered to ensure it is within a 4-minute response time.