2025

Emergency Management Group

Six Nations Fire and Emergency Services

Station Location Study

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STATION LOCATION STUDY

EMG reviewed the four operational SNFES fire stations, which will be addressed in this section. It should be noted that the walkthrough of the fire stations was a visual inspection; no destructive testing or engineering assessment was conducted.

Fire stations should be positioned to offer the most effective and efficient response to the community. Locating a fire station within a geographic response zone established on timed responses within that zone may not be the optimal location. Fire station locations depend on several factors. These factors include key risks within the response zone, the future growth of the community, and the response team composition (full-time or volunteer firefighters). Another consideration is the geographical layout of the community, which can include natural barriers or divides, such as water, that may make it necessary to have some stations located within proximity of each other.

Distance and travel time may be a primary consideration. However, if the community's decision-makers set a basic expectation of response time, then a more realistic level of service and fire station location criteria can be identified.

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 establishes travel times for emergency response in full-time stations. Chapter

240 seconds (4-minutes) or less for fires

240 seconds (4-minutes) or less for medical emergencies

4.1.2.1 establishes a performance objective for first-due response zones that have an pumper crew on the scene in:

NFPA 1720 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments establishes travel times for volunteer stations. Chapter 4.3.2 details a chart that divides response zones based on population density. Most of Six Nations (outside of Ohsweken and based on population density) is within the definition of a “rural area” as per this NFPA table. This indicates that the population density is less than 500 people per square mile (or 2.6 square kilometres). This section establishes performance objectives of:

- Minimum 6 staff responding
- Response time (on scene) within 14 minutes

- Meet this criterion 80% of calls

The mixed staffing model of SNFES combined with the size, population density, and central community hub allows for a hybrid solution in determining station locations. During the EMG review, reliable emergency call data from the previous three years was unavailable. This data could be used to create heat maps that indicate areas with more calls for service compared to areas with fewer calls. This type of data is useful in determining immediate risks in the community and ensuring that a station can respond within NFPA or departmental performance objectives. Without that data, this review will focus on the geographic dispersion of stations and staffing to allow for a consistent response to all areas within the community.

A composite department like SNFES will have to determine the best deployment of resources to locate them efficiently. Full-time firefighters are better utilized in high-risk and/or high-volume areas, with the advantage of quicker turnout times and minimum staffing. Volunteer firefighters can be an additional support and provide effectiveness in quantity and localized responses. However, the reliability in recruitment and retention can be problematic. Where available, the addition of volunteer firefighters to supplement emergency response would increase emergency operations.

However, as the Six Nations decision-makers near implementation of any recommendations, a review of current call data should be considered. Response mapping and related response data should not be taken in isolation. The Fire Chief should consider all relevant factors in developing a report to the Council as new data becomes available and long-term growth plans are provided.

Six Nations Fire Stations

Station 1 – Veterans Lane (Headquarters)

Front of Station

Back of Station

Training Room

Kitchen

Station 1 is a single-storey station built in 2015. It has a drive-through arrangement with five bays for fire apparatus. The station currently houses Pump 1 (Unit 611), Rescue 1 (Unit 619), Ladder 1 (Unit 613), and Tank 1 (Unit 614). The station is located beside Six Nation Paramedic Services station in downtown Ohsweken, the central hub for the Six Nations of the Grand River. Both fire and EMS stations are effectively situated for optimal geographic deployment.

Administration and Firefighters Area

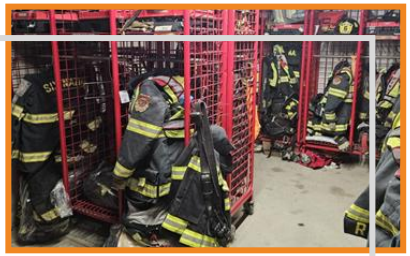
The administration area contains offices for the Fire Chief, Deputy Chief, Assistant Chief, Chief Training Officer, and Captain. It also has a crew lounge with a kitchen, training room and sleeping quarters for firefighters.

Pump 1

Rescue 1

Ladder 1

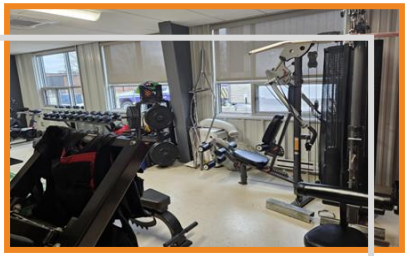
Tank 1


Bunker Gear Room


Compressor Room


Decontamination Room


Decontamination Room


Fitness Room

Apparatus Bays

The apparatus bays contain four apparatus bays, one administrative vehicle bay, a gym, a tool room, a bunker gear room, an SCBA room, a decontamination room, a compressor room, and an additional room upstairs converted into sleeping quarters for additional staff or students for the training centres.

Station Concerns

- Floor drains do not have oil separators in them
- Partial vehicle exhaust system in the station (only for two vehicles)

Station 2 – Second Line

Station 2 is a single-storey station with two bays for fire apparatus. It does not have a drive-through bay. It was built in 1979 and currently houses Pump 2 and Tank 3.

Front of Station 2

Apparatus Bay

Apparatus Bay

Washroom

PPE Racks

Pump 2

Tank 3

Station Concerns

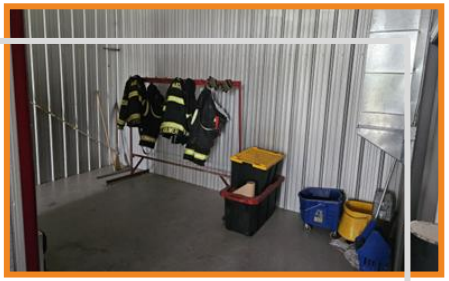
- Lack of storage for equipment
- There is no diesel exhaust removal system in the station
- Firefighting gear is exposed to exhaust contamination
- Security issue with consistent vandalism
- Safety issue with clearance to back in vehicles
- Floor drains do not have oil separators in them
- No shower facilities for decontamination of firefighters (due to exposure of contaminants)

Station 4 – Third Line

Station 4 is a single-storey station with two bays for fire apparatus. It does not have a drive-through bay. It was built in 1985 and currently houses Pump 4 and Tank 4.

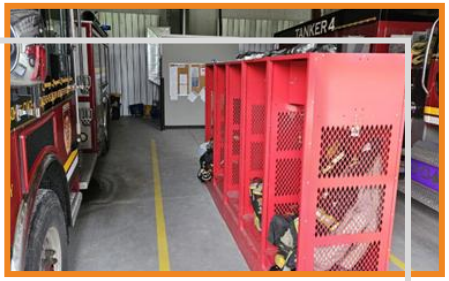
Front of Station 4

Apparatus Bay



Apparatus Bay

Washroom



PPE Racks

Pump 4

Tank 4

Station Concerns

Lack of storage for equipment

There is no diesel exhaust removal system in the station

Firefighting gear is exposed to exhaust contamination

Security issue with consistent vandalism

Safety issue with clearance to back in vehicles

Floor drains do not have oil separators in them

No working washroom

No shower facilities for decontamination of firefighters (due to exposure of contaminants)

Station 5 – Fourth Line (Training Centre)

Station 5 is a two-storey, warehouse-style building retrofitted in 2015 to serve as a training centre. It includes space for apparatus within a large open area but lacks a drive-through bay. The facility was recently renovated to add an additional upstairs classroom and a mezzanine for storage. They are also renovating a kitchen and bedrooms.

Front of Station 5


Upper Mezzanine


Upper Mezzanine


Upstairs Classroom


Downstairs Classroom


Kitchen


Storage / Compressor Room


Storage / Compressor Room


Compressor / Storage Room


Compressor / Storage Room


Bedroom


Washroom

Pump 3

Marine Unit

UTV Unit


Wildland Unit

Station Concerns

There is no diesel exhaust removal system in the station

Fire Station Concerns

During EMG's site visit, significant variance was observed in the condition and investment across SNFES fire stations. Stations 1 and 5 have clearly benefited from recent improvements. However, the closure of Station 3—due to a property dispute and ongoing vandalism—along with persistent security and vandalism issues at Stations 2 and 4, has created a notable gap in station reliability and operational readiness.

The following is a summary of facility-related concerns, primarily associated with Stations 2 and 4:

Bunker Gear Proximity to Vehicle Exhaust

Firefighter personal protective equipment (PPE) is stored in close proximity to vehicle exhaust, with no dedicated exhaust extraction systems in place. This poses a contamination risk, as outlined in the Ministry of Labour Section 21 Guidance Note 3-1, Controlling Exposure to Diesel Exhaust. Without adequate ventilation, exposure to harmful diesel particulates is a concern.

Lack of Dedicated PPE Storage

Neither station offers a separate room for PPE storage. While SNFES has implemented Operational Guideline 4.9 (Reducing Products of Combustion in the Fire Station) to address contamination, mechanical ventilation—an effective method to reduce airborne contaminants—is not currently in place.

Absence of Decontamination Facilities

Stations 2 and 4 lack shower facilities, which are essential for firefighter decontamination following exposure to smoke, toxic substances, bodily fluids, or pathogens. Immediate access to such facilities is critical for occupational health and safety.

Non-Functional Sanitary Facilities

Station 4 does not have a working washroom, further compounding hygiene and health concerns for personnel operating from the facility.

Spatial Constraints and Safety Risks

Both stations present significant space limitations when maneuvering apparatus. Insufficient clearance increases the risk of personal injury or equipment damage.

Adequate spacing is essential to allow safe ingress and egress for both personnel and vehicles during operations.

These deficiencies highlight the urgent need for targeted infrastructure upgrades and operational improvements at Stations 2 and 4 to ensure firefighter safety, compliance with occupational health standards, and consistent service delivery.

Training Centre

Six Nations Fire and Emergency Services operates a training centre at Station 5. The centre has three components: an indoor search/rescue and firefighter survival prop, an outdoor multi-level live fire prop, and an additional outdoor fire behaviour prop. Two classrooms are in the station portion, one upstairs and one downstairs. Additional renovations will include bedrooms in the kitchen area, which will assist with course delivery to outside agencies. This training centre is assessed separately in the training section. It is a primary component of Station 5.

Options Relating to Future Fire Station Locations

During the review of the station locations and facilities, there may be an opportunity to maintain the number of fire stations without impacting SNFES's overall response capabilities.

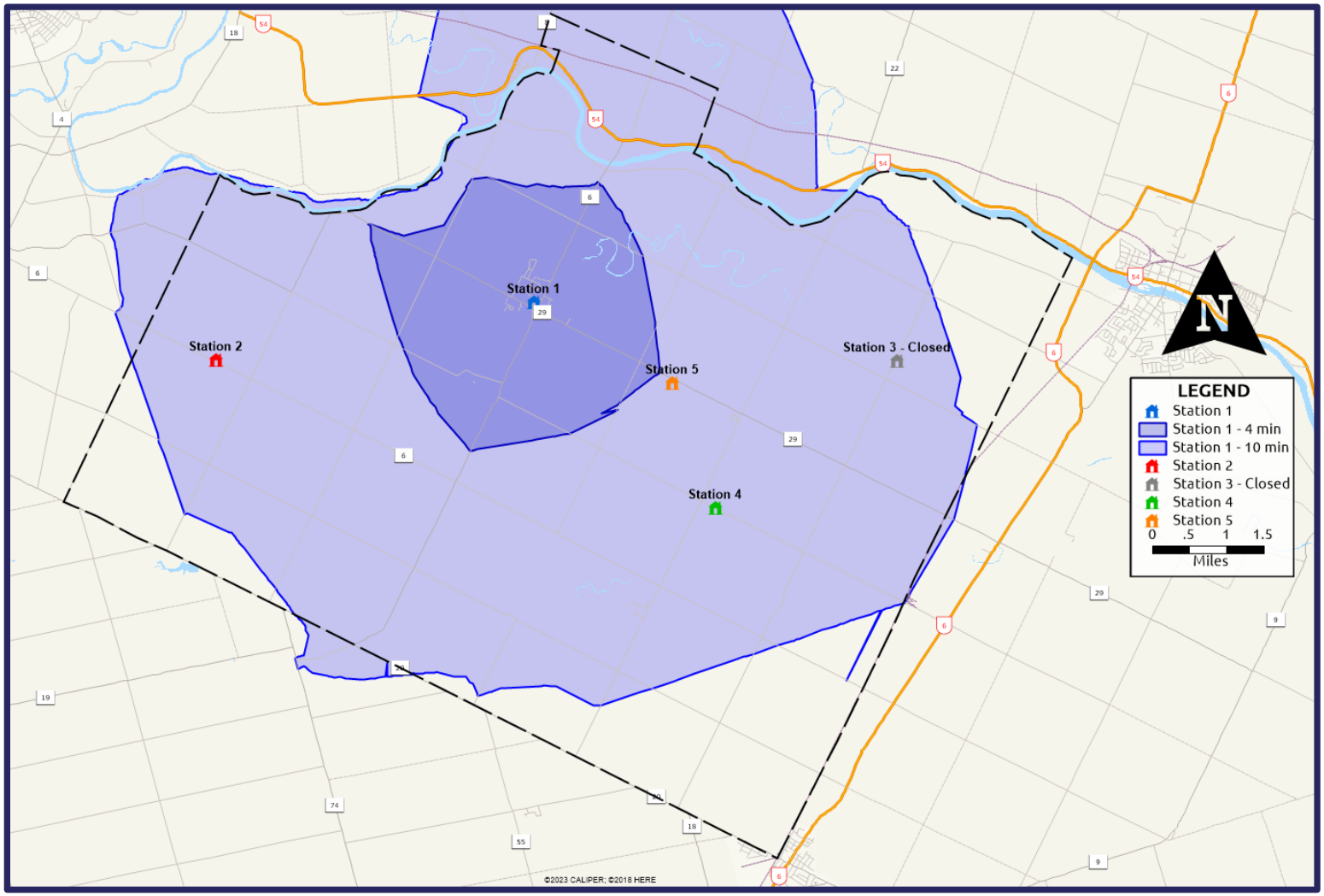
Further review of accurate response data should be considered before final approval. A third-party feasibility study is required before any new builds commence. This study would identify potential costs involved in construction, required utilities, any zoning issues, and require input on expected use and necessary space. Budgeting for these studies per station should be anticipated. Additional considerations could include extending available services such as a water main to the areas of station placement.

However, a geographic deployment is an acceptable solution based on the population density in Six Nations. As such, EMG will present two options to address the current state of the SNFES fire stations.

Future Station Options for Consideration

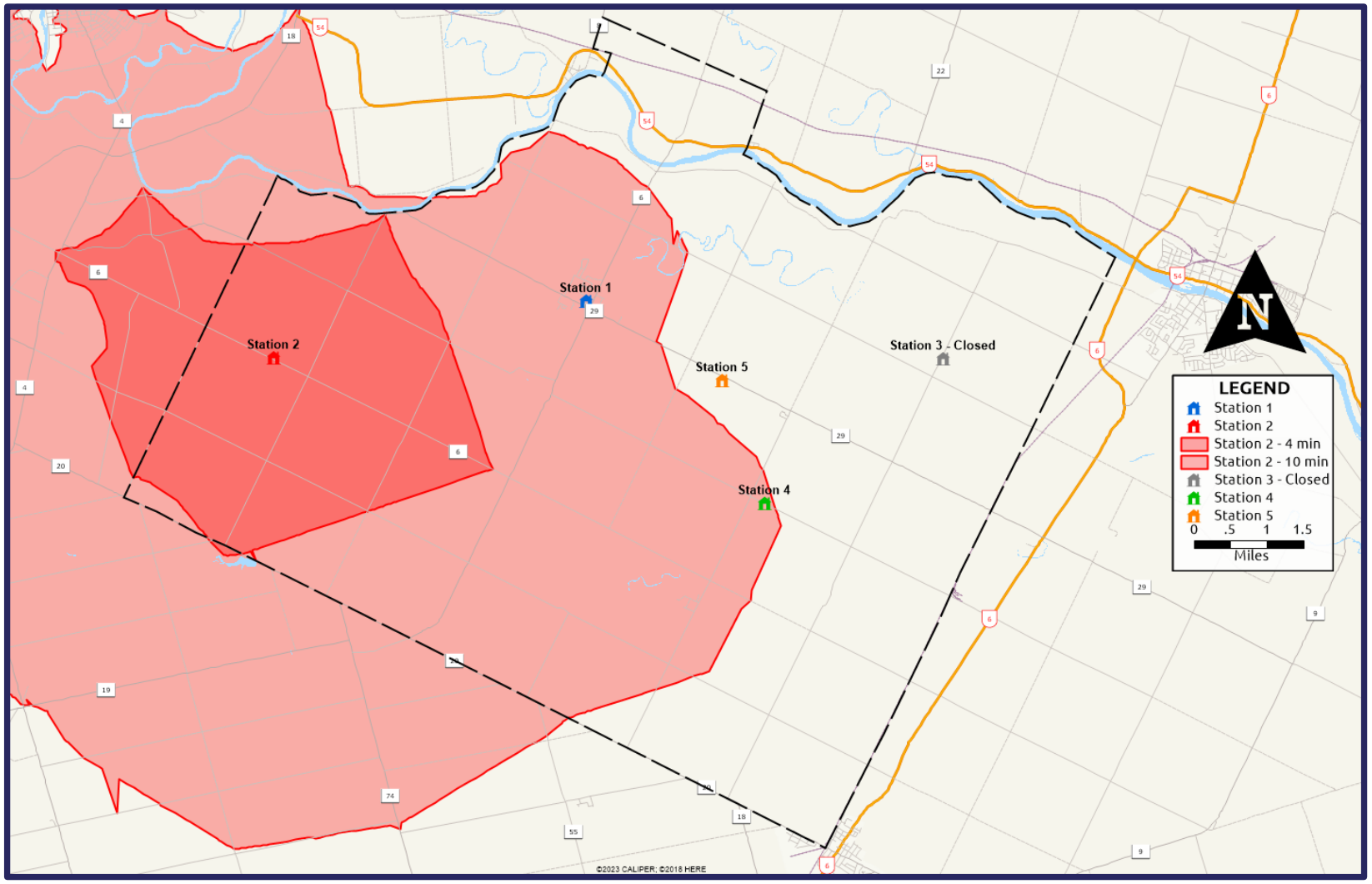
The current four-station model covers most of the community as the deployment areas spread outward from the stations. Responses occur from Station 1 where the full-time staff are located. The other stations are primarily used for secondary apparatus response or volunteer response. If SNFES continues with this composite model, the full-time staff must be spread out to at least one additional station. A revised 4-station model would address the current issues with centralized response, unstaffed stations being vandalized, and the use of Station 5 as a training centre.

FIGURE #6: STATION 1 RESPONSE AREA 4- AND 10- MINUTE TRAVEL TIME



Based on a 10-minute travel time, Station 2 covers a fair area of the southeastern portion of the jurisdiction.

FIGURE #7: STATION 2 - RESPONSE AREA 4- AND 10-MINUTE TRAVEL TIME



Station 4 is also located in the mid-southeast corner of Six Nations and provides fair coverage based on a 10-minute response time.

FIGURE #8: STATION 3 - RESPONSE AREA 4- AND 10-MINUTE TRAVEL TIME

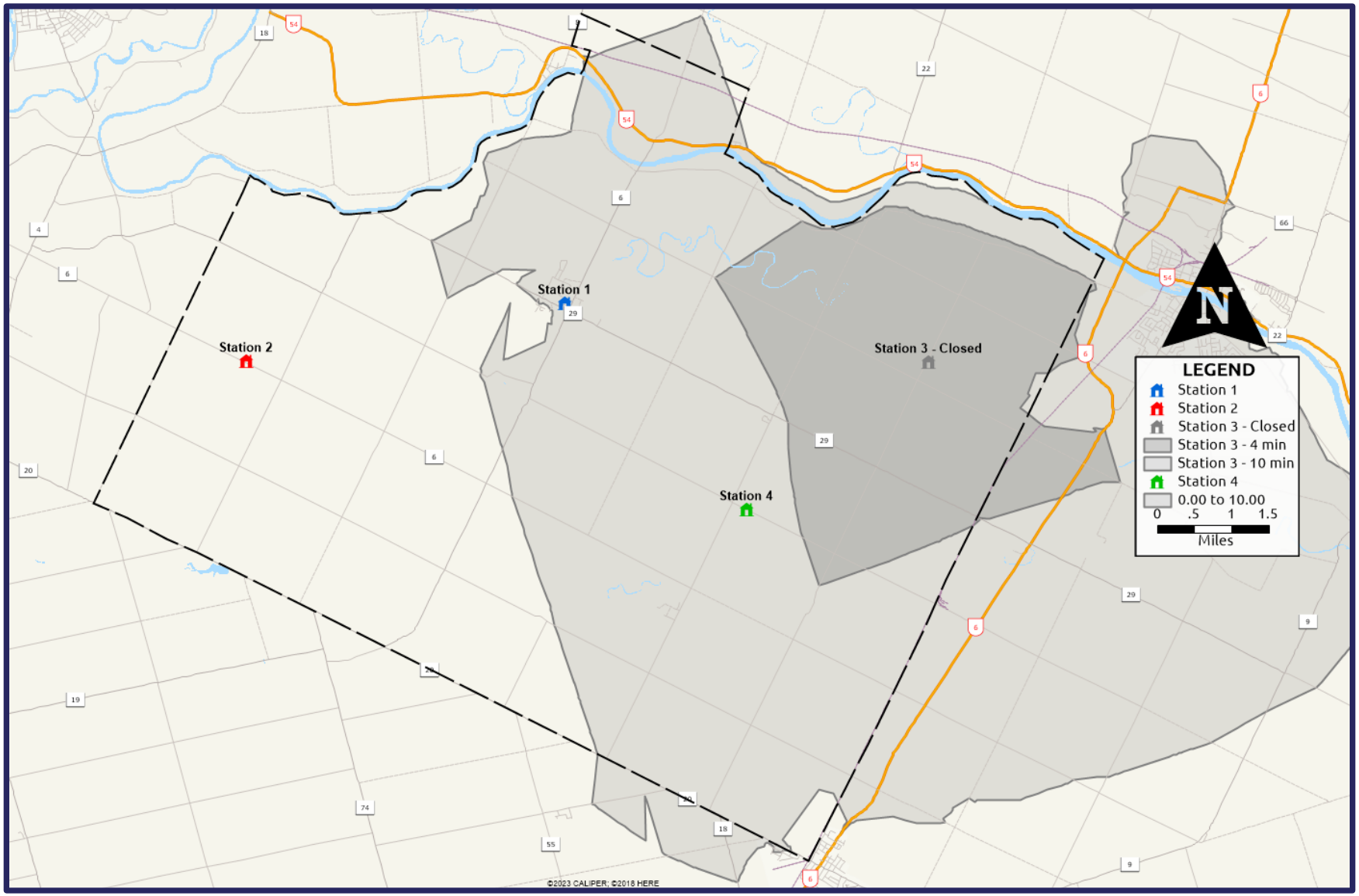


FIGURE #9: STATION 4 - RESPONSE AREA 4- AND 10-MINUTE TRAVEL TIME

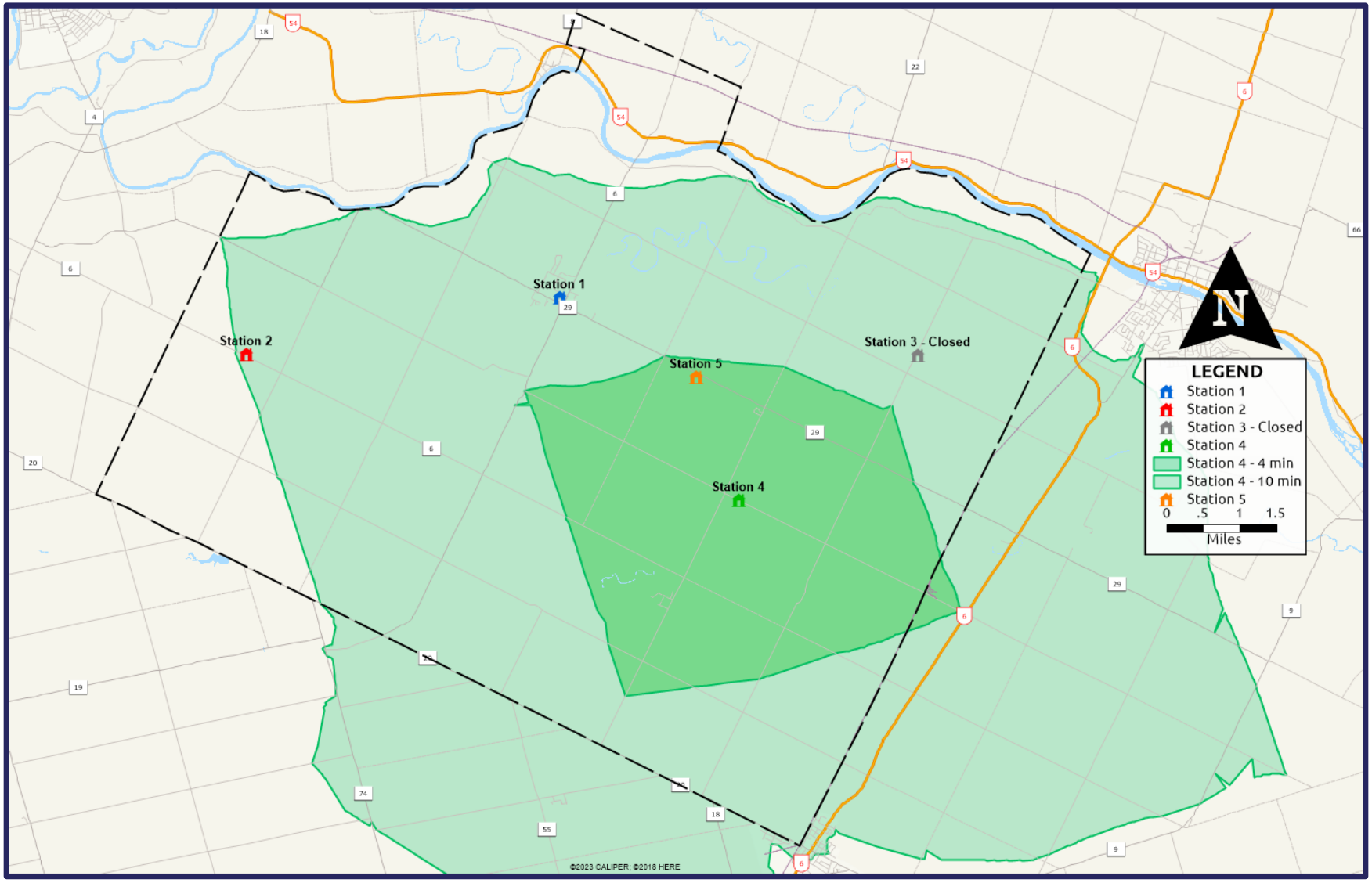
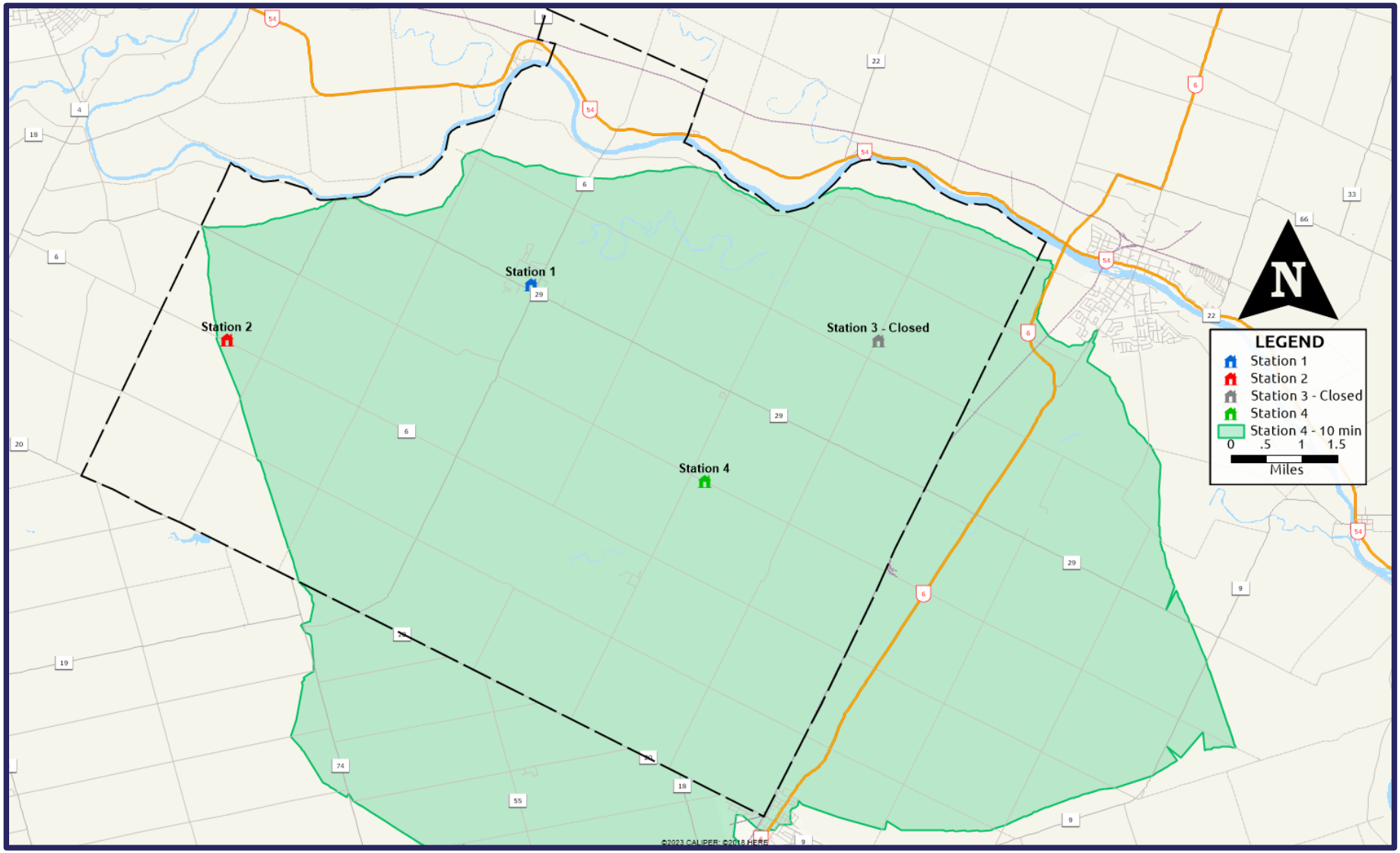


FIGURE #10: STATION 4 RESPONSE AREA 10 MINUTE TRAVEL TIME



The revised 4-station model would see a re-envisioning of Station 2 and Station 4, with the discontinued use of Station 5 as a response station and a new Station 3 will provide coverage in the western area of SNGR.

The 4-station setup, combined with a new staffing model, would offer better coverage to the community based on a geographic deployment. The model would still support the full use of volunteer firefighters while at the same time balancing resources throughout the response areas. By creating additional full-time stations supported by a volunteer station, both staffing and department resources can be better managed with potential long-term savings in maintenance and apparatus costs.

The current state of stations 2, 3, 4, and 5 require change. This change can be commensurate with the growth of Six Nations. Current staffing models have the bulk of crews operating from one location, while the recommendation provides spreading them out. Station 5 is not properly built to act as an emergency response station but is an ideal training centre.

The closure of Station 3 and the current state of Station 2 require a re-envisioning. This may require renovations and/or rebuilding. Traditionally, fire stations have been stand-alone structures. Some municipalities have begun shifting to integrating services into shared-use buildings, with emergency service response stations being built into community centres, libraries, or public works buildings. This type of partnership with other community services is a cost-effective measure in both the use of an existing building and new facilities, sensible use of available lands, and may provide 24-hour staffing to reduce the rates of vandalism.

It is common across Canada to have different emergency services co-located, including fire and police, fire and paramedics, or all three in the same building, with separate entrances and facilities. This permits each service to operate independently while taking advantage of the efficiencies of a single structure.

Recommendation

Station 1

Station 1 requires no changes and remains the headquarters for SNFES in this recommendation.

Station 2

Station 2 is currently only capable of storing up to two apparatus. As the community grows and staffing alongside it, expansion renovations and/or a complete rebuild will be required. See Station 3 for additional recommendations.

Station 3

The loss of Station 3 and the coverage it provided should be replaced. With the proposed closing of Station 5, an area within or close to the old Station 3 location can provide coverage in the western area of SNGR. Station 3 can progress the same as a re-envisioned Station 2, in that they both can expand their respective footprint to include additional apparatus bays, accommodations for fulltime suppression staff, and additional office space for potential fire prevention or administrative staff. Redeploying staff or adding staff to an upgraded and appropriately designed station that will accommodate staff 24/7, resources are available to another portion of the community.

With the recommended addition of fire prevention staff, incorporating additional office space in either the upgraded Station 2 or Station 3 will ease the spacing restrictions in Station 1.

Potential Loss of Coverage Area Without Station 3

Station 4

Station 4 is in the poorest condition and like Station 2, is only designed to store up to two apparatus. It too requires an expansion renovation and/or a redesign and rebuild. However, for the foreseeable future these changes may be under the vision of Station 4 serving as a dual-purpose station, mechanical and volunteer resourcing. With the amount of apparatus in SNFES, back-up and reserve units can be stored in Station 4. The station, with additional apparatus floor space could provide mechanical work for units and equipment. With the continued use of volunteer firefighters, additional equipment and PPE may be stored at this facility.

Station 5

Station 5 should be closed as an emergency response station. It is well designed as a training centre and should continue to function as such. Upgrades and improvements to Station 5 should be training oriented.

Summary

SNFES once operated with five stations. The closure of Station 3, the limitations of Stations 2 and 4, and the design and access to Station 5 create difficulties in providing efficient and effective emergency response across Six Nations. The recommended station locations are:

- Station 1 remains as SNFES headquarters
- Station 2 is renovated or rebuilt to accommodate more staff and apparatus

- Station 3 is rebuilt and can accommodate more staff and apparatus
- Station 4 is renovated or rebuilt to serve as a mechanical and volunteer response station
- Station 5 is restructured to accommodate training only

These recommendations require additional planning and resourcing by the Fire Chief. They are not intended to be realized immediately. As the community grows and the fire department with it, this growth can be accommodated. Currently only Station 1 is the primary response location. SNFES has adequate staffing to support two stations operating with full-time crews, with growth potential for a third. There are also plans to add a fire prevention division. Vandalism seems to be a security issue and puts fire department resources at risk. The current state of SNFES stations will not adequately serve the community in the future.

The existing four buildings, stations 1, 2 and 4, have overlapping coverage areas. As depicted in Figure #9, Station 4 sits between two preferred locations.

FIGURE #11: FOUR STATION COVERAGE AREA – 4 MINUTES

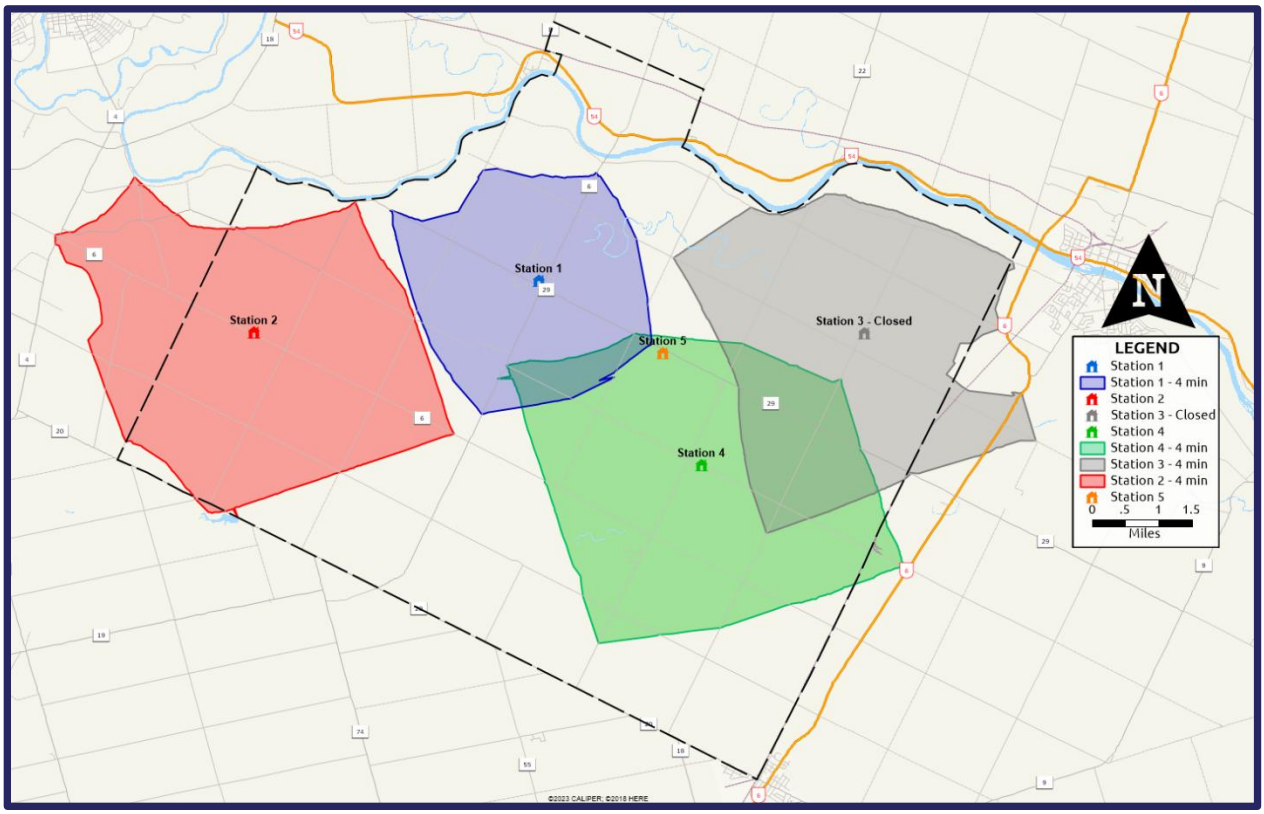
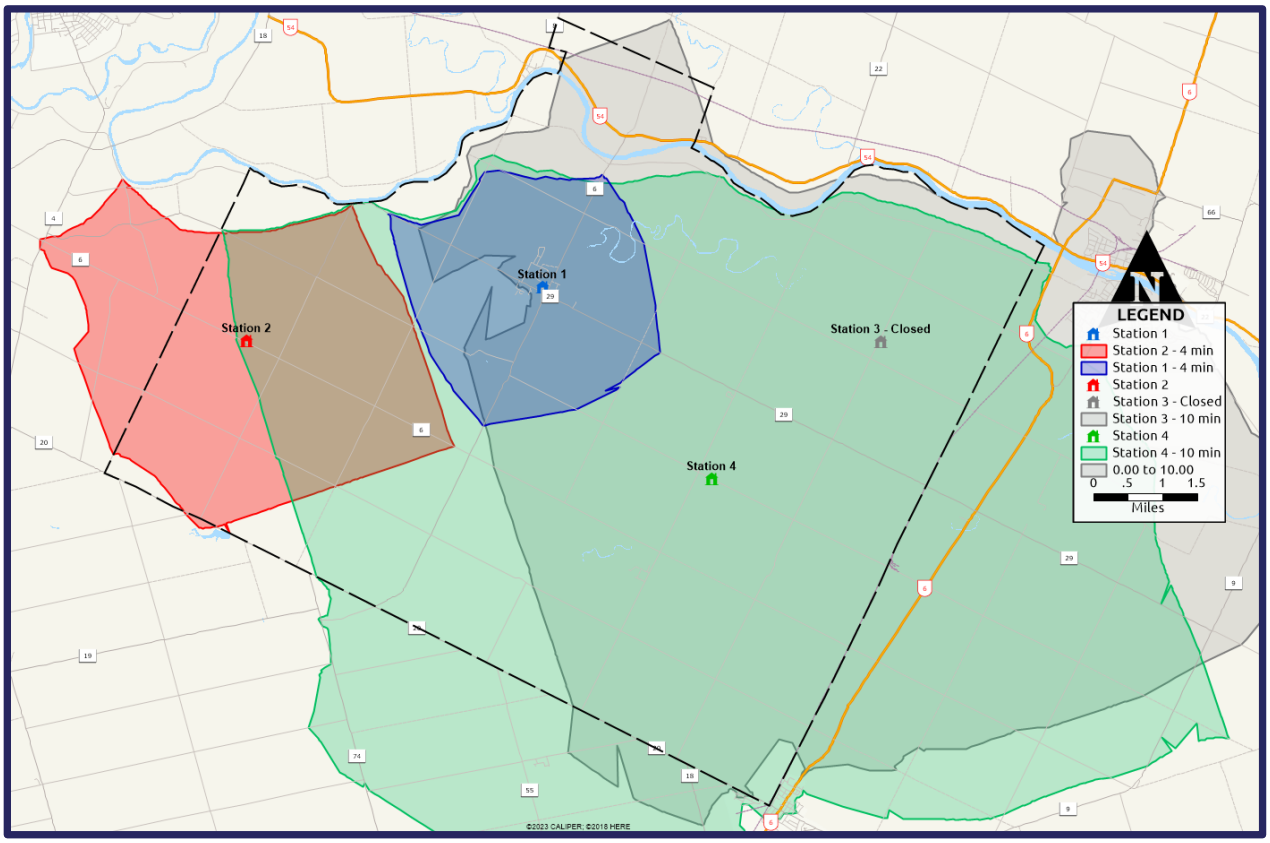


FIGURE #12: STATION 1 AND 2 WITH 4 MINUTE RESPONSE, STATIONS 3 AND 4 STATION SUPPORT



Feasibility Study

There is a great deal of information to consider, with the options noted here. Before any decision is made, a feasibility study by the Works Department and/or a third party is recommended to understand what will be required to bring any of the noted stations that will be kept up to a state that will allow them to continue to serve the community for the next 20 years and beyond. A station condition assessment may be required to assess Stations 2 and 4 in the meantime, as they have identified issues that require attention. The feasibility study could be the deciding factor in what statins may, in fact, need to be rebuilt or even relocated. The study would need to fully assess costing, coverage and staffing considerations, along with a timeline for implementation.

Type of Buildings and Options for Fire Stations

As technology, community demographics, and operational requirements evolve, maintaining flexibility in the station design, construction, and location will benefit the community in the long

term. Leasing a facility reduces the initial capital outlay, placing building maintenance responsibility on the landlord and allowing the Six Nations of the Grand River the flexibility to move should there be a change in community development.

The following is the City of Vancouver Fire Station #5, which has been integrated into a community housing project run by the YWCA. The two main floors make up the fire station, and 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 by the City, the YWCA housing portion of the building received funding from the municipal, provincial, and federal governments, as well as the YWCA, which launched a capital fundraising campaign. Having the two services integrated provides a sense of safety and security for single mothers and their children.

In Calgary, a unique fire station exists that includes a two-storey podium building with two separate high-rise towers. The 11-storey east tower contains 88 affordable housing units, while the 18-storey west tower contains 132 market housing units. The fire hall is at the base of the building, composing two storeys. This is a public/ private partnership.

The City of Barrie has leased the end unit of a commercial strip mall as a fire station (pictured below). The landlord constructed the unit to meet the city's requirements.

EXTREME fire stations are a new concept and a Canadian-built product out of Lethbridge, Alberta. They are modular-based buildings built to seismic and building code standards, using high-efficiency, energy-code-compliant HVAC systems and fire suppression systems; these are standard on EXTREME stations.

The positive aspects about EXTREME fire stations are that they are custom built at a factory and transported to the site where they are quickly placed onsite and ready for occupancy.

Extreme Fire Station Assembly (On-Site)

A typical fire station has a life expectancy of approximately 50 years before the cost/benefit ratio starts to work against the municipality in terms of maintenance, basic function, and design. The EXTREME fire stations have, the ability to meet that life cycle because they are made from steel and aluminum, and additional modules can also be added if the station needs to expand its footprint.

Extreme Fire Station (Multi-Bay Example)

The West Conrad station is an example of the diversity of EXTREME fire station designs and how they can be designed and expanded to meet the customer's needs.

A partnership with non-profit organizations, EMS, or leasing of available space in a new fire station are options as municipalities become more innovative in how they incorporate a fire station into the community. This model may not work or be a fit in every community, but these options are worth exploring to decrease costs while simultaneously increasing the fire department's response capacity.

Calgary Fire Department Waldon Station

The Calgary Waldon station is an example of the EXTREME fire station's one-bay design, which can be expanded to meet the customer's needs.