



Municipality of West Nipissing

FIRE & EMERGENCY SERVICES MASTER PLAN

October 24, 2024

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Preface

This document serves as the Municipality of West Nipissing's Fire & Emergency Services Master Plan. The primary motivation for developing this document is for the community to establish a long-term strategy to protect life and property based on community risk, safety, corporate priorities, and council-approved budget allocations. This document will be used as a tool to evaluate and forecast the immediate and future emergency service needs of the community.

Acknowledgements

Behr would like to specifically acknowledge the leadership, diligence and continuous improvement focus of Fire Chief Frank Loeffen. While there are some challenges for the Municipality, Chief Loeffen remains positive in his efforts to enhance the department and public safety for the community and its citizens. The fire services' leadership and firefighters are dedicated and engaged in all facets of their community. Their pride in the department and their service is clear.

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ACRONYMS

AHJ	Authority Having Jurisdiction
CAD	Computer Aided Dispatch
CRA	Community Risk Assessment
ERF	Effective Response Force
FMP	Fire Master Plan
FUS	Fire Underwriters Survey
MVC	Motor Vehicle Collision
NFPA	National Fire Protection Association
OBC	Ontario Building Code
POC	Paid-On-Call (Volunteer Firefighter)
PSAP	Public Safety Answering Point
SOC	Standard of Cover
SOG	Standard Operating Guideline
WNFES	West Nipissing Fire & Emergency Service

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EXECUTIVE SUMMARY

Introduction

Today's fire and emergency services are continually being challenged by budget constraints, unprecedented growth, rising call volumes, and increasing and unusual risks against a backdrop of expectations to do more with their current levels. The demand for emergency response and emergency management services has expanded, causing the role to shift and for services to diversify. Effective management of an emergency services department requires a clear understanding of risk and the ability to provide an appropriate response to mitigate the risks. Failing to realize and address these challenges could leave the community and its responders vulnerable.

Modern fire, rescue and emergency services have evolved into a critical component of a community's social safety net. Whereas early fire departments were established specifically to combat structure fires that, at the time, were often devastating. Today's fire departments are also called upon to respond to rescues of all sorts, motor vehicle incidents, dangerous goods releases, wildland fires and natural disasters etc. As a result, fire departments must be adequately resourced and equipped to provide these services safely, efficiently, effectively with a great deal of competency.

The goal of developing this Fire Master Plan is to provide strategic direction for the fire service. This plan will provide a systematic and comprehensive approach to evaluate current response capabilities by identifying and mitigating risks through a community risk assessment. The Fire Master Plan will also assist in formulating and communicating strategic directions for the fire service, while highlighting opportunities for improved service delivery. This plan can also be used in conveying information to the public, staff, and municipal council about what to expect in the municipality's approach to fire and emergency service planning, service delivery model, policy, and development.

Ultimately, the outcome of this project determines options towards an optimum service delivery model and serves as a blueprint for the municipality to be more effective and efficient in the delivery of emergency services through current and future challenges.

Strategic Goals

The Municipality of West Nipissing Fire & Emergency Services will utilize the Community Risk Assessment (CRA) to identify the fire safety risks with the municipality, as the basis to inform the development of goals and objectives for the delivery of fire protection and emergency response provided. Optimizing the methodology of the three lines of defense (Public Education, Fire Prevention and Code Enforcement, and Emergency Response) will allow WNFES to provide a comprehensive fire protection program.

Project Approach and Outcomes

While risks are the basis for triggering response decisions, our analysis has also investigated the needs of the community and will provide a point of reference upon which future decisions and priorities can be evaluated and implemented. This includes identifying priorities, challenges, and opportunities for the improvement of the delivery of emergency services to the community, businesses, and overall public safety. Along with risks, this plan also considers applicable legislation, industry-leading and best practices, and standards to provide unbiased analysis and evidence-based recommendations.

Key aspects in the development of this plan included a community and station tour that focused on the overall footprint, topography, and transportation infrastructure of the community along with the various response zones for each of the two responding stations. Touring each station also provided an opportunity to conduct a general condition and operational functionality assessment on each station.

Targeted interviews and an online survey were also used to collect data and information. This process was used to promote an open discussion about the community, risks, and general concerns related to the community and municipal operations.

An industry peer municipal comparative analysis¹ of the fire service was conducted as a method of benchmarking the performance of departments to similar municipalities. These benchmarks include budgets, performance, effectiveness, and efficiencies. Although fire and emergency services ultimately have the same goal of protecting life and property, each community has its unique features in how to accomplish their goals. Our main criteria for the comparative analysis are indicators of effectiveness and efficiencies amongst the communities for risk and mitigation.

Fire Services Master Plan Process

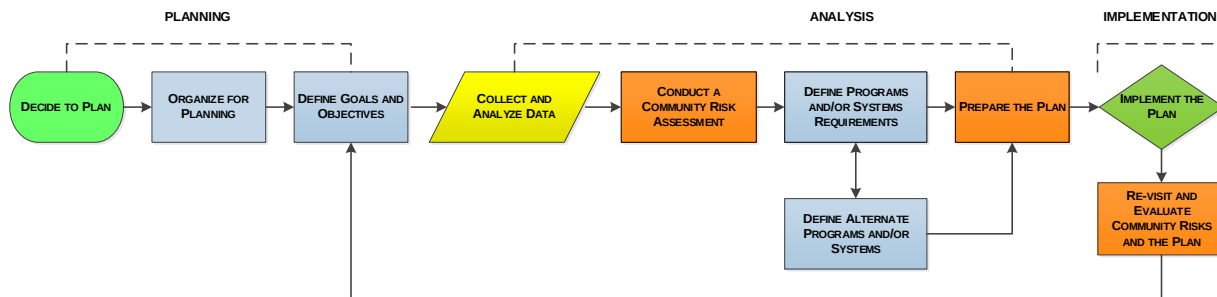
The following diagram illustrates the process used to complete this plan. A Fire Master Plan is sometimes referred to as a ‘road map’ for the future and used as a guiding document for current and future department leaders and decision makers.

As described in the implementation phase, it is highly recommended that this plan be reviewed and evaluated, at minimum, on an annual basis or when there are unusual changes, such as in population, and residential and/or industrial development activity that could affect changes in risk.

¹ Please see Section 3.9 Municipal Comparative Analysis, Page 127

When reasonably possible, we also recommend a third-party update of the plan at the five-year mark to apply an unbiased review into the operation and provide further credibility to the master plan process.

Fire Services Master Plan Process



Community Overview

The Municipality of West Nipissing is in the Nipissing District, roughly 40 kms west of North Bay and 90 km east of Sudbury (Sturgeon to downtown Sudbury) and is situated on the north shores of Lake Nipissing. The municipality is approximately 400 km from downtown Toronto and 375 km from Pearson International Airport.

The town, spans nearly 2,000 km², largely characterized by lush green spaces and numerous lakes, including Lake Nipissing and the Sturgeon River. It has a population of 14,583² as per the 2021 census, with a population density of around 7.5 individuals /km².

Formed through the amalgamation of various townships and communities in 1999, West Nipissing comprises 11 named townships, including Cache Bay, Crystal Falls, Desautniers, Field, Kipling, Lavigne, North Monetteville, River Valley, Sturgeon Falls, and Verner, along with 17 ½ unincorporated townships.

The municipality serves as an agricultural hub and offers diverse opportunities across sectors such as mining, healthcare, public service, retail trade, education, construction, forestry, and transportation.

²<https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&SearchText=West%20Nipissing%20%2F%20Nipissing%20Ouest&DGUIDlist=2021A00053548055&GENDERlist=1,2,3&STATISTIClist=1&HEADERlist=0>

Community Risk Assessment

Every municipality has unique challenges and characteristics contributing to the overall risk profile of the community. In accordance with the Ontario Regulation 378/18: Community Risk Assessments (O. Reg. 378/18), under the authority of the Fire Protection and Prevention Act, 1997 (FPPA), O.Reg. 378/18 “requires that each municipality and every fire department in a territory without municipal organization complete a community risk assessment and use it to inform decisions on the provision of fire protection services.”³ A community Risk Assessment (CRA) is a comprehensive evaluation of potential risks and vulnerabilities within a specific community. It is a vital process designed to identify, assess, and prioritize various risks, such as natural disasters, industrial accidents, public health emergencies, and other hazards that impact the safety and well-being of the community residents.

The introduction of O. Reg. 378/18 is also now a core component to satisfy the FPPA requirements of developing an in-depth analysis of a community’s fire related risks through a comprehensive analysis of nine mandatory profiles which include:

1. Geographic Profile
2. Building Stock Profile
3. Critical infrastructure Profile
4. Demographic Profile
5. Hazard Profile
6. Public Safety Response Profile
7. Community Services Profile
8. Economic Profile
9. Past Loss and Event History Profile

A CRA was developed for the Municipality of West Nipissing using technical guidelines provided by the Office of the Fire Marshal (OFM). A series of data was collected and analyzed to identify risks to the community from the perspective of each of the nine profiles. Key data sources were obtained from West Nipissing Fire & Emergency Services, Office of the Fire Marshal (OFM) Standard Incident Reporting Data, Statistics Canada Population Census, Municipal Property Assessment Corporation (MPAC) and desktop research. The lens of the risk assessment was focused on risk outcomes and how they relate to the fire service. The results of the CRA were then used to inform the development of this Fire Master Plan to mitigate the identified risks and improve fire safety and emergency response capabilities for the community.

³ Community Risk Assessment: Office of the Fire Marshal OFM-TG-02-2019, 2019.

The evaluation of fire and rescue-related risks consider both the probability and consequence of emergency event types. The probability of an event is quantified by analyzing historical, current, and projected data. The consequence of the event type or risk is based on an informed assessment of the potential impact on a community should the event occur. As a result of this analysis, the top hazards in the municipality include the following:

- Flood River & lake
- Windstorm
- Hazardous Material Transportation Incident
- Transportation Accident
- Forest Fire
- Snowstorm- Blizzard

In addition to the overall highest risks to the community, certain events pose an increased risk specific to firefighting. To better understand the risks of hazards as they pertain to fire protection services, the top five hazards have been assessed to identify possible impacts on fire protection services.

Community Comparative Analysis

An industry peer comparative analysis⁴ of the West Nipissing Fire and Emergency Services' operations was also conducted as a method of benchmarking the performance of departments to similar municipalities. These benchmarks include:

- Population
- Budgets
- Department size and type
- Department staffing
- Number of fire stations
- Call volumes and types

Although fire and emergency services ultimately have the same goal of protecting life and property, each community has its unique features in how to accomplish their goals. Our main criteria for the comparative analysis are indicators of effectiveness and efficiencies amongst the communities for risk and mitigation. The communities who participated, along with the Municipality of West Nipissing included:

- Township of Springwater
- Township of South Frontenac
- Municipality of Strathroy-Caradoc
- Township of Clearview
- St. Clair Township

⁴ Please see *Community Comparative Analysis*, Page v

All six services, including Municipality of West Nipissing, have emergency service operating budgets within the range of \$1.8 to \$3.0 million per year. WNFES ranks highest in per-capita cost of the comparison municipalities, but second highest in terms of percentage of municipal budget at 9.39%; second only to South Frontenac.

It is important to note there is no standard for categorizing incidents so it must be understood that the statistics contained in the Fire Master Plan are broadly based and are only for general reference when comparing fire departments. The community comparative analysis can only be interpreted from an indirect basic level due to the disparity from each of the surveyed communities' organizational structure, core services and levels, emergency response categorization, and financial systems.

Department Overview

The West Nipissing Fire and Emergency Services (WNFES) was formed in 1999 through the amalgamation of 11 townships and 17 ½ unincorporated municipalities. The amalgamation brought together Cache Bay FD, Caldwell Township FD, Field Township FD, Springer Township FD, and Sturgeon Falls FD. The unincorporated municipalities fire departments included Lavigne Fire Protection Team, North Montville Fire Protection Team, and River Valley Fire Protection Team.

Today WNFES is serviced through nine stations, with a current roster of six full-time and 130 volunteers to provide fire suppression and rescue response services. WNFES is led by a full-time Fire Chief and one Assistant Chief. Several stations are led by volunteer District Chiefs.

WNFES can also request or be requested for additional fire/rescue resources with partners within the Nipissing Parry Sound Mutual Aid Plan and established automatic aid agreements. Resources may also be requested through the OFM where necessary.

Summary of Observations and Recommendations

The intent of this fire services master plan is to provide a series of recommendations to be implemented over a ten-year timeframe. However, the recommendations in this plan were prioritized in such a way that it was felt all should be completed within seven years. The following recommendations are drawn from findings presented throughout the report. They are grouped into three categories according to priority: critical, short-term, and long-term.

Progress on the implementation of recommendations should be monitored and potentially adjusted to reflect available funding and administrative capacity that may go beyond the five years identified. Most of the recommendations presented in this report are achievable using existing staff or members' time and will therefore not pose significant additional costs to the community, however some recommendations are substantial and will require review of potential funding or financial strategies. Costs are rough order of magnitude estimates only and will require further investigation.

'Cost neutral' refers to the use of internal staff through a normal work schedule. This would include support from volunteers and other internal departments that may or may not require additional resources (costs) to complete. Undertaking of these cost neutral recommendations are also contingent upon staff availability.

A timeframe within 1 – 84 months (1 – 7 years) has been assigned to each recommendation, recognizing that the start and completion of any recommendation is based on annual corporate priorities and council approved budget allocations.

Note: Observations and recommendations are numbered based on how they appear in the report.

Critical	Short Term	Long-Term
1 -12 months	12 - 48 months	48 - 84 months

Recommendation #1a

Revise the current Establishing and Regulating Bylaw to provide for a Council supported detailed core service levels that are informed by the current Community Risk Assessment and providing for WNFES to meet all applicable provincial legislation and regulations.

Reference: Section 2.14.1 Fire Station Response Demand Zone, Pg. 31

Suggested completion: 6-12 months

Cost: Neutral

Resource: WNFES staff time

Recommendation #1b

Establish a Standard of Cover policy identifying the performance expectations (baseline) for each level of service identified in an updated E&R bylaw.

Reference: Section 2.14.1 Fire Station Response Demand Zone, Pg. 31

Suggested completion: 6-12 months

Cost: Neutral

Resource: WNFES staff time

Recommendation #2

WNFES develop a firefighting water supply plan that includes tanker operations, cisterns, and implementation of additional strategically located dry hydrants in water reservoirs and water bodies.

Reference: Section 2.15 Water Infrastructure, Pg. 33

Suggested completion: 12-60 months

Cost: Staff time, potential costs to install dry-hydrant infrastructure (\$12.5k to \$15k per install for lake or river application. Add \$25k to add a fiberglass tank.

Resource: WNFES staff time, third party contractors

Recommendation #3

WNFES develop a plan to provide for a minimum of two firefighters/ staff on duty 24/7.

Reference: Section 3.2.2 Staffing Complement, Pg. 41

Suggested completion: 12-24 months

Cost: As per Collective Agreement. Annual salary per ff is \$66.5k-\$111K depending on classification. Doubling staff 24/7 would require 4 additional resulting in additional costs between \$266k-\$444k in annual salary plus benefits. This would be the top-end rate. To provide part time during evening and weekends at an hourly rate (median of \$88,75k) of \$40/hr. would be approximately \$245k annually. This would cover evenings and full weekends.

Resource: Operating budget

Recommendation #4

WNFES work with the municipal Human Resources personnel to establish complete job descriptions for each of the positions within WNFES. They include:

- **Fire Chief/ Community Emergency Management Coordinator**
- **Administrative Assistant**
- **Assistant Fire Chief**
- **Full-time Firefighter**
- **POC District Chief**
- **POC Captain**
- **POC Firefighter**

Reference: Section 3.2.3 Department Leadership, Management and Operations, Pg. 43

Suggested completion: 6-12 months

Cost: Neutral

Resource: WNFES staff time, Human Resources

Recommendation #5

WNFES explore recruitment and retention practices that have proven to be successful in other similar fire services. These may include, but not be limited to:

- **Incentives for local employers who employ POC firefighters and allow their employees to leave work for emergency response.**
- **Regularly review and update remuneration rates for POC firefighters**
- **Establishment of a Firefighter cadet program**
- **Increased community based or local recruitment drives.**
- **Regular recognition programs for POC firefighters**

Reference: Section 3.2.5.4 Retention, Pg. 50

Suggested completion: 6 months - ongoing

Cost: Any adjustment to remuneration rates, minor costs to provide uniforms and protective equipment for cadet program, any costs for the incentives to local employers

Resource: WNFES staff time, Human Resources

Recommendation #6

Utilizing the Community Risk Assessment findings and new identified trends, WNFES to formalize public education programming. This includes annual reviews to ensure recent trends or incidents are addressed to mitigate risks and ensure adequate resources available to delivery programming.

Reference: Section 3.3 Fire Public Education Services, Pg. 55

Suggested completion: 12-24 months

Cost: Neutral

Resource: WNFES staff time, programming supplies

Recommendation #7

WNFES to formalize a proactive inspection program and ensure the municipality is conducting code enforcement inspections and meeting all legislative requirements through a formalized proactive fire safety inspection program.

Reference: Section 3.4.2 Fire Code Inspection Services, Pg. 58

Suggested completion: 24-36 months

Cost: Additional Fire Inspector as required based on the inspection cycle identified. The annual salary for Fire Prevention Officer is \$113k-\$124k plus benefits based on classification rates in CBA.

Resource: Human resources, Fire administration time, operating budget

Recommendation #8

WNFES and the Building Department conduct a review of the OBC plan review and occupancy inspections program to ensure that the Fire Service is appropriately engaged to be proactive on fire safety requirements under the OBC.

Reference: Section 3.4.3 New Developments Plan Reviews, Pg. 61

Suggested completion: 12-24 months

Cost: Neutral

Resource: Building Department

Recommendation #9

WNFES must review the service levels for fire suppression operations, considering the critical tasks necessary to manage all risks and structure fire types, including residential, industrial, commercial, and higher building fires and include any technical rescue discipline being delivered safely and effectively. SOP's or SOG's must be developed recognizing the limitations of the POC model and provide direction to staff for safe and effective completion of critical tasks, and the need to utilize existing automatic aid agreements for additional support when necessary to meet these requirements.

Reference: Section 3.5.1 Structural Firefighting, Pg. 63

Suggested completion: 12-24 months

Cost: Staff time only to review and develop the critical tasking. The additional use of Automatic Aid will have added cost dependent on the number of incidents and costs identified in the appropriate contract.

Resource: WNFES staff time, Operating budget

Recommendation #10a

WNFES identify the stations to be trained, certified and respond to MVC incidents.

Reference: Section 3.5.5 Technical Rescue Services, Pg. 70

Suggested completion: 12-36 months

Cost: Training and certification costs. There will be additional POC training hours required. Approximately 40 hrs. per person trained and certified. Based on the training rates for POC the start-up costs would be approximately \$2,100 per firefighter per course.

Resource: WNFES staff time, Operating budget

Recommendation #10b

Station #1 to be trained, certified and respond to ice and water rescues at an operations level and all other stations be trained to awareness level. SOP's and SOG's developed to identify the procedures for response and operations. (See recommendation 20 and 21).

Reference: Section 3.5.5 Technical Rescue Services, Pg. 70

Suggested completion: 12-36 months

Cost: Training and certification costs. There will be additional POC training hours required. Approximately 40 hrs. per person trained and certified. Based on the training rates for POC the start-up costs would be approximately \$2,100 per firefighter per course.

Resource: WNFES staff time, Operating budget

Recommendation #11

WNFES to formalize pre-planning programming. This to include annual reviews to ensure plans are currently accessible to all staff attending fire incident scenes.

Reference: Section 3.5.6 Pre-Emergency Planning, Pg. 73

Suggested completion: 12-48 months

Cost: Neutral

Resource: WNFES staff time

Recommendation #12

WNFES explore dispatching options with another fire department communications centre.

Reference: Section 3.5.7 911 and Fire Dispatch, Pg. 74

Suggested completion: 24-36 months

Cost: To be determined based on cost with alternative agreement. The cost can be a flat rate or per incident based, estimated costs \$50k-\$75k annually.

Resource: WNFES staff time, operating budget

Recommendation #13a

WNFES develop at training and certification forecast to meet the level of service provided identified for each station.

Reference: Section 3.6 Training, Pg. 76

Suggested completion: 12-24 months

Cost: Neutral

Resource: WNFES staff time

Recommendation #13b

WNFES utilize a records management program that allows for proper tracking and analysis of current and future training needs and utilizing an on-line training module.

Reference: Section 3.6 Training, Pg. 76

Suggested completion: 12-18 months

Cost: TBD based on the system acquired. Estimated to be between \$50k-\$150k.

Resource: WNFES staff time, Operating budget

Recommendation #14a

The municipality ensure that all members that will serve on the MECG or in support role obtain the appropriate training required through Emergency Management Ontario.

Reference: Section 3.7 Emergency Management Program and Emergency Operation Centre, Pg. 82

Suggested completion: 12-18 months

Cost: Neutral

Resource: WNFES staff time, MECG members time

Recommendation #14b

The Emergency Plan committee review the current plan to ensure that it meets the needs and circumstances and is compliant with the provincial legislation and regulations. This review should be conducted and tested annually.

Reference: Section 3.7 Emergency Management Program and Emergency Operation Centre, Pg. 82

Suggested completion: 12-18 months

Cost: Neutral

Resource: WNFES staff time, MECG members time

Recommendation #15

The fire stations are included in building envelope study and develop a proactive plan for the maintenance, and repair of fire stations. These deficiencies are addressed through the municipalities capital budget process based on the formal building envelope study.

Reference: Section 3.8.1 Facilities, Pg. 83

Suggested completion: 12-60 months

Cost: Staff time for the building envelope study, Capital cost depending on the findings and planning of the of the building envelope study.

Resource: WNFES staff time, corporate staff, Capital budget, Operating budget

Recommendation #16

WNFES explore opportunities to improve equipment and vehicle inventory tracking and maintenance scheduling.

Reference: Section 3.8.6 Asset Management, Pg. 128

Suggested completion: 12-24 months

Cost: Operating and Capital funding dependent on project scope.

Resource: WNFES staff time, operating budget, capital budget

Recommendation #17

Identify and implement opportunities to improve assembly time.

Reference: Section 4.4.2 Assembly Time, Pg. 149

Suggested completion: 12-36months

Cost: Neutral

Resource: WNFES staff time

Recommendation #18a

WNFES permanently close Station 3, utilizing Station 2 for response coverage.

Reference: Section 4.5 Response Coverage Mapping, Pg. 157

Suggested completion: 6-12 months

Cost: Neutral, Potential for cost savings/ avoidance on operating and capital budgets

Resource: WNFES staff time, Human Resources, operating budget, capital budget

Recommendation #18b

WNFES permanently close Station 9, utilizing Station 1 for response coverage.

Reference: Section 4.5 Response Coverage Mapping, Pg. 157

Suggested completion: 6-12 months

Cost: Neutral, Potential for cost savings/ avoidance on operating and capital budgets

Resource: WNFES staff time, Human Resources, operating budget, capital budget

Recommendation #18c

WNFES explore a fire protection agreement with French River to provide response coverage to Station 8.

Reference: Section 4.5 Response Coverage Mapping, Pg. 157

Suggested completion: 6-18 months

Cost: Neutral,

Resource: WNFES staff time

Recommendation #18d

WNFES permanently close Station 8 if recommendation #18c is successful.

Reference: Section 4.5 Response Coverage Mapping, Pg. 157

Suggested completion: 12-24 months (6-12 months after completion of recommendation 18c)

Cost: Neutral, Potential for cost savings/ avoidance on operating and capital budgets

Resource: WNFES staff time, Human Resources, operating budget, capital budget

Recommendation #18e

Consolidation of station 6 and station 7 to a central area between the two communities of Verner and Lavigne

Reference: Section 4.5 Response Coverage Mapping, Pg. 157

Suggested completion: 36-60 months

Cost: Operating cost for fire protection agreement, operating savings/ offsets for closure of stations 3, 9 and 8. Reduction to Capital costs on apparatus replacement due to closures. Additional costs to construct new consolidated station (Station 6 & Station 7) approximately \$5 million - \$7.5 million.

Resource: WNFES staff time, Human resources, operating budget, capital budget

Recommendation #19

Identify the number of firefighters that respond and monitor the time taken to assemble an effective response force.

Reference: Section 1.1 **Error! Not a valid result for table., Pg. 172****Error! Not a valid result for table., Pg. 172**

Suggested completion: 6-12 months

Cost: Neutral

Resource: WNFES staff time

Recommendation #20

Complete a critical task analysis for common emergency incident types.

Reference: Section 4.7 Critical Task Analysis, Pg. 173

Suggested completion: 6-12 months

Cost: Neutral.

Resource: WNFES staff time

Recommendation #21

Utilize a purpose-built fire service records management system to ensure support for all programs required to meet the service levels.

Reference: Section 4.8 Measuring, Managing and Reporting Performance, Pg. 178

Suggested completion: 12-24 months

Cost: \$100,000-\$150,000 is the average cost for record management systems for WNFES sized departments

Resource: WNFES staff time, operating budget, capital budget

Recommendation		Months							
		1	12	24	36	48	60	72	84
1a	Revise the current Establishing and Regulating Bylaw to provide for a Council supported detailed core service levels that are informed by the current Community Risk Assessment and providing for WNFES to meet all applicable provincial legislation and regulations.								
1b	Establish a Standard of Cover policy identifying the performance expectations (baseline) for each level of service identified in an updated E&R bylaw.								
2	WNFES develop a firefighting water supply plan that includes tanker operations, cisterns, and implementation of additional strategically located dry hydrants in water reservoirs and water bodies.								
3	WNFES develop a plan to provide for a minimum of two firefighters/ staff on duty 24/7								
4	WNFES work with the municipal Human Resources personnel to establish complete job descriptions for each of the positions within WNFES								
5	WNFES explore recruitment and retention practices that have proven to be successful in other similar fire services								
6	Utilizing the Community Risk Assessment findings and new identified trends, WNFES to formalize public education programming. This to include annual reviews to ensure recent trends or incidents are addressed to mitigate risks and ensure adequate resources available to delivery programming.								
7	WNFES to formalize a proactive inspection program and ensure the municipality is conducting code enforcement inspections and meeting all legislative requirements through a formalized proactive fire safety inspection program.								
8	WNFES and the Building Department conduct a review of the OBC plan review and occupancy inspections program to ensure that the Fire Service is appropriately engaged to be proactive on fire safety requirements under the OBC.								

Recommendation		Months							
		1	12	24	36	48	60	72	84
9	WNFES must review the service levels for fire suppression operations, considering the critical tasks necessary to manage all risks and structure fire types safely and effectively, including residential, industrial, commercial, and higher building fires. SOP's or SOG's must be developed recognizing the limitations of the POC model and provide direction to staff for safe and effective completion of critical tasks, and the need to utilize existing automatic aid agreements for additional support when necessary to meet these requirements.								
10a	WNFES identify the stations to be trained, certified and respond to MVC incidents								
10b	Station #1 to be trained, certified and respond to ice and water rescues at an operations level and all other stations be trained to awareness level.								
11	WNFES to formalize pre-planning programming. This to include annual reviews to ensure plans are current accessible to all staff attending fire incident scenes.								
12	WNFES explore dispatching options with another fire department communications centre								
13a	WNFES develop at training and certification forecast to meet the level of service provided identified for each station.								
13b	WNFES utilize a records management program that allows for proper tracking and analysis of current and future training needs and utilizing an on-line training module.								
14a	The municipality ensure that all members that will serve on the MECG or in support role obtain the appropriate training required through Emergency Management Ontario.								
14b	The Emergency Plan committee review the current plan to ensure that it meets the needs and circumstances and is compliant with the provincial legislation and regulations. This review should be conducted and tested annually.								

Recommendation		Months							
		1	12	24	36	48	60	72	84
15	The fire stations are included in building envelope study and develop a proactive plan for the maintenance, and repair of fire stations. These deficiencies are addressed through the municipalities capital budget process based on the formal building envelope study								
16	WNFES explore opportunities to improve equipment and vehicle inventory tracking and maintenance scheduling.								
17	Identify and implement opportunities to improve assembly time								
18a	WNFES permanently close Station 3, utilizing Station 2 for response coverage.								
18b	WNFES permanently close Station 9, utilizing Station 1 for response coverage.								
18c	WNFES explore a fire protection agreement with French River to provide response coverage to Station 8.								
18d	WNFES permanently close Station 8 if recommendation #18c is successful								
18e	Consolidation of station 6 and station 7								
19	Identify the number of firefighters that respond and monitor the time taken to assemble an effective response force.								
20	Complete a critical task analysis for common emergency incident types.								
21	Utilize a purpose-built fire service records management system to ensure support to all programs required to meet the service levels.								

Conclusion

The goal of developing this Fire Master Plan is to conduct a comprehensive review of the West Nipissing fire service and produce a strategic plan for the next 7 years. This will provide a systematic and comprehensive approach to evaluate current response capabilities by identifying and mitigating risks and assist in formulating and communicating strategic directions for the fire service, while highlighting opportunities for improved service delivery. The FMP will also assist in conveying information to the public, staff, and municipal council about what to expect in the municipality's approach to fire and emergency service planning, service delivery model, policy, and development.

The WNFES is functioning well with evidence of the typical challenges with volunteer services such as turnover, retention, recruitment, and training requirements. The emergency response capabilities analysis indicates that the total response time 80th percentiles are well beyond of the industry practice for the municipality. Further, WNFES was not able to assemble an effective response force of 10 firefighters within the 80th percentile to perform the critical tasks required in a structural fire. It is important to note that WNFES is providing the best possible emergency response service given the limitations of the volunteer staffing model, the community risk factors, and the current built up areas within the municipality's boundaries.

There are several observations and recommendations provided in this master plan to improve operational effectiveness and efficiencies and enhance administrative and operational processes. Key among the 29 recommendations is:

- Improve efficiencies through closing of low call volume, low risk stations.
- Establish service levels for emergency response that includes the analysis and risk factors identified in the community risk assessment.
- Establish dedicated fire and life safety education and dedicated inspection and enforcement positions with a focus on risk reduction through lines 1 and 2.
- Ensuring all fire fighters and fire service staff are certified to appropriate levels as identified by the Council approved service levels.
- Ensure appropriate records management systems for Fire Prevention, Operations and Response, Training, and Capital Assets.
- Undertake a complete building envelope study assessment of all WNFES fire stations.

Although each recommendation has a corresponding timeframe, it is important to note this FMP needs to be revisited on a regular basis to confirm that the observations and recommendations remain relevant. The recommendations outlined in this FMP will better position WNFES to mitigate and manage community risks, monitor response capabilities and performance, and maintain excellent community relationships and value for money.

Notwithstanding operational observations around emergency response performance, achievement of an effective response force and the WNFES is a fire service that is serving the community well.

Finally, our interactions with the West Nipissing staff revealed a highly professional and dedicated organization that is committed to providing the best possible service to the citizens of the municipality

SECTION 1

INTRODUCTION

1.1 Background and Significance

Community leaders across Canada continue to search for innovative approaches to improve the efficiency and effectiveness of service delivery. Effectiveness refers to the ability to achieve the desired results or outcomes. Efficiency refers to optimizing the use of available resources – whether it is time, money, or effort. The notion of efficiency in service delivery is often described as ‘doing more for less’ or ‘value for money’.

Elected officials, CAOs, directors and managers are often faced with the ongoing challenge of achieving efficient and effective service delivery models. Public safety is most often one of the top priorities within most communities, but achieving this goal comes at a relatively high cost. The services charged with achieving this outcome, including police, fire, EMS, and emergency management services, are essential components of any community’s social safety net. Service effectiveness is not an option. However, the need for fiscal prudence and to review operational efficiency and effectiveness cannot be ignored. Senior community officials must continue to be vigilant in their search for innovative and sustainable practices and finding the balance between service levels and expenditures to ensure their citizens are getting ‘value for money’.

1.2 Goals and Objectives

The goal of developing this Fire Master Plan (FMP) is to create a strategic plan by conducting a comprehensive community risk assessment and review the current capacity of the fire service. The goal of the FMP is to provide a systematic and comprehensive approach to evaluate current response capabilities by identifying and mitigating risks and assist in formulating and communicating strategic directions for the fire service, while highlighting opportunities for improved service delivery. The FMP will also assist in conveying information to the public, staff, and municipal council about what to expect in the municipality’s approach to fire and emergency service planning, service delivery model, policy, and development.

While risks are the basis for triggering response decisions, our analysis has also investigated the needs of the community and will provide a point of reference upon which future decisions and priorities can be evaluated and implemented. This includes identifying priorities, challenges, and opportunities for the improvement of the delivery of emergency services to the community, businesses, and overall public safety. This plan has considered applicable legislation, industry-leading practices, and standards, along with current and anticipated risks to provide unbiased analysis and evidence-based recommendations.

Ultimately, this project FMP has determined options towards an optimum service delivery model(s) and serves as a ‘blueprint’ for the municipality to be more effective and efficient in the delivery of emergency services through current and future challenges. The detailed project scope is available in Section 1.3 of this document.

1.3 Project Scope

The FMP will consider and achieve the following benefits:

- Enhanced firefighter safety
- Improved cost control and containment
- Increased efficiency and effectiveness
- Identification of the right sized service to meet the current and future needs of the community.

At minimum, we completed the following items:

1. Community Risk Assessment (CRA) addressing the nine (9) mandatory profiles outlined in Ontario Reg 378/18 to make informed decisions regarding the current service capabilities.
2. A review of all current fire services and programs, based upon the above risk assessment. Our analysis included an examination of the department’s core functions, including, but not limited to:
 - a. Fire administration fire prevention, fire inspection, public education, training, fire suppression, apparatus, facilities, and emergency management.
 - b. How are services currently being provided and to identify areas needing improvement?
 - c. Fire station locations and apparatus deployment.
 - d. Recruitment and retention of volunteer firefighters.

1.4 Standards and References

This plan considers the following references and standards:

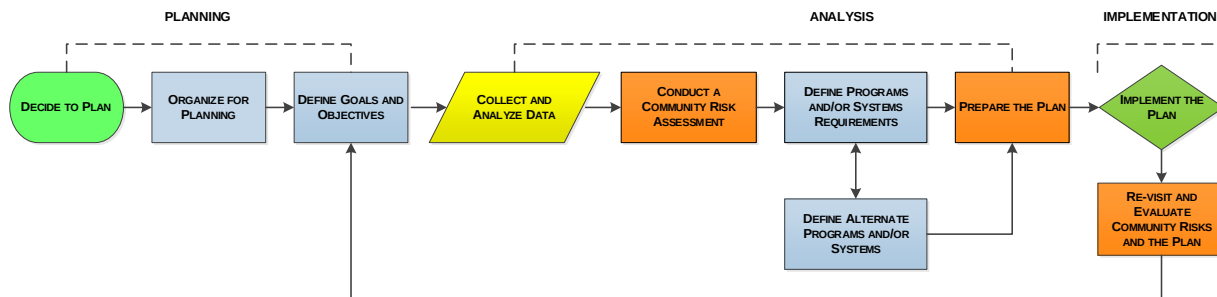
- Commission on Fire Accreditation International
- Canadian Standards Association (CSA)
- Fire Underwriters Survey (FUS)
- Ontario Emergency Management and Civil Protection
- Ontario Fire Protection and Prevention Act
 - O. Reg. 213/07: Ontario Fire Code
 - O. Reg. 378/18: Community Risk Assessments
 - O. Reg. 364/13: Mandatory Inspection – Fire Drill in Vulnerable Occupancy
 - O. Reg. 365/13: Mandatory Assessment of Complaints and Requests for Approval
 - O. Reg. 343/22: Firefighter Certification
- Fire Marshal Directives
- National Fire Protection Association (NFPA)
- Ontario Occupational Health and Safety Act
- Ontario Building Code
- Underwriters Laboratories (UL/ULC)

1.5 Fire Services Master Plan Process

The following diagram illustrates the process used to complete this plan. A Fire Services Master Plan (FMP) is sometimes referred to as a ‘road map’ for the future and used as a guiding document for current and future department leaders and decision makers.

As described in the ‘implementation’ phase, it is highly recommended that this plan be reviewed and evaluated, at minimum, on an annual basis or when there are unusual changes in risk, response demands, population and residential or industrial development activity. When reasonably possible, we also recommend a third-party update of the plan FMP at the five-year mark to apply an unbiased review into the operation and provide further credibility to the master plan process.

Figure 1: Fire Services Master Plan Process



1.6 Consultative Process

1.6.1 Community and Fire Stations Tours

The community and stations tours focused on the overall footprint, topography, transportation infrastructure of the municipality and the various response zones. Touring the stations provided an opportunity to conduct a general condition and operational functionality assessment on each station.

1.6.2 Targeted Interviews

Targeted interviews were part of the data and information collection process. Participants were asked questions related to their areas of purview and expertise. An interview guide was used to conduct the interviews. The interview itself was used to promote an open discussion about the community, risks, and general concerns related to the community and municipal operations.

Table 1: Targeted Interview List

No.	Name	Job Title
1	Jay Barbeau	Chief Administrative Officer
2	Frank Loeffen	Fire Chief
3	Julie Martin	Fire Department Administration
4	Gilles Imbeau	Assistant Chief
5	Pascal Morin	Assistant Chief
6	Alisa Craddock	Director of Finance
7	Marc Ayotte	Facilities Manager
8	Jonny Belanger	Facilities
9	Alain Bazinet	Chief Building Official
10	Stephan Poulin	Director of Economic Development
11	Elizabeth Henning	Director of Public Works
12	Daniel Giroux	District Chief
13	Jean Larocque	District Chief
14	Sean Turpin	District Chief
15	Denis Labelle	District Chief
16	Robert Halls	District Chief
17	Jonny Bourque	District Chief

1.6.3 Online Firefighter Survey

To obtain balanced input, we also employed an online firefighter survey. Our survey methodology offers several unique benefits. First, it offers an opportunity to gather opinions from an entire group as opposed to a limited sample of opinions from a select few. The online survey also offers an extremely flexible approach to the collection of data as respondents can complete the survey questions when it is convenient for them. Additionally, the anonymity of participants is relatively easy to control and therefore may yield more candid and valid responses. Finally, surveys are also extremely time and cost-efficient methods to engage large groups while capturing extensive data.

Invitations to participate in the survey were emailed to staff and 34 participated in the survey. Nearly three quarters of the survey respondents (82.35%) agreed that the community received adequate fire protection, while 11.76% were neutral and 5.88% disagreed. Nearly all (88.24%) agreed that the demand for fire and emergency services would increase in the future, however only 38.24% agreed that currently the response model is adequately staffed, while 41.18% were neutral and the remaining 20.59% disagreed.

Nearly all the participants (88.23%) agreed that the current level of theoretical and leadership training was adequate while 8.82% were neutral (neither agreed or disagreed) and the remainder (2.94%) disagreed. However, only 52.94% felt the amount of live-fire and specialty training was adequate.

When asked, the top five perceived community risks were as follows:

1. Understaffed and lack of volunteers.
2. Wildfires and brush fires
3. Structure fires and fire hazards.
4. Vehicle accidents and hazards
5. Community preparedness and education

(See Appendix D: for Online Firefighter Questionnaire Results).

1.6.4 Municipal Comparative Analysis

An industry peer comparative analysis⁵ was conducted as a method of benchmarking the performance of departments to similar municipalities. These benchmarks include budgets, performance, effectiveness, and efficiencies. Although fire and emergency services ultimately have the same goal of protecting life and property, each community has its unique features in how to accomplish their goals. Our main criteria for the comparative analysis are indicators of effectiveness and efficiencies amongst the communities for risk and mitigation.

⁵ Please see Section 3.9 Municipal Comparative Analysis, Page 127

1.7 Study Considerations

The following factors that affected both the assessment and effective mitigation of risk were considered and assessed:

Community-Specific Considerations

- Total area of review
- Population and future growth
- Community risk factors
- Community demographic information
- Development and area structure plans
- Multi-jurisdictional requirements and cooperation
- Current and future development impact on risks and response
- Financial resources and constraints
- Impacts of government legislation
- Bylaws affecting the emergency services.
- Economic factors
- Tourism
- Construction
- Industrial activity
- Utilities
- Retail businesses and other services
- Agriculture
- Buildings and structures concentrating on high-risk demands, including business, assembly occupancies, etc.
- Municipal emergency management plans

Department-Specific Considerations

- Geographic and physical boundaries
- Fire service annual reports.
- Fire service focused reports previously conducted.
- Standard of cover
- Budgets
- Staff rosters with qualifications
- Fire station locations and other infrastructure.
- Support services.
- Department structure
- Service delivery models.
- Apparatus and equipment inventory, and future needs
- Building space requirements
- Operation staffing and administrative needs
- Bylaw, policies, and procedures
- Reporting structure and requirements
- Fire prevention & public education.
- Emergency core service response
- Health and wellness
- Training records and standards
- Succession planning
- Prevention programs such as inspections, education, and enforcement
- Records and data management
- Standard operating guidelines and procedures

SECTION 2

COMMUNITY PROFILE AND RISK OVERVIEW

2.1 Community Overview

The Municipality of West Nipissing is in the Nipissing District, roughly 40 kms west of North Bay and 90 km east of Sudbury (Sturgeon to downtown Sudbury) and is situated on the north shores of Lake Nipissing. The municipality is approximately 400 km from downtown Toronto and 375 km from Pearson International Airport.

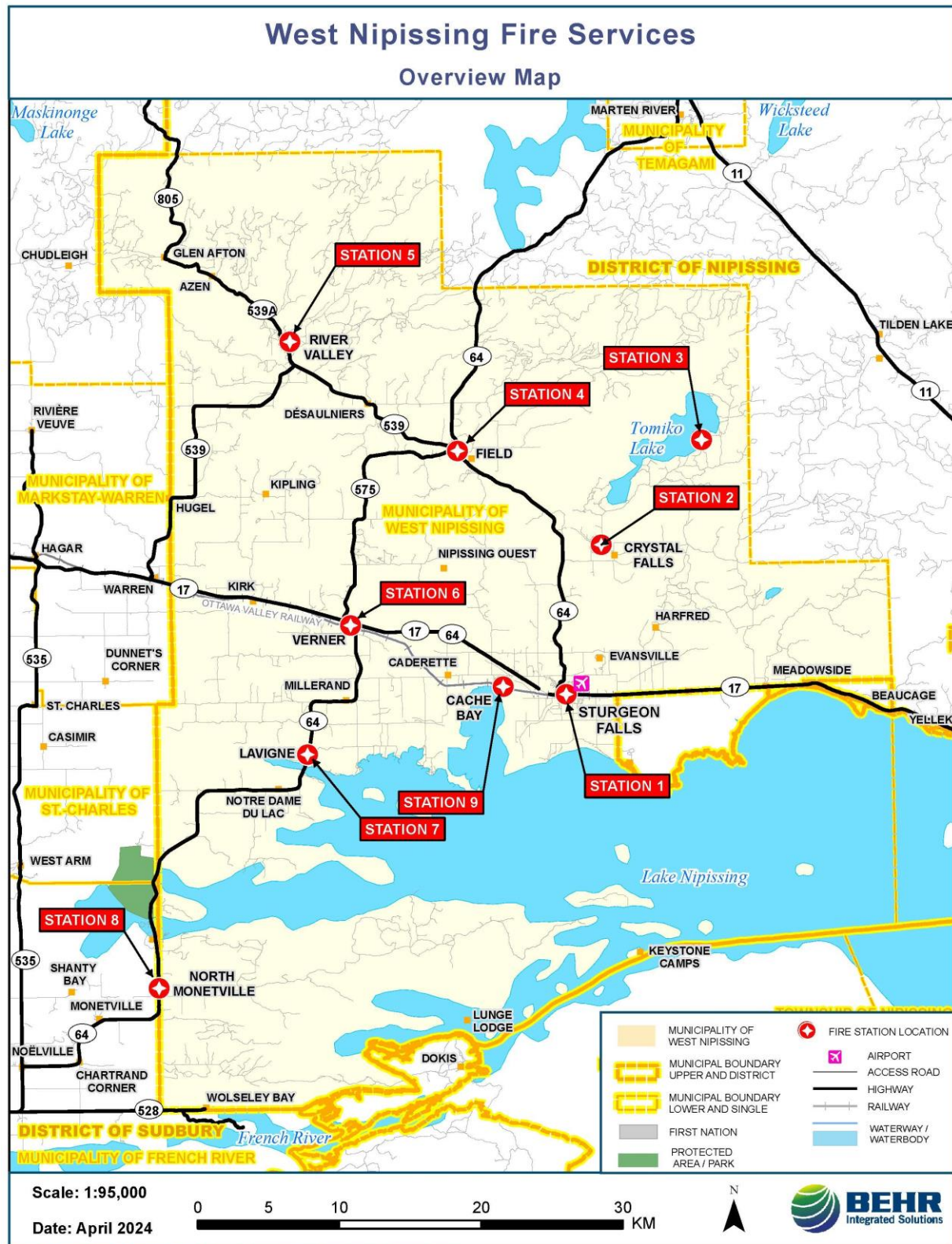
The town, spans nearly 2,000 km², largely characterized by lush green spaces and numerous lakes, including Lake Nipissing and the Sturgeon River. It has a population of 14,583⁶ as per the 2021 census, with a population density of around 7.5 individuals /km².

Formed through the amalgamation of various townships and communities in 1999, West Nipissing comprises 11 named townships, including Cache Bay, Crystal Falls, Desaulniers, Field, Kipling, Lavigne, North Monetville, River Valley, Sturgeon Falls, and Verner, along with 17 ½ unincorporated townships.

The municipality serves as an agricultural hub and offers diverse opportunities across sectors such as mining, healthcare, public service, retail trade, education, construction, forestry, and transportation.

⁶ (Statistics Canada, 2021)

Map 1: Municipality of West Nipissing Overview



2.2 Economic Indicators

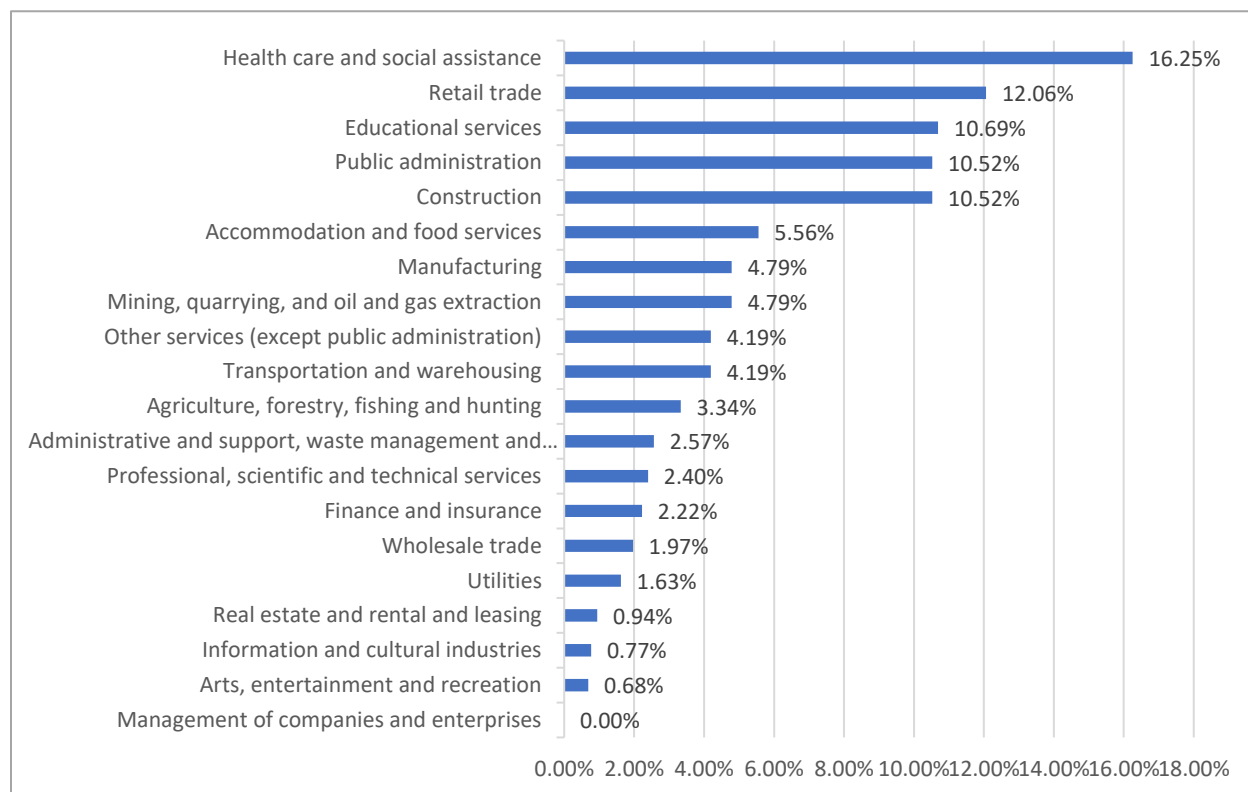
Once known for its lumbering and pulp and paper industries, West Nipissing is an agricultural hub for the area, with the community of Sturgeon Falls being the primary administrative and commercial centre for the municipality. The public sector including health care and education have become the leading employers. Lumbering is still a focus in the manufacturing sector, and is joined by mining support systems, construction industry and other manufacturing as the leading industries in West Nipissing.

Tourism is a main industry attracting outdoor activities over all seasons, including fishing, snowmobiling, and hunting businesses. The top manufacturing and non-manufacturing employers and economic sectors in the municipality are summarized in the following tables.

Table 2: Major Employers in West Nipissing

Company	Service/Product	Address	Number of Employees
Public Sector			
West Nipissing General Hospital	Health Care	725 Coursol Road	270
Municipality of West Nipissing	Municipal services	225 Holditch Street	244 – Full-time, Part-time, Seasonal, Firefighters
College Boreal Nipissing	Post Secondary Education	96 Main Street	unavailable
Stats Canada	Federal government statistics	225 Holditch Street	Over 330
Private Sector			
Goulard Lumber	Softwood lumber sawmill	175 Goulard Road	50
DSI Underground Canada Ltd	Mining ground support systems	15 Toulouse Crescent	75-90
Verner Ag Centre and Grain Elevators	Agriculture and propane supplies and services	723 Gingras Avenue	unavailable
Sturgeon Falls Brush & Contracting	Land clearing and road building	145 Main Street	14
Au-Chateau Home for the Aged	Long-term Care Home	100 rue Michaud Street	Over 200

Figure 2: Economic Sectors (2021)



2.3 Growth Projections

Over a twenty-year period (2001-2021), the Municipality of West Nipissing's population has steadily increased. Simultaneously, the number of total private dwellings has increased from 2001 to 2021. Table 3 illustrates that the rate of increase for both the population and total private dwellings has increased most significantly over the past 10 years with an 8.54% increase in total population and an 1.52% increase between 2016 and 2021.

Table 3: Population and Private Dwellings Change (2001 to 2021)

Year	Population	% Change	Total Private Dwellings	% Change
2001	No Data	No Data	No Data	No Data
2006	13,410	No Data	5,575	No Data
2011	14,149	5.51	6,021	8.00
2016	14,364	1.51	6,281	4.32
2021	14,583	1.52	6,413	2.10

Table Source: (Statistics Canada, 2021)

2.4 Key Community Demographics

The following tables provide key demographics of the municipality. A complete review of the municipality's demographics can be found in the Community Risk Assessment.

Table 4: Population Growth

2021	2016	% Change
14,583	14,364	1.52%

Table 5: Population Distribution

Age Range	Total	%	Male	%	Female	%
0 to 14 Years	2,085	14.3%	1,035	7.1%	1,050	7.2%
15 to 64 Years	8,645	59.3%	4,305	29.5%	4,340	29.8%
65+ Years	3,850	26.4%	1,795	12.3%	2,055	14.9%

Figure 3 Percent of Population by Age Group - West Nipissing and Ontario:

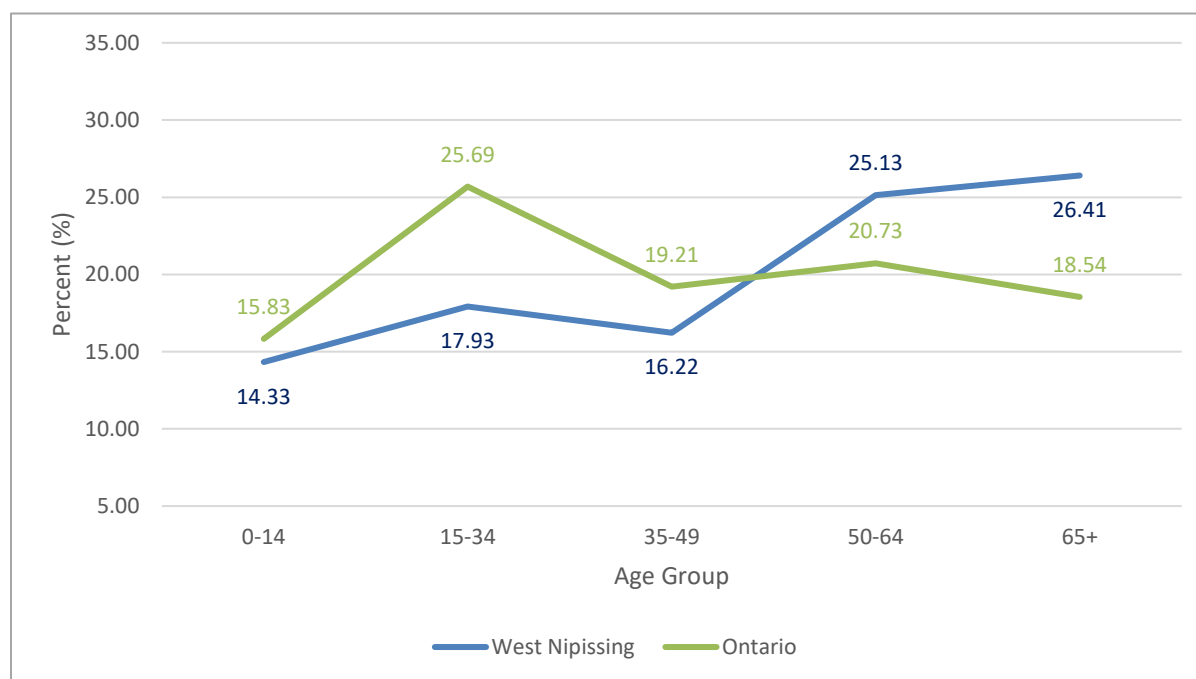


Figure Source: (Statistics Canada, 2021)

2.5 Community Planning and Development

The Municipality of West Nipissing Official Community Plan is a comprehensive review conducted in 2011 and identified several key factors:

- The purpose of the Official Plan is to set out goals and objectives for development in the Municipality for the next 20 years (2008-2028) while having regard for the effects on the social, economic, and natural environment of the municipality.
- The fastest growing areas of in the municipality were the Town of Sturgeon Falls/Cache Bay, Township of Springer, and the Township of Caldwell. With a projected employment decline in the manufacturing and agricultural economic sectors across Canada and in the Municipality, population growth will be dependent on job growth in other economic sectors such as tourism, adult community development (retirement-based development), retail and food services, and education and health services.

2.6 Community Risk Assessment

Risk can be managed by either accepting the risk, insuring against damages, or investing in risk prevention and mitigation strategies. Local governments typically employ a combination of these approaches. In general, the risks and management strategies of a community are relative to a municipality's financial capacity, geography, population demographics, fixed assets, and critical infrastructure, as well as overall service delivery.

Conducting a risk assessment is the first step towards establishing a strategic plan to manage community risks based upon local fire department response capabilities. The results are used to assist the municipality in making informed decisions regarding the allocation of limited fire prevention and fire response resources.

Community Risk Assessments are required pursuant to Ontario Regulation 378/18 and allow fire departments to make informed decisions about the types and levels of fire protection services provided based on identified risks. Specifically, the following nine (9) profiles will be reviewed:

1. Geographic profile
2. Building stock profile
3. Critical infrastructure profile
4. Demographic profile
5. Hazard profile
6. Public safety response profile
7. Community services profile
8. Economic profile
9. Past loss and event history profile

The information and data gathered to address each of the profiles will assist in determining and prioritizing risks to public safety in the community and determining the fire protection services to be provided by municipalities to address those risks.

Risks were identified using historical response data, hazard risk vulnerability assessments and information from our interviews to develop a risk profile for the community. The evaluation of fire and rescue risks considers both the probability and consequence of emergency event types. The probability of an event is quantified by analyzing historical, current, and projected data. The consequence of the event type or risk is based on an informed assessment of the potential impact on a community should the event occur.

The Community Risk Assessment (CRA) must consider the following:

- The format is approved by the Ontario Fire Marshal by reviewing the nine mandatory profiles.
- The Technical Guideline TG-02-2019: Community Risk Assessment Guideline will be used as guidance in formatting the risk assessment.
- Utilization of the charts as provided in the technical guideline or as a minimum, all the points outlined in the guideline.
- The CRA document will be made readily available if the Ontario Fire Marshal conducts a review of the municipality under the FPPA(Part III, 9. (1)(a)).

2.6.1 Factors Contributing to Risk

As mentioned, every municipality has unique challenges and characteristics contributing to the overall risk profile of the community. Examples of community risks include:

- Fire/rescue service model and response capacity
- Population and demographics
- Population growth rate
- Industry types
- Economy
- Rate of development
- Transportation corridor types
- Topography
- Weather
- Historical response data

2.6.2 Risk Management

All communities require a process to identify and actively manage high-priority risks. As previously discussed, there are approaches to managing risk. The focus of this report is to identify and discuss specific risks, and unique community characteristics that contribute to risk, typically managed through fire prevention or fire department response. Image 1 describes the risk management cycle. The first step in the risk management process includes the assessment of the probability and consequence of specific risks. The next step is the assessment to identify key risks which are then evaluated against the current prevention or response strategy to identify potential service gaps. The third step in this cycle includes adjusting fire prevention and response service levels to manage the resources necessary to pre-emptively mitigate or respond as determined by approved service levels. The last step in the cycle is to measure and report results to key policy makers. This cycle should be repeated periodically to address changes in the risk profile and make thoughtful and informed decisions regarding strategies to manage any changes.

Image 1: Risk Management Cycle Process



In Canada, local governments are charged with delivering fire and rescue response services for their citizens. Elected officials are the ‘authority having jurisdiction’ (AHJ) who determines the level of service required to manage fire and rescue risks to an acceptable level. The challenge for elected officials lies in determining the best balance between investing in adequate emergency services and accepting a certain level of risk.

2.7 Risk Evaluation vs. Service Levels

The evaluation of fire or rescue risks considers both the probability and consequence of emergency event types. The probability of an event is quantified by analyzing historical, current, and projected data. The consequence of the event type or risk is based on an informed assessment of the potential impact on a community should the event occur.

Probability – The probability of a risk, or event type, is the determined likelihood that an event will occur within a given time. The probability is quantified by considering the frequency of event type data. An event that occurs daily is highly probable and therefore higher risk. An event that occurs only once in a century is assessed as a lower risk as it may never occur.

Consequence – There are three types of consequences when considering fire/rescue response requirements:

- **Life safety impact:** Life safety risk for victims and responding emergency personnel are the highest order of consequence when considering the risk associated with specific event types. Events with a high likelihood of injury/death occurring and even a moderate probability of occurring require close examination to ensure adequate resources required to safely rescue or protect the lives of occupants from life-threatening are accessible to respond. Incidents that risk life safety include motor vehicle accidents, extreme weather, flooding, fire, release of hazardous materials, medical emergencies, and all types of rescue situations.
- **Economic impact:** Events with high negative impact on the local economy are devastating to a municipality. For example, recovering from the fire loss of a large employer's property or key public infrastructure in smaller municipalities can be difficult. Therefore, providing adequate response capacity necessary to manage these types of events must be considered.
- **Environmental impact:** Negative environmental consequences resulting in irreversible or long-term damage to the environment must also be considered in the analysis. Events with risk of negatively impacting water, soil and air quality are also likely to impact life safety as well as the economy and therefore must be considered.

Social and cultural impacts as experienced with the loss of historic buildings, recreation facilities or non-critical community infrastructure, are considered but do not typically affect how fire department resources are deployed.

As discussed, the risk evaluation process is used to identify high-priority risks and the appropriate risk management strategy. Where a fire department response is determined to be the most appropriate management strategy, the appropriate services and service levels should be established to safely manage the risks. Elected officials are responsible for determining which services are delivered and setting service level goals. The service level goals determine the necessary concentration and distribution of either fire prevention or emergency response resources to safely manage the identified risks.

Distribution refers to the number of fixed resources, such as fire stations, and where they are placed throughout the community. *Distribution varies depending on factors related to the number of incidents and types of calls for service in the defined area.*

Concentration refers to the assembling of resources, such as a specialized work force and equipment, needed to effectively respond to an incident in each area within the community. *It must also identify the availability of additional response resources including the reliability and time of arrival of a secondary responding unit.*

The risk evaluation matrix (see Figure 4.) can be divided into four levels of risk based on the probability and consequence, each with specific implications for the concentration and distribution of resources. It is provided as a reference and context for use of the matrix to quantify fire response risks in your municipality. Different quadrants of the risk matrix need different response requirements.

Table 6 offers examples of categories of types of structural fires and general hazards commonly found in communities. As described above, these risks are categorized by considering the probability and consequence of the fire or hazard. This qualitative analysis is based on experience and expertise, and should be completed with input from fire, building and emergency management officials. Every community will have a unique risk inventory contributing to its risk profile.

Figure 4: Risk Evaluation Matrix

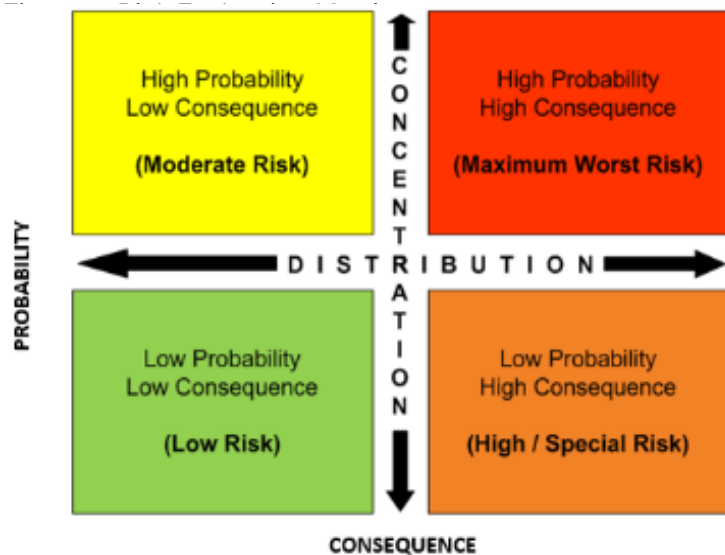


Table 6: Sample Risk Inventory

Low Risk = Low Probability and Low Consequence This category is limited to areas or incidents having a low probability of fire risk and low consequence for the potential for loss of life or economic loss. Some low risks include: - Outdoor fire pits - Non-structure lightning strikes - Vacant land - Parks without structures - Isolated structures such as sheds	
Moderate Risk = High Probability and Low Consequence Most responses fall under this category. Moderate risks include: - Motor vehicle collisions - Carbon monoxide detection (emergency medical co-response) - Monitoring/local alarms - Vehicle fires - Dangerous goods incidents with small quantities of a known product (20 litres or less), outdoor odours (natural gas or unknown) - Miscellaneous explosions - Emergency standbys - Smoke - Odours - Fires: - garbage - detached garages - single or multi-family residential fires - small non-residential buildings less than 600 square metres	
High Risk = Low Probability and High Consequence There are very few properties/responses that are considered high probability, high consequence. These properties are categorized as large properties, over 600 square metres, without adequate built-in fire protection systems, or that has large concentrations of people or has a significant impact on the local economy. High risks include: - Commercial, industrial warehouse - Dangerous goods incidents with large quantities of known products (75 litres or more), unknown products or large exposure - Hospitals, care homes, institutions - Derailments & transportation of dangerous goods - Aircraft crashes on or off the airport - Bulk fuel storage facility fire/explosion	
Maximum Risk = High Probability and High Consequence This category of risk can be generally categorized as properties over 600 square metres that have high economic value in the form of employment or are not easily replaceable, or natural disasters occurring in highly populated areas, creating high life and property loss potential and strains on the department and other agency resources. Damage to properties in this category could result in temporary job loss or permanent closure of the business. Such properties are highly regulated or possess built-in fire protection systems. Some maximum risks include: - Wildland fires - Weather related events (floods, tornadoes, severe storms etc.) - Large vehicle accidents, pileups, derailments - Quantities of known flammable products (500-1000 litres) - Explosions or substation electrical fires - Confirmed natural gas leak	

2.7.1 Assigning Risk Level

Once probability and consequence are determined, the level of risk is calculated by multiplying the numerical values for probability and consequence. The relationship between probability and consequence as it pertains to risk levels can be illustrated in a risk matrix (below). In a risk matrix, probability and consequence are defined on separate scales with varying descriptors providing direction on how to assign the probability and consequence of an event. The purpose of assigning a risk level is to assist in the prioritization of the range of risks that are identified in the CRA. Figure 5 shows the risk matrix utilized within the CRA review.

Figure 5: Risk Matrix Template

Probability/ Consequence	Insignificant 1	Minor 10	Moderate 100	Major 1,000	Catastrophic 10,000
Almost Certain 10,000	Moderate	Moderate	High	High	High
Likely 1,000	Moderate	Moderate	Moderate	High	High
Possible 100	Low	Moderate	Moderate	Moderate	High
Unlikely 10	Low	Low	Moderate	Moderate	Moderate
Rare 1	Low	Low	Low	Moderate	Moderate

Table Source: (OFM-TG-02-2019, Revised 2022, pp. Appendix B, pg. B1)

Where possible, quantitative data was used to inform the risk assignment as described in the rationale in the table. It is important to recognize that with the availability of new or updated data, the probability levels could change or be refined. It should also be recognized that, as identified in OFM TG-02-2019, “professional judgment based on experience should also be exercised in combination with historical information to estimate probability levels. Similarly, OFM TG-02-2019 acknowledges the role of professional judgment and reviews of past occurrences in determining consequence levels. The rationale provided for both probability and consequence consider information from the CRA’s nine profiles, as OFM TG-02-2019 supports consideration of the profiles together to inform decision-making about the provision of fire protection services in the specific municipality/community.

2.8 Structural Fire Risk Analysis

It is critical to use careful planning and consider alternative solutions when managing risk because the ability to increase the distribution of resources and add capacity is always limited. Spending substantial amounts of time and resources to manage a risk with low frequency/low consequences will have limited impact and make a minimal improvement to community safety. When planning for fire department response, the planning process includes a detailed review of the frequency of events and their potential consequence(s) to ensure prevention and response efforts maximize life safety and minimize negative consequences for high-priority events.

The Office of the Fire Marshal (OFM) have developed guidelines to assist municipalities with conducting community risk assessments to inform decisions about the provision of fire protection services, in accordance with Ontario Regulation 378/18 and the Fire Protection Act 1997 (FPPA).

As referenced in O. Reg. 378/18, the building stock profile assessment includes analysis of the types and uses of building stock of a municipality. Important considerations include the number of buildings of each type, the number of buildings of each use and any building related risks known to the fire department. There are potential fire risks associated with different types and uses of buildings given the presence or absence of fire safety systems and equipment at time of construction and maintenance thereafter. This section considers these building characteristics within the municipality.

2.9 Ontario Building Code Occupancy Classifications

2.9.1 Building Stock Profile

The Ontario Building Code (OBC) categorizes buildings by their major occupancy classifications. Each classification has definitions that distinguish it from other occupancy classifications. Using 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 classification groups and divisions are presented in Table 7 below.

Table 7: OBC Major Occupancy Classification

Group	Division	Description
A	1	Assembly occupancies intended for the production and viewing of the performing arts
A	2	Assembly occupancies not elsewhere classified in Group A
A	3	Assembly occupancies of the arena type
A	4	Assembly occupancies in which occupants gather in the open air
B	1	Detention occupancies
B	2	Care and treatment occupancies
B	3	Care occupancies
C	--	Residential occupancies
D	--	Business and personal services occupancies
E	--	Mercantile occupancies
F	1	High hazard industrial occupancies
F	2	Medium hazard industrial occupancies
F	3	Low hazard industrial occupancies

Table Source: Ontario Building Code⁷

2.9.2 OFM Fire Risk Sub-Model Occupancy Classifications

The Fire Risk Sub-model developed by the OFM utilizes the major building occupancy classifications (i.e., Group A, B, C, D, E and F), but does not use the detailed division classifications as included in the OBC. This strategy provides the opportunity for further analysis of a specific occupancy group. Subject to any site-specific hazards or concerns, occupancies within a group can be assessed individually and then included where required within the scope of the broader community risk assessment.

Analyzing structural fire risk begins by developing an exhaustive inventory of existing building stock and monitoring changes to the inventory. This process should include staff from the planning and development departments, as well as building and fire prevention officers. This provides the fire service with an opportunity to evaluate the Ontario Fire Code requirements in the design, construction, and operation phases of the building.

⁷ (Ontario Ministry of Municipal Affairs and Housing, 2017)

The building inventory database becomes the foundation of assessing fire risk in the community. This inventory provides a count of all property types including single and multi-family residential, assembly (including schools, churches, hospitals, personal care homes, etc.), mercantile, commercial, and industrial properties.

Once the inventory is assembled, fire department response capability is measured against the identified property risks. This simple identification of the high numbers of specific high-risk property types may identify gaps in the current response model, resulting in the reorganization or addition of fire department resources. As building stocks increase, fire departments should continue to monitor response capability and capacity to ensure service levels are maintained.

2.10 West Nipissing Existing Major Building Classification Summary

Analysis of the town's major building occupancy types was conducted using data provided by the Municipal Property Assessment Corporation (MPAC).

Table 8 summarizes the municipality's existing major building occupancy classifications. The majority of the town's existing property stock is comprised of Group C - Residential Occupancies (84.86%) representing 6,187 residential units. The second largest occupancy type within the town is Group F – Industrial Occupancies accounting for 2.48% of the municipality's property stock. There are 734 buildings that are not classified within the OBC – Farm category.

Table 8: Municipality of West Nipissing Total Existing Property Stock⁸

OBC Occupancy Classification	OFM Fire Risk Sub-Model Major Building Classifications	Number of Occupancies	Percentage of Occupancies
Group A	Assembly Occupancies	50	0.69
Group B	Care or Detention Occupancies	5	0.07
Group C	Residential Occupancies - Total	6187	84.86
Group C	Single-detached	5684	91.87
Group C	Semi-detached	151	2.44
Group C	Row	12	0.19
Group C	Apartment < 5 Storeys	303	4.90
Group C	Apartment > 5 Storeys	0	0.00
Group D	Business/Personal	28	0.38
Group E	Mercantile	106	1.45
Group F (All)	Industrial Occupancies - Total	181	2.48
F1	High Hazard Industrial	1	0.55
F2	Medium Hazard Industrial	170	93.92
F3	Low Hazard Industrial	10	5.52
Other	Not classified in OBC- Farm	734	10.07
Other	Not classified in OBC - Government	0	0.00
Total		7291	100.00

Consistent with most other municipalities in Canada, Group C - Residential Occupancies represent the most prominent type of building occupancy type within West Nipissing. Within Ontario, information provided by the OFM for West Nipissing indicates that the majority of structure fires loss over the five-year period from January 1, 2018, to December 31, 2022, occurred within Group C - Residential Occupancies (81.16%). It is also important to note that 100% (3) of the civilian fire related injuries, 100% (1) of the civilian fire related fatalities.

⁸ Difference between MPAC and Census occupancy totals is related to MPAC classifications vs Census Groupings

2.11 Potential High-Fire Risk Occupancies

Potential high-fire risk occupancy is another factor for consideration within a town's building stock. High fire risk can be linked to a combination of factors such as building density (exposures), building age, and construction. 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. Higher fuel loads results 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, within a large multi-unit residential building, or within a historic downtown core.

2.11.1 Fuel Load Concerns

Buildings with potential fuel load concerns are identified in Table 9. These include buildings housing materials such as wood, rubber, plastic and flammable and combustible liquids and gases.

Table 9: Potential High-Fire Risk Occupancies

Address	Facility Name/ Organization	Risk Description
325 Quesnel Rd	A-1 Blasting Mats	Rubber tire recycling/ Rubber blasting mats
10402 ON-17 Verner	RL Equipment Sales and Services	Tractor and recreational vehicle sales
694 Olivier Rd., Verner	West Nipissing Sanitation	General contracting, sanitation services and rentals
717 Gingras Ave, Verner	Co-op Regional Verner Petroleum Bulk plant	Bulk fuel storage and sales
175 Goulard Rd	Goulard Lumber	Lumber manufacturing and sales
656 Coursol Rd	Savignac General Woodworkings Ltd	Woodworking
14 Toulouse Cr.	Simcoe North Supply	Building materials
317 Quesnel Rd. Sturgeon Falls	TCM Total Cabinet Modules	Cabinet Manufacturing
500 Salter St	Best Blasting Mats	Rubber recycling/ rubber blasting mats
118 Front St	Sturgeon Falls Home Hardware	Building materials
826 Drive In Rd	Groulx Equipment	Farm equipment sales
114 Front St	ASM Sales	Tractor and ATV sales parts and service
90 Bay St	ASM Parts and Service	Tractor and ATV parts and service
11995 Hwy 17	TG Powersports	ATV/ Snowmobiles/ watercraft sales and services
27 Golf Course Rd	Sturgeon Motorsports & Trans Canada RV	ATV and RV sales and service
15 Toulouse Cr	DSI Underground Canada Ltd.	Underground mining and tunneling machinery
580 Quesnel Rd	Just In Septic	Sewer and septic service, porta-potties. plastics and sewage
219 O'Hara St	Sturgeon Falls Arena	Municipal arena with ammonia on site
80 Principal St E	Verner Arena	Municipal arena with ammonia on site
717 Gingras Av	Verner Bulk Propane	Propane storage and distribution tanks
12011 Hwy 17	Canadian Tire (propane fill station)	Propane distribution tanks
114 Front St	ASM (propane fill station)	Propane distribution tanks
119 Hwy 539A	Kwik Way River Valley (propane fill station)	Propane distribution tanks
15 Landfill Site Rd	Sturgeon Brush & Contracting Ltd	Piles of raw wood (kiln being built)

In addition to ensuring compliance to the requirements of the OBC and the OFC, there are operational strategies that a fire service 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. It should be noted that some of these companies do routinely update emergency response plans and share them with the fire services.

2.12 Occupancies with Potential High Fire Life-Safety Risk

Fire risk does not affect all people equally. Those who are at an increased risk of fire injury or fatality are known as vulnerable individuals. In the event of a fire, these individuals may be unable to self-evacuate and/or require assistance in their evacuation efforts. Identifying the location and number of vulnerable individuals or occupancies within the community provides insight into the magnitude of this demographic within a community.

2.12.1 Registered Vulnerable Occupancies

From an occupancy perspective, vulnerable occupancies contain vulnerable individuals who may require assistance to evacuate in the event of an emergency due to cognitive or physical limitations, representing a potential high-life safety risk. As part of its registry of vulnerable occupancies, the OFM defines vulnerable occupancy as any care occupancy, care and treatment occupancy, or retirement home regulated under the Retirement Homes Act.

These occupancies house individuals such as seniors or people requiring specialized care. It is important to note, however, that not all vulnerable individuals live in vulnerable occupancies; for example, some seniors who are vulnerable due to physical limitation can live on their own or in subsidized housing, making them a key demographic to reach.

Ontario Regulation 150/13: Fire Code, which amends Ontario Regulation 213/07: Fire Code, identifies vulnerable occupancies as care, care and treatment and retirement homes. This includes hospitals, certain group homes and seniors' residences and long-term care facilities. The regulation requires fire service to perform annual inspections, approve and witness fire drill scenarios and file certain information regarding the occupancy with the Fire Marshal's office. A list of vulnerable occupancies is presented in Table 10. There are 19 vulnerable occupancies identified in West Nipissing. These include care occupancies, care and treatment occupancies and retirement and assisted living homes.

Table 10: Vulnerable Occupancies

Property Name	Occupancy Type	Location
Au Château Home for the Aged	Long Term Care Home	100 rue Michaud Street
West Nipissing General Hospital	Hospital	725 COURSOL RD
Villa Du Loisir	Senior Apartments	106 Michaud St.
Villa Des Pignons	Seniors Apartments	709 Coursol Rd
Domaine Leclair	Seniors Apartments	711 Coursol Rd
Joie de Vivre	Seniors Apartments	715 Coursol Rd
Villa Aubin	Seniors Apartments	145 Holditch St
Bellevue Apartments	Seniors Apartment	19 William St.
Residence Mutuelle #1	Seniors Apartments	163 King St
Residence Mutuelle #2	Seniors Apartments	140 Parker St
Villa du Bonheur	Social Housing	70 Principal St. East
Foyer Prieur	Social Housing	25 Grand Allee
Community Living	Assisted Adult Living	170 William St
Community Living	Assisted Adult Living	114 William St
Community Living	Assisted Adult Living	120 Nipissing St
Community Living	Assisted Adult Living	145 Main St
Community Living	Assisted Adult Living	113 Nipissing St
Community Living	Assisted Adult Living	15 John St
Community Living	Assisted Adult Living	90 Cholette St

2.13 Community Risk Analysis Overview

The municipality's HIRA was reviewed and updated in 2019. As a component of the risk assessment and risk analysis process, the top risks in West Nipissing were identified. The HIRA assigned likelihood and consequence levels to a list of hazards based on the potential for impacts to people, property, and the environment. As a result of this analysis, the top hazards in the town include the following:

- Flood River & lake
- Windstorm
- Hazard Material Transportation Incident
- Transportation Accident
- Forest Fire
- Snowstorm - Blizzard

In addition to the overall highest risks to the community, certain events pose an increased risk specific to firefighting. The risk to firefighting responders to the most hazardous events are identified below, as well as the most hazardous events they may encounter that pose a specific risk to them and their ability to respond.

2.14 Impacts of Hazards on Fire Protection Services

To better understand the risks of hazards as they pertain to fire protection services, the top five hazards have been assessed to identify possible impacts on fire protection services (excluding fire/explosion). Many of the potential impacts are not unique to a jurisdiction. The results of this review as they pertain to the top four hazards in the town are presented in Table 11.

Table 11: Impacts of Hazards on Fire Protection Services

Hazard	Possible Impact
Flood River and Lake	<u>Overall Impact</u> All lakes and rivers discharge their water into Lake Nipissing. Any flooding of Lake Nipissing could have a disastrous effect on the municipality. There is a large population that resides along these rivers and lakes. Flooding, in the area, already occurred in 1959 and 1979. <u>Fire Services</u> Flooding can result in access issues areas or individual occupancies, require evacuation, or water rescue.
Transportation Accident	<u>Overall Impact</u> Threat to life safety. Impact to road network, downed power lines and vehicular fires. <u>Fire Services</u> Pose secondary threat to responders of fire or explosion. Delayed response in accessing scene. May require support for high number of injuries/fatalities and/or rescues.
Snowstorm-Blizzards	<u>Overall Impact</u> Above ground power lines could be impacted along with road treatments, debris clearing, salt gravel or other road treatment supplies. Increase in call volume due to vehicular incidents, rescues. <u>Fire Services</u> Depending on the severity of the debris on roads and downed power lines, access to various sections of the road network could be limited to fire service response delaying emergency response times. Interruptions to communication towers could impact fire service communications.

Hazard	Possible Impact
Windstorms	<u>Overall Impact</u> Above ground power lines could impact buildings or roads and winds could take down communication towers. Life safety risk, to vulnerable population. <u>Fire Services</u> Depending on the severity of the debris on roads and downed power lines, access to various sections of the road network could be limited to fire service response delaying emergency response times. Interruptions to communication towers could impact fire service communications.
Hazardous Material Transportation Incident	<u>Overall Impact</u> Serious injury or fatality. Possible secondary emergencies such as fire or explosion when chemicals mixed with air, water, or other agents. Could require small- or large-scale evacuation of homes, businesses, school etc. <u>Fire Services</u> Depending on the severity and type of release, could pose secondary risk to firefighters on-scene. Must have proper knowledge of chemical release. May not be able to access the scene until proper back-up arrives or have proper information.
Forest Fire	<u>Overall Impact</u> The whole Municipality is surrounded by forest. The different fuel load of the forest is approximately: • 50% 30 – 70% Softwood • 35% Mixed wood with less than 30% Softwood • 10% Open Forest and Grass (Brush) • 4% Mature Jack Pine • 1% Wetland Small communities such as North Monetville, Lavigne, Kipling, River Valley, Field, and Crystal Falls are at a greater risk of a forest fire. This statement does not exclude the other rural areas and shoreline properties of lakes and rivers in the Municipality that are surrounded by forest. <u>Fire Services</u> Requires coordination with Ministry of Natural Resources. Require coordination of fire support to Ministry of Natural Resources, creation of fire breaks, exposure protection, coordination of evacuations and rescues.

2.14.1 Fire Station Response Demand Zone

As detailed at Section 4, the Municipality of West Nipissing has a population of 14,538 with an area nearing 2,000 km². This translates to 18.90 people/2.6km² and falls into the rural area category of NFPA 1720. This category identifies the category for the entire municipality; however, the Sturgeon Falls area could be broken out given the demographics. Sturgeon Falls has a population of 6939 (2021 consensus data) with an area of 15km². This equates to 1203 people per 2.6 km² and would indicate an urban area demand zone. This category contains performance objectives that can be particularly challenging for a volunteer or combination fire service and in many ways is comparable to NFPA 1710 for career services. The intent of the aggressive response goals in NFPA 1720 is to minimize total intervention time. Increased intervention time can have the following important impacts on a property owner/patient/victim:

- Decreased survivability
- Increased property loss in the event of fire
- Building design restrictions for response times beyond 10 minutes
- Potentially higher property insurance premiums based on extended response times and proximity to water supply.
- Longer-term economic impacts resulting from increased recovery time.

Over the four-year period of data reviewed, the WNFES was not able to effectively meet NFPA 1720 demand zone goals. Given the current deployment model achievable emergency response time performance service levels need to be established. The current Establishing and Regulating By-law identifies that West Nipissing Fire & Emergency Services.

Observation #1

The West Nipissing Fire Service's Establishing & Regulation Bylaw is the establishing and regulating bylaw for the municipality. It references services to be delivered however it does not include specific emergency response time performance service levels. Furthermore, response performance such as the number of firefighters responding either directly or converging on scene, or the time increment to achieve a safe effective response force and complete the critical tasks is not being tracked or monitored. All these components should be included in a standard of cover or service level policy.

Recommendation #1a: Revise the current Establishing and Regulating Bylaw to provide for a Council supported detailed core service levels that are informed by the current Community Risk Assessment and providing for WNFES to meet all applicable provincial legislation and regulations.

Suggested completion: 6-12 months

Cost: Neutral

Resource: WNFES staff time

Recommendation #1b: Establish a Standard of Cover policy identifying the performance expectations (baseline) for each level of service identified in an updated E&R bylaw.

Suggested completion: 6-12 months

Cost: Neutral

Resource: WNFES staff time

Rationale: Developing formalized policy statements regarding fire department service levels is considered a leading practice. In the absence of established service levels, it is difficult for a Fire Chief to determine whether fire department response or service performance meets community and council expectations. Further, the anticipated growth planned for the city will increase demand for services. Increases in service demands are correlated with increases in population and related risks such as building stock and community profile changes. Furthermore, a comprehensive emergency response and service level policy will confirm the essential core services for WNFES based upon statistical demands.

Observation #1

It should be noted that technical/ specialized rescue is based on the likelihood that fire will respond to these types of calls and must be trained to a minimum standard of awareness level so best to understand the situation, size up and request the appropriate additional resources required. Those identified as operations level are indications that there is experience in delay with emergency requiring these skills and fire fighters must be trained to the appropriate level. The Fire Chief should review these annually to determine if the current level is appropriate to deal with the needs and circumstances identified.

NFPA 1201: Standard for Providing Emergency Services to the Public suggests all fire departments should have a policy identifying service types and service levels. Section 4.5.3.1 states: “The fire and emergency services (FESA) leader shall develop and adopt a formal policy statement that includes the specific types and levels of services to be provided by the organization, the service area, and the delegation of authority to subordinates.”

2.15 Water Infrastructure

Water supply is a critical infrastructure that is essential for firefighting. Having access to the municipality’s water delivery systems or alternative water supply is critical to service delivery. The system consists of 2 treatment facilities, 2 water storage towers and 73.5 km of water main. Hydrants are available in the communities of Sturgeon Falls and Verner; however, the rest of the municipality relies on tanker shuttle and static water sources to supply water for firefighting operations.

Alternate water supply sources can include fire services access to lakes, ponds, streams and alternative water supplies, and the use of fire suppression apparatus that have portable tanks that can support a tanker shuttle and a continuous supply of water to support fire suppression activities. According to the Fire Underwriter’s Survey, an Accredited Superior Tanker Shuttle Service is a recognized equivalent to a municipal fire hydrant protection system if it meets all the requirements for accreditation. In areas without reliable municipal water supply, a fire service should consider a water servicing strategy or formal plan for those areas requiring water flow for firefighting. West Nipissing currently participates in Nipissing Parry Sound mutual aid plan and can request additional assistance for shuttle tank operations.

Observation #2

The available water supply for the municipality is limited in the rural areas. There are a few established dry-hydrant locations strategically located in these areas, however the ability to access water quickly and ensure the maintenance of effective fire fighter water may be impacted. The municipality maintains several water tankers located at various stations and WNFES has the option to request mutual aid for additional tankers as required. This takes time to assemble on scene and takes further time to refill tankers depending on the location of the refill infrastructure. The municipality has many lakes and rivers located throughout, but accessing these for water supply can be difficult, including when the lakes are frozen over.

Recommendation #2: WNFES develop a firefighting water supply plan that includes tanker operations, cisterns, and implementation of additional strategically located dry hydrants in water reservoirs and water bodies.

Suggested completion: 12-60 months

Cost: Staff time, potential costs to install dry-hydrant infrastructure.

Resource: WNFES staff time, third party contractors

Rationale: Water supply is a critical infrastructure that is essential for firefighting. Having access to the municipality's water delivery systems or alternative water supply is critical to service delivery. This type of plan would identify, and address the water volumes necessary, including internal and external resources. (i.e., appropriately sized and number of WNFES water tankers and other apparatus, mutual/automatic aid, and private water shuttle services) to address the risks identified in those response zones.

Additionally, the improvements in dry-hydrant infrastructure will allow the WNFES to effectively provide adequate firefighting water in a timely manner, with this infrastructure being in the greatest areas of risk. This would include access to lakes and rivers through dry hydrants as well as detailed lists and mapping of all water sources across the municipality.

SECTION 3

DEPARTMENT PROFILE

3.1 Department Overview

The West Nipissing Fire and Emergency Service (WNFES) was formed in 1999 through the amalgamation of 11 townships and 17/1/2 unincorporated municipalities. The amalgamation brought together Cache Bay Fire Department, Caldwell Township Fire Department, Field Township Fire Department, Springer Township Fire Department and Sturgeon Falls Fire Department. The Unincorporated municipalities fire departments included Lavigne Fire Protection Team, North Montville Fire Protection Team, and River Valley Fire Protection Team.

Today WNFES operates out of nine stations, with a current roster of six Full-time and 80 volunteers to provide fire suppression and rescue response services to the municipality. The WNFES is led by a full-time Fire Chief supported by 1 Assistant Fire Chief. Several stations are led by a volunteer District Chief and/or Captain. There is a full-time Training Officer, full-time Fire Prevention/Public Education Officer and 4 full-time firefighters all working from fire station #1. POC firefighters are assigned throughout the 9 fire stations. WNFES can request or be requested for additional fire/rescue resources with partners within the Nipissing Parry Sound Mutual Aid Plan. Resources may also be requested through the OFM where necessary.

Modern fire departments have evolved into a critical component of a community's social safety net. Whereas early fire departments were historically established specifically to combat structure fires that, at the time, were often devastating. Today, fire departments are also called upon to respond to technical rescues, and dangerous goods releases, often working together with other response agencies. As a result, fire departments must be properly structured, adequately resourced and equipped to deliver these services safely and competently.

West Nipissing Council has developed the 2022-2026 Term Plan that provides for the Collective strategic focus of Council, which makes the most effective use of financial and human resources. It is focused to making decisions and identifying priorities five (5) pillars:

- Community Development for a Vibrant Present and Future
- Community-centric Facilities and Public Spaces
- Strategic Management and Policies
- Functional and Dependable Infrastructure
- Efficient and Effective Service Delivery

As detailed in Section 2, the projected growth in development and population is minimal within the municipality and should not challenge the current level of services going forward. It is desirable to ensure current services and infrastructure are in step with any potential future development. In the case of a fire service, the lead-time to have staffing and equipment in place at the appropriate time is validating the need to develop a master plan that is aligned with the West Nipissing strategic plans and council priorities.

While volunteer fire departments have a long-valued service history with their respective communities throughout North America, there may be a point that necessitates a transition toward a hybrid full-time/volunteer staffing model, typically referred to as a composite delivery model. WNFES has moved in that direction with limited fulltime firefighters and day staff, however the increasing call volume, incident complexity and resource demands require that the municipality formally establishes service levels for emergency response (see Section 2, Recommendation 1a and 1b). The response performance analysis in Section 4 provides options to address service level shortfalls and includes the move towards an increased composite staffing model.

3.1.1 West Nipissing's Culture and Values

A mission statement declares concisely the purpose of an organization, why it exists and how it provides service. A vision statement offers insight into where the department strives to be in the future. Values are the beliefs and principles that drive the organization forward.

The Municipality of West Nipissing Council's Principles and culture and values statements were captured from the West Nipissing Term Plan (2022-2026) and the Municipality's website.

West Nipissing's Council's Principles

- *Build trust and foster positive engagement together*
- *Use a strategic approach to put goals into action*
- *Serve the community by listening and being transparent*
- *Achieve goals by remaining realistic, honest, and respectful*
- *Take chances and seize opportunities*
- *Embrace change*

West Nipissing Culture and Values *The people of West Nipissing are friendly, welcoming, and outdoorsy. The community is culturally rich and proudly celebrates its Bilingual, Francophone, and Aboriginal roots. Lake Nipissing, the Sturgeon River, and the region's numerous lakes provide an attractive residential and recreational setting for residents, newcomers, and retirees.*

- *West Nipissing is a distinguished agricultural hub that is well surrounded by opportunities from key sectors including mining, healthcare, public service, retail trade, education, construction, forestry, and transportation.*
- *The Municipality of West Nipissing is focused on service excellence, collaboration, and resourcefulness. We are committed to providing quality services for urban and rural residents while maintaining one of the lowest tax rates in Ontario.*

A fire service may align with their municipality's values or build upon those with fire service specific statements.

West Nipissing Fire and Emergency Service Mission and Goals statements are captured from the West Nipissing Fire and Emergency Services Establishing Bylaw.

West Nipissing Fire and Emergency Service Mission Statement (in part)

The mission of the Fire Service is to provide fire protection services through a range of programs designed to protect the lives and property of the inhabitants from the adverse effects of fires, or exposure to dangerous conditions created by man or nature. The priority of the programs is first to the Municipality; second, to those municipalities requiring assistance through authorized Emergency Fire Service Plan and Program (mutual aid) activities; and third, to those municipalities/agencies, which are provided fire protection by the Fire Service via, automatic aid agreement.

West Nipissing Fire and Emergency Service Goals

1. *Regular review of the fire services requirements of the municipality.*
2. *Provide an administrative process consistent with the needs of the fire service.*
3. *Ensure that the fire suppression apparatus, equipment, and personnel are available within the municipality to provide adequate response to a citizen's call within a reasonable length of time.*
4. *Provide fire service training to an accepted standard, which will ensure the continuous upgrading of all personnel in the latest techniques of fire prevention, fire suppression and control of emergency situations and to cooperate with other municipal departments with respect to management training and other programs.*
5. *Provide a maintenance program to ensure all fire protection apparatus, including allied equipment, is in proper state of repair to respond to emergency calls.*
6. *Provide an effective Fire Prevention Program to:*
 - a. *Ensure through plan examination and inspection, compliance with applicable municipal, provincial, and federal fire prevention legislation, statutes, codes, and regulations.*
 - b. *Identify, reduce and/or eliminate fire hazards.*
7. *Develop and maintain an effective public information system and education program, with particular emphasis on school fire safety programs, commercial, industrial, and institutional staff training.*
8. *Develop and maintain a good working relationship with all federal and provincial departments, utilities, and agencies, related to the protection of life and property.*
9. *Develop and maintain a Forrest Fire Protection Agreement with the Ministry of Natural Resources to provide fire suppression and values protection in areas inaccessible by the Fire Service.*
10. *Interact with other municipal departments respecting the aspects of fire on any given program and ensure these goals are not in conflict with any other municipal departments.*

3.1.2 Thematic Summary of Interview and Survey Results

The Fire Services Master planning process was initiated by providing WNFES firefighters, fire administration and select Municipality of West Nipissing senior administration an opportunity to comment on numerous aspects of WNFES operations. Seventeen interview participants and 34 survey respondents provided responses to similar questions and constructive feedback. The following key themes emerged from this process:

1. New Chief is transitioning the department and providing strong leadership, majority of the survey and interview felt that West Nipissing is receiving a good level of fire services, however, is challenged with the increased firefighter responsibility/expectations leading to increased challenges of recruitment and retention.
2. Many participants believe that Fire prevention activities have significantly improved with the addition of the Assistant Chief, however, feel that this is an area of the service that should be further promoted including public education and enforcement of fire code requirements.
3. Most participants agree that the service is adequately resourced with necessary modernization, and equipment to perform their tasks safely and effectively. Concern was expressed on the aging apparatus and concern over reliability of the vehicles. There was some concern expressed regarding the functionality or reliability of the radio network and portable radios within certain geographical areas.
4. The paid-on-call volunteer model was historically well supported but some concerns were reported. Recruitment and retention of new firefighters is a challenge. The aging population, bedroom community and increased training commitments have provided difficulty in recruiting new members and retaining existing members. Additional limitations such as low daytime and weekend response of POC firefighters were identified. The lower number of active and/or available firefighters has led to a push for additional full-time firefighters, particularly for daytime response where POC firefighter availability is typically low.
5. The current fire stations were reported to be well positioned to provide services across the municipality. Many participants felt they are marginally functional. There are concerns over the maintenance upkeep and the need for repair and renovations to provide appropriate facilities. Concern with lack of washroom and showers for fire fighter to use.

6. A strong sense from participants indicated that the current level of training was insufficient to meet current competencies and necessary certifications. Live-fire training and hands-on training was limited and should be increased. The increased demands for training will start to strain capacity.

3.2 Administration

3.2.1 Human Resources

Whether full-time (career), volunteer (not paid) or POC volunteer; a fire department's employees are its most valuable asset. Emergency services are often delivered under difficult and stressful circumstances, with little room for error. Fire departments must be adequately resourced with staff, equipment, and training to be effective in delivering highly technical services to achieve service excellence. As a result, considerable effort is warranted to ensure that only highly committed, team-oriented, and physically able employees are recruited, trained, and retained.

An effective organizational structure must promote and support strong, effective leadership, sound business management and continuity, and effective communication with opportunities for staff development. The Municipality of West Nipissing Corporation Human Resources Department (HR) partners with each of the municipality's departments, programs, and services to assist with achieving their human resources goals and objectives. Services provided include:

- Compensation and benefits including the lead in negotiations
- Employee relations including grievances.
- Employee wellness
- Contract implementation and interpretation
- Corporate training programs (note: not fire service specific)

The HR staff works together with the WNFES administration to assist with providing consistent delivery of fire services. During the period of Behr's involvement in developing this Fire Master Plan the staff demonstrated a commitment to their mandate and consistently provided a high level of service to the municipality while maintaining the safety and health of the members.

The Municipality of West Nipissing HR Department maintains all contracts; however, it was identified that there are no job descriptions for the positions in the fire service.

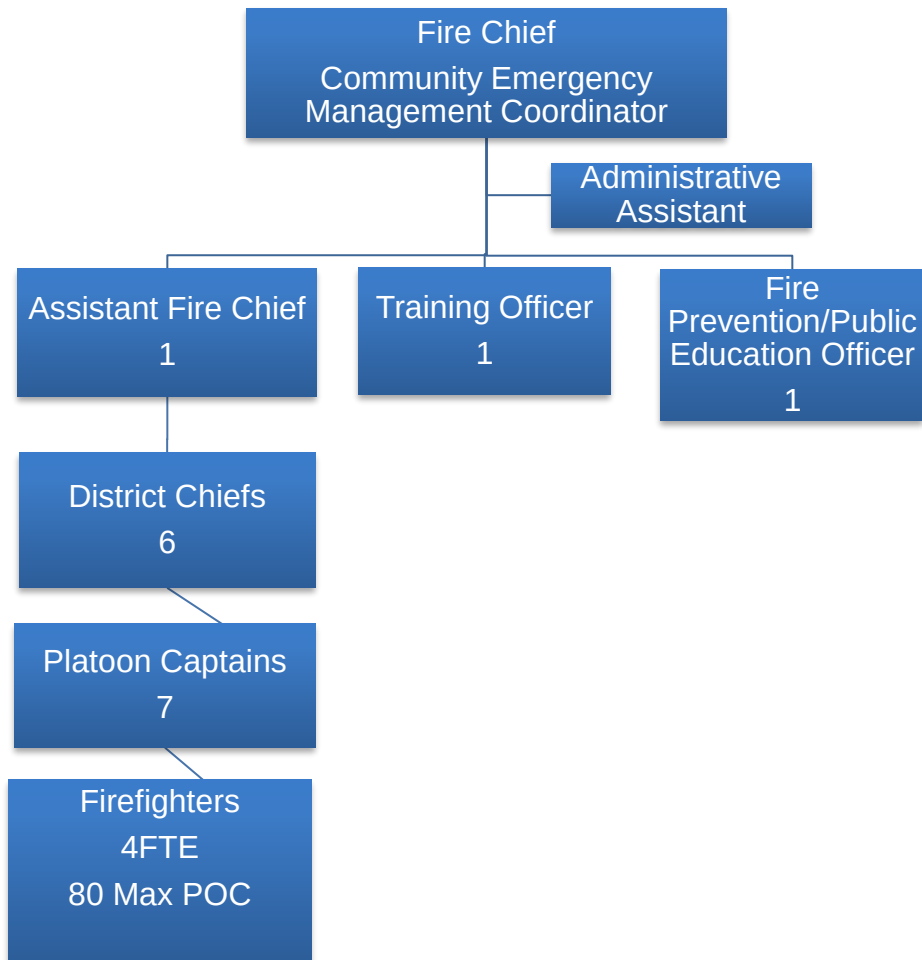
3.2.2 Staffing Complement

WNFES has an effective administrative structure with support from the municipality. Led by the Fire Chief, there is 1 deputy/assistant chief supporting POC officers, firefighters deliver emergency services. There are dedicated fire prevention & public education personnel and one training officer to support training and education programming of fire suppression operations.

As illustrated in Figure 6: West Nipissing Fire & Emergency Services Organization Chart, WNFES has the following full-time equivalent and POC volunteer positions:

- 1 FTE Fire Chief
- 1 FTE Assistant chief
- 1 FTE Fire Prevention Officer
- 1 FTE Training Officer
- 4 FTE Firefighters
- 6 POC District Chiefs
- 7 POC Platoon Captains
- 70 POC firefighters

Figure 6: West Nipissing Fire & Emergency Services Organization Chart



The WNFES is a composite fire department and utilizes one full-time fire fighter on duty 24/7 responding from Station 1 in Sturgeon Falls. During daytime hours Monday -Friday the firefighter is supported by the Training Officer, Fire Prevention Officer, Deputy Fire Chief, Fire Chief and POC firefighters, however during evening hours and weekends the firefighter is working alone and when a response is required, the firefighter may respond alone, depending on the call type and location with the objective of arriving on-scene within five minutes. The balance of POC firefighter's objective is to arrive within five to ten minutes.

Observation #3

The current WNFES practice is to have one full-time firefighter on duty and respond alone during evening and weekends, when other supporting staff are not present at Station #1. This practice opens the municipality and the staff member to potential health and safety concerns when working alone and responding alone. Arriving on the scene of an emergency alone may lead to significant expectations and resulting safety concerns for the lone firefighter.

Recommendation #3: WNFES develop a plan to provide a minimum of two firefighters/ staff on duty 24/7.

Suggested completion: 12-24 months

Cost: As per Collective Agreement

Resource: Operating budget

Rationale: A minimum of two firefighters should be on duty at any time to ensure the health and safety of the staff member. Further the additional staff could allow for a timelier response from Station 1 with 2 firefighters responding. Faster interaction time and size up will provide for greater fireground effectiveness and will allow for improvements to current response time deficiencies. This opportunity can maintain the use of day-time staff to respond during regular business hours and the addition of additional staff during evening, weekend, and holiday hours.

3.2.3 Department Leadership, Management and Operations

Effective leadership and management start at the top of an organization to guide it towards success. With increasing pressure to find value for money, elected officials are relentlessly looking for ways to increase the value for money proposition for their citizens. Department managers are challenged to maintain or improve services while avoiding services cost increases. This environment generates the need for communities to adopt more business-like approaches for delivering public safety services. Managers of fire and emergency services are required to develop private sector-like business practices such as:

- Conducting regular market (external) cost analysis
- Developing performance measures and objectives for core services including emergency response, fire prevention, public education and health and safety
- Regularly monitoring and reviewing performance
- Ensuring value for service

In some cases, this requires a shift from the historical approach of a focus on day-to-day service delivery to scanning the future and moving towards a department that is responsive to change, sustainable and efficient. Fire department leaders must also adopt a business-like approach to leading and managing their departments. Along with their municipality's senior administration, they need to be proactive and examine all aspects of their service delivery systems to look for innovation in efficiencies and effectiveness.

The following theoretical figure suggests how to allocate leadership time to effectively operate a fire department, scan for improvement opportunities and implement system improvements:

Figure 7: Fire Service Time Management

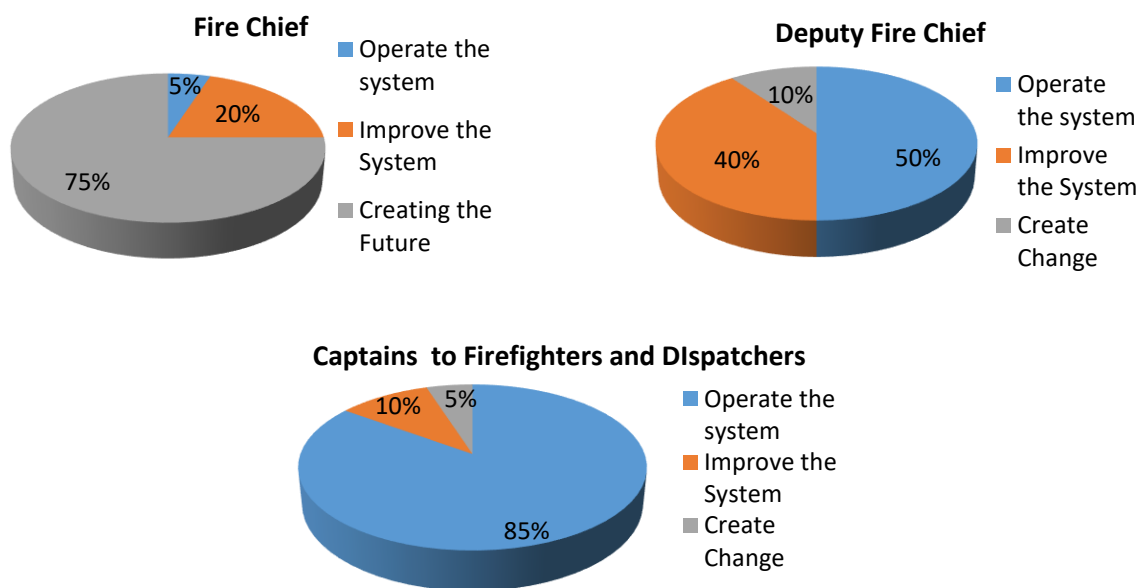


Figure 7 illustrates two important points: one, the amount of time allocated to operating, improving, and identifying strategy varies at different levels in the organization; two, senior leadership positions in WNFS must retain the capacity to identify and implement change.

The leadership team appears sufficient in structure and competency to deliver the high level of leadership required for a fire service. The number of positions accurately reflect their responsibilities; however, relying on the increasingly demanding workload appears to be of concern. The Fire Chief position has core responsibilities detailed within the Establishing Bylaw. The Fire Chief can delegate some responsibilities to the Assistant Fire Chief and coordinate management and leadership functions through the command structure.

Based upon our review of WNFES organizational structure, and results of interviews and surveys, there is opportunity to broaden some of the mid-management and leadership responsibilities to the District Chiefs and Platoon Captains. Opportunities include increasing individual oversight of operational and administrative functions. There are however limitations that can be placed on POC staff that should be carefully managed and monitored to ensure consistency and meeting set goals/objectives. These limitations are further discussed within this section.

It is extremely important that senior management continue to work closely as a team. A highly functioning team is one that understands each person's roles and responsibilities and brings their skills together in a collaborative manner to lead the organization in achieving their vision, mission, and goals. Therefore, it is important to ensure that accurate and updated job descriptions are made available and respected for each team member to promote role clarity.

Traits of a high performing team include:

- Trust
- Strong communication
- Transparency
- Collaboration
- Support
- Clarity
- Adaptive
- Reflective

Observation #4

WNFES operates with various positions, ranks each with expected responsibilities to ensure staff are completing duties. None of the positions within WNFES have formal job descriptions for any of the current FT or POC positions.

Recommendation #4: WNFES work with the municipal Human Resources personnel to establish complete job descriptions for each of the positions within WNFES. They include:

- Fire Chief/ Community Emergency Management Coordinator
- Administrative Assistant
- Assistant Fire Chief
- Full-time Firefighter
- POC District Chief
- POC Captain
- Paid-on-call Firefighter

Cost: Neutral

Suggested Completion: 6-12 Months

Resource: WNFES staff time, Human Resources

Rationale: Accurate job descriptions serve important tool to both the employer and employee including:

- Identifying necessary skills and abilities that are necessary for each position to meet the needs of the organization.
- Allow perspective employees will know what qualifications are necessary and what is expected of them, thereby saving unnecessary recruitment time and resources.
- Assisting with guiding new and incumbent employee training for each position.
- Assisting the employer and supervisors with performance reviews.
- Assisting with succession planning, as employees will know what is required to compete for a different position.
- Protecting the employer during a termination process

Leadership is a function of all members of WNFES. Chief officers to firefighters contribute to the leadership required to achieve service excellence in a fire department. Day-to-day station leadership is the responsibility shared with each district chief and station officer. These positions play a critical role in leading, managing, and mentoring firefighters. These roles are crucial in ensuring firefighter practice is aligned with department policy, as well as being the critical link in the chain of command between firefighters and administration. Within the current WNFES organizational structure it is imperative that the administration continues to work closely with each district chief, officer, and captain to provide direction and support while allowing for engagement including constructive feedback.

Current community growth projections, risk factors, volunteer recruitment and retention, and increasing management demands associated with maintaining a diverse composite service will require continually evaluate management staff capacity. The chief officers should be focusing most of their time on improving the current system and creating change to meet future challenges. An effective organization structure allows for roles and responsibilities to be evenly distributed. The WNFES leadership team requires the capacity to undertake and complete fire service management and strategic level requirements, including those recommended in this FMP.

3.2.4 Remuneration, Recruitment, Selection, Retention, Promotion

3.2.4.1 Remuneration

The Municipality of West Nipissing is committed to recruiting the best candidates possible. Competitive salaries and benefits are offered to all their full-time positions. The municipality maintains a Collective Agreement with the unionized work force that details working conditions and compensation for its employees. This Collective Agreement is between the Corporation of the Municipality of West Nipissing and the West Nipissing Professional Firefighters' Association, Local 1531.

Most employer-employee issues are handled through discussion up to and including the grievance procedures stipulated in the Collective Agreement. Competitive salaries, benefits and working conditions for each position is negotiated and form part of the Collective Agreement.

The WNFES Fire Chief and Assistant Chiefs' working conditions, remuneration and other terms of conditions of employment are determined by the CAO and approved by Council. The WNFES POC firefighters do not work under contract. Identified compensation rates are awarded for emergency response and training in line with WNFES unionized rates that is paid to each POC member every three months.

3.2.4.2 Recruitment

Recruitment is a key function of all emergency service agencies. The community places a tremendous amount of faith in their fire department personnel, trusting them to provide the highest level of service when the public is most vulnerable. As such, the process used to select personnel should be very comprehensive.

Experience within the emergency services industry has shown that relaxing the requirements for entry-level positions is not the answer for recruiting any employee. Instead, most departments have had the greatest success when qualified applicants are encouraged to apply. This process often involves targeted advertising, and promotional campaigns aimed at demonstrating the benefits, as well as the personal satisfaction of becoming part of the fire service. The expected requirements for residency, required training, and attendance must be clearly explained early in the process. Existing staff should be encouraged to participate in any such campaign.

WNFES, like other fire services in North America, train, maintain, and equip their firefighters, training officer and fire prevention/inspection officer to the recognized NFPA standards for the services being delivered. As this requires substantial investment in both financial and resource commitments, recruit selection should be carefully managed. This is further discussed in 3.6 Training in this report.

The process for recruiting applicants for vacant full-time positions is established. Job postings including minimum requirements and process are listed on the municipal website. The past and current practice is to strongly consider applicants from the POC work force for any full-time firefighter vacancies. This practice has worked well for the organization allowing the administration to have a reliable insight into the qualifications and suitability for future full-time employees.

POC firefighter opportunities are regularly posted on the municipal website supporting an annual recruitment process. The Fire Chief has stated that they are looking to expand the recruitment drives to twice per year. Applicants are required to forward a completed on-line application to the administration in person or by mail for consideration.

Most interview and survey participants suggested that WNFES recruiting efforts were successful in attracting quality applicants, however the industry wide challenge of attracting and retaining enough volunteer or POC firefighters remains a significant challenge.

Our review of the recruitment process along with interviews and survey results indicate that the recruiting processes for career firefighters, training officers and fire prevention/inspectors has generally been successful in identifying excellent candidates.

FTE vacancies are uncommon in the WNFES. Opportunities typically occur as firefighters, inspectors, and training officers retire or are promoted to positions that become vacant or are newly created. Available positions are posted on the municipal website with a defined opening and closing application submission period. The fact that limited opportunities occur for this position allows the city to select very high-quality candidates.

All new unionized employees serve a six-month probationary period. POC firefighters are subject to a one-year probationary period. An evaluation of each recruit firefighter will be made by the Fire Chief prior to the completion of their probationary period.

3.2.5 Selection and Training of New Staff

3.2.5.1 Firefighters

WNFES has an informal selection process for full-time firefighter positions. Applications typically come from the WNFES POC firefighters desiring to move to a career position. After submitting their application and meeting the minimum qualifications, firefighter candidates are required to move through a multi-stage process. Applications are only accepted when there is an open competition, and candidates meet all the initial requirements begin the following process:

- Assigned to straight day shifts to work together with the on-duty crew for two weeks.
- Successful recommendation from the officers will result in being assigned to one of the platoons.

3.2.5.2 Fire Prevention, Training and Public Educator Officer

WNFES promotion to the Fire Prevention, Training and Public Educator Officer position is awarded to a WNFES first class firefighter that has:

- Obtained the Fire Officer II certificate
- Completed the NFPA 1031 Fire Inspector, NFPA 1033 Fire Investigator, and NFPA 1035 Public Educator certificate
- Seniority of qualified candidates will be the deciding factor

3.2.5.3 POC Firefighter

Potential POC applications are reviewed by WNFES administration. Suitable candidates are then interviewed. Successful candidates are awarded a POC position on a probationary basis.

All probationary POC firefighters are required to complete basic firefighter skills and assignments before being allowed to attend emergency calls (typically 3-6 months). Attendance and suitability are monitored through the probationary period.

3.2.5.4 Retention

Career full-time employee retention is not generally for most career fire services. Retirement, promotions, and attrition are the most common reason for vacancies. Unanticipated retirements or resignations can result in significant challenges to maintain a sufficient pool of staff in each position that impact service delivery and budgets.

A significant challenge however is prevalent in many fire services that depend on a reliable complement of volunteer or POC firefighters. WNS has an approved roster of 80 POC firefighters, but their actual number is hovering around 66. The primary reasons for resignation from a volunteer firefighter service include:

- A physical move of residence or workplace out of the municipality
- Career/primary work demands
- Family commitments and childcare
- Obtain a career firefighter position
- Increased training demands of the position up to NFPA 1001 and other requirements
- Increased demands on department time obligations
- Occupational and safety requirements

A fire service that has a constant turnover of trained firefighters results in staffing shortages, operational limitations, experience, and increased costs of recruitment and training.

Observation #5

Attraction, recruitment, and retention of POC firefighters is a challenge shared among most fire services across the nation that rely on all, or a portion of their firefighting force to be made up of volunteer or POC firefighters. This is evident in West Nipissing as several stations are below their current complement of identified POC firefighters. Some stations are limited to 2 or 3 firefighters resulting in the inability to muster a response to incidents, requiring additional page out from the next closest station.

Recommendation #5: WNFES explore recruitment and retention practices that have proven to be successful in other similar fire services. These may include, but not be limited to:

- ***Incentives for local employers who employ POC firefighters and allow their employees to leave work for emergency response.***
- ***Regularly review and update remuneration rates for POC firefighters***
- ***Establishment of a Firefighter cadet program***
- ***Increased community based or local recruitment drives***
- ***Regular recognition programs for POC firefighters***

Suggested completion: 6 months - ongoing

Cost: Any adjustment to remuneration rates, minor costs to provide uniforms and protective equipment for cadet program, any costs for the incentives to local employers.

Resource: WNFES staff time, Human Resources

Observation #5

Rationale: A municipality that relies on a dedicated complement of volunteer or POC firefighters must be very strategic, proactive, and supportive of attracting and retaining enough firefighters to provide approved emergency services safely and reliably to their community. To recruit, select and train replacement staff can require significant upfront and continuing costs while often taking months or more to complete. Unique programs like a cadet program, will offer local youth an opportunity to train and participate in recruit like training, perhaps obtaining necessary training for various required certifications, and once the cadet is of the appropriate age and training completed, could immediately be available as a POC firefighter. Cadet type programs also allow for additional support roles in incidents and during public events.

3.2.5.5 Promotions and Advancement

The promotional policy for administrative and full-time officer positions are filled through specific selection and appointment processes. Promotion eligibility up from probationary firefighter to officer positions is contained in the current Collective Agreement.

The Fire Chief and assistant chief shall review all applicants for promotion and the successful applicant shall be chosen based on the applicant's experience, fire station record, training record, and any tests and interviews as may be required by the Fire Chief. As stated earlier in this report, individual job descriptions for each of the WNFES positions that outline the purpose, responsibilities, qualifications, knowledge, and skills for consideration should provide the basis for promotion or advancement.

Each position subject to the process for promotion requires eligible candidates to submit their interest to participate to the Fire Chief, participate in the written exam, oral exam, and presentation. All candidates who pass the exams will be granted an interview, including a written assignment. Final selection to each position will be made by the Fire Chief. Each promotion subject to the terms of the Collective Agreement is subject to a six-month probationary period.

3.2.6 Health and Wellness

The active pursuit of employee health and wellness is extremely important to an organization. The benefits may include but not be limited to:

- Early recognition and treatment of illness
- Reduction in absenteeism due to short/long-term illness
- Decreased injuries during normal duties
- Decreased workers' compensation board (WCB) premiums
- Increased employee career longevity
- Improved work/life balance

The West Nipissing municipality has an established Occupational Health and Safety Committee with representation from the Fire Chief and training officer that is the reporting mechanism to and from the WNFES dedicated OHS committee. Terms of Reference have been developed to guide these important committees. Health and wellness initiatives are in place and/ or being developed. Standard operating policies and guidelines are established to ensure safe practices and procedures are followed.

WNFES has updated the existing fire stations where possible with the health and safety of their staff a priority, including exhaust extrication systems, PPE gear extractors and dryers, fitness areas and equipment, and other measures to mitigate potential health and safety risk to staff. Each WNFES fire station has unique physical, or space limited challenges to retrofit desired OHS enhancements.

The mental health of first responders is an issue that has garnered considerable attention over the past 10 years. As identified in the International Association of Firefighters Wellness-Fitness Initiative Manual⁹, “a firefighter’s work is characterized by long hours, shift work, disruptions in sleep patterns, sporadic high intensity situations, strong emotional involvement, life and death decisions and exposure to extreme human suffering.” Over time, this type of work can impose considerable stress on some individuals.

As previously indicated, the municipality provides health and wellness programs for its employees. Group benefits are included in the collective agreement for full-time career firefighters. Workers’ compensation benefits are in place through the provincial Workplace Safety Insurance Bureau (WSIB)

⁹ Joint Labor Management Wellness-Fitness Initiative, 4th Edition, p.48

An effective health and wellness program tailored around the demands of a firefighter take a holistic approach including physical and emotional fitness. These programs should promote regular fitness assessments and support, injury protection and early detection of occupational illness such as cardio and cancer screening. An excellent resource for the key concepts of an effective firefighter health and wellness program is in the IAFF Joint Labor Management Wellness-Fitness Initiative, 4th Edition Properly outfitted fitness rooms allow opportunities for staff to maintain the strength and cardiovascular necessary to meet the demands of their positions.

Recognizing the unique challenges and programs available for the mental and physical wellbeing of firefighters, an industry specific health and wellness program implemented and available to all firefighters is an important component within the core services of the department.

3.2.7 Policies, Procedures, and Guidelines

Emergency response is dynamic in nature where split-second decisions are made that protect the lives of the public and their fellow responders. Therefore, the safe and effective operation of the fire service there must have industry-specific set of policies, procedures, and guidelines. Policies will outline expectations while procedures are the accepted ways of adhering to these policies.

SOGs are a set of documented expectations for staff to follow to achieve a desired goal during an emergency event. SOGs are considered at emergency scenes where there is some flexibility on how activities are conducted, taking into consideration the safety of the public and emergency responders. SOPs, however, are formal policies that specify a course of action, thereby ensuring efficiency, predictability, consistency, and safety for all staff, including firefighters operating on the fireground. The Ontario OHSA is the foundational document by which a strong internal responsibility system is established in the workforce. The employer has the ultimate responsibility for the health and safety of all workers in the workplace however every employee has the responsibility to adhere to policies, procedures and guidelines that are meant to keep them, there follow coworkers and the worksite safe.

A critical tool in the employer's scope of responsibility is the establishment of approved policies, procedures, and guidelines. All these documents must be appropriate for the situation, vetted, approved, and documented. It is the employer's responsibility to develop, institute and establish compliance. The employees have a right to know about potential hazards in the workplace, a right to participate, and in certain circumstances a right of refusal. WNFES has an established list of standard operating policies and guidelines for emergency and non-emergency operations. These policies and guidelines are reviewed, amended and/or added to as necessary.

3.2.8 Command Structure

Effective emergency services follow an established command structure on an emergency scene for effective operations and scene safety. Utilizing a recognized command system allows for:

- Identifying lead agency (fire, police, other)
- Span-of-control of all resources
- Interoperability with responding agencies
- Defined objectives and benchmarks
- Consistent communication protocols
- Enhancing overall scene safety

WNFES utilizes an industry recognized NFPA 1561 'Standard on Emergency Services Incident Management System and Command Safety' ICS. All personnel are trained on this command system and utilized in all emergencies. This command structure can be expanded or retracted based on the needs of the emergency and can integrate easily into other command processes as necessary.

3.3 Fire Public Education Services

Public education programs and active involvement in the community are important efforts that inform and engage citizens to think about fire safety and risk reduction. Prior to Covid, WNFES was active in schools and seniors' residents, however due to Covid, access was limited, and the programs were paused. Post Covid, WNFES has not reimplemented these programs and Public Education programming is currently provided on request such as Knights of Columbus Bike Rodeo and "Touch a Truck" events. Individual volunteer stations may conduct a fall smoke alarm blitz in conjunction with Fire Prevention Week in the fall of each year, however this is not structured within WNFES.

The current CRA has identified 19 risks of moderate or high levels. From the CRA the WNFES can structure and prioritize public education programs on the risks identified.

Residential occupancies represent 84.86% of the existing property stock and over the period from January 1, 2018- December 31, 2022, and were associated with almost 78% of the structure fire loss. This combined with 49.24% of the municipality's residential building stock being built prior to the introduction of the 1981 OFC and the OBC, and over the five-year period from January 1st, 2018, to December 31st, 2022, only 18% of incidents, there was a smoke alarm present on the floor of origin, show opportunities to promote smoke alarm safety in all homes, and target the residential homes in older neighbourhoods.

Further the population aged 65 years and older in West Nipissing represents over 26% of the total population. An additional 18.5% of the municipality's population falls between the age group of 55 and 64, who are aging towards the senior demographic of 65 years of age and older. This is an opportunity to reduce risk through target programming for seniors.

The Indigenous population makes up almost 1/5th of the total population. In the province studies have shown that the indigenous population is a higher risk to experience fire and at a higher risk for fire fatalities. Target fire home safety programs with the Indigenous community will be important to focus on.

The municipality has 10 elementary schools and secondary schools and an opportunity to partner with these organizations to promote fire safety with respect to smoke alarms, escape planning and the most reported ignition sources within the municipality being related to heating equipment (13.33%) which is higher than the provincial rate of 7.35%. Other informal events include mall booths, attending city events, churches, and mosques.

Observation #6

WNFES does not currently have a formal public fire safety education program. As per the Community Risk Assessment, there are several high risks related to seniors over 65 years, Group C residential occupancies, vulnerable occupancies, electrical fires, forest fire risk, and a higher proportion of Indigenous population the municipality.

Recommendation #6: Utilizing the Community Risk Assessment findings and new identified trends, WNFES to formalize the public education programming. This includes annual reviews to ensure recent trends or incidents are addressed to mitigate risks and ensure adequate resources available to delivery programming.

Suggest completion: 12-24 months

Cost: Neutral

Resource: WNFES staff time, programming supplies

Rationale: The municipality is required under the FPPA to provide public education. By utilizing information about the current risks and trends within the community will allow WNFES to build targeted public education programming with the end-goal to reduce the risk and educate people so to prevent a fire from occurring or know what to do in the event a fire does occur. Developing the program that integrates the use of social media, and the volunteer firefighters, will allow for outreach to the various communities within the municipality and utilize these resources for appropriate delivery of programming.

3.4 Fire Prevention and Code Enforcement

3.4.1 Fire Prevention Services Overview

As departments increase their emphasis on fire prevention activities, communities are seeing a reduction in fire-related losses. In Ontario alone, deaths caused by fire have been reduced over the last 70-75 years from 354 deaths reported in 1956 to 133 deaths reported in 2022. Although difficult to directly measure, effective fire prevention programs generally reduce fire-related deaths and property loss proportionately to the resources committed. Data collection and analysis will determine the effectiveness of these programs and their impact on the overall reduction of losses.

WNFES relies on the Fire Chief and the two assistant Chiefs, as assistants to the Fire Marshal to carry out all directives required within the Fire Protection and Prevention Act, 1997 to the municipality. As previously identified the FPPA regulations for public education and fire prevention, and the identified risks for the municipality emphasize the need to ensure appropriate capacity for fire prevention services.

The ability to meet legislative requirements, service expectations, and public safety requirements, relies on the fire service having adequate resources to meet the needs, circumstances, and requirements. The WNFES provides inspections based on complaints and requests as mandated under the FPPA. Schools, (7), Hotels (4), Tourist Camps (36-37) and Restaurants are inspected on an annual basis and various times throughout the year. Fire services should establish service level standards that allow the department to set clear expectations to the public, Council, and staff. For fire prevention and life safety activities and programs, the industry best practiced are outlined in NFPA 1730 and Fire Underwriters Services. Municipalities should examine these levels based on needs and circumstances and examining the identified risks within the community.

Additionally, all Fire Prevention staff must be trained and certified to the appropriate NFPA standards including NFPA 1031 Fire Inspector Level 2 (level 2 due to the scope of inspection work required), NFPA 1033 Fire Investigators and NFPA 1035 Fire and Life Safety Educator. Currently the plan is to have all staff trained and certified to the required levels and staff working through the various levels required.

3.4.2 Fire Code Inspection Services

Modern building codes including life safety design and operating requirements are key component of risk management. Cyclical fire inspection programs for high-risk buildings ensure these systems continue to function throughout the life of the building. This is especially important for high occupancy and special purpose buildings such as apartment buildings, hospitals, seniors housing and schools.

While the benefits of an effective fire prevention program are sometimes difficult to fully quantify, the reduction of fire deaths and injuries in Ontario following the implementation and enforcement of modern building and fire codes illustrates the value. These services are fundamental elements of a broader community fire reduction and life safety strategy. Fire inspections are critical services in identifying fire hazards and maintaining life safety systems. WNFES provides inspection as required under Ontario Regulation 365/13 – Mandatory Assessment of Complaints and Requests for Approval for complaints and requests and Ontario Regulation 364/13 – Mandatory Inspection- Fire Drill in Vulnerable Occupancy.

Fire services should establish service level standards that allow the department to set clear expectations to the public, Council, and staff. For fire prevention and life safety activities and programs, the industry best practices are outlined in NFPA 1730 and Fire Underwriters Survey (FUS). Municipalities should examine these levels based on needs and circumstances and examine the identified risks within the community. WNFES has set an inspection frequency rates for Schools, Hotels, Restaurants, and Tourist Camps as outlined in Table 12. The balance of occupancies is only conducted on request or complaint (R&C).

Table 12: Fire Prevention Inspections Frequency Levels

OBC Building Class	WNFES	NFPA 1730	FUS
A	12-months	12-months	6-months
B	R&C	12-months	6-months
C	R&C	12-months	6-months
D	R&C	36-months	12-months
E	R&C	36-months	12-months
F	R&C	24-months	6-months
F - Division 1	R&C	12-months	3-months

Vulnerable occupancies which include care occupancies, care and treatment occupancies, and retirement homes are required to conduct a fire drill annually and to notify the Chief Fire Official as identified in Ontario Regulation 364/13 “Mandatory Inspection- Fire Drills in Vulnerable Occupancy”.

Under O.Reg 364/13 an inspector is required to observe the drill and must also conduct a fire safety inspection. On completion of the fire drill and fire safety inspection, WNFES is required to file the information with the Ontario Fire Marshal. These regulations would require WNFES to complete an observation of the fire drill and a fire safety inspection annually on all identified vulnerable occupancies. Through discussions with staff, these inspections are not being conducted annually and only on request and complaint.

Observation #7

The WNFES provides the minimum requirements under the FPPA for inspections and code enforcement. WNFES, although conducting some proactive code inspections, does not have a defined inspection cycle identified through an approved formal service level policy. Further WNFES is not conducting the required inspections as defined in O. Reg 364/13 annually.

Recommendations #7: WNFES to formalize a proactive inspection program and ensure the municipality is conducting code enforcement inspections and meeting all legislative requirements through a formalized proactive fire safety inspection program.

Suggest completion: 24-36 months

Cost: Additional Fire Inspector as required based on the inspection cycle identified. The annual salary for Fire Prevention Officer is \$113k-\$124k plus benefits based on classification rates in CBA.

Resource: Human resources, fire administration time, operating budget

Rationale: As part of a solid fire prevention code enforcement program, proactive inspections on a regularly defined inspection cycle will increase code compliance within a municipality. The municipality should maintain inspection levels that ensure compliance with all appropriate regulations concerning vulnerable occupancies.

The current staffing model allows WNFES to meet the current requirements for the required request and complaint inspections and limited proactive inspections, meeting the legislative inspection requirements. To increase the proactive inspection program, meet the O. Reg 364/13 requirements and meet the growth anticipated in the new buildings, additional resources are required.

3.4.3 New Developments Plan Reviews

Working with the Building Department services departments, the Chief fire prevention officer is introduced to new developments and construction plans after approvals were provided. WNFES is not participating in the Ontario Building Code(OBC) plan review process and should be to ensure continuity from the OBC during build and occupancy, and OFC once occupancy is granted. The earlier involvement will allow WNFES to ensure that once occupancy is granted and the OFC becomes enforceable, that there are no discrepancies and pre and post occupancy is consistent. This will limit potential liability on the municipality that is currently possible.

Further, having direct involvement in the plan process with reviewing sub-division, land use and development proposals will allow WFNS to determine potential impacts on the fire services effectiveness to provide core services to residents. This would align the level of fire protection services with growth and development.

Observation #8

WNFES is not involved in Ontario Building Code plan reviews, which would bring an increased level of fire safety to new building compliance. Permit fees are charged by the municipality to cover the costs of the municipality's work on permit review, plan examination, and occupancy inspections and final approval.

Recommendation #8: WNFES and the Building Department conduct a review of the OBC plan review and occupancy inspections program to ensure that the Fire Service is appropriately engaged to be proactive on fire safety requirements under the OBC.

Suggest completion: 12-24 months

Cost: Neutral

Resource: Building Department

Rationale: the WNFES is not participating in the OBC plan review process and should be to ensure continuity from the OBC during build and occupancy, and OFC once occupancy is granted. The earlier involvement will allow WNFES to ensure that once occupancy is granted and the OFC becomes enforceable, that there are no discrepancies and pre and post occupancy is consistent. This will limit potential liability on the municipality that is currently possible.

Further, having direct involvement in the plan process with reviewing subdivision, land use and development proposals will allow WFNS to determine potential impacts on the fire services effectiveness to provide core services to residents. This would align the level of fire protection services with growth and development.

3.4.4 Fire Cause and Origin Services

All fires in Ontario causing injury, death and property loss are to be investigated for origin, cause and circumstances under the Fire Protection and Prevention Act, 1997.

The fire investigations in West Nipissing are conducted by the Fire Chief or one of the two Assistant Chiefs. There is a weekly on-call schedule, requiring one of the senior officers to attend all major fires. Part of the on-call activities includes conducting the fire cause and circumstances investigation as appropriate.

They utilize SCBA, have bunker gear / overalls, a dedicated vehicle and personal decontamination capabilities at Station #1. Photograph using cellphones provide basic pictures, however at times are not adequate to capture detailed photographs. Investigation reports are inputted into the ICO records management system which is meeting the needs of the service.

The three senior officers are certified to NFPA 1033 – Standard for Professional Qualifications of Fire Investigator. Two additional full-time fire fighters are trained to NFPA 1033 and can assist in the investigations as required.

Investigators are to determine cause and origin to a level that establishes probable cause with supportive and defensible evidence. They do not complete full reconstruction unless it is necessary. In the event of complex incidents, the investigator will request assistance from the Ontario Fire Marshal or work in conjunction with fire cause and origin teams provided by the insurance companies.

3.5 Emergency Response

3.5.1 Structural Firefighting

Fire department resources should be adequate to manage the most probable risks. Structural fire suppression encompasses a wide range of tactics for the control and extinguishment of fires originating from several sources. Single-family dwellings are the most prevalent building type in most communities. As a result, these types of structure fires are typically the most probable, but only rated as a low to moderate risk as the consequence are limited to one or two properties. Residential fires are a leading cause of fire-related death, injuries, and property loss in Canada.

While in many communities, structure fires are not the most frequent emergency response request, they require a significant investment in resources (equipment and staffing), training and coordination to manage safely and effectively. WNFES trains and maintains their full-time firefighters to the NFPA 1001 Level I and II standard. The POC firefighters are expected to obtain the NFPA 1001 level I as a minimum.

Structure fires are an infrequent type of incident encountered by WNFES (10%) over the 2018-2022 reviewed timeframe, however, has a large degree of life safety and property risk to both the public and the firefighters where time and resources are paramount considerations for safe and effective resolution of the emergency. Available staffing and equipment should be adequate for firefighters to be able to safely perform the task expected of them. For WNFES the industry practice for response and operations are outlined in the NFPA 1710 and 1720 standards for fire suppression operations. These standards are further covered in Section 4.

Structure fires that require entry into the building for fire suppression and rescue require many critical tasks to occur simultaneously for the safety of both the victims and the firefighters. Each of these tasks may require one or more companies of firefighters to accomplish them safely and effectively. Without enough companies of firefighters on scene, entry may be delayed until some of these tasks are completed.

WNFES maintains a modern fleet of emergency response apparatus and equipment along with a committed team of career and POC firefighters available for emergency structural fire response. Structural fire suppression encompasses a wide range of tactics for the control and extinguishment of fires originating from several sources. Sufficient firefighters arriving on-scene in a timely manner are paramount to facilitate safe and effective rescue and suppression tactics for the control and extinguishment of fires. The current practice for emergency response is a combination of a career firefighter/s from fire Station 1 and POC firefighters responding from the closest fire station on the appropriate apparatus. Additional firefighters would respond from one or more additional fire stations to assemble an effective response force. Call-back of one or more career firefighters may be utilized as necessary. The effectiveness of interior firefighting may be significantly impeded depending on the level of training of POC firefighters responding. While some have the training and capability to commence interior firefighting activities, others may not possess that level of training and thereby limited to exterior evolutions only.

Through the Ontario Fire Marshal, fire departments can define the level of service that they will provide as it relates to having the appropriate level of training and the required certification. This includes exterior or interior fire suppression operations, motor vehicle collision response, hazardous material response and any specialized rescue response. This level does not have to be consistent across the entire department and individual stations can be trained and certified to different levels.

WNFES total response and the ability to provide an effective response force in a timely manner is challenged at several stations. This combined with the limited number of incidents annually at some stations would allow for consideration of different levels for each station. Table 13 is derived from various data found in Section 4 and is compiled to indicate the possible service levels that could be considered for each.

Table 13: Station recommended Service Levels

Station	# FF	Annual Incidents	# Fires	Response times (secs)	Recommended Level of Suppression	MVC's	HazMat	Technical Rescue
1	27	219	41.2	690	Interior	Ops	Ops	Water/Ice

Station	# FF	Annual Incidents	# Fires	Response times (secs)	Recommended Level of Suppression	MVC's	HazMat	Technical Rescue
2	6	4.5	2.4	1059	Exterior	no	Aware	aware
3	2	0.75	0	N/A	Exterior	no	Aware	aware
4	11	13.5	7.6	1294	Interior	Ops	Aware	aware
5	6	7.9	4.8	1295	Exterior	no	Aware	aware
6	12	27	11.6	1061	Interior	Ops	Ops	aware
7	10	11.3	7.2	974	Interior	Ops	Aware	aware
8	8	4.1	2.4	1179	Exterior	no	Aware	aware
9	3	3.75	0.8	711	Exterior	no	Aware	aware

Based on the above information the following observations are made:

- Station 1 and 6 based on types of calls, number of calls, risk types, the length of response time, and number of firefighters on roster should be trained, certified and operating as a full-service station (Interior suppression operations, MVC response and hazmat operations level.
- Stations 4 and 7 based on the same criteria above should be at Interior suppression operations with MVC. Hazmat should be at awareness level.
- Stations 2,3,5, 8, and 9 should be at Exterior suppression operations with awareness in MVC and Hazmat.
- Station 1 should be trained and certified to Operations and some to Technician level for Ice and Water Rescue. All other stations should be trained to awareness level.

Most interview and survey participants agreed that WNFES was adequately trained and minimally staffed to safely manage most structural fire incidents, however significant concern was expressed regarding ability to establish an effective response force (EFR) for high rise and/ or multi-family structures and concurrent emergency responses. Minimum career staffing level constraints in WNFES is the most significant limiting factor in determining the actual effectiveness of any given emergency response.

Observation #9

WNFES is challenged to meet NFPA standards for both first arriving fire company and an effective response force for structure fires and increased size of the incidents, including higher and larger buildings. There is anticipated limited increase in vertical and horizontal growth with many new builds planned in the residential areas. NFPA standards recommends certain number of trained firefighters on-scene within a certain time criteria depending on the occupancy risk type so to ensure for public and fire fighter safety. To meet this criterion a call-back of off duty career firefighters and/or automatic aid response may be necessary. Further the province through the OFM allows for municipalities to set the operational level that the fire service will be trained, certified and operate at. Based on Table 10, various levels should be considered for each station.

Recommendation #9: WNFES must review the service levels for fire suppression operations, considering the critical tasks necessary to manage all risks and structure fire types, including residential, industrial, commercial, and higher building fires and include any technical rescue discipline being delivered safely and effectively. SOP's or SOG's must be developed recognizing the limitations of the POC model and provide direction to staff for safe and effective completion of critical tasks, and the need to utilize existing automatic aid agreements for additional support when necessary to meet these requirements.

Suggested completion: 12 -24 months

Cost: Staff time only to review and develop the critical tasking. The additional use of Automatic Aid will have added cost dependent on the number of incidents and costs identified in the appropriate contract.

Resource: WNFES staff time, Operating budget

Observation #9

Rationale: *Through the revision of the Establishing and Regulating By-law, the level of fire suppression operations should be established for each station, allowing the appropriate level of training and certification required. Basing it on available resources, risk, response performance and annual incident load will allow for different levels to be set. This may assist in improving recruitment and retention issues and the training expectations that are burdened upon the POC's at slower, lower risk stations. SOP/SOG's must be developed to detail critical tasks that can be performed at each level for each type of structure fire technical rescue discipline being delivered, and what staff expectations are when those appropriately trained staff levels are not on scene.*

3.5.2 Medical Assist

WNFES provides limited medical assistance to the community. The number of calls for EMS support is not significant and does not have a negative impact on other emergency responses. There is no need to make any adjustments to the current medical assistant incidents.

3.5.3 Motor Vehicle Collisions, Vehicle Extrication

Motor vehicle collisions (MVCs) with or without trapped persons can pose unique hazards to both the victims and responders. Vehicle extrication requires specialized training and equipment. Close coordination with police and ambulance services is necessary for the safety of both victims and responders. Weather conditions also contribute significantly to both the severity of the incident and the effectiveness of the response. The CRA sets the Motor vehicle collision risk to the community as high, the consequences as moderate and the probability as almost certain.

Many modern vehicles have added risks to firefighters, such as airbag deployment and hybrid vehicles containing fuel cells or batteries. Vehicle collisions or events involving transport vehicles often pose the additional challenge of involving dangerous goods or requiring heavy equipment to manage.

WNFES is trained and equipped to manage vehicle collision and extrication incidents (services provided to the NFPA 1001 and NFPA 1006 Standard). Depending on the nature of the incident, fire engines, tankers, and/or rescues are typically deployed to these events. MVCs are captured in the rescue response type which had 195 responses (21% of total call volume) over the 2018-2023 period within the municipality. High-speed roadways and provincial highways are common throughout and around the municipality. Responses on these roadways may present hazardous conditions for all responders. WNFES resources must work closely together with partner agencies at the scene of an MVC. These types of incidences may require the resources and expertise of PFS staff including:

- Scene safety
- Fire suppression
- Extrication
- Stabilization
- Medical first aid
- Dangerous goods control
- Special rescue

Additional apparatus and staff are often required to provide support to other agencies for equipment and roadway safety.

3.5.4 Hazardous Materials/ Dangerous Goods Response

Response capabilities should align with service levels defined in the NFPA 1072: Standard for Competence of Responders to Hazardous Materials Weapons of Mass Destruction Incidents service level matrix. It requires departments without advanced hazmat (dangerous goods) training to take only a limited role in hazardous materials (dangerous goods) response. There are three dangerous goods response service levels.

The first level of service is the awareness level. This level is the most basic and is for persons who could be the first on the scene of emergency involving dangerous goods. Responders at the awareness level are expected to recognize the presence of hazardous materials, protect themselves, call for trained personnel and secure the area to the best of their abilities. It does not involve donning protective suits to enter the contaminated zone to stop the flow of hazardous materials or conducting decontamination.

The second level of response is the operations service level. Responders are trained to be part of the initial response and control the impact of the release in a defensive fashion. Crews are expected to take a more hands-on approach than considered at the awareness level. They will use absorption, damming and diking to stop or redirect the flow of the hazardous material. Firefighters are trained to don protective suits, enter the hot zone to conduct rescue activities and control the product release. They must also establish a decontamination zone for responders and equipment. Crews also lead the evacuation in the hot zone.

The third level of response is the technician level. Technical-level responders must be certified hazmat technicians, trained in the use of specialized chemical protective clothing and control equipment. Responders at this level take offensive action in responding to releases or potential releases of dangerous goods. Given the required training, cost of equipment and limited community need, this level of service is normally provided by provided by larger communities or private companies through contract.

WNFES full-time firefighters are currently trained to the NFPA 1072 Operations level. WNFES POC firefighters are trained to a minimum of NFPA 1072 Awareness level. WNFES does not have a designated dangerous goods response unit but carries basic containment material and equipment on their apparatus. While incidents involving hazardous or dangerous goods are infrequent (53 for the 2018-2023 review period) these types of events can result in significant environmental and life-threatening consequences. In addition, a dangerous goods release was identified and discussed as a community risk factor. The municipality of West Nipissing CRA hazard identification and risk analysis classifies dangerous goods spills/releases as a low probability with a high risk to the public and the environment. These risks are attributed to a significant release or spill on railways, waterways, highways and/or bridges. A significant DG release or spill would warrant a mutual aid request to North Bay Fire and Emergency Services or the OFM.

Table 14 shows a review of the 2018-2023 Standard Information Report data provided through the OFM show WNFES provided responses to 53 incidents over 6-years involving various levels of minor to major dangerous goods including:

Table 14: Hazard Material Incidents 2018-2023

Call Type	2018	2019	2020	2021	2022	2023	Total
CO incident, CO present	2	5	5	3	6	9	25
Gas Leak - Natural Gas	1	3	3	2	4	2	15
Gas Leak - Propane	0	2	0	0	0	1	3

Call Type	2018	2019	2020	2021	2022	2023	Total
Other Public Hazard	2	0	0	0	3	1	6
Spill- Gasoline or Fuel	0	1	1	2	0	0	4

3.5.5 Technical Rescue Services

Rescue operations are often unique situations that require specialized equipment and training to ensure the responders maintain the competencies to safely execute the rescue. The challenge in maintaining these skills is the low frequency of the events. As a result, fire departments offering technical rescue services must provide adequate and consistent training to maintain competencies and equipment.

WNFES, like many fire services, are relied upon to provide a wide range of rescues within their community. The low frequency combined with the complexity and training required to manage these incidents provides unique challenges safely and effectively to a fire service. There is recognized training, certification and equipment required for many of these types of incidents, while unique rescues may rely on one or more skills and equipment to perform safely.

There may be other agencies within the municipality or region that provide specialty rescues. Close coordination and understanding of roles and responsibilities of each agency will alleviate conflict and provide clarity of responsibilities at the scene of an emergency.

Table 15 is a review of the 2018-2023 Standard Information Report data provided through the Ontario Office of the Fire Marshal show WNFES provided rescue services 288 times, including:

Table 15: Rescue Calls 2018-2023

Call Type	2018	2019	2020	2021	2022	2023	Total
Animal Rescue	0	1	0	0	0	0	1
Other Rescue	2	2	1	0	1	1	7
Rescue No Action Required	0	2	0	0	1	0	3
Vehicle Collision	13	34	31	43	60	68	249
Vehicle Extrication	9	0	1	0	4	4	18
Water Ice Rescue	0	0	0	1	0	1	2
Water Rescue	2	1	2	1	1	1	8

As reported above, most rescue incidents responded to were able to be managed by WNFES within the training and certification of their staff. For the additional calls beyond the capabilities of WNFES, (awareness levels), agreements with North Bay Fire and Emergency Services and ability to request additional support through the OFM.

Observation #10

Currently water and ice rescue responses are provided out of Station 1. An air boat responds from Station 1 or Station 1b to any incident in the municipality. Between the period of 2018-2023 WSNF conducted 10 ice or water rescues. Further WNFES responded to over 250 MVC incidents during the same period. Not all stations carry auto extrication equipment, and several stations have not had a MVC incident response in the 2018-2023 period.

Recommendation #10a: WNFES identify the stations to be trained, certified and respond to MVC incidents.

Recommendation #10b: Station 1 to be trained, certified and respond to ice and water rescues at an operations level and all other stations be trained to awareness level. SOP's and SOG's developed to identify the procedures for response and operations. (See recommendation 20 and 21)

Suggested completion: 12-36 months

Cost: Training and certification costs. There will be additional POC training hours required. Approximately 40 hrs. per person trained and certified. Based on the training rates for POC the start-up costs would be approximately \$2,100 per firefighter per course.

Resource: WNFES staff time, Operating budget

Rationale: Not all stations have responded to MVC incidents, nor have the appropriate equipment to conduct higher level rescue operations, therefore identifying the stations to train and certify and provide equipment based on risk and call volume, less training requirements and commitments can be experienced at some stations.

There are few overall ice and water rescues experienced in the municipality and can be responded to from Station 1 as the technical disciplined team. Having all other stations trained to awareness level will allow for the appropriate size up to occur and provide training to ensure health and safety of a fire fighters responding is addressed.

3.5.6 Pre-Emergency Planning

Pre-emergency or incident plans are intended to provide emergency responders with advanced knowledge and processes for a safe and effective response. These pre-plans include information regarding the construction type, occupancy, building status, emergency contacts, utility shutoffs, fire suppression and detection systems installations and locations exposure information, water supply availability, access problems and any other hazards.

Pre-planning programs are not necessarily tied directly to the fire inspection program, but rather include operationally relevant information that was gained on a site visit. Pre-planning should also include potential responses to areas of concern that are not captured in the formal fire inspection program.

WNFES does not utilize a formal pre-planning program. There are some existing pre-fire plans that have been developed and are now shared responding staff through the “Who’s Responding” application.

Observation #11

WNFES does not currently have a formal incident pre-planning program. As identified in the Community Risk Assessment, there are several high risks occupancies that have not had pre-plans developed or reviewed and updated.

Recommendation #11: WNFES to formalize pre-planning programming. This includes annual reviews to ensure plans are currently accessible to all staff attending fire incident scenes.

Suggested completion: 12-48 months

Cost: Neutral

Resource: WNFES staff time

Rationale: Pre-emergency or incident plans are intended to provide emergency responders with advanced knowledge and processes for a safe and effective response. These pre-plans include information regarding the construction type, occupancy, building status, emergency contacts, utility shutoffs, fire suppression and detection systems installations and locations exposure information, water supply availability, access problems and any other hazards. This addition to this program will increase fire fighter and public safety. The Fire Prevention staff should lead the projects and assisted by the FT and POC firefighters to complete.

3.5.7 911 and Fire Dispatch

The Public Safety Answering Point (PSAP) is provided by North Bay Central Ambulance Communications Centre (CACC). Fire rescue related calls for the municipality of West Nipissing are forwarded to WNFES for page out. Once WNFES receives the call the administrative assistant, full time firefighter, or designate will page out WNFES resources and provide any necessary support as required.

Observation #12

Currently WNFES is paged out to emergency response incidents by North Bay Central Ambulance Communications Centre. Once paged out, the Administrative Assistant responds to Station 1 to take over the communication duties of the incident. When this individual is not available, a fire fighter will conduct the communications. The current agreement with CACC does not include performance standards to be met. It is also noted that the CACC staff are not trained and certified to NFPA 1225

Recommendation #12: *WNFES explore dispatching options with another fire department communications centre.*

Suggested completion: 24-36 months

Cost: *To be determined based on cost with alternative agreement. The cost can be a flat rate or per incident based, estimated costs \$50k-\$75k annually.*

Resource: WNFES staff time, operating budget

Rationale: *Utilizing an existing fire department communications centre will allow the centre to manage incident communications during incidents and accurately track benchmark times and recording of callers and radio traffic. Utilizing an existing fire service communications centre will also provide trained call-takers and dispatchers to appropriate NFPA certifications. This option would also free up internal WNFES staff from having to conduct dispatching responsibilities after the incident is paged out.*

Further appropriate performance standards could be included in future agreements ensuring that WNFES is receiving a desired level of service.

3.5.8 Fire Protection Service Agreements

Large emergency events quickly overwhelm the response capacity of most municipal fire departments. This is especially true for smaller fire departments with limited resources. As a result, fire protection agreements, such as mutual aid and automatic aid agreements are a necessary component in adding response capacity for these additional resources to low frequencies but potentially high or extreme consequence events, or to provide initial response to areas that are difficult for the municipality to respond to in a timely manner and the other municipality may be closer.

Mutual aid agreements between fire departments allow them to assist each other across jurisdictional boundaries. Typically, this happens when local emergencies exceed local resources. They may include fire response, and/or specialty response services including rescue, dangerous goods. Any response would be made by the requesting agency and is not pre-determined in the case of automatic aid. The requested agency may or may not be able to fulfill the request.

Automatic aid agreements ensure a provision of initial or supplemental response to fires, rescues, and emergencies where a fire department situated in a neighbouring municipality can provide a response quicker than any fire department situated in the requesting municipality.

The Province of Ontario through the Office of the Fire Marshal has developed a provincial wide mutual aid plan to formalize and maintain mutual aid plans for identified areas coordinated through an Ontario Fire Marshal appointed fire coordinator. Each area will develop and maintain their respective MAP consistent with the Ontario plan.

The principle of operation of MAPs is to promote and ensure adequate and coordinated efforts to minimize loss of human life and property, as well as damage to the environment through the efficient utilization of fire department and provincial resources in the event of a mutual aid activation during times of natural or human-made emergencies.

In the event an emergency over tasks the resources of the municipality, and requires additional assistance, the EOC Commander may request assistance from neighbouring municipal or the Office of the Fire Marshal and/or Emergency Management through the Provincial Emergency Operations Centre (PEOC). The Municipality of West Nipissing participates in mutual aid with other fire services in Nipissing Parry Sound District. Automatic aid is received by WNFES from Markstay-Warren (west area), French River (southwest area) and St. Charles (southwest area).

3.6 Training

3.6.1 Training Overview

Training and competency development are essential and ongoing activities for all contemporary fire departments. A prepared and competent workforce reduces risk and safely optimizes service delivery. An effective workforce-training program aligns the growth and development of personnel to the organization's mission and goals.

The Ontario Firefighter Certification regulation (Ontario Regulation 343/22) filed April 14, 2022, and enacted on July 1, 2022, introduces mandatory minimum certification standards for firefighters that align with fire protection services being provided. This regulation will help ensure that firefighters have consistent training according to the level of service set by a municipality supporting firefighters and public safety.

Under the regulation, the municipality has the responsibility to ensure that fire fighters are trained and certified to the level of service that is being provided by July 1, 2026 (July 1, 2028, for technical rescue certification). The municipality can identify various levels of services to be delivered across the municipality and may train and certify fire fighters to various certifications. It must be noted that firefighters trained and certified to a certain level may not perform tasks at a higher level until they are trained and certified. The various levels of certification to consider are:

Exterior Attack, identified as Fire suppression operations from exterior of the building only, with a variety of additional provisions to consider:

1. Firefighter exterior
2. Firefighter Exterior attack and auto extrication
3. Firefighter Exterior attack and Hazardous materials response
4. Firefighter Exterior attack with auto extrication rescue and hazardous materials response

Interior Attack, identified as Fire Suppression operations that enter the interior building and can perform rescue, with a variety of additional provisions to consider:

5. Firefighter Interior Attack
6. Firefighter interior attack with auto extrication
7. Fire fighter interior attack with hazardous material response
8. Firefighter interior attack with auto extrication and hazardous material response (Full-service firefighter)

The certification option 1-7 above require various training from components of *NFPA 1001 “Standard for Fire Fighter Professional Qualifications”* and the certification is a seal provided by the OFM. Option 8 requires training to the entire NFPA 1001 qualifications and the certification is through Proboard or IFSAC seals. Options 1-7 require less training however will continue to meet the level of service identified by the municipality.

Based on the risks identified in the municipality and the current level of services identified in the Establishing and Regulating By-law, WNFES should be considering the appropriate levels services (See recommendation 9) by station and ensuring that firefighters and officers are receiving the appropriate training to meet the level provided.

All operators of fire apparatus must be trained and certified in pump operations for either non-class D license apparatus or class D license apparatus, NFPA 1002 “Standard for Fire Apparatus Driver/ Operator Professional Qualifications Chapter 5.

All officers that oversee staff and operations must be trained and certified as Team leader to the appropriate level of service delivery or to the full company officer standard, *NFPA 1021 “Standard for Fire Officer Professional Qualifications”*.

The municipality must further identify what other emergency response level they will provide and consider training in:

- Rope Rescue: Awareness, operations, or technical level
- Structural Collapse: Awareness, operations, or technical level
- Confined space: Awareness, operations, or technical level
- Trench rescue: Awareness, operations, or technical level
- Surface Water rescue: awareness, operations, or technical level
- Swift water rescue: Awareness, operations, or technical level
- Ice Water rescue: awareness, operations, or technical level.

Training Officer and those teaching training sessions (District Chiefs or Captains) must be certified to Training Officer Level I or Level II, *NFPA 1041 “Standard for Fire and Emergency Services Instructor Professional Qualifications Chapter 4 or 5.”*

Fire Prevention Officers and those conducting code enforcement inspections must be trained and certified to Fire Prevention/ Inspection Level I or Level II, *NFPA 1031 “Standard for Professional Qualifications for Fire Inspector and Plan Examiner”*.

Staff whose primary function as a public fire safety educator must be trained and certified to Fire and Life Safety Educator, *NFPA 1035, “Standard on Fire and Life Safety Educator, Public Information Officer, Youth Firesetter Intervention Specialist, and Youth Firesetter Program Manager Professional Qualifications.”*

WNFES has identified the need to train to appropriate certification levels but has not yet identified the appropriate levels for the entire department. The full-time firefighters have been trained to NFPA certifications in NFPA 1001 level I and II, and Hazardous Materials 1072 Awareness level.

Within the Establishing and Regulating Bylaw the municipality has identified response service to ice and water rescue shore base, water entry, and boat rescue incidents. The community risk assessment confirms this as an identified risk. The full-time firefighters are trained to operate the boat, however through interviews, lack training for firefighters across the municipality in this discipline was a concern.

With the closing of the Ontario Fire College in 2020 there have been challenges identified with the regional training centres (RTC's) program operated by the OFM. WNFES has challenges finding programs close to their community and sending fire fighters to outside programs is costly due to travel cost (mileage, hotel, and meals) and volunteers having to take time off work to attend. This has resulted in a lack of area for various firefighter training especially live fire training. WNFES utilizes in-house training with a dedicated FTE Officer for training programming, delivery, and records management. District Chiefs and Captains are assigned responsibility for in-house training at their appropriate stations.

A key to a solid training program is a detailed records management program to maintain all training records of all staff and details of the various levels completed and be able to identify the outstanding training still required. WNFES has utilized a paper record-keeping system, and it could not be confirmed as to the accuracy of the records. The new officer assigned to oversee training is currently reviewing the records and establishing an excel spread sheet to identify individual records of training completed. The ICO records management system has a training module but is not currently being utilized.

Training is currently conducted twice a month for 2hrs each session, with a training budget of \$5000. The officer with training oversight provides a schedule of training to complete and the District Chief is responsible for ensuring training is conducted and completed. If a session is missed a fire fighter may attend the same training and another fire station.

Training and education program activities are identified by assessing the Knowledge, Skills, and Abilities (KSAs) needed for the firefighters to perform their duties as outlined in the department's SOGs and procedures. When firefighters are competently trained and possess the KSAs for the services they are expected to provide, they reduce risk and increase their own safety and the safety of the public they serve. All training programs should be measured against and tailored to the core services and identified risk assessments for the community.

The training program of a fire service is a very important and demanding portfolio. The scheduling of instructors, facilities and participants is a daunting task to ensure safe and consistent training, while not negatively impacting the operational capacity.

Observation #13

WNFES currently provides training but has not yet identified specific levels of service to be provided. Although training is occurring, the approach is not station specific to the levels required or provided. Current training is conducted twice a month totaling 4 hours of training monthly.

Further training programs and training records are all tracked manually using a paper-based system transferred to an excel spreadsheet. It is reliant on the district chief responsible for the training to ensure that appropriate paperwork is submitted to the Training Officer to track and manually enter. There is no use of on-line training programs limiting training to be conducted in person only.

Recommendation #13a: WNFES develop at training and certification forecast to meet the level of service provided identified for each station.

Suggested Completion: 12-24 months

Cost: Neutral

Resource: WNFES staff time

Recommendation #13b: WNFES utilize a records management program that allows for proper tracking and analysis of current and future training needs and utilizing an on-line training module.

Suggested Completion: 12-18 months

Cost: TBD based on the system acquired. Estimated to be between \$50k-\$150k.

Resource: WNFES staff time, Operating budget

Observation #13

Rationale: *The need to first identify the level of service identified in Recommendation #13a will allow for the WNFES to better prepare and align training needs and schedules to meet the needs, service levels and certification requirements. This step must occur first before a formal training program can be put in place. The formal program is needed to ensure public safety and fire fighter safety is considered and maintained. Modern training processes incorporate a learning management software program that assists with the administration, documentation, tracking, reporting, automation, communication, coordination, and delivery of educational courses. Most learning management systems typically focus on online learning and support several delivery processes. There are commercial learning management software programs specifically designed for the fire service that are capable of assigning, delivering, tracking, and reporting firefighter training requirements. In the event of a critical injury or investigation by the Ministry of Labour, proper training records could be requested.*

3.6.2 Industry Recommended Qualifications

NFPA certification standards represent industry best practices. Position profiles and associated KSAs should prepare staff to competently provide the services necessary to address the risks in their community.

Many of the NFPA standards have been incorporated as mandatory in Ontario Regulation 343/22 Firefighter Certification, enforced under the Fire Protection and Prevention Act 1997. The regulation requires every municipality and every fire department to ensure that it's firefighters, including all staff performing duties defined in the regulation.

Further, organizational size and structure will often change the breadth of tasks and competencies required by specific positions. For example, large career fire departments tend to have a higher degree of specialization for senior positions and less need for senior officers to be directly involved in fire suppression or rescue operations. In contrast, smaller volunteer POC or paid-per-call volunteer department senior officers will lead or be directly involved in fire suppression and rescue operations.

The following Table 16 lists NFPA standards is offered as a general guideline for NFPA training standards aligned with most fire department positions.

Table 16: NFPA Professional qualification standards by position

<u>Deputy/ Assistant Chiefs and Fire Chief</u>	<u>District Chiefs</u>
- NFPA 472 Dangerous Goods awareness level (as required) - Firefighter Interior Attack with Auto Extrication (as required) - NFPA 1002 Pump Operator (as required) - Team Leader Interior Attack and auto extrication - NFPA 1041 Instructor (Level 1) (as required) - All Qualifications required to instruct firefighters and recruits (as required)	- NFPA 472 Dangerous Goods awareness level - Firefighter Interior Attack with Auto Extrication - NFPA 1002 Pump Operator (as required) - Team Leader Interior Attack and auto extrication - NFPA 1041 Instructor (Level 1) - All Qualifications required to instruct firefighters and recruits
<u>Captain</u>	<u>Firefighter</u>
- NFPA 472 Dangerous Goods awareness level - Firefighter Interior Attack with Auto Extrication - NFPA 1002 Pump Operator (as required) - Team Leader Interior Attack and auto extrication - NFPA 1041 Instructor (Level 1)	- NFPA 472 Dangerous Goods awareness level - Interior Attack with Auto extrication - NFPA 1002 Driver/Pump Operator (as required)
	<u>Training Officer</u>
	- NFPA 1041 Instructor (Level 1) - All Qualifications required to instruct firefighters and recruits

The role of the Office of Fire Marshal (OFM) provides leadership and expertise on fire safety and promotes changes to minimize the impact of fire and other public safety hazards on people, property, and the environment in Ontario. The OFM provides guidance and leadership to municipal fire departments in required training including the certification regulation to ensure mandatory minimum certification standards for firefighters that align with fire protection services being performed. The table found in Appendix F, describes the minimum certification standards for the various fire protection services and the compliance timeline.

3.7 Emergency Management Program and Emergency Operation Centre

Ontario's Emergency Management and Civil Protection Act lays out obligations and standards for emergency management programs required of all levels of government. In Ontario, each municipality must develop and implement an emergency management program to protect the lives and property of its citizens.

The Municipality of West Nipissing's Emergency Management Response Plan and Emergency Operations Centre has been developed under the authority of the Corporation through the municipality's By-Law 2019/27 and maintained under the direction of the municipal emergency control group (MECG). Through the by-law, this plan enables the head of Council to declare an emergency and implement the plan, appoint officials to implement the plan, and further to ensure the Emergency Plan committee review the plan annually and recommend changes to the plan.

In the event of an emergency, the Municipality of West Nipissing's Emergency Management Plan guides the municipality's response, mitigation, and recovery. This plan assigns designated corporate positions to the MECG including the position of Emergency Management Program Coordinator (CEMC) as well as support groups to the MECG from other agencies based on the nature of the emergency. The municipality's EOC will utilize the municipal Council chambers located at the Municipal building at 225 Holditch Street in Sturgeon Falls. There are three back-up EOC's identified at:

Station 1 - Municipal Building in Verner

Station 2 - Fire Hall in Field

Station 3 - Community Centre in Cache Bay

Observation #14

Thorough review of the Emergency Management plan and interviews with senior members whose positions are identified in the plan have indicated that they know they have a role, however, do not recall any formal training. The plan also identifies the Police Chief, which does not exist following the switch to the OPP in 2019. The EM plan has not been tested or exercised for several years.

Recommendation #14a: *The municipality ensure that all members that will serve on the MEEG or in support role obtain the appropriate training required through Emergency Management Ontario.*

Recommendation #14b: *The Emergency Plan committee review the current plan to ensure that it meets the needs and circumstances and is compliant with the provincial legislation and regulations. This review should be conducted and tested annually.*

Suggested Completion: 12-18 months

Cost: Staff time

Resource: WNFES staff time, MEEG members time

Rationale: *The municipal by-law has provided direction for an annual review of the plan. Further provincial regulations and legislation require municipalities conduct annual training for MEEG and support staff and an annual exercise to be conducted to test the plan.*

3.8 Capital Assets

3.8.1 Facilities

WNFES provides fire and emergency response, as well as fire prevention and public education services to the Municipality of West Nipissing out of nine fire stations that are located throughout the municipality. WNFES apparatus and vehicle repair is through internal and external providers.

The local fire station/s has a long history going back to the late 17th century when organized fire services were first organized. Typically, early fire stations housed simple fire pumps, facilities for the horses that pulled the fire pumps and living quarters for firefighters. Today's fire stations are typically used to store modern firefighting apparatus and equipment as well as living quarters for firefighters in many cases for 24 hour-7 days a week. Modern fire halls are ideally located in strategic locations with modern technology that allow for a quick response all to accommodate larger and heavier fire apparatus.

Health and safety and environmental considerations are now a necessary criterion for the design and function of a fire station, with necessary renovations being made if feasible. An overview of the nine WNFES fire stations and assessment of what are considered necessary amenities for a fully functional fire station are also detailed below.

Station Name: **Sturgeon Falls**



In-Service Date: 1993

Description: Located in Sturgeon Falls, this is the main station for West Nipissing Fire and Emergency Services. This station houses the WNFES management and operational equipment and personnel.

The structure is constructed of brick over concrete blocks. The station is equipped with fire suppression systems, smoke detectors, and an integrated alarm system. Security is provided via combination-type door locks, though there is no intrusion alarm. Vehicle exhaust removal systems are installed, and the building complies with current fire and life safety codes.

Bays:	3 back-in bays, 1 drive-thru	Apparatus and Light-Duty Vehicles:	1 Rescue, 1 Tanker, 1 Pumper, 1 Ladder, 3 Command Vehicles
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Comments: The structure is part of a multi-use facility. Although the structure is sound, the facility does not safely and effectively accommodate the size and technology of newer more modern apparatus. There is no room for expansion to accommodate additional apparatus or operational space. Over the years, the facility has been re-purposed, resulting in poor overall flow. This facility is at capacity.

Apparatus Bay



Bunker Gear Storage



Laundry and Storage



Item	Description	Yes	No	Comments
1	Site security	✓		
2	Adequate parking for staff and visitors	✓		
3	Internet and intranet connectivity	✓		
4	Adequate space for training – training props, hydrant		✓	Hands-on training props located at Station 1B
5	Back-up power supply	✓		
6	Fire Chiefs' office	✓		
7	Deputy's Chief's offices	✓		
8	Emergency management office	✓		
9	Administrative support office/space	✓		
10	Training room / meeting room	✓		Training room located at 1B
11	Office security	✓		
12	Dorm rooms		✓	
13	Day use area	✓		
14	Kitchen	✓		Limited kitchen
15	Fitness / wellness area		✓	Fitness equipment located at Station 1 B
16	Firefighter Men's and ladies' bathrooms and showers	✓		
17	Space to safely garage and do minor maintenance on vehicles	✓		
18	Hose drying area	✓		
19	Small equipment storage and maintenance room	✓		
20	Air filling station room complete with proper ventilation	✓		
21	Industrial washer and dryer room	✓		
22	Bunker gear storage room complete with proper drying and ventilation	✓		
23	Consumables storage room	✓		
24	Sufficient workstations	✓		
25	Sufficient supervisor workspace	✓		
26	Breakout or quiet room		✓	
27	Public and Staff Washrooms		✓	
28	Locker room		✓	
29	Proper interior Lighting	✓		

Station Name:		Sturgeon Falls 1B	
			
In-Service Date:		Built 1987-1988 in service as a Fire Hall 2006	
Description:		Located in Sturgeon Falls, this facility is used primarily for training and storage of light-duty equipment. The structure is constructed of metal over wood.	
Bays:		4 back-in bays	Apparatus and Light-Duty Vehicles: 2 ATVs, 2 Snowmobiles 2, 1 Airboat, 1 Fire Boat, 1 Boat, 1 Utility Trailer
Comments:		The facility was re-purposed after the City acquired it from Weyerhaeuser approximately 15 years ago. There is room outside of the facility to conducted training including vehicle extrication. The building is sound and is serving its current purpose well.	

Apparatus and Equipment Bay



Bunker Gear Storage



Laundry and Storage



Item	Description	Yes	No	Comments
1	Site security	✓		Door lock only
2	Adequate parking for staff and visitors	✓		
3	Internet and intranet connectivity	✓		Limited
4	Adequate space for training – training props, hydrant	✓		
5	Back-up power supply	✓		
6	Fire Chiefs' office		✓	
7	Deputy's Chief's offices		✓	
8	Emergency management office		✓	
9	Administrative support office/space		✓	
10	Training room / meeting room	✓		
11	Office security		✓	
12	Dorm rooms		✓	
13	Day use area		✓	
14	Kitchen		✓	
15	Fitness / wellness area	✓		
16	Firefighter Men's and ladies' bathrooms and showers	✓		
17	Space to safely garage and do minor maintenance on vehicles	✓		
18	Hose drying area		✓	
19	Small equipment storage and maintenance room	✓		
20	Air filling station room complete with proper ventilation		✓	
21	Industrial washer and dryer room		✓	
22	Bunker gear storage room complete with proper drying and ventilation		✓	
23	Consumables storage room	✓		
24	Sufficient workstations		✓	
25	Sufficient supervisor workspace		✓	
26	Breakout or quiet room		✓	
27	Public and Staff Washrooms		✓	
28	Locker room		✓	
29	Proper interior Lighting	✓		

Station Name: **Station 2 Crystal Falls**



In-Service Date:	Built 1995 Acquired in Amalgamation 1999		
Description:	This facility is used to stage and deploy apparatus for the Crystal Falls response area.		
Bays:	2 back-in bays	Apparatus and Light-Duty Vehicles:	1 Mini Pumper
Comments:	There is room inside and outside of the facility to conduct some hands-on training, but there is no classroom. This facility is serving its current purpose well.		

Apparatus Bay



Item	Description	Yes	No	Comments
1	Site security	✓		Door lock only
2	Adequate parking for staff and visitors	✓		
3	Internet and intranet connectivity	✓		Limited
4	Adequate space for training – training props, hydrant		✓	Hands-on training props located at Station 1B
5	Back-up power supply		✓	
6	Fire Chiefs' office		✓	
7	Deputy's Chief's offices		✓	
8	Emergency management office		✓	
9	Administrative support office/space		✓	
10	Training room / meeting room	✓		Training room located at 1B
11	Office security		✓	
12	Dorm rooms		✓	
13	Day use area		✓	
14	Kitchen		✓	
15	Fitness / wellness area		✓	
16	Firefighter Men's and ladies' bathrooms and showers		✓	
17	Space to safely garage and do minor maintenance on vehicles	✓		
18	Hose drying area		✓	
19	Small equipment storage and maintenance room			
20	Air filling station room complete with proper ventilation		✓	
21	Industrial washer and dryer room		✓	
22	Bunker gear storage room complete with proper drying and ventilation		✓	
23	Consumables storage room		✓	
24	Sufficient workstations		✓	
25	Sufficient supervisor workspace		✓	
26	Breakout or quiet room		✓	
27	Public and Staff Washrooms		✓	
28	Locker room		✓	
29	Proper interior Lighting	✓		

Station Name: **Station 3 Tomiko Lake**



In-Service Date:	2000		
Description:	This facility is used to stage and deploy apparatus for the Tomiko Lake response area. The structure is of wood construction.		
Bays:	1 back-in bay	Apparatus and Light-Duty Vehicles:	1 Crew Cab Support Vehicle with Portable Pump
Comments:	There is room outside of the facility to conduct some hands-on training, but there is no classroom or storage inside the building. This facility is serving its current purpose well. Note: Currently, this facility is under review.		

Apparatus Bay



Item	Description	Yes	No	Comments
1	Site security	✓		Door lock only
2	Adequate parking for staff and visitors	✓		
3	Internet and intranet connectivity		✓	
4	Adequate space for training – training props, hydrant		✓	Hands-on training props located at Station 1B
5	Back-up power supply		✓	
6	Fire Chiefs' office		✓	
7	Deputy's Chief's offices		✓	
8	Emergency management office		✓	
9	Administrative support office/space		✓	
10	Training room / meeting room	✓		Training room located at 1B
11	Office security		✓	
12	Dorm rooms		✓	
13	Day use area		✓	
14	Kitchen		✓	
15	Fitness / wellness area		✓	
16	Firefighter Men's and ladies' bathrooms and showers		✓	
17	Space to safely garage and do minor maintenance on vehicles	✓		
18	Hose drying area		✓	
19	Small equipment storage and maintenance room			
20	Air filling station room complete with proper ventilation		✓	
21	Industrial washer and dryer room		✓	
22	Bunker gear storage room complete with proper drying and ventilation		✓	
23	Consumables storage room		✓	
24	Sufficient workstations		✓	
25	Sufficient supervisor workspace		✓	
26	Breakout or quiet room		✓	
27	Public and Staff Washrooms		✓	
28	Locker room		✓	
29	Proper interior Lighting	✓		

Station Name: **Station 4 Field**



In-Service Date:	Built 1969 Acquired in Amalgamation 1999		
Description:	This facility is used to stage and deploy apparatus and equipment for the Field response area. This facility is part of a multi-use facility and is constructed of brick and concrete.		
Bays:	2 back-in bays	Apparatus and Light-Duty Vehicles:	1 Pumper, 1 Tanker
Comments:	There is room inside and outside of the facility to conduct some hands-on training. This facility is equipped with a SCBA refilling station, classroom, office, and storage area. There is ample room to safely maneuver equipment and resources. Currently, this facility is serving its purpose and the area well.		

Apparatus Bay



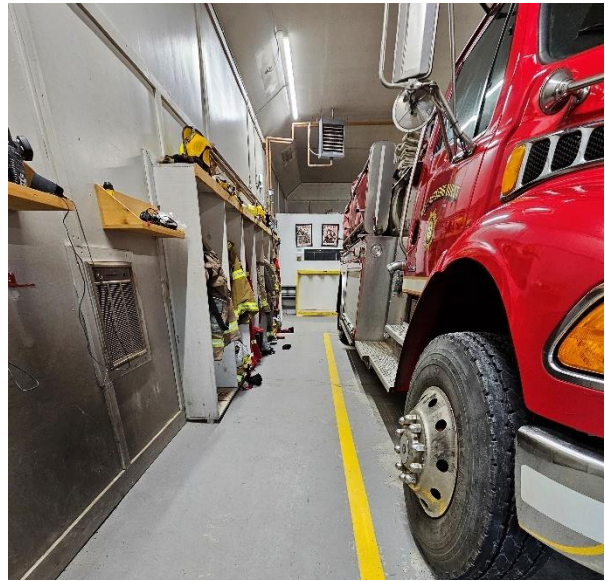
Apparatus Bay



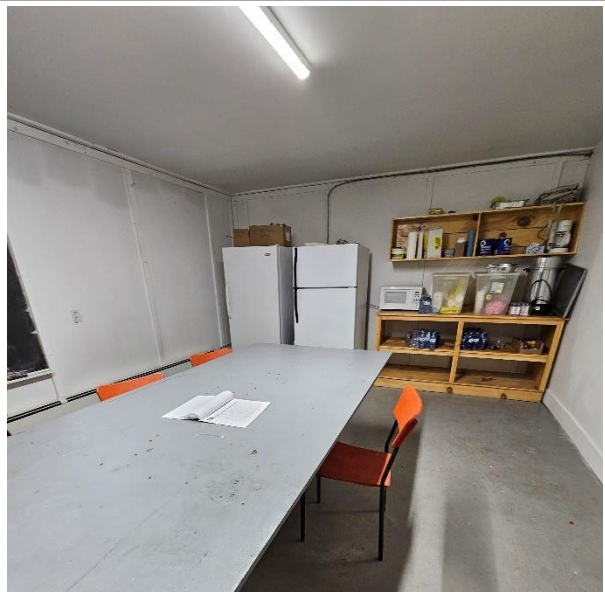
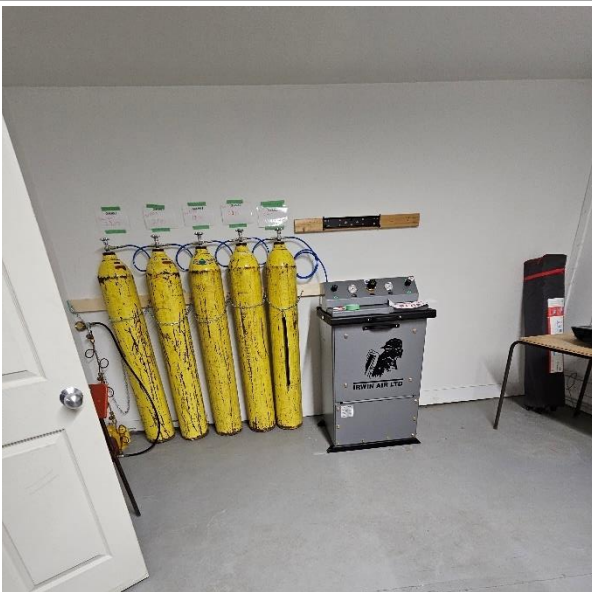
Item	Description	Yes	No	Comments
1	Site security	✓		Door lock only
2	Adequate parking for staff and visitors	✓		
3	Internet and intranet connectivity		✓	
4	Adequate space for training – training props, hydrant		✓	Hands-on training props located at Station 1B
5	Back-up power supply		✓	
6	Fire Chiefs' office		✓	
7	Deputy's Chief's offices		✓	
8	Emergency management office		✓	
9	Administrative support office/space		✓	
10	Training room / meeting room	✓		Training room located at 1B
11	Office security		✓	
12	Dorm rooms		✓	
13	Day use area		✓	
14	Kitchen		✓	
15	Fitness / wellness area		✓	
16	Firefighter Men's and ladies' bathrooms and showers		✓	
17	Space to safely garage and do minor maintenance on vehicles	✓		
18	Hose drying area	✓		Hose tower
19	Small equipment storage and maintenance room			
20	Air filling station room complete with proper ventilation		✓	
21	Industrial washer and dryer room		✓	
22	Bunker gear storage room complete with proper drying and ventilation		✓	
23	Consumables storage room		✓	
24	Sufficient workstations		✓	
25	Sufficient supervisor workspace		✓	
26	Breakout or quiet room		✓	
27	Public and Staff Washrooms		✓	
28	Locker room		✓	
29	Proper interior Lighting	✓		

Station Name:		Station 5 River Valley	
			
In-Service Date:		Built 1980 Acquired in Amalgamation 1999	
Description:		This facility is used to stage and deploy equipment and apparatus for the River Valley area. This facility is equipped with a SCBA refilling station, classroom, kitchen, and storage area.	
Bays:		2 back-in bays	Apparatus and Light-Duty Vehicles: 1 Mini Pumper, 1 Tanker
Comments:		There is room inside and outside of the facility to conduct some hands-on training. Currently, this facility is serving its purpose and the area well. There is ample room to safely maneuver equipment and resources. At present, this facility is at capacity.	

Apparatus Bay



Apparatus Bay



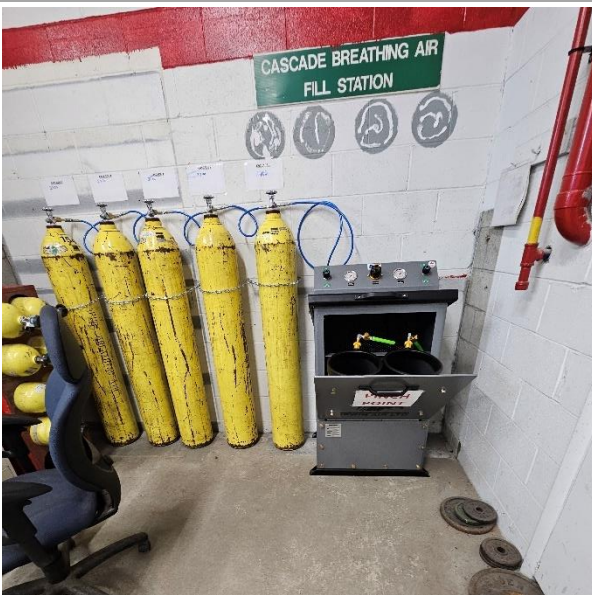
Item	Description	Yes	No	Comments
1	Site security	✓		Door lock only
2	Adequate parking for staff and visitors	✓		
3	Internet and intranet connectivity		✓	
4	Adequate space for training – training props, hydrant	✓	✓	Hands-on training props located at Station 1B
5	Back-up power supply		✓	
6	Fire Chiefs' office	✓		
7	Deputy's Chief's offices		✓	
8	Emergency management office		✓	
9	Administrative support office/space		✓	
10	Training room / meeting room	✓		
11	Office security		✓	
12	Dorm rooms		✓	
13	Day use area		✓	
14	Kitchen		✓	
15	Fitness / wellness area	✓		
16	Firefighter Men's and ladies' bathrooms and showers		✓	
17	Space to safely garage and do minor maintenance on vehicles	✓		
18	Hose drying area		✓	
19	Small equipment storage and maintenance room			
20	Air filling station room complete with proper ventilation	✓		
21	Industrial washer and dryer room		✓	
22	Bunker gear storage room complete with proper drying and ventilation	✓		
23	Consumables storage room	✓		
24	Sufficient workstations	✓		
25	Sufficient supervisor workspace	✓		
26	Breakout or quiet room		✓	
27	Public and Staff Washrooms	✓		
28	Locker room		✓	
29	Proper interior Lighting	✓		

Station Name: **Station 6 Verner**



In-Service Date:	Built 1963 Acquired in Amalgamation 1999		
Description:	This facility is used to stage and deploy equipment and apparatus for the Verner response area. This facility is equipped with a SCBA refilling station, office, and storage area. There is ample room to safely maneuver equipment and resources.		
Bays:	2 back-in bays	Apparatus and Light-Duty Vehicles:	1 Mini Pumper, 1 Tanker
Comments:	There is room inside and outside of the facility to conduct some hands-on training. Currently, this facility is serving its purpose and the area well. At present, this facility is at capacity. Note: Currently, this facility is under review.		

Apparatus Bay



Item	Description	Yes	No	Comments
1	Site security	✓		Door lock only
2	Adequate parking for staff and visitors	✓		
3	Internet and intranet connectivity		✓	
4	Adequate space for training – training props, hydrant	✓	✓	Hands-on training props located at Station 1B
5	Back-up power supply		✓	
6	Fire Chiefs' office		✓	
7	Deputy's Chief's offices		✓	
8	Emergency management office		✓	
9	Administrative support office/space		✓	
10	Training room / meeting room	✓		
11	Office security		✓	
12	Dorm rooms		✓	
13	Day use area		✓	
14	Kitchen	✓		
15	Fitness / wellness area	✓		
16	Firefighter Men's and ladies' bathrooms and showers		✓	
17	Space to safely garage and do minor maintenance on vehicles	✓		
18	Hose drying area	✓		Hose drying rack
19	Small equipment storage and maintenance room	✓		
20	Air filling station room complete with proper ventilation	✓		
21	Industrial washer and dryer room		✓	
22	Bunker gear storage room complete with proper drying and ventilation	✓		
23	Consumables storage room	✓		
24	Sufficient workstations	✓		
25	Sufficient supervisor workspace		✓	
26	Breakout or quiet room		✓	
27	Public and Staff Washrooms	✓		
28	Locker room		✓	
29	Proper interior Lighting	✓		

Station Name: **Station 7 Lavigne**

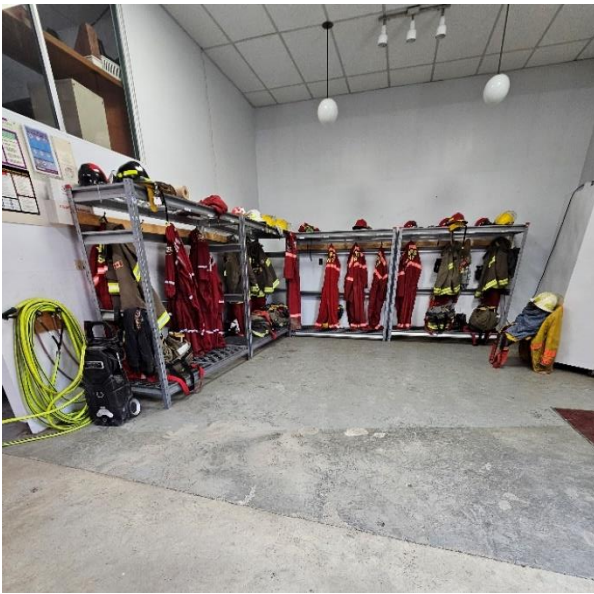


In-Service Date:	Built 1974 Acquired in Amalgamation 1999		
Description:	This facility is used to stage and deploy equipment and apparatus for the Lavigne response area. There is room inside and outside of the facility to conduct some limited hands-on training. This facility is equipped with a SCBA refilling station, office, and storage area.		
Bays:	3 back-in bays	Apparatus and Light-Duty Vehicles:	1 Tanker, 1 Pumper
Comments:	There is ample room inside to safely maneuver equipment and resources, however access in front of the building requires extreme care and attention due to its location on a sharp bend in the road. There is room outside the facility to conduct limited hands-on training. At present, this facility is at capacity. Note: Currently, this facility is under review.		

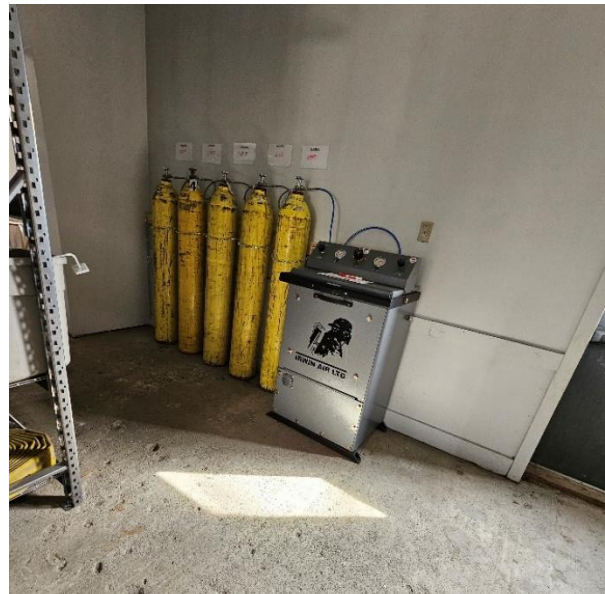
Apparatus Bay



Storage



SCBA Refill Station



Item	Description	Yes	No	Comments
1	Site security	✓		Security cameras
2	Adequate parking for staff and visitors	✓		
3	Internet and intranet connectivity		✓	
4	Adequate space for training – training props, hydrant	✓	✓	Hands-on training props located at Station 1B
5	Back-up power supply		✓	
6	Fire Chiefs' office		✓	
7	Deputy's Chief's offices		✓	
8	Emergency management office		✓	
9	Administrative support office/space		✓	
10	Training room / meeting room	✓		
11	Office security	✓		Secure office upstairs
12	Dorm rooms		✓	
13	Day use area		✓	
14	Kitchen		✓	
15	Fitness / wellness area		✓	
16	Firefighter Men's and ladies' bathrooms and showers		✓	
17	Space to safely garage and do minor maintenance on vehicles	✓		
18	Hose drying area		✓	
19	Small equipment storage and maintenance room	✓		
20	Air filling station room complete with proper ventilation	✓		
21	Industrial washer and dryer room		✓	
22	Bunker gear storage room complete with proper drying and ventilation	✓		
23	Consumables storage room	✓		
24	Sufficient workstations		✓	
25	Sufficient supervisor workspace		✓	
26	Breakout or quiet room		✓	
27	Public and Staff Washrooms	✓		
28	Locker room		✓	
29	Proper interior Lighting	✓		

Station Name:		Station 8 North Monetville	
			
In-Service Date:		Built 1993 Acquired in Amalgamation 1999	
Description:		This facility is used to stage and deploy equipment and apparatus for the North Monetville response area. This facility is equipped with a SCBA refilling station, office, and storage area.	
Bays:		2 back-in bays	Apparatus and Light-Duty Vehicles: 1 Mini Pumper, 1 Tanker
Comments:		Currently, this facility is serving its purpose and the area well. There is room outside of the facility to conduct some hands-on training. There is, however, limited room to safely maneuver equipment and resources. At present, this facility is at capacity. Note: Currently, this facility is under review.	

Apparatus Bay



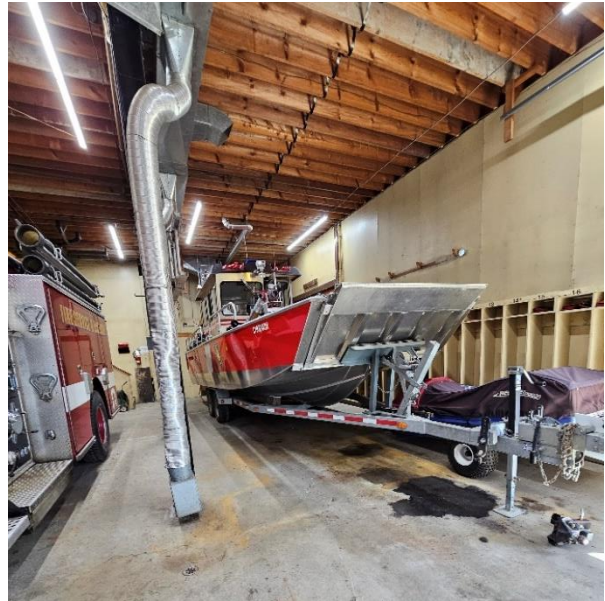
Item	Description	Yes	No	Comments
1	Site security	✓		Door lock only
2	Adequate parking for staff and visitors	✓		
3	Internet and intranet connectivity		✓	
4	Adequate space for training – training props, hydrant	✓	✓	Hands-on training props located at Station 1B
5	Back-up power supply		✓	
6	Fire Chiefs' office		✓	
7	Deputy's Chief's offices		✓	
8	Emergency management office		✓	
9	Administrative support office/space		✓	
10	Training room / meeting room	✓		
11	Office security		✓	
12	Dorm rooms		✓	
13	Day use area		✓	
14	Kitchen		✓	
15	Fitness / wellness area		✓	
16	Firefighter Men's and ladies' bathrooms and showers		✓	
17	Space to safely garage and do minor maintenance on vehicles	✓		
18	Hose drying area		✓	
19	Small equipment storage and maintenance room	✓		
20	Air filling station room complete with proper ventilation		✓	
21	Industrial washer and dryer room		✓	
22	Bunker gear storage room complete with proper drying and ventilation	✓		
23	Consumables storage room	✓		
24	Sufficient workstations		✓	
25	Sufficient supervisor workspace		✓	
26	Breakout or quiet room		✓	
27	Public and Staff Washrooms	✓		
28	Locker room		✓	
29	Proper interior Lighting	✓		

Station Name: **Station 9 Cache Bay**



In-Service Date:	Built 1977 Acquired in Amalgamation 1999		
Description:	This facility is used to stage and deploy equipment and apparatus for the Cache Bay response area. This facility is equipped with a SCBA refilling station, office, and storage area.		
Bays:	2 back-in bays	Apparatus and Light-Duty Vehicles:	1 Pumper
Comments:	There is room outside of the facility to conduct some hands-on training. There is ample room to safely maneuver equipment and resources. This facility is equipped with a classroom and lounge area. At present, this facility is at capacity. Note: Currently, this facility is under review.		

Apparatus Bay



Item	Description	Yes	No	Comments
1	Site security	✓		Door lock only
2	Adequate parking for staff and visitors	✓		
3	Internet and intranet connectivity		✓	
4	Adequate space for training – training props, hydrant	✓	✓	Hands-on training props located at Station 1B
5	Back-up power supply		✓	
6	Fire Chiefs' office	✓		Office located upstairs
7	Deputy's Chief's offices		✓	
8	Emergency management office		✓	
9	Administrative support office/space		✓	
10	Training room / meeting room	✓		
11	Office security		✓	
12	Dorm rooms		✓	
13	Day use area		✓	
14	Kitchen	✓		
15	Fitness / wellness area		✓	
16	Firefighter Men's and ladies' bathrooms and showers		✓	
17	Space to safely garage and do minor maintenance on vehicles	✓		
18	Hose drying area		✓	
19	Small equipment storage and maintenance room	✓		
20	Air filling station room complete with proper ventilation		✓	
21	Industrial washer and dryer room		✓	
22	Bunker gear storage room complete with proper drying and ventilation		✓	
23	Consumables storage room		✓	
24	Sufficient workstations		✓	
25	Sufficient supervisor workspace		✓	
26	Breakout or quiet room		✓	
27	Public and Staff Washrooms		✓	
28	Locker room		✓	
29	Proper interior Lighting	✓		

Observation #15

The on-site tour provided observations of declining conditions of various fire stations. During interviews with staff, concern about the deteriorating conditions was expressed. These declining conditions include leaking roofs, exterior deterioration, system maintenance, flooring and paint, lack of storage, training area. The municipality has identified the Community Services Department to oversee the municipal owned or operated buildings and are working with the Fire Chief to assist in repairs to the fire stations. The Community Services Department has begun a building envelope study and identified the needed repairs, replacements, and upgrades for the city buildings. The fire stations have not been included in the study and repairs are being conducted on a need-by-need basis.

Recommendation #15: *The fire stations are included in building envelope study and develop a proactive plan for the maintenance, and repair of fire stations. These deficiencies are addressed through the municipalities capital budget process based on the formal building envelope study.*

Suggested completion: 12-60 months

Cost: *Staff time for the building envelope study, Capital cost depending on the findings and planning of the of the building envelope study.*

Resource: *WNFES staff time, corporate staff, Capital budget, Operating budget*

Rationale: *Fire stations are required to maintain a level of readiness to meet operational needs and ensure health and safety requirements. Ensuring proper maintenance is maintained and appropriate life cycle planning will ensure the readiness is at the required levels. The coordination at a municipal level should ensure prioritization within the municipal asset management program and the corresponding capital budget forecasting.*

3.8.2 Apparatus and Emergency Vehicles

Fire apparatus and emergency vehicles are typically the largest asset expenditures for any fire department. Purchasing and managing these assets requires strong fiscal responsibility to endure public and local government scrutiny. Currently, WNFES has considerable monies invested in vehicles and equipment. The lifespan of apparatus varies depending on its type and use, along with regular maintenance and testing standards. Fire services typically designate a lifecycle to each piece of apparatus and other emergency vehicles and contribute to a capital reserve fund to ensure enough funds are available when the replacement is needed.

3.8.2.1 NFPA Standards for Fire Apparatus

NFPA has developed standards to assist a fire service with the design, maintenance, inspection, testing, life cycling, and dispersal for their fire apparatus. Fire departments may choose to adopt these standards or utilize them as a reference in their own standards and practices.

NFPA 1901: Standard for Automotive Fire Apparatus

The NFPA 1901 standard defines the requirements for new automotive fire apparatus and trailers designed to be used under emergency conditions to transport personnel and equipment and to support the suppression of fires and mitigation of hazardous conditions. This standard recommends that fire apparatus should respond to first alarms for the first 15 years of service, with the expectation that they perform as designed 95% of the time. For the next five years, it should be held in reserve for use at large fires or used as a temporary replacement for out of service first line apparatus.

NFPA 1911: Standard for the Inspection, Maintenance, Testing and Retirement of In-Service Emergency Vehicles

The NFPA 1911 standard defines the minimum requirements for establishing an inspection, maintenance, and testing program. Also included are guidelines for emergency vehicle refurbishment and retirement.

The Underwriters Laboratory of Canada utilizes many of the provisions within these NFPA standards which are referenced by Fire Underwriters Survey (FUS) for determining fire insurance ratings for a community. For example, it follows the life cycle program with the exception that it may award full credit for a fire apparatus older than 15 years, but not more than 20 years, in remote locations only if the piece of equipment is deemed in excellent condition and all necessary upgrades are done. The value of the additional credit in this case, which is only a portion of the total grading for a final FUS rating may well be overshadowed by the cost of maintaining an older unit. In addition, the NFPA 1901: Standard for Automotive Fire Apparatus recommends the following:

D.1 General

To maximize firefighter capabilities and minimize risk of injuries, it is important that fire apparatuses be equipped with the latest safety features and operating capabilities.

In the last 10 to 15 years, much progress has been made in upgrading functional capabilities and improving the safety features of fire apparatus. Apparatuses more than 15 years old might include only a few of the safety upgrades required by the recent editions of the NFPA fire department apparatus standards or the equivalent Underwriters Laboratories of Canada (ULC) standards. Because the changes, upgrades, and fine-tuning to NFPA 1901 have been truly significant, especially in safety, fire departments should seriously consider the value (or risk) to firefighters of keeping fire apparatus more than 15 years old in first line service. It is recommended that apparatus more than 15 years old that have been properly maintained and that are still in serviceable condition be placed in reserve status; be upgraded in accordance with NFPA 1912; and incorporate as many features as possible of the current fire apparatus standard (See Section D3 of Standard). This will ensure that, while the apparatus might not totally comply with the current editions of the automotive fire apparatus standards, many of the improvements and upgrades required by the current editions of the standards are available to the firefighters who use the apparatus. Apparatuses that were not manufactured to the applicable NFPA fire apparatus standards or that are over 25 years old should be replaced.

Underwriters Laboratories of Canada

Current Underwriters Laboratories of Canada (ULC¹⁰) and NFPA 1901: Standard for Automobile Firefighting Apparatus Standards recommend using apparatus on the front line for up to 15 years, then as a backup for another four to five years. Of course, this timeline is dependent on the frequency of use, scheduled maintenance, and budgets. As indicated in Table 17, some emergency vehicles life cycles can be extended due to low usage or serviceable condition. A leading practice is to have a complete condition survey conducted to determine if there is usable life cycle remaining. This condition survey must consider the NPFA and FUS standards along with the maintenance and cost records of the respective vehicle.

¹⁰ Underwriters Laboratories of Canada (ULC) is an independent product safety testing, certification, and inspection organization. www.canada.ul.com

Table 17: Fire Apparatus Service Schedule (Fire Insurance Grading)

Apparatus Age (Yrs.)	Major Cities ³	Medium Sized Cities ⁴	Small Communities ⁵ and Rural Centres
0 – 15	First Line Duty	First Line Duty	First Line Duty
16-20	Reserve	2 nd Line Duty	First Line Duty
20-25 ¹	No Credit in Grading	No Credit in Grading or Reserve ²	No Credit in Grading or 2 nd Line Duty ²
26-29 ¹	No Credit in Grading	No Credit in Grading or Reserve ²	No Credit in Grading or Reserve ²
30+	No Credit in Grading	No Credit in Grading	No Credit in Grading
¹ All listed fire apparatus 20 years of age and older are required to be service tested by recognized testing agency on an annual basis to be eligible for grading recognition (NFPA 1071).			
² Exceptions to age status may be considered in a small to medium sized communities and rural centres conditionally, when apparatus condition is acceptable, and apparatus successfully passes required testing.			
³ Major Cities are defined as an incorporated or unincorporated community that has: - a populated area (or multiple areas) with a density of at least 400 people per square kilometer; AND - a total population of 100,000 or greater.			
⁴ Medium Communities are defined as an incorporated or unincorporated community that has: - a populated area (or multiple areas) with a density of at least 200 people per square kilometer; and/or - a total population of 1,000 or greater.			
⁵ Small Communities are defined as an incorporated or unincorporated community that has: - no populated areas with densities that exceed 200 people per square kilometer; AND - does not have a total population more than 1,000.			

3.8.2.2 Fire Apparatus Design and Procurement

Fire apparatus is designed and tendered based on the unique requirements of the fire service and the community needs that it serves. With the design, tender and procurement processes typically taking two to three years or longer as well as with the expected life cycles of these apparatus of 20 years or more, it is important that the initial decisions accurately reflect the immediate needs and those in the future.

WNFES design and procurement is in line with the municipal capital budget planning and provided through the Fire Chief with input from staff.

3.8.2.3 Fire Apparatus Maintenance and Repair

In Ontario, all fire apparatus with a gross weight, registered gross weight, or manufacturers gross vehicle weight rating exceeding 4500 kilograms must be inspected on an annual basis in accordance with regulations made under the Highway Traffic Act. These vehicles are required to display an inspection sticker as evidence of compliance with this requirement.

Daily driver inspections for commercial vehicles are a requirement under the Act. Fire vehicles are not included in this requirement, however most fire departments in Ontario mandate daily inspections either at the beginning of a shift, or post-trip at a minimum.

A sound and reliable preventative maintenance program is a vital component of the overall fleet management process ensuring each piece operates reliably in the way it was intended safely and effectively while assisting in making it to the anticipated life cycle. Poor maintenance scheduling or neglect of required checks and repairs can lead to accidents, breakdowns, and life safety issues. A fire apparatus pre-maintenance program should consist of the following components:

- Trip inspections (daily, pre-trip, post trip)
- Regular preventative maintenance scheduling
- Annual preventative maintenance comprehensive check

The maintenance, repair, testing and certification of all WNFES heavy and light emergency vehicles is skillfully provided by internal and/or third-party vendors based on the nature of the repair, testing or certification requirements.

Daily inspection sheets and post trip inspections are reviewed to ensure any necessary repairs are made as soon as possible. Recommended service schedules, testing and certifications are coordinated with WNFES administration to ensure compliance with as little disruption to service as possible. Through interviews and surveys as well as a review of records, the maintenance and upkeep of all fire vehicles are maintained to a very high standard. The importance of conducting basic care, regular inspections and reporting deficiencies from operators cannot be understated, for the safety of staff and citizens, as well as reliability of apparatus when needed.

3.8.2.4 Fire Apparatus Replacement and Dispersal

The Municipality of West Nipissing utilizes a 10-year Capital forecast to identify the needs for vehicle and large equipment replacement. Each year WNFES updates the needs and seeks approval through the budget cycle. A list of all WNFES apparatus and light vehicles with their anticipated replacement dates has been developed and updated as necessary. WNFES apparatus have a target of 15 -20 years for frontline apparatus service and may be placed in reserve if functionally feasible. Light emergency vehicles have an anticipated replacement time frame of 7-10 years. There are several PFS apparatus, and light vehicles approved for replacement in the 2023 Capital budget.

There are several assumptions that should form the criteria for fire apparatus replacement. This process for determining the appropriate dollar value required to be placed in a reserve fund to ensure sufficient monies are available at the time of replacement is based on the identified life cycle, forecasted inflation, depreciation, and salvage value of current assets. Calculating the yearly contributions is based on the number of years of expected life in the fleet inventory. Although both NFPA and FUS have criteria on re-classifying or retiring apparatus, modifications or upgrades may be required based on age or heavy usage.

For example:

- Engines: 16-20 years frontline (FUS & NFPA), but can be reduced due to high usage
- Rescue Truck: 15 years frontline (NFPA) but can be reduced due to high usage.

When reviewing current apparatus, a study of the original purchase price minus market depreciation is compared to the anticipated replacement cost, taking into consideration the trend in inflationary increases. The salvage or trade-in value of the original apparatus can be estimated based on industry trends.

This value is subject to several considerations, including:

- Age of the vehicle
- Kilometers
- General condition
- Certifications
- Annual test results

Through careful analysis the optimal replacement year can be determined. The table below shows an example of an apparatus purchased in 2014 with a 20–21-year replacement timeline. Assumptions need to be determined for a particular piece of apparatus to consider the type of factors above, as well as requirements for the replacement apparatus to meet the needs for the next 20 plus years. Annual reserve contributions should be made to ensure sufficient funds are available at the time of anticipated replacement.

Table 18: Fire Apparatus Life Cycle Cost Projection Example

Period	Year	Replacement cost	Based on %	Original vs replacement	Depreciated value
0	2014	\$375,415.05		\$0.00	\$375,415.05
1	2015	\$386,677.50	3.0%	\$11,262.45	\$300,332.04
2	2016	\$398,277.83	3.0%	\$22,862.78	\$240,265.63
3	2017	\$410,226.16	3.0%	\$34,811.11	\$192,212.51
4	2018	\$422,532.95	3.0%	\$47,117.90	\$153,770.00
5	2019	\$485,912.89	15.0%	\$110,497.84	\$123,016.00
6	2020	\$558,799.82	15.0%	\$183,384.77	\$98,412.80
7	2021	\$642,619.79	15.0%	\$267,204.74	\$78,730.24
8	2022	\$684,390.08	6.5%	\$308,975.03	\$62,984.19
9	2023	\$728,875.44	6.5%	\$353,460.39	\$50,387.36
10	2024	\$776,252.34	6.5%	\$400,837.29	\$40,309.88
11	2025	\$826,708.74	6.5%	\$451,293.69	\$32,247.91
12	2026	\$880,444.81	6.5%	\$505,029.76	\$25,798.33
13	2027	\$937,673.72	6.5%	\$562,258.67	\$20,638.66
14	2028	\$998,622.51	6.5%	\$623,207.46	\$16,510.93
15	2029	\$1,063,532.98	6.5%	\$688,117.93	\$13,208.74
16	2030	\$1,132,662.62	6.5%	\$757,247.57	\$10,566.99
17	2031	\$1,206,285.69	6.5%	\$830,870.64	\$10,000.00
18	2032	\$1,284,694.26	6.5%	\$909,279.21	\$10,000.00
19	2033	\$1,368,199.39	6.5%	\$992,784.34	\$10,000.00
20	2034	\$1,457,132.35	6.5%	\$1,081,717.30	\$10,000.00

Figure 8: Fire Apparatus Life Cycle Cost Projection Example

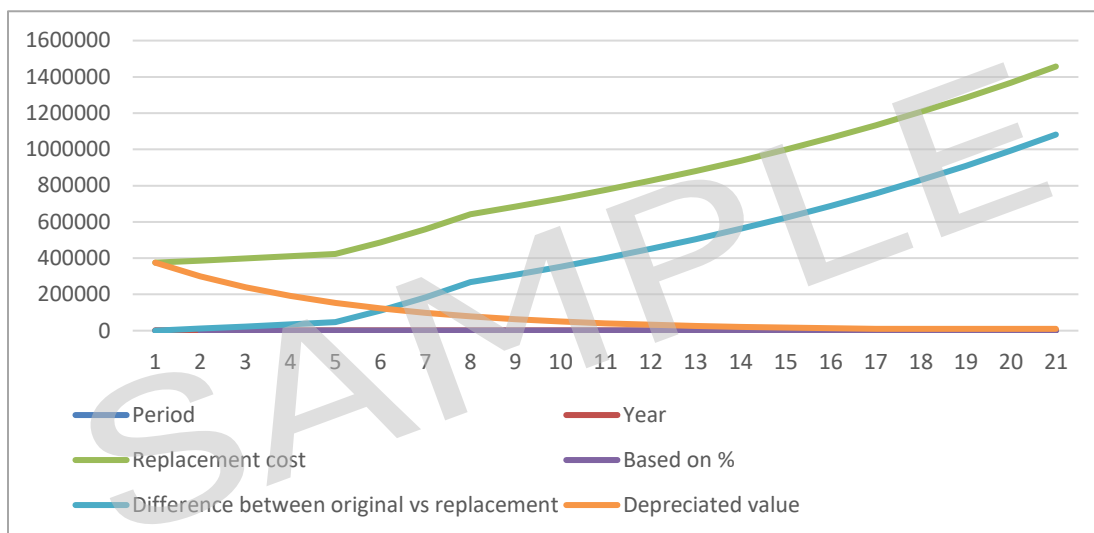


Table 18 and Figure 8 show that the monies put into the replacement reserve fund is close to the projected replacement cost in year 15 and requires additional contributions to extend past. Note the following key points:

- Five-year increase to replacement cost from 15-20 years = \$393,599.37
- Five-year decrease in depreciation value from 15-20 years = \$3,208.74
- Total increased costs to retain apparatus for additional 5 years (15-20) = \$396,808.11
- Additional contributions to reserve fund \$79,361.62
- Difference between 20 and 15 years is \$1,447,132.35 - \$1,050,324.24 = \$396,808.11 or an additional \$2,335.00 of contribution per year

A fire service that utilizes a similar process as above, taking into consideration local conditions to determine the optimal replacement time for each major piece of apparatus will be able to accurately ensure sufficient funds are available when required.

3.8.2.5 Apparatus and Emergency Vehicle Fleet Inventory

WNFES, through the Municipality of West Nipissing, owns and maintains 15 heavy apparatus (8 pumpers, 6 tankers, 1 rescue, and 1 ladder) and 17 light emergency vehicles that are housed throughout their 9 fire stations. Each piece of apparatus is assigned to a fire station has specific roles in anticipation of the risks in their response zone. WNFES inventory of apparatus, light, and specialty vehicles along with associated equipment is modern and well maintained. Table 19 provides details of the current fleet.

Table 19: WNFES Apparatus and Vehicle with Planned Life Cycle

Location	Unit Number	Year	Make / Model	Life Expectancy	Est. Replacement Year
Station 1	Rescue 1	2001	Hackney Heavy Rescue	23 years	2024
Station 1	Tanker 1	1999	Freightliner Water Tanker	25 years	2024
Station 1	Command 2	2016	Ford Truck	12 years	2028
Station 1	Command 1	2019	Ford F150	11 years	2030
Station 1	Ladder 1	2011	Engine Model ISM	20 years	2031
Station 1	Pumper 1	2012	Custom Stock Pumper	25 years	2037
Station 1	Command 3	2014	Ford Crew Cab 4 X 4	11 years	2025
Station 1 B	6-Wheeler	2001	Polaris ATV	N/A	N/A
Station 1 B	Trailer	2001	Trailer for Polaris ATV	N/A	N/A
Station 1 B	UTV	2018	Honda SM5	N/A	N/A
Station 1 B	Trailer	2014	Miska Trailer for Honda SMA	N/A	N/A
Station 1 B	Snowmobile	2015	Ski-Doo Expedition Sport 550	N/A	N/A
Station 1 B	Snowmobile	2015	Ski-Doo Expedition Sport 550	N/A	N/A
Station 1 B	Trailer	2018	Trailer for 2 Ski-Doo's	N/A	N/A
Station 1 B	Air Boat	2005	Airboat	26 years	2031
Station 1 B	Fire Boat	2011	Fire Boat	N/A	N/A
Station 1 B	Trailer	2011	Tandem Trailer for Air Boat	N/A	N/A
Station 1 B	Boat	2022	Bayview 16' Boat	N/A	N/A
Station 1 B	Trailer	2022	Enclosed Continental 7x14 V Nose	N/A	N/A
Station 2	Mini Pumper 2	2008	Chevrolet C5500 Fire Truck	20 years	2028
Station 3	Tomiko 3	2009	Chevrolet Silverado	20	2029
Station 4	Tanker 4	1999	Int 2100 Gallon Water Tanker	27 years	2026
Station 4	Pumper 4	2006	International 4400 Fire Truck	22 years	2028

Location	Unit Number	Year	Make / Model	Life Expectancy	Est. Replacement Year
Station 5	Tanker 6	2000	Chevrolet Tanker	26 years	2026
Station 5	Mini Pumper 5	2017	Ford F550 4x4 s/c Chas Cab DRW	20 years	2037
Station 6	Tanker 5	2004	Sterling Tanker	23 years	2027
Station 6	Pumper 6	2009	Kenworth/Pierce Pumper	20 years	2029
Station 7	Tanker 7	2000	Chevrolet Tanker	25 years	2025
Station 7	Pumper 7	2007	Kenworth Pumper	20 years	2027
Station 8	Tanker 8	2000	Chevrolet Tanker	25 years	2025
Station 8	Mini Pumper 8	2019	Ford F5500	20 years	2039
Station 9	Pumper 9	2001	Kenworth	25 years	2026

3.8.3 Ancillary Equipment

Equipment needed for field response operations such as vehicle extrication tools, hand tools and blowers, etc. are current and appropriate for the needs of WNFES. The ancillary equipment is designed and maintained to meet the department's current core service, goals, and objectives. WNFES equipment has anticipated replacement cycles of 5 years. As the response needs change or grow, additional equipment to match the service must be considered.

3.8.4 Personal Protective Equipment

PFS personnel are supplied with NFPA, NIOSH and CSA approved personal protective equipment (PPE) including turnout (bunker gear), gloves, helmets, boots and any specialized gear for specific rescue and EMS operations. WNFES has installed commercial washer/extractors and driers for PPE and has been following a cleaning and maintenance program in compliance with NFPA 1971: Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting for the health and safety of their firefighters in cooperation with a certified provider located in North Bay.

The PPE provided is current, appropriate, and designed to meet the department's safety goals and objectives.

3.8.5 Specialized Operations Equipment

Effective and efficient response to an incident requires equipment designed for a specific purpose. PFS responds with specialized equipment to incidents involving motor vehicles, Hazmat/DG incidents, technical rope rescue, ice rescue, water rescue and wildland interface fires. This equipment is typically kept in each fire station and/or on the apparatus in anticipation of the known risks in each response zone.

3.8.6 Asset Management

WNFES does not currently utilize a dedicated asset management program, but rather utilizes paper tracking of assets.

Observation #16

There are several industry specific asset management programs that are available to accurately track WNFES assets including life cycles, inspection, or certification dates. For fire apparatus and equipment.

It was identified that there is no formal maintenance program that manages and records the variety of capital assets operated and maintained by WSN. The current system is a paper system and requests to fleet services relies on paper or simple file transfers.

Recommendation #16: WNFES explore opportunities to improve equipment and vehicle inventory tracking and maintenance scheduling.

Suggested completion: 12-24 months

Cost: Operating and capital funding dependent on project scope.

Resource: WNFES staff time, operating budget, capital budget

Rationale: A robust capital asset and equipment tracking software process will assist with tracking all WNFES assets, assisting with necessary testing, certifications and replacement schedules as well as preventing unnecessary loss and replacements. A software program that works together with fleet services will assist with the efficient maintenance requirements reporting and tracking.

3.9 Municipal Comparative Analysis

Comparing the West Nipissing Fire and Emergency Services to that of similar municipalities is a good way to identify relative service levels, costs, and trends. It must be noted that all communities have different attributes such as risk factors, historical decisions, and community profiles. For this reason, the comparative community analysis should be used as a base reference, not a suggestion or intention of something to be replicated by West Nipissing. These benchmarks include budgets, service areas, service levels, and staffing levels.

For the purposes of this analysis, we used 2019-2023 information to obtain common information from each community. Although fire and emergency services have the same goal of protecting life and property, each community has its unique features in how to accomplish those goals. Therefore, there are no ideal or identical comparators for West Nipissing. Our main criteria for collecting information were:

- Population
- Budgets
- Department size and type
- Department staffing
- Number of fire stations
- Call volumes and type

Table 20: Participating Community Comparatives

Community	Population	Land Area (km ²)	Response Area (km ²)
Municipality of West Nipissing	14,583	1989.57	1989.57
Township of Springwater	23,459	536.28	536.28
Township of South Frontenac	21,000	900	900
Municipality of Strathroy-Caradoc	23,871	270.86	270.86
Township of Clearview	15,000	550	700
St Clair Township	14,000	618.57	618.57

3.9.1 Department Profile

Department profile, staffing models and levels of service are based on community risk, risk tolerance and the ability for a community to pay for and sustain desired service levels.

Table 21: Community Comparative Departments' Profile

Community	Department Type	No. of Stations	Total Staff	Fire Chief (FT)	Deputy (DC) Assistant Chief (AC)	Support Staff (FT)	Suppression Staff	Fire Prevention Staff (FT)	Training Staff (FT)	Dispatch	Mechanical (FT)	Other
West Nipissing	Composite	9	93	1-FT	1 (AC)-FT	1	4-FT 83-POC	2	1	0	0	0
Springwater	Composite	4	106	1-FT	1(DC)-FT	1	100 POC	2	1	0	2	0
South Frontenac	Volunteer	8	113	1 FT	1(DC)-FT	1	110 POC	0	0	0	0	0
Strathroy-Caradoc	Volunteer	3	65	1	1(DC)FT	5	POC	1	POC	0	0	0
Clearview Township	Volunteer	5	90	1	1(DC)FT	1	85	1	1	0	0	0
St Clair Township	Volunteer	6	160	1	3(DC)FT	1	155	1	1			1

FT: Full-time

PT: Part-time

POC: Paid-On-Call

3.9.2 Budgets

Department budgets are of specific concern to most communities. In some instances, budgeting for fire and emergency services make up a considerable portion of a community's operating budget. We evaluated the budgets for each community, and it is important to note that each is unique in how each municipality allocates their budgets.

Table 22: Community Comparative Budget Ranking

Community	Municipal Budget 2022/23	Emergency Services Operating Budget	% of Municipal Budget	Cost Per Capita
West Nipissing	\$28,341,365	\$2,661,347	9.39%	\$182.49
Township of Springwater	\$51,013,341	\$1,817,952	3.57%	\$77.50
South Frontenac	\$26,792,892	\$3,045,735	11.5%	\$145.00
Strathroy-Caradoc	\$40,289,456	\$2,006,808	4.9%	\$84.00
Clearview Township	\$32,915,172	\$2,179,000	7.1%	\$145.00
St Clair Township	\$23,267,853	\$2,067,417	8.8%	\$147.67

3.9.3 Industry Standards

Table 23: Community Comparative Standard of Cover

Community	Standard of Cover	Standard of Cover approved by Council	Is the standard based on a leading practice such as NFPA 1710/ 1720?
West Nipissing	Yes	Yes	No
Township of Springwater	Yes	Yes	No
South Frontenac	Yes	Yes	No
Strathroy-Caradoc	Yes	Yes	Yes
Clearview Township	Yes	Yes	Yes
St Clair Township	Yes	Yes	No

3.9.4 Response Data

For the purposes of this municipal comparator analysis, we used 2019–2023 information to get common information from each community. Breakdowns are divided into the two following categories:

Table 24: Examples of Incident Types for Statistical Analysis

Incidents by Type		
EMS Related Calls		
Call Types	Pre-Hospital Care: Alpha, Bravo Charlie Delta Echo	
	Lift Assist	
	False Alarms	
Fire-Related Calls		
Fire Emergency	Alarm	Car Fire
	Burning Complaint	Re-check
	Structure Fire	Wildfire – Grass, Brush, Outdoor
	Minor Fire	Oven/Pot on Stove
	Smoke	Explosion
MVI (Motor Vehicle Incident), aka MVC (Motor Vehicle Collision)	Extrication	No Extrication
Rescue	Stalled Elevator	Swift Water
	Lake/Marine Rescue	Building Collapse
	High Angle	Ice
Hazmat/Dangerous Good	Highway Incident	Industrial Incident
	Rail Incident	Resident Incident
Non-Emergency	Carbon Monoxide	Aircraft Standby Incident
	Gas/Oil Smell/Spill	Bomb Threat
	Power/Telephone/Cable Line Down	Hazardous Materials
	Natural Gas Leak	Propane Leak/Smell
Other	Inspection	Needle Pick-up
	Burning Pile Inspection	Flood Assessment
	Assist Other Agency	Water Problem (in structure)
	Public Service	

Note: Description and category names may not be common terminology in all jurisdictions.

Table 25: Municipal Comparative Response Call Volume

Community		West Nipissing	Springwater	South Frontenac	Strathroy-Caradoc	Clearview Township	St Clair Township
Total Call Volume	2019	179	505	508	328	813	301
	2020	145	498	492	319	740	341
	2021	165	510	445	320	789	377
	2022	266	537	520	431	940	379
	2023	313	572	501	405	950	459
Fire Related Calls	2019	179	368	269	322	393	246
	2020	145	348	304	313	365	280
	2021	165	340	245	313	416	327
	2022	266	407	268	406	420	303
	2023	313	439	275	388	450	377
EMS Related Calls	2019	0	137	239	6	420	55
	2020	0	150	188	6	375	61
	2021	0	170	200	7	373	50
	2022	0	130	252	25	520	76
	2023	0	133	226	17	500	82

It is important to note there is no standard for categorizing incidents so it must be understood that the statistics contained in the Fire Master Plan are broadly based and are only for general reference when comparing fire departments. The community comparative analysis can only be interpreted from an indirect basic level due to the disparity from each of the surveyed communities' organizational structure, core services and levels, emergency response categorization, and financial systems. Direct comparison is strongly discouraged.

SECTION 4

INCIDENT STATISTICS AND RESPONSE PERFORMANCE ANALYSIS

4.1 Industry Standards and Provincial Legislation

The following section provides an overview of relevant industry standards and provincial legislation with respect to fire department response performance in Ontario. This section also includes a detailed analysis of the trends in incident types occurring within West Nipissing Fire Service (WNFES) response performance.

4.1.1 National Fire Protection Association (NFPA) Standards

The most widely accepted standards for the fire service are developed by the National Fire Protection Agency (NFPA). Established in 1986, “the NFPA is a self-funded non-profit organization devoted to eliminating death, injury, property and economic loss due to fire, electrical and related hazards (NFPA, 2021).” The NFPA has developed over 300 consensus-based codes and standards designed to improve fire department effectiveness and firefighter safety. NFPA research is applied in establishing industry benchmarks for fire department operations, training, and equipment. Many of these standards form the basis of and are referenced throughout the Ontario Fire Protection and Prevention Act, 1997 and related firefighting regulations and guidelines the Ontario Occupational Health and Safety Act, R.S.O. 1990.

The NFPA has done considerable research in developing standards and ensuring they reflect the primary value of life-safety in emergency response for responders and victims. The NFPA standard identifying firefighting operations and response performance objectives for smaller composite departments that are predominately paid-on-call such as WNFES is 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.*” This standard provides the framework for the fire department emergency response performance analysis and will be discussed in detail further in this section of this master plan.

Additionally, NFPA 1201: Standard for Providing Emergency Services to the Public outlines several practices in establishing and managing an effective and efficient fire service. It provides standards regarding governance, organizational structure, planning, and resource deployment. It will be referenced throughout this section.

4.1.2 Ontario Regulatory Framework Regarding Community Fire Safety

Ontario municipalities are required to provide a public education and fire safety program but may or may not elect to do that by establishing a fire department. The *Fire Protection and Prevention Act*, 1997, S.O. 1997, c. 4 states the following:

“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.*

Methods of providing services

(2) In discharging its responsibilities under subsection (1), a municipality shall,

- (a) appoint a community fire safety officer or a community fire safety team; or*
- (b) establish a fire department.”*

In the event a fire department is established, municipalities are required to meet the numerous requirements regarding fire department equipment, training and certification standards identified in the regulations of this act and the *Occupational Health and Safety Act*, R.S.O. 1990. Many of these requirements are based on NFPA standards. However, municipalities are not required to provide specific services or meet the service level standards identified in NFPA 1720. The response time goals and the number of required firefighters to respond identified in NFPA 1720 are an industry leading practice but not mandated.

Establishing service types and associated service levels is the responsibility of the authority having jurisdiction (AHJ). For most municipalities, the AHJ is the municipal council. Formalizing service types and service levels in policy is also considered a best practice. Fire department service types and service levels are typically established to mitigate identified community risks. However, service levels should also be achievable and affordable.

The Centre for Public Safety Excellence and International Association of Fire Chiefs developed a standard of cover framework to support the process of establishing fire department service types and service levels. It is a comprehensive process to identify community risks, assessing fire department capability, and establishing appropriate emergency response service levels to mitigate community risks. The outcome of this process results in a standard of cover policy including service level recommendations to be considered for approval by the AHJ.

4.2 Incident Types and Frequency Analysis

Fire and rescue services typically have access to large amounts of incident and response data. Incident data can be used and reported for several purposes. Incident type and frequency data is used to analyze department activity levels and identify trends in demand for fire services. The breadth of services provided by the modern fire service is often surprising. Fire departments have evolved from responding primarily to fires to responding to a broad range of public service and emergency incidents and becoming a critical component of a community's social safety net.

Five years of response data provided by WNFES was analyzed. The data includes all incidents from January 2018 to December 2022. Incident data is aggregated into broader categories and more specific incident categories. For example, all types of fire incidents including structural, vehicle and wildland/brush/garbage/cropland fires may be combined into a single category. This differentiation is made to provide varying levels of information as stakeholder reporting and information needs vary depending on their level of interest in WNFES activities.

Table 266 identifies all unique incidents occurring within the municipal boundary. This analysis provides a general overview of the types of emergencies that the fire department was dispatched to and their respective frequency. It does not include counts of mutual aid responses which are outside of West Nipissing. These incident types will be discussed in further detail in this section.

Table 26: SIR Incident Types within West Nipissing (2019 to 2023)

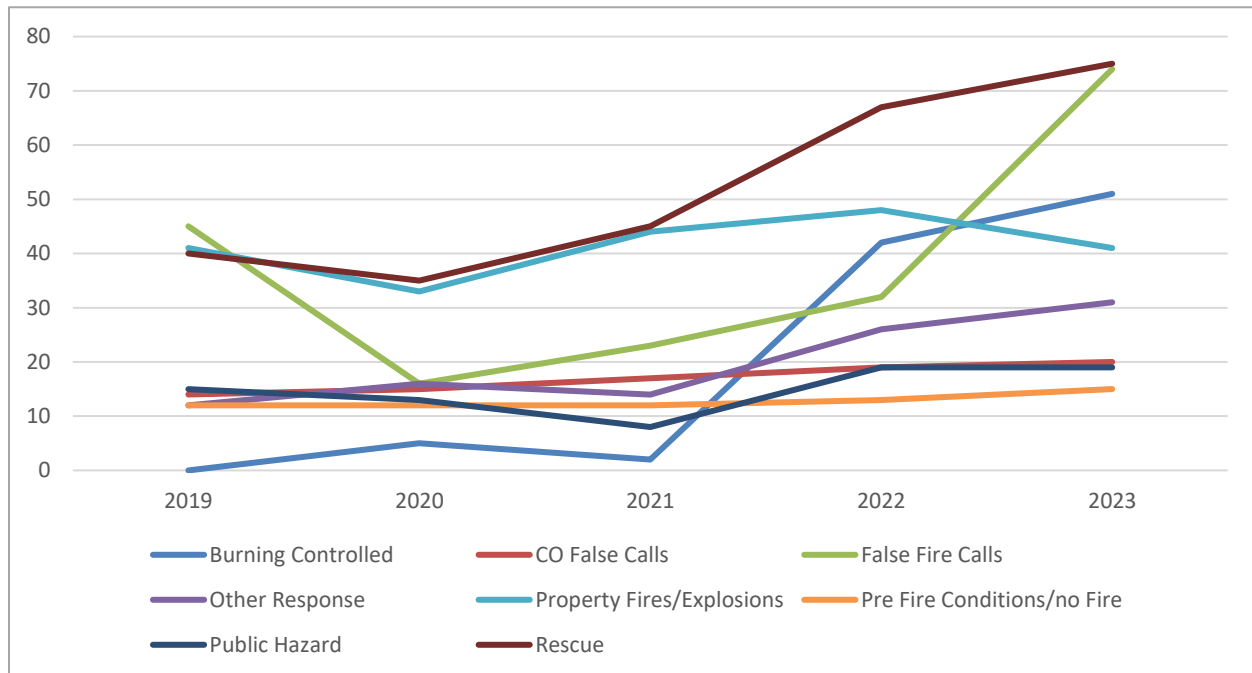
Incident Type	2019	2020	2021	2022	2023	Total	Total %
Burning Controlled	0	5	2	42	51	100	9.36
CO False Calls	14	15	17	19	20	85	7.96
False Fire Calls	45	16	23	32	74	190	17.29
Other Response	12	16	14	26	31	100	9.18
Property Fires/Explosions	41	33	44	48	49	205	19.19
Pre-Fire Conditions/no Fire	12	12	12	13	15	64	5.99
Public Hazard	15	13	8	19	19	74	6.93
Rescue	40	35	45	67	75	262	24.53
Total	179	145	165	266	313	1068	100.00

The following observations regarding unique incident types within West Nipissing were noted:

- 24.53% (262) of all incidents were Rescue calls. These were composed of Vehicle Collisions (236), Vehicle Extrications (9), Water Rescue (8), Other Rescues (5), and Animal Rescue (1).
- Property Fires/ Explosions accounted for 19.19% (205) of SIR incident types. The majority of these were comprised of Fire/ Explosion (148), No Fire Loss (57).
- False Fire Calls accounted for 17.29% (190) of all SIR reported incidents. of the highest make-up of incidents were Alarm System Equipment malfunction (88), followed by Alarm System equipment accidental and human perceived emergency (27 each).

Figure 9 illustrates the general trends seen in the broad categories of unique incidents occurring in West Nipissing during this period. This analysis is intended to draw attention to the incident categories that are changing rapidly. A positive trend (increasing) may forecast a future need for additional resources to respond to these incidents or new mitigation strategies to address this type of community risk. A negative trend (decreasing) may identify successful mitigation efforts or a decreasing risk resulting from other changes in the community risk profile.

Figure 9: SIR Incidents by Incident Type (2019 to 2023)



The following general trends regarding SIR incident types within West Nipissing were noted:

- Most incident types experienced a gradual positive trend over the 5-year period except for Property Fires/ Explosions that saw a slight decrease.
- False Fire Calls have saw a significant increase in 2023.
- Rescue calls (predominately MVC's) have seen substantial increase and is now the highest number of incidents responded to.

General or broad incident type categories can be broken out into subcategories of incident types to provide more specific information regarding community risks. For example, fire incidents may be categorized into specific fire types such as brush, structure fires, garbage fires or vehicle fires. This level of detail is useful in analyzing more specific trends in community risk and service requirements. It may also be useful in identifying the need for specific risk mitigation strategies such as increased property inspections, reduced speed limits or targeted public education.

Table 277 reflects all dispatched incident types in greater detail that occurred in West Nipissing from 2019 to 2023. This dataset included mutual aid and second-station responses to reflect the response activity from a department-wide response perspective. It is useful to include these categories to acknowledge and reflect the additional demand on the fire response system these types of incidents create.

Table 27: All Incidents/Responses by Incident Subcategory Type

Call Type	2019	2020	2021	2022	2023	Total	Total %
Fire/Explosion	37	22	15	35	39	148	13.86
D. No Loss Fire	4	11	19	13	10	57	5.34
F. Non-Fire Call	138	112	121	218	264	853	79.87
Total	179	145	165	266	313	1068	100
F. Non-Fire Call Breakdown							
Burning Controlled	0	5	2	42	51	100	9.36
Authorized controlled burning complaint	0	0	1	0	2	3	3.00
Open Air Burning/unauthorized controlled burning	0	5	1	42	49	97	97.00
CO False Fire Calls	14	15	17	19	20	85	7.96
CO false alarm - equipment malfunction	12	14	16	12	10	64	75.29
CO false alarm - perceived emergency	2	1	1	7	10	21	24.71
False Fire Calls	45	16	23	32	74	190	17.79
Alarm System Equipment Accidental Activation	4	3	4	3	13	27	14.21
Alarm System Equipment Malfunction	27	9	10	13	29	88	46.32
Human - Accidental	2	0	5	7	8	22	11.58
Human - Malicious	0	0	0	2	5	7	3.68
Human - Perceived Emergency	2	0	2	4	19	27	14.21
Other False Fire Call	10	4	2	3	0	19	10.00
Other Response	12	16	14	26	30	98	9.18
Assistance not required by other agency	0	0	1	1	0	2	2.04
Assistance to other agencies	1	2	1	8	10	22	22.45
Assistance to Police	0	0	0	3	1	4	4.08
Assisting other Fire Department (Automatic Aid)	3	5	2	3	5	18	18.37
Other Response – Continued							

Call Type	2019	2020	2021	2022	2023	Total	Total %
Assisting other Fire Department (Mutual Aid)	0	1	1	0	1	3	3.06
Cancelled on Route	0	2	4	2	4	12	12.24
Incident Not Found	6	1	0	1	0	8	8.16
Other Public Service	0	0	1	1	1	3	3.06
Other Response	2	5	4	7	8	26	26.53
Pre-Fire Conditions (no fire)	12	12	12	13	15	64	5.99
Fireworks (no fire)	0	0	0	0	1	1	1.56
Other (cooking, smoke, steam)	4	3	2	4	6	19	29.69
Other pre fire conditions (no fire)	4	7	7	7	7	32	50.00
Overheat (no fire-mechanical devices)	2	0	3	2	1	8	12.50
Pot on Stove	2	2	0	0	0	4	6.25
Public Hazard	15	13	8	19	19	74	6.93
CO incident, CO present	5	5	3	6	9	28	37.84
Gas Leak - Natural Gas	3	3	2	4	2	14	18.92
Gas Leak - Propane	2	0	0	0	1	3	4.05
Other Public Hazard	0	0	0	3	1	4	5.41
Power Lines Down, Arcing	3	2	1	2	3	11	14.86
Public Hazard call false alarm	1	1	0	0	1	3	4.05
Public Hazard no action required	0	1	0	4	2	7	9.46
Spill- Gasoline or Fuel	1	1	2	0	0	4	5.41
Rescue	40	35	45	67	75	262	24.53
Animal Rescue	1	0	0	0	0	1	0.38
Other Rescue	2	1	0	1	1	5	1.91
Rescue No Action Required	2	0	0	1	0	3	1.15
Vehicle Collision	34	31	43	60	68	236	90.08
Vehicle Extrication	0	1	0	4	4	9	3.44
Water Ice Rescue	0	0	1	0	1	2	0.76
Water Rescue	1	2	1	1	1	6	2.29

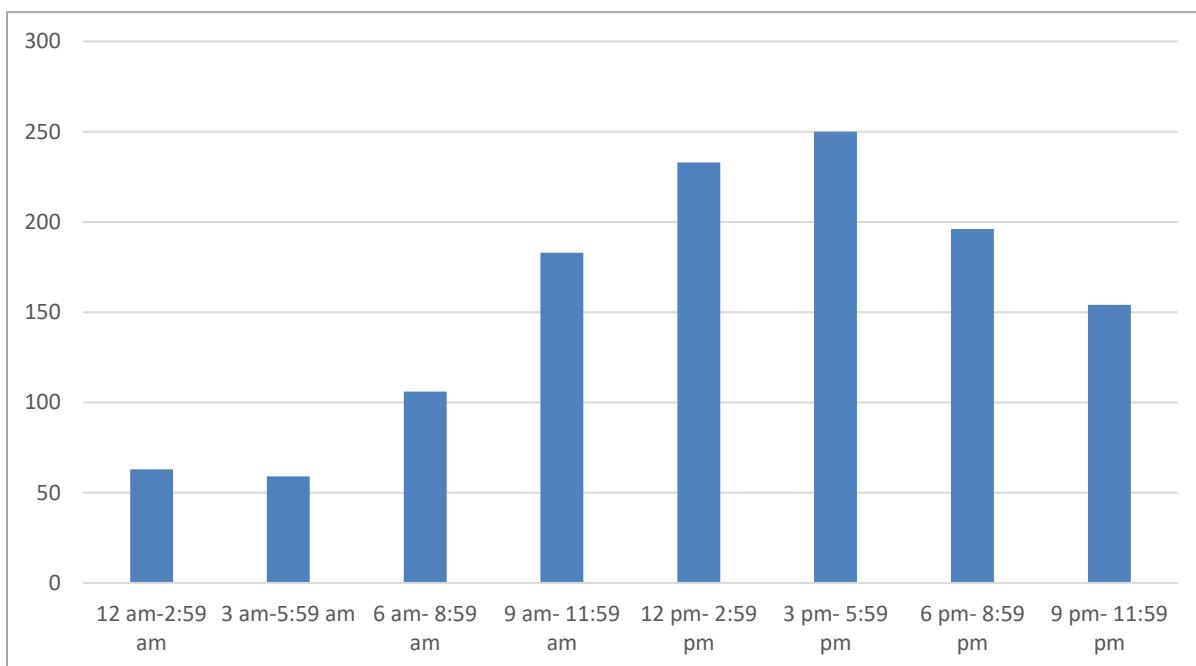
The following observations regarding all incident types/all responses were noted:

- False alarm Incidents saw a significant increase in 2023 (73.6%)
- Motor vehicle collisions have seen significant increase in 2022 and 2023 (128 incidents)
- False alarms represent 17.79% of incidents and account for the third largest incident group responded to.

4.2.1 Incidents by Time of Day

The time incidents occur is useful in identifying periods of peak and lower demand for services. Typically, demand for emergency services is lowest in the early hours of the morning. The horizontal axis in Figure 10 Incidents by Time of Day begins with 0 hours (12 p.m. – 1 a.m.) and ends at 23 hours (11 p.m. to 12 p.m.).

Figure 10: 2018-2023 Incidents by Time of Day



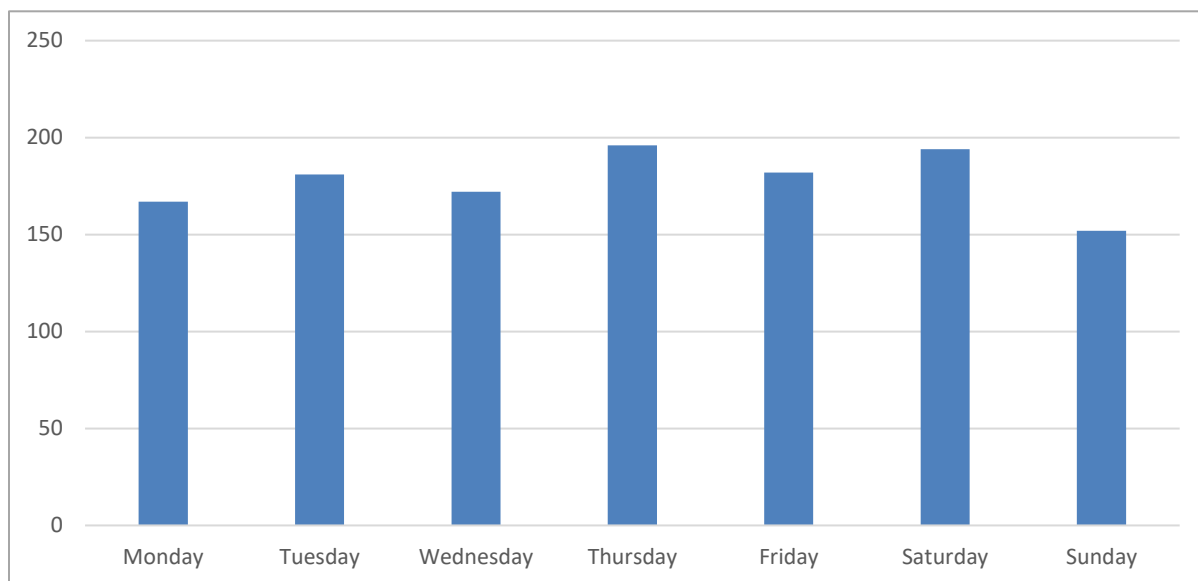
The following observations regarding the time incidents occurred were noted:

- Most incidents are occurring during the daytime hours when people are most active and or traffic flow is highest, and the majority of POC volunteer firefighters are likely to be at work.
- Incidents began to increase around 6 a.m. and peaked around 6 pm.
- Beginning at 12 a.m., the number of incidents declines until 9 a.m.

4.2.2 Incidents by Day of Week

Similarly, monitoring the days of the week in which WNFES respond most and least frequently provide additional insight into potential pressures in service delivery. Typically, emergency services respond most frequently on Friday and Saturday.

Figure 11: 2018-2023 Incidents by Day of Week



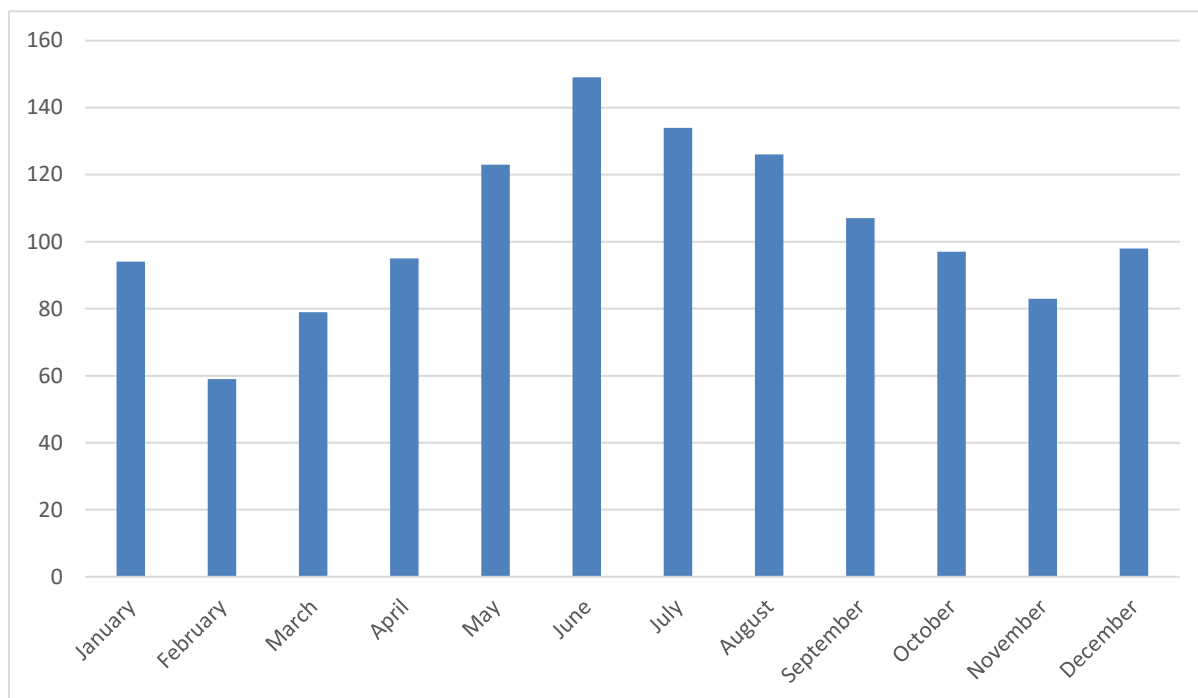
The following observations were noted in service demands for different days of the week:

- In general, incidents occurred with similar frequency throughout the week.
- The fewest incidents occurred on Sundays and the most occurred on Thursdays, but the variation was very minimal.

4.2.3 Incidents by Month

Similarly, monitoring the month of the year in which WNFES respond most and least frequently provides further insight into potential pressures in service delivery throughout the year. Typically, emergency services respond most frequently during the summer months when vacation and summer travel is more active, and during the winter months when there is more active weather.

Figure 12: 2018-2023 Incidents by Month



- Incidents by the month are typical with the highest months being June, July, and August.
- December and January show spikes in incidents which is consistent with active winter weather.

4.3 Response Performance

The following sections provide an analysis of the response performance of WNFES. The response performance is assessed based on two key elements – the length of time taken to respond and the adequacy of resources responding to safely manage an emergency incident. The response performance goals applied in the analysis are identified in the NFPA 1720 standard. Some additional references to the NFPA 1710 standard for Career departments are provided as reference for best practice where applicable.

4.3.1 Intervention Time

Total intervention time is the elapsed time between the incident occurring and the time incident management begins. The discovery of the incident and initiation of the emergency response system, typically by calling 911. From a community perspective, this time segment can be partially managed by implementing cyclical life-safety system inspections and promoting residential fire alarms and sprinkler systems.

After the 911 call is made, the emergency response system is engaged to manage the incident and minimize its impact. Simplified, the system is composed of an emergency dispatching centre and the first responding agency. Although many of the requests for service may not require urgent intervention, when it is, the main purpose of this system is to respond and manage the incident as quickly as is safely possible. As a result, the times taken to get all the relevant caller and incident information (Alarm Processing time), notify first responders and have them prepare to respond (Assembly/Chute time), and drive to the incident (Travel time) are all critical elements of an effective response. These time segments are the focus of this section and are the key indicators of total response time performance.

Total response time is the best indicator of how the entire system is functioning. It also reflects the experience of the person making the 911 call. System performance can be managed and improved by implementing best practices and supporting technologies. As a result, total response time performance should be monitored and reported to the authority having jurisdiction (AHJ) regularly. The causes of significant changes in response time performance should be identified and discussed with the AHJ.

Incident management time is variable and depends on the type of incident and the resources required to safely manage it. Fire department resource availability is determined by the concentration (how many and what types of resources there are in one station) and distribution (where are those resources located relative to the incident) of fire department equipment and firefighters. Resource requirements are based on community risks. An adequately resourced response system should provide an effective response force (ERF) to safely manage commonly known risks as effectively and efficiently as possible. Figure 13 provides an overview of the incident intervention timeline from NFPA 1710. The definitions and descriptions of the actions taken in each time segment are provided below.

Figure 13: Incident Intervention Continuum

Notification	Intervention Time			
Incident Discovery and 911 Call	Alarm Processing	Assembly / Chute Time	Travel Time	Set-up
Time unknown (Time varies with every incident)	64 Seconds	80 Seconds Fire 60 seconds medical	240 Seconds	May vary by event
Time indirectly manageable	Time directly manageable			
Time Values				

Discovery: This is the time between the start of the emergency incident and when a person or an engineered system has detected the incident.

Emergency 911 Call: This is the time taken to dial 911 and notify the 911 call centre of the need for emergency services.

Alarm Handling: This is the time segment begins when the 911 call is answered and ends with the notification of firefighters. It is the time taken to extract the necessary information from the 911 caller to allow the proper response to be initiated.

Assembly Time: This is the time segment begins when dispatch notifies the firefighters until the vehicle leaves the station for response. Time is required for POC volunteer firefighters to respond to the station, dress in proper personal protective equipment (PPE) and safely egress the station.

Travel Time: This time segment begins when an apparatus leaves the station or otherwise begins the response to the scene of the emergency and ends at the time when the assigned vehicle arrives on scene. This time segment is a function of distance, and the speed traveled.

Total Response Time (Common Definition): This time segment begins when the 911 call is answered and ends when the first apparatus capable of commencing the incident management arrives.

Total Response Time (NFPA 1710 Definition): This time segment begins when the 911 call is answered and ends when the first apparatus capable of commencing the incident management arrives and initiates to control the incident. Identified as Intervention Time in the diagram above.

Total Response Time (NFPA 1720 Definition): This time segment begins when fire department is dispatched and ends when the first apparatus capable of commencing the incident management arrives.

Setup Time: This is the time it takes (on-site) to evaluate the necessary actions, position the required resources, and commence the intervention. In the case of a fire, completing size-up, assigning the necessary tasks, and deploying resources can provide delays on scene. A well-trained crew can minimize these delays while providing a safe, successful response.

4.3.2 NFPA 1720 Performance Standards

Recognizing that POC volunteer fire departments serve a variety of community types with varying population densities and geography, NFPA developed response time and staffing standards relative to regional and individual demand zone conditions. NFPA 1720 response standards are lowered as population density decreases and travel distances increase within a demand zone increase. For example, the response goal for urban areas is to respond within nine minutes 90% of the time with 15 firefighters whereas the rural response standard is within 14 minutes 80% of the time with six firefighters. It is important to note that depending on the geography of a fire department's total response area and demand zone(s), levels of service may vary across demand zones for a fire department. Additionally, the response standards identified in NFPA 1720 are based on a structure fire of a single residence and are considered a leading practice and not a legislated requirement.

Table 28: NFPA 1720 Staffing and Response Time Standards

Demand Zone	Demographics	Minimum Staff to Respond ^b	Response Time (minutes) ^c	Meets Objective (%)
Urban area	>1000 people/2.6 km ²	15	9	90
Suburban area	500-1000 people/2.6 km ²	10	10	80
Rural area	<500 people/2.6 km ²	6	14	80
Remote area	Travel distance ≥ 12.87 km	4	Directly dependent on travel distance	90
Special risks	Determined by AHJ	Determined by AHJ based on risk	Determined by AHJ	90

^a A jurisdiction can have more than one demand zone.

^b Minimum staffing includes members responding from the AHJs department and automatic aid

^c Response time begins upon completion of the dispatch notification and ends at the time interval shown in the table.

The Municipality of West Nipissing has a population of 14,538 with an area nearing 2000 km². This translates to 18.90 people/2.6km² and falls into the rural area category of NFPA 1720. This category identifies the category for the entire municipality; however, the Sturgeon Falls area could be broken out given the demographics. Sturgeon Falls has a population of 6939 (2021 consensus data) with an area of 15km². This equates to 1203 people per 2.6 km² and would indicate an urban area demand zone. This category contains performance objectives that can be very challenging for a volunteer or combination fire service and in many ways is comparable to NFPA 1710 for career services.

The intent of the aggressive response goals in NFPA 1720 is to minimize total intervention time. Increased intervention time can have the following important impacts on a property owner/patient/victim:

- Decreased survivability
- Increased property loss in the event of fire
- Building design restrictions for response times beyond 10 minutes
- Potentially higher property insurance premiums based on extended response times and proximity to water supply.
- Longer-term economic impacts resulting from increased recovery time.

4.4 WNFES Emergency Response Performance Analysis

The time segments identified above are calculated by the dispatching service capturing individual response timestamps throughout an incident. The timestamps are recorded by the dispatching agency and used to compile a complete history for all responding emergency vehicles to every incident. Examples of typical incident timestamps include:

- Incident begins
- Station or firefighter notification
- Apparatus responding
- Apparatus arrived
- Loss stopped
- Leaving scene
- Returned to station

The response performance analysis for WNFES focuses on emergency responses from 2018 to 2022. The timestamps are used to calculate alarm-handling time, assembly time, travel time and total response time.

Emergency response performance information can be used by the Fire Chief and senior administration for several purposes including but not limited to:

- Monitoring response efficiency and effectiveness
- Reporting response performance to community and elected officials
- Evaluating the effectiveness and compliance with national and provincial codes
- Evaluating the effectiveness and compliance with Council policies and local bylaws
- Identifying possible improvement strategies
- Developing or modifying service level standards
- Planning for future resource needs (operational and capital)

Historically, fire departments typically reported their average performance. Average performance can be misleading as it is only achieved approximately 50% of the time. Contemporary fire and emergency services report 80th or 90th percentile performance times to provide a more precise representation of response reliability depending upon whether they are POC volunteer or career fire departments.

Emergency response time analyses typically begin with the timestamp identifying the point at which the 911 call is answered by the primary service answering point (PSAP). Once the 911 call is taken, it is transferred to the appropriate dispatching centre. All requests for service provided by WNFES are transferred and dispatched by the North Bay Centralized Ambulance Communications Centre (CACC). The incident begin time captured by the PSAP was not included in the available data. As a result, all the emergency response time segments in this analysis begin with the timestamp identifying when the alarm was received by WNFES.

4.4.1 Alarm Handling

Alarm handling time is typically the cumulative time taken for alarm answering and alarm processing in the dispatching process. The initial time stamp available for identifying the incident begin time in the PSAP was not available. Therefore, only alarm processing was analyzed. Alarm processing time begins at the point of time the alarm is transferred and answered in the North Bay CACC dispatch centre and ends when the fire department is dispatched. The actual collection of the alarm handling was not made available and therefore we did not calculate or analysis the alarm processing time.

4.4.2 Assembly Time

Assembly time is calculated from the point of notification of an alarm to the point at which firefighters begin traveling to the incident. For WNFES firefighters, assembly time begins when paged and includes travel to the fire station as well as the time taken to dress in their personal protective equipment and safely seat themselves on the responding fire apparatus. NFPA 1720 does not include an assembly time standard.

Assembly time is influenced by several factors including time of incident, availability of firefighters, road conditions and distance to the fire station. As a result, it is difficult to assess whether assembly time performance can be improved given the range of factors influencing it. However, assembly time should be monitored to assess its impact on total response time and establishing achievable service levels.

4.4.2.1 Data Limitation

The data provided by WNFES are the timestamps used to calculate alarmed received time, assembly time, travel time and total response time of the first arriving unit including the total number of firefighters regardless of their arrival time on scene. There are several limitations in this analysis that may not facilitate a full evaluation of the current response performance. Therefore, the following tables (29, 30, 31) regarding assembly time, travel time, and total response time is solely based upon the first responding fire apparatus only.

Table 29: Assembly Performance Station 1 – First Departing Only (in secs) (excluding mutual aid)

Station 90 th Percentile	2021	2022	2023	2024	4-Year
Fires	250	279	397	163	340
All other Incident Types	451	488	442	400	473
Overall 90 th percentile	443	436	442	395	433
80 th percentile	319	350	340	231	325

Table 30: Assembly Performance by Station 2-9 rolled up (Oct 2021-June 2024)

80 th Percentile	Station								
	2	3	4	5	6	7	8	9	2021-2024
Structure Fires	483	N/A	718	719	485	398	603	135	614
All other Incident Types	172	118	549	1035	526	438	1060	328	490
Overall 80 th percentile	404	118	709	833	549	412	676	306	615
50 th percentile	155	96	439	676	322	377	445	140	348

Table 31: Assembly Time combined Stations 2-9 by year

Station 80 th Percentile	Oct 2021	2022	2023	June 2024	4-Year
Fires	956	497	625	461	614
All other Incident Types	253	607	480	347	490
Overall 80 th percentile	716	609	652	482	615
50 th percentile	231	339	359	348	348

The following observations regarding assembly time performance were noted:

Station 1:

- Structure fires at the time of dispatch resulted in firefighters assembling 133 seconds faster than all other incident types.
- The 80th percentile overall was 325 seconds (5 mins 25 secs)

Station 2-9:

- Assembly time for fires (614 secs) was 124 seconds longer than all other calls (490 secs)
- The 50th percentile overall was 348 secs (5 mins 48 secs)
- Assembly times represent the largest opportunity to reduce to the overall response time to emergencies within West Nipissing

As previously indicated, assembly time was calculated using the fire department notification and first responding apparatus timestamps. It did not include the time taken for a second or third apparatus to respond. As a result, the assembly times reported only reflect the time taken for the first apparatus. Additionally, the number of firefighters responding on the initial apparatus was not available. Assembly time is useful generalizing the time taken to respond to at least one apparatus following notification. However, it is not a measure of how long it took for an Effective Response Force (ERF) to assemble and respond.

Observation #17

In our experience, typical POC department assembly time ranges from five to eight minutes. Extended assembly times are a common limitation of the POC response model. The overall 3 year 80th percentile WNFES assembly time for Station 1 was 5 minutes 25 seconds and for Stations 2 – Station 9 was 10 minutes 15 seconds. POC volunteer firefighters have varying availability and travel distances to the fire station, and as a result, assembly time can be challenging to improve.

Recommendation #17: Identify and implement opportunities to improve assembly time.

Suggested completion: 12-36 months

Costs: Neutral

Resource: WNFES staff time

Rationale: Assembly time and travel time contribute to total response performance. Implementing an increased in-station presence of POC firefighters and introducing response pre-alerting are examples of novel approaches to reducing assembly time and improving response performance. Any improvement in assembly times will reduce overall response and intervention time in West Nipissing.

4.4.3 Travel Time Performance

Travel time is the time taken to drive to the location of the incident. It is measured from the point at which the responding vehicle leaves the station until the point of arrival on scene. Travel time is a function of distance from the fire station to the incident and the speed travelled to the incident. It can be managed to a certain degree by distributing fire resources in optimal response locations within demand zones. Travel time should be monitored to assess the distribution and concentration of resources and assess whether additional resources are required in different locations to maintain service levels.

NFPA 1720 acknowledges the considerable variations in size and population densities of the demand zones of many POC volunteer fire services. Depending upon the specific geography, the standard offers several different response time goals, but it does not identify a specific travel time standard. Like assembly times, the travel times for historical Structure fires was different enough than the overall performance to include separately.

Table 32: 90th Percentile travel performance Station 1 (in secs)

Station 1	2021	2022	2023	2024	4 Year
Structure Fires (90 th)	480	264	375	299	365
All other Incident Types (90 th)	428	502	448	471	480
90 th percentile	445	470	438	451	453
80 th percentile	338	341	322	318	330

Table 33: 80th Percentile Travel Performance combined Station 2-9 (in secs)

Station 2-9	2021	2022	2023	2024	4Year
Structure Fires (80 th)	651	529	446	627	576
All other Incident Types (80 th)	513	931	720	741	754
80 th percentile	562	807	685	729	725

The following observations regarding travel times were noted:

Station 1

- Structure fires required 365 seconds (6 minutes 5 seconds) or less travel time from the fire station.
- The remaining travel time percentile for all other incidents was 480 seconds (8 minutes) at the 90th percentile.

Station 2-9

- Structure fires required 576 seconds (9 minutes 36 seconds) or less travels time from the stations.
- The remaining travel time for all other incidents was 754 seconds (12 minutes 34 seconds)

4.4.4 Total Response Time

The common method when measuring response time would be from the point at which the emergency call is answered in the 911-dispatching centre to the time the first fire or rescue apparatus arrives at the incident. This time best reflects the emergency system's overall response performance and the experience of the person requesting the service. For the purposes of measuring compliance with NFPA 1720 response standards, total response time is measured from the point of fire department notification to the point of the first arriving fire apparatus to Structure Fire or similar major incidents. The rationale for this approach is to acknowledge that most volunteer fire departments contract dispatch services and are not in control of the time taken for alarm handling.

As the population, geographic footprint of developed areas and community risk increase, a fire department will experience an increase in concurrent requests for service, longer travel distances and a higher frequency of complex incidents. As a result, emergency response times may gradually increase as demand for service increases.

Tables 34 to 37 identify the 90th percentile emergency response time performance for WNFES from the time of dispatch until the apparatus arrives on scene. NFPA 1720 identifies that urban demand zones shall have 15 firefighters on scene within 9 minutes (540s), 90 percent of the time. These standards are based on the effective response force for a single family 2000 sq. ft. house with no basement. Given that resources are deployed to match the dispatched incident type, it would be unfair to consider incidents in this analysis where resources were withheld at station or did not respond to measure a department's ability to muster the ERF necessary to meet NFPA 1720. The 50th percentile and 80th percentile times are offered purely for comparison as part of this analysis and considerations as the municipality builds out response standards.

Given the difficulty in achieving NFPA 1720 in an urban setting for a volunteer department, compliance with a 10-, 12- and 14-minute response time goals were provided to give some insight to achievable response time service levels. These times ultimately, it is left to the AHJ to decide on service level and performance targets.

Table 34: NFPA 1720 Station 1 - Structure Fire Total Response Performance (in secs)

Station	2021	2022	2023	2024	4-Year
90 th percentile	498	364	519	368	475
80 th percentile	497	301	473	321	435
50 th percentile	494	194	409	188	222
540 sec compliance	100%	100%	93%	100%	98%
600 sec compliance	100%	100%	93%	100%	98%
720 sec compliance	100%	100%	100%	100%	100%
840 sec compliance	100%	100%	100%	100%	100%
Structure Fires Dispatched	2	22	13	9	46
# of FFs on scene once all units arrive (90 th percentile)	23	22	17	15	19
# of events with 15 FFs or more	1	12	3	1	17
% of calls with 15 or more FF's	50%	55%	23%	11%	37%

Table 35: Station 1 Total Response Performance all other calls (in secs) From Dispatch to First Unit Arriving on scene.

Station1	2021	2022	2023	2024	4- Year
90 th percentile	953	916	897	778	898
80 th percentile	634	703	589	535	657
50 th percentile	320	370	334	297	334
540 sec compliance	77%	66%	75%	80%	73%
600 sec compliance	78%	70%	81%	81%	77%
720 sec compliance	85%	80%	85%	86%	84%
840 sec compliance	85%	85%	88%	91%	87%

Table 36: NFPA 1720 Station 2-9 - Structure Fire total Response Performance (in secs)

Stations 2-9	2021	2022	2023	2024	4-Year
90 th percentile	1480	868	1167	1163	1352
80 th percentile	1469	804	1117	1056	1117
50 th percentile	1434	745	699	607	698
600 sec compliance	33%	33%	27%	50%	35%
720 sec compliance	33%	50%	55%	67%	54%
840 sec compliance	33%	83%	64%	67%	65%
Structure Fires Dispatched	3	6	11	6	26
# of FFs on scene once all units arrive (80 th percentile)	9	15	18	12	15
# of events with 6 FFs or more	3	6	10	5	24
% of calls with 6 or more	100%	100%	91%	83%	92%

Table 37: (Station 2-9) Total Response Performance all calls (in secs) From Dispatch to First Unit Arriving on scene.

Station	2021	2022	2023	2024	4- Year
90 th percentile	1455	1934	1760	1153	1661
80 th percentile	1268	1259	1237	1056	1236
50 th percentile	594	845	778	700	779
600 sec compliance	50%	32%	33%	43%	35%
720 sec compliance	57%	41%	42%	50%	44%
840 sec compliance	64%	49%	57%	57%	55%

The following observations regarding WNFES emergency response performance were noted:

- Station 1 can achieve NFPA 1720 (first unit response in 540 sec) 98% of the time for structured fires however only achieved 15 firefighters on scene 37% of the time.
 - The total response time for structure fires at the 90th percentile was 475 seconds.
- For all other calls Station 1 achieved a total response time of 540 secs 73% of the time. The total response time for all other calls at the 90th percentile was 898 seconds.
 - The data measures only first response vehicle on location and does not track the number of firefighters, so the data is unable to confirm total number of fire fighters on the first in apparatus.
- Although response times were improved for structure fires, assembly time will be the largest barrier to improving response performance.
- Stations 2-9 are calculated at a rural classification. The rural stations were able to meet NFPA 1720 (first in unit response in 840 secs) 65% of the time for structure fires. The assembling of 6 or more firefighters was achieved at 92% and the number of firefighters assembling at the 80th percentile was 15.
 - The total response time for structure fires for Station 2-9 at the 80th percentile was 1117 secs (18 minutes 36 seconds)
- Although response times were improved for structure fires, assembly time will be the largest barrier to improving response performance. This is more than half the total response time at 614 secs (10 minutes 13 seconds)

Included in this FMP in Section 2 is Recommendation 1b, to formally establish emergency response time performance service levels. In addition, this recommendation includes the monitoring and tracking of the current emergency response system capabilities in terms of the number of firefighters responding either directly or converging on scene, or the time increment to achieve a safe ERF and completion of the critical tasks.

4.5 Response Coverage Mapping

This section provides mapping of the response coverage for West Nipissing Fire & Emergency Services. The methodology used to calculate the theoretical travel time and area coverage was based on the following formula:

Response Time Goal – Assembly Time = Theoretical Travel Time

For example:

600 secs (10 min), 720 secs (12 min) or 840 secs (14 min) - (80th percentile assembly time of 547 seconds) = theoretical travel time (in secs)

The theoretical travel time and road network travel speed data were applied to generate the response area of each station in the geographic information system (GIS) mapping program.

The theoretical travel time and road network travel speed data were applied to generate the response area of each station in the geographic information system (GIS) mapping program.

The calculated theoretical travel time using this approach is a conservative calculation. Use of the 80th percentile assembly times to calculate theoretical travel time and corresponding area coverage for 10, 12 and 14-minute response time goals is highly reliable. When the 50th percentiles times are used, the associated assembly times would only be achieved 50% of the time. In other words, the theoretical travel time and area coverage would only be achieved about 50% of the time. Whereas by using the 80th percentile times, the mapped area coverage is somewhat smaller but should be achieved 80% of the time and is therefore a more reliable representation of response area coverage within a given time.

Table 38: Theoretical Travel Time Calculation (in secs)

Station	5-Year 80 th Percentile Assembly Time	Theoretical Response Time			
		480 Sec.	600 Sec.	720-Sec.	840 Sec.
1	433	107	167	287	407
2-9	615	n/a	n/a	105	225

Map 2 illustrates the total response performance for station 1. The map demonstrates the total response area at 9, 10, 12 and 14 minutes at the 80th percentile. This is utilizing the theoretical travel times identified in Table 38 above.

Observations:

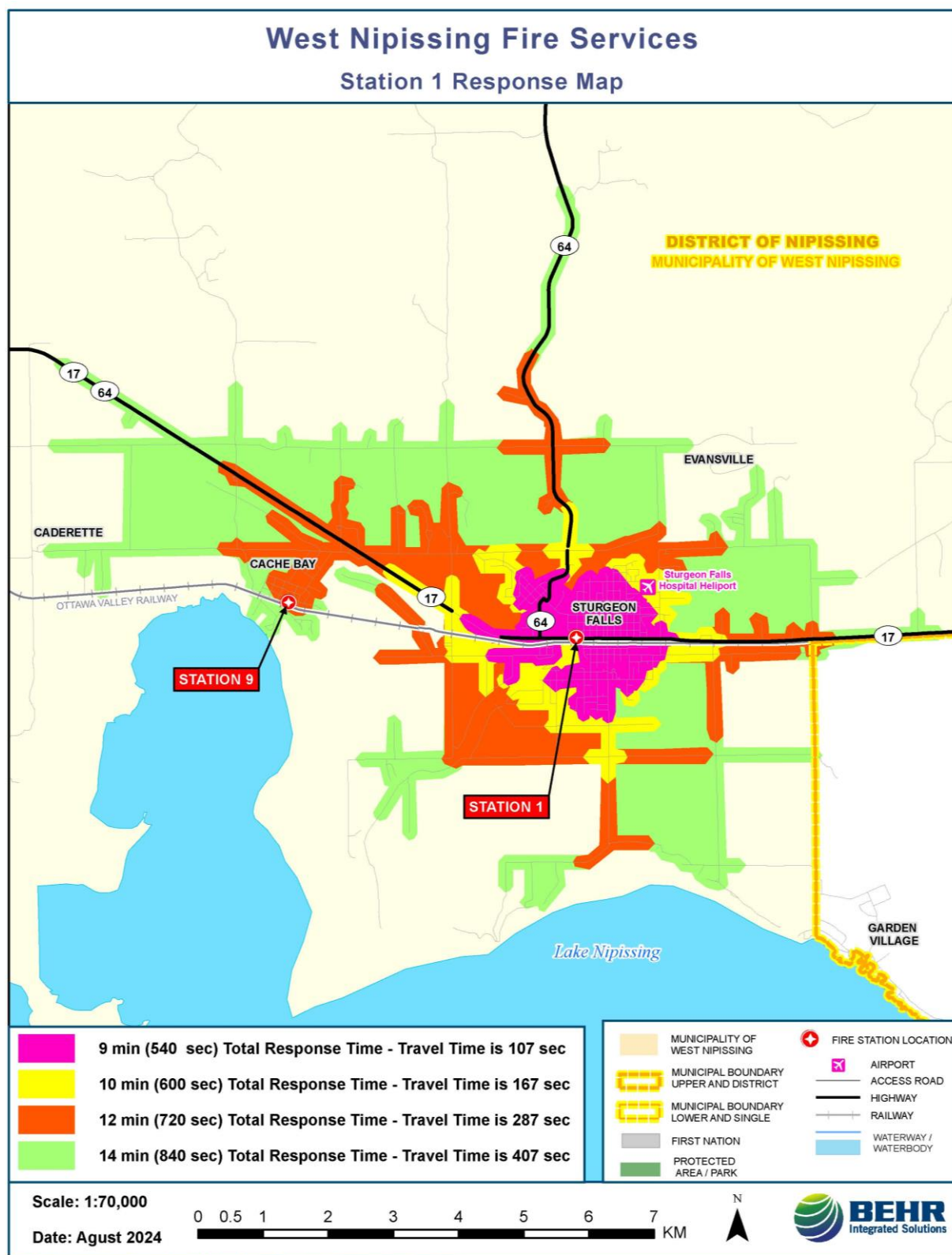
- Station 1 can cover most of the urban area of Sturgeon Falls within 10-minutes total response time.
- Most of the Cache Bay area (Station 9) can be reached by Station 1 in 12 minutes.

Map 3 examines the response times for Station 2-9 and illustrates a 12- & 14-minute total response time utilizing the theoretical travel times identified in Table 38 above. It is noted that a 10-minute response time was not calculated due to the actual assembly time at the 80th percentile exceeding 10-minutes (615 seconds).

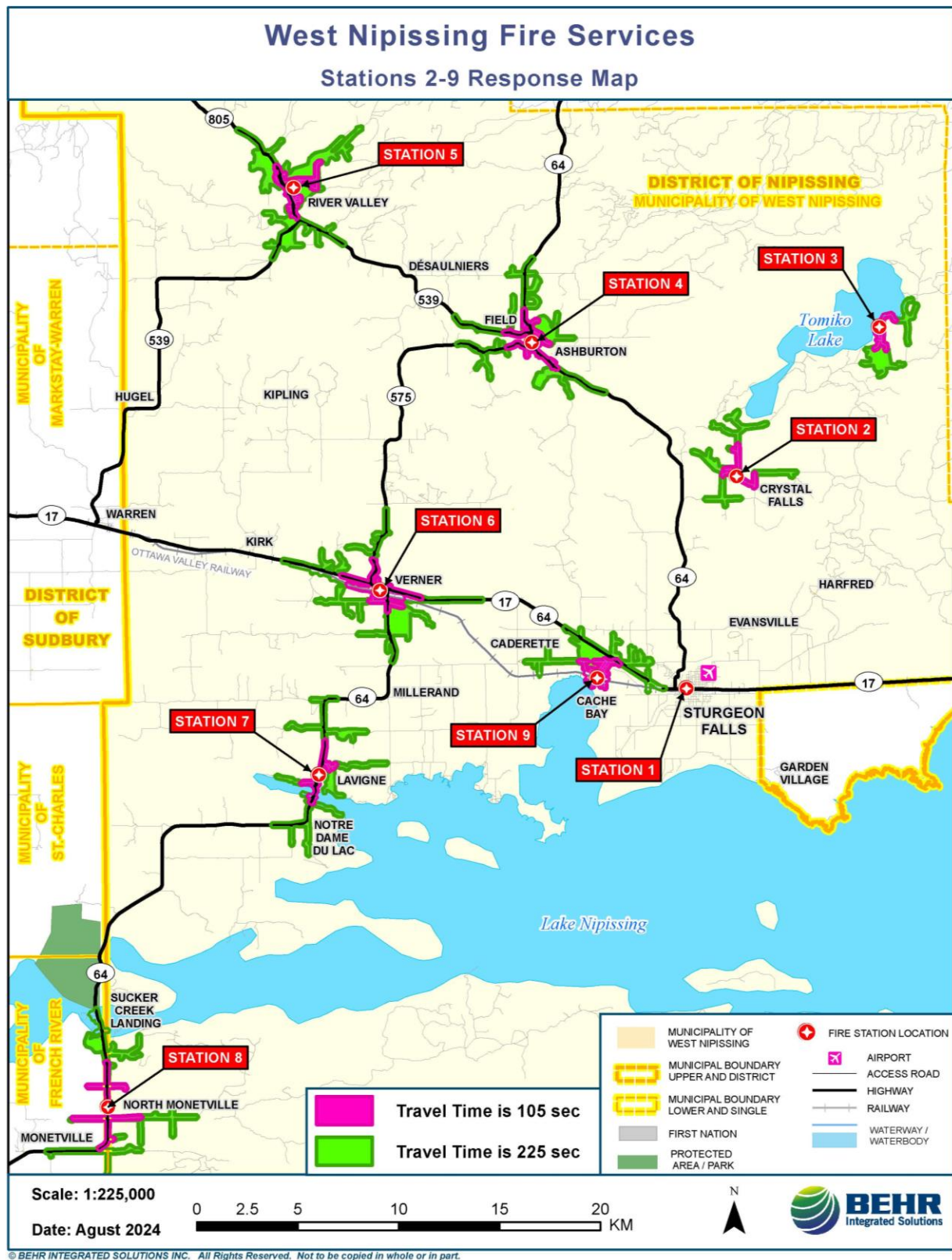
Observations:

- There are response gaps between stations, save and except Station 9 and Station 1. Responses beyond 14-minutes is to be expected in the areas between existing fire stations.
- Most calls experienced outside the 14-minute response area are predominantly MVC's.

Map 2: Station 1 Response Coverage (Based Upon Actual Response Performance)



Map 3: Station 2-9 Response Coverage Map (Based On Actual Performance)



Station Response Review

Individual station incident breakdowns (Oct 2021-July 2024) are illustrated in Table 39. The table further identifies the average annual incidents each station experiences.

Table 39: Call Types By Stations 2021-2024

Incident Type	Station								
	1	2	3	4	5	6	7	8	9
Burning Controlled	95	2	1	1	6	5	4	0	2
CO False Calls	51	1	0	0	0	6	1	0	2
False Fire Calls	106	0	1	2	0	4	1	0	1
Other Response	54	2	0	5	1	4	2	4	0
Property Fires/Explosions	103	6	0	19	12	29	18	6	2
Public Hazard	35	1	0	0	1	6	0	0	1
Rescue	140	0	0	9	1	18	4	1	2
Total	584	12	2	36	21	72	30	11	10
Annual Avg	219	4.5	.75	13.5	7.9	27	11.3	4.1	3.75

Table 40 demonstrates the number of POC firefighters and officers assigned to each station.

Table 40: POC Staffing By Station

Station	DC	Captain	Fire Fighter	Total
1	0	1	26	27
2	1	0	5	6
3	0	0	2	2
4	1	2	8	11
5	1	1	4	6
6	1	1	10	12
7	1	1	8	10
8	0	0	8	8
9	1	1	1	3
Total	6	7	70	83

Observations:

- Station 1 is the busiest station averaging 219 incidents annually. This relates to the density, population and the potential risks identified in the Sturgeon Falls area. The remaining stations range from less than 1 call per year to 27 calls annually.
- Station 3 responses are less than 1 call per year and over the period (Oct 2021-Jul 2024) responded to a burning complaint and a false fire call.
- Station 6 located in Verner is the second busiest station averaging approximately 27 incidents per year. Currently Station 6 has a POC complement of 1 District Chief, 1 Captain, and 10 Fire Fighters.
- Station 8 is the most remote station and does not have any leadership assigned (District Chief or Captains). This station responds to 4.1 calls annually.

Station Feasibility and Considerations

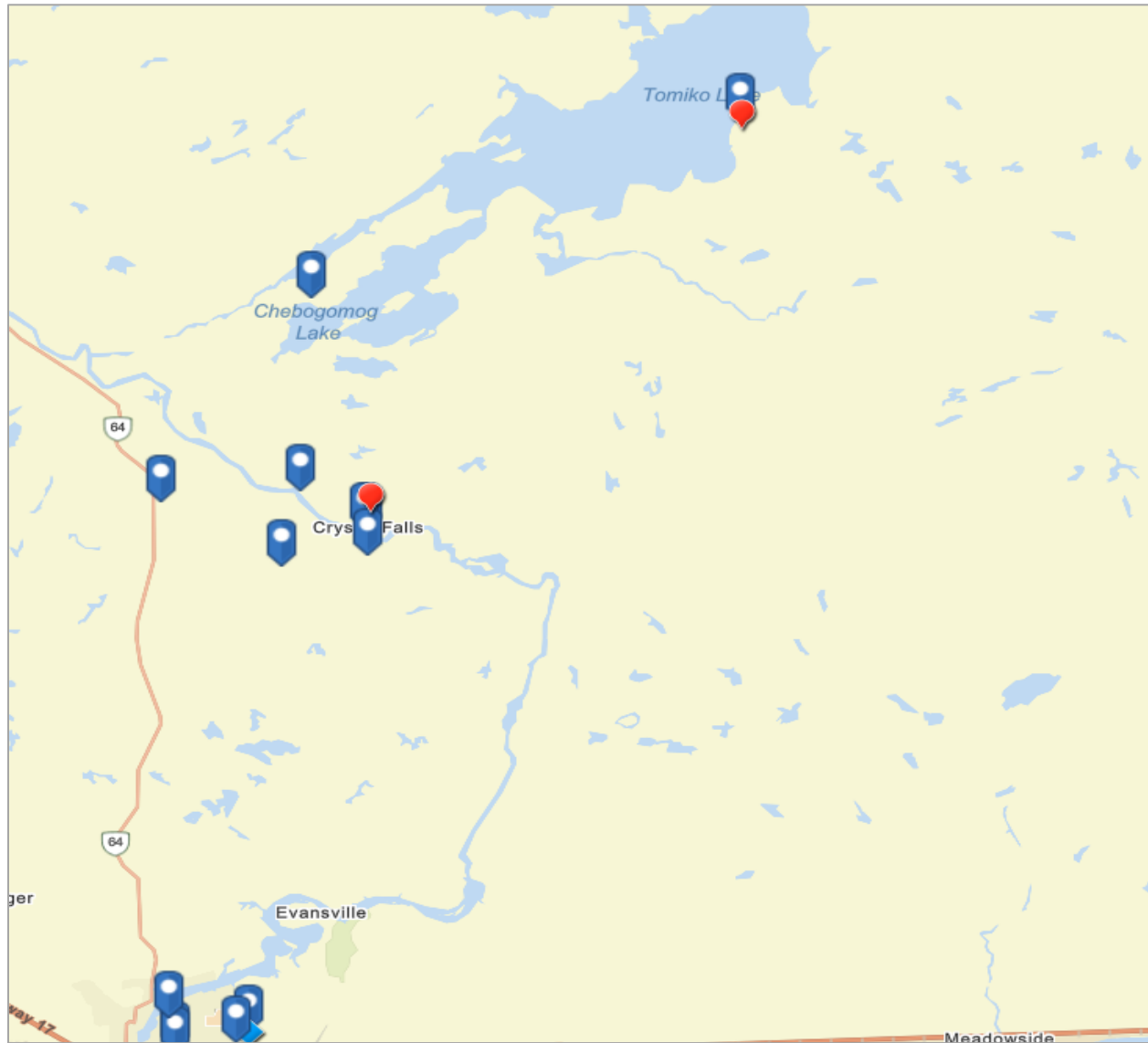
As part of this review the report has examined the feasibility of the stations and has detailed considerations of closing and combining stations within the municipality.

Station 3

Station 3 responds to less than one incident annually. The incidents that were responded to in a period of October 2021 to July 2024 were a burning complaint and a false fire call. Map 4 shows the location of incidents at both Stations 2 and 3 (Oct 2021-June 2024). The station has 2 firefighters and no officers that are assigned to the station. The apparatus that is used is a 2009 Chevy pickup with a portable pump with zero to limited fire suppression capabilities.

Assembly time, although low (118 secs at the 90th percentile) is not a good representation due to the low number of incidents. Based on historical incident data, potential growth, and overall risk, closing this station, and having Station 2 respond to incidents in the current Station 3 response zone will have limited to no impact to the overall protection in the area.

Map 4: Emergency Incidents Station 2 and Station 3 (2021-2024)



Station 9

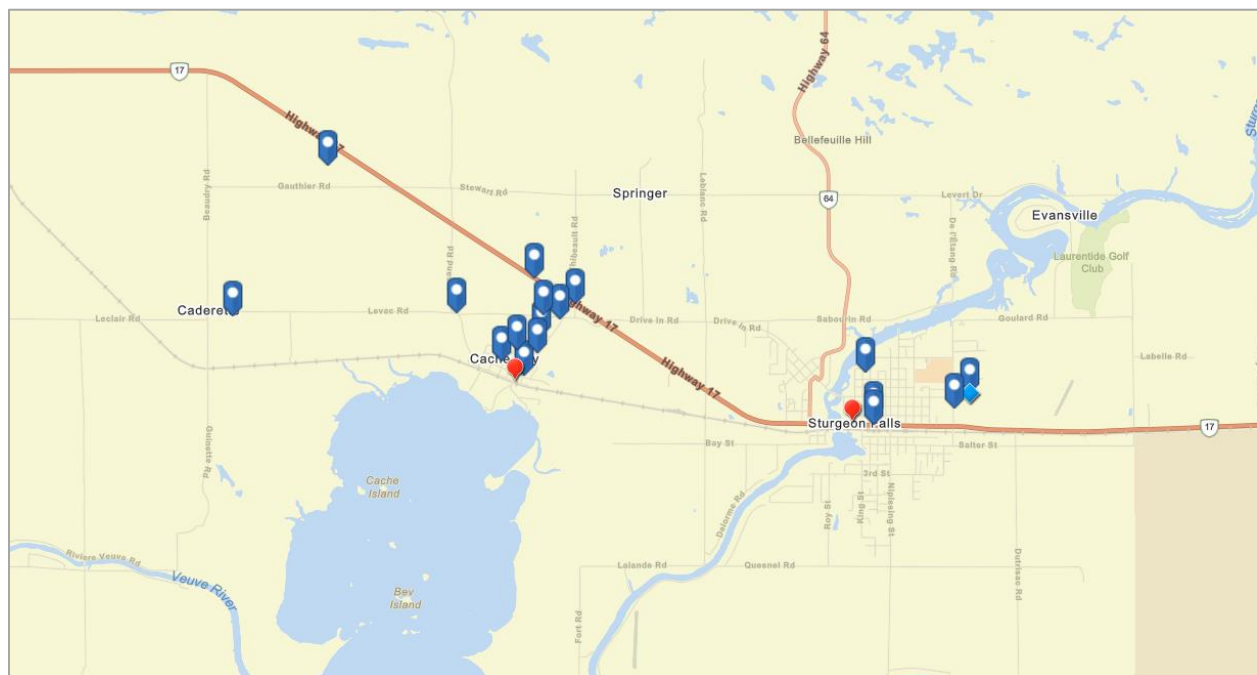
Station 9 located in Cache Bay responds to just under 4 incidents annually. These incidents have included (Oct 2021-June 2024): 1 false alarm, 2 burning complaints, 2 MVCs, 1 hydro pole fire, 2 Carbon Monoxide and 2 Fires to which one was cancelled enroute. Map 5 shows the location of the incidents responded to in the Station 9 response area. The apparatus assigned to the station is a 2001 Kenworth pumper (scheduled for replacement in 2031)

There are currently 3 POC assigned to the station which include 1 firefighter, 1 Captain and 1 District Chief. The assembly time is 5 minutes, 6 seconds at the 80th percentile. The current procedure is to have Station 1 or Station 6 (depending on the location of the incident) responded automatically with station 9 due to staffing concerns.

Station 1 can reach most Station 9's response area in 12 minutes or less 90% of the time from the time the call is received until the time the first apparatus arrives. This is demonstrated on Map 2 station 1 response.

Based on the current practice of having station 1 respond automatically and the ability of Station 1 to reach the Station 9 response area in 12 minutes or less, added to the fact that Station 9 responds to less than 4 incidents a year on average, closing this station and utilizing Station 1 or Station 6 (depending on incident location) will have little operational impact and limited to no risk to response area.

Map 5: Emergency Incidents Station 9



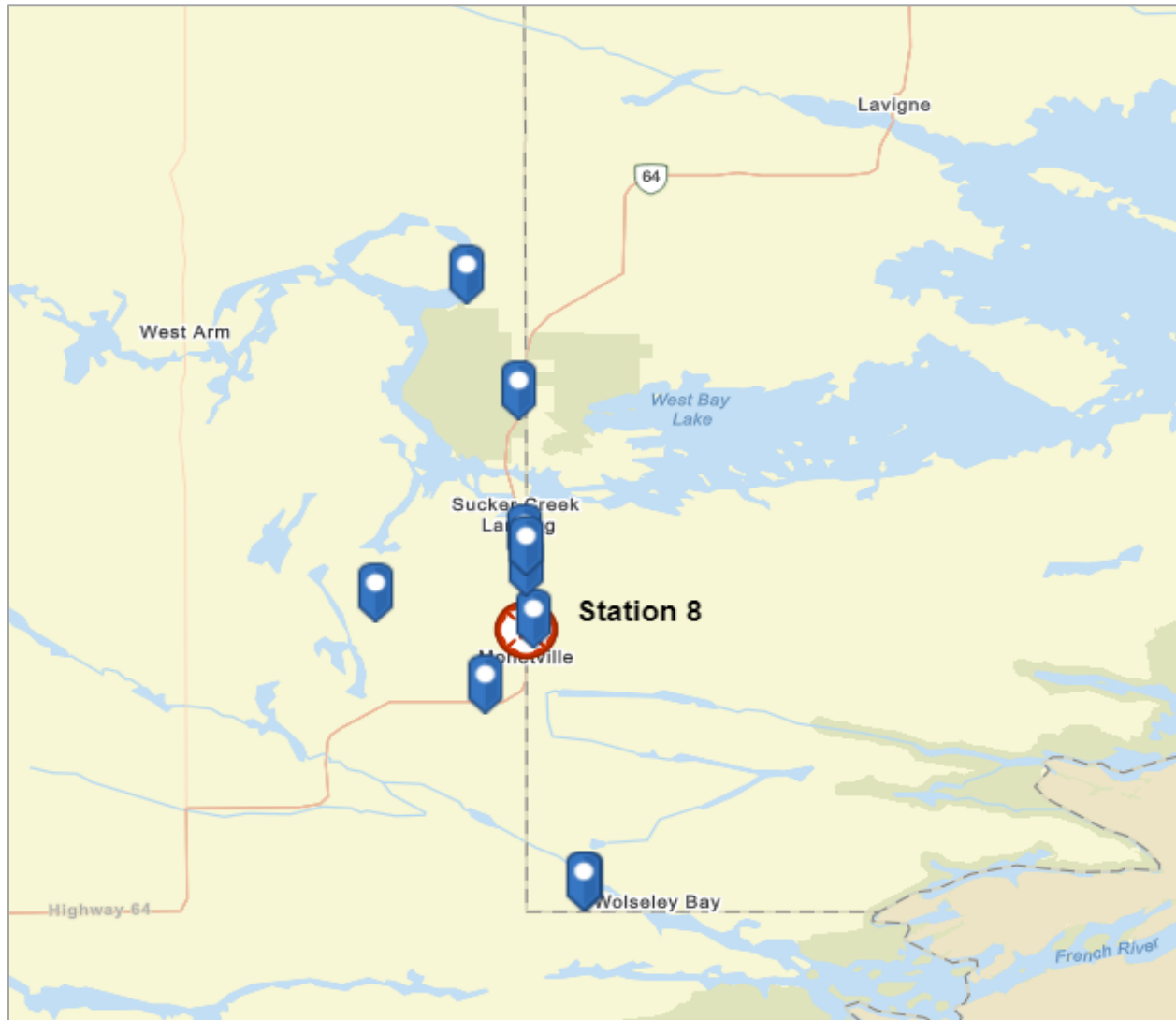
Station 8:

Station 8 responses to approximately 4 incidents annually. These incidents included (Oct 2021 to July 2024) 2 vehicle fires, 2 hydro pole fires, 1 brush fire, 1 MVC, 3 mutual aid or automatic aid and 1 structural fire. Map 6 demonstrates the incidents (Oct 2021 to July 2024) in Station 8 response area.

There are 8 POC firefighters assigned to the station, however there is currently no officers assigned, leading to concern over direct supervision and command responsibilities at fire incidents. The current assembly time is 11 minutes, 2 seconds at the 80th percentile with the total response time of 47 minutes, 41 seconds at the 80th percentile. This is a result of several calls that experienced long drive times over 15 to 43 minutes.

French River is approximately 13 Km from Station 8, and Station 7 is 25 km from Station 8. There is opportunity to look at a fire protection agreement for services to Station 8 response zone with French River. For 4 incidents on average, the costs of a fire protection agreement should be less than the cost to operate a fire station, including POC firefighter costs, fire apparatus and station maintenance. Additionally, the station has a 2019 mini pumper and a 2000 Tanker (which is due for replacement in 2025). These apparatus' can be reassigned to other stations and replacement in 2025 may not be required avoiding increases to capital budgets.

Map 6: Station 8 Response (Oct 2021-July 2024)



Station 6 & 7:

Station 6 (Verner) responds to 27 incidents annually on average. Most of these incidents are fires and MVC's. Verner is considered an urban growth area in the municipality's official plan and contains some industrial including COOP operations.

There are currently 10 POC firefighters, 1 Captain and 1 District Chief assigned to the station. The assembly time for Station 6 is 9 mins 36 seconds at the 80th percentile and a total response time of 18 minutes, 32 seconds at the 80th percentile.

On average, Station 7 (Lavigne) Responds to 11 incidents annually. Most of these incidents are fires. There are currently 8 POC firefighters, 1 Captain and 1 District Chief assigned to the station. The assembly time for Station 7 is 7 minutes, 8 seconds at the 80th percentile and a total response time of 22 minutes, 3 seconds at the 80th percentile.

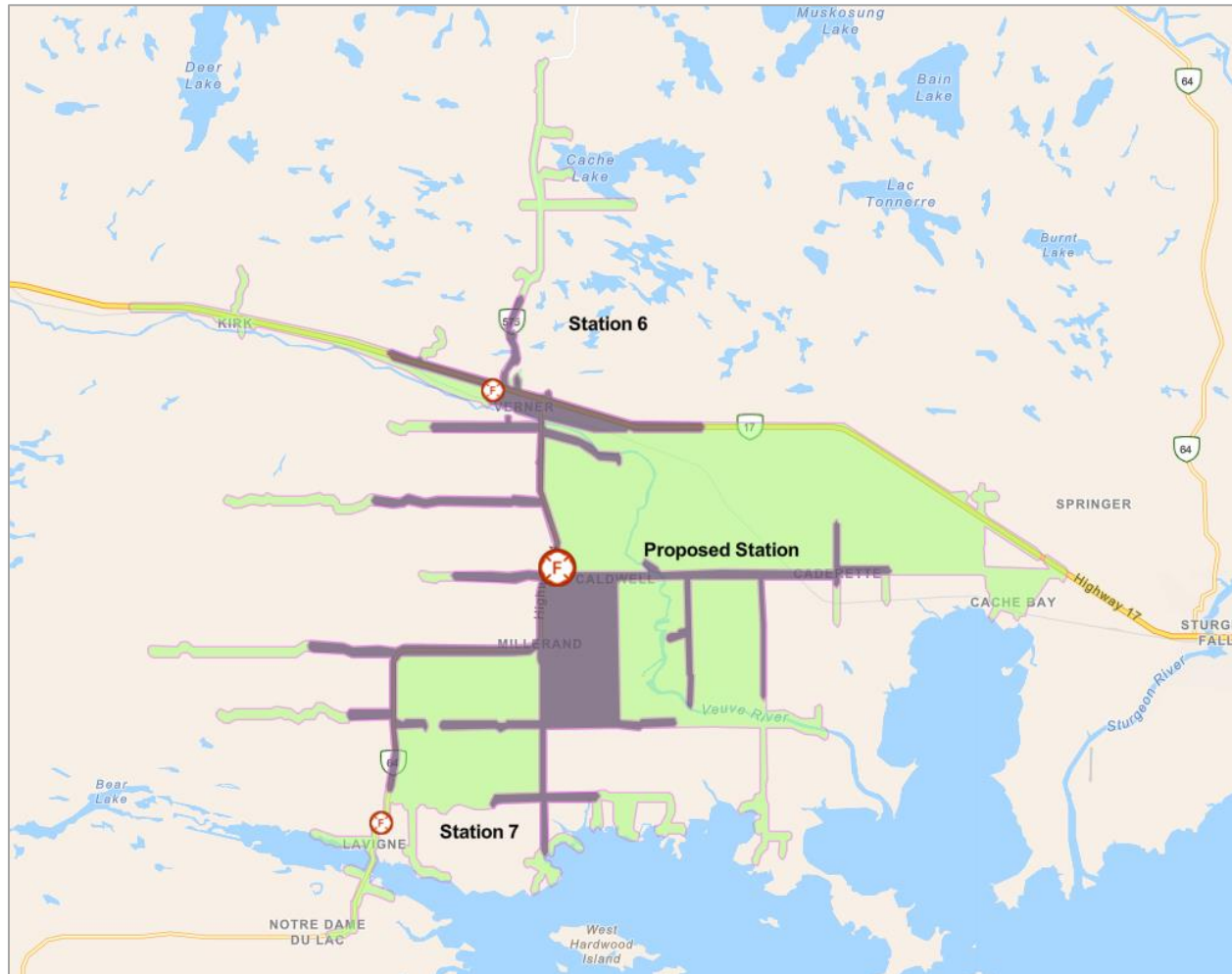
Both stations require work to address deficiencies including parking issues at station 6 and location on a blind bend at Station 7. Furthermore, the current locations present a variety of operational issues, including the parking at Station 6 which is limited and not sufficient for the responding firefighters. It further prevents opportunities to conduct drills at the station and alternative locations must be sought. Station 7 is located on a blind bend which creates a hazard for responding apparatus, firefighters responding to the station and drivers in the general area.

Consideration to combine the two stations to a centralized location is illustrated in Map 7. This consideration has pros and cons identified in Table 411.

Table 41: Station 6 & 7 Consolidation Considerations

Station	Pro's	Con's	Options
Station 6 & Station 7	• Amalgamating to a centralized location will eliminate the operation of one less station. • A new fire station to replace two stations that have identified issues and concerns to maintenance and operation efficiencies. • May lower number of vehicles to maintain. • Can take advantage of a municipal operated multi use facility with Public Works division.	• There will be increased response times to both station areas. Including assembly times and travel times. Station 6 experiences just under 12 fires annually and Station 7 experiences 7 fires annually) • Major highway runs through Station 6 area. • May experience community concerns • May experience recruitment and retention issues in stations that maintain reasonable number of POC firefighters. • Current risks in Verner area are higher with the CO-OP plant	1. Operate from Station 6 and close to station 7. 2. Construct a new station between Station 6 and Station 7 along Hwy 64 and Leclair Rd. 3. Maintain status quo

Map 7: Travel Times To And From Proposed Station



Map 7 demonstrates a 10-minute travel time from the proposed new station location (green). The 10-minute travel time covers the current communities of Verner and Lavigne, where most of the incidents occur for Stations 6 & 7. We further examined the assembly time to which is currently over 7 and 9 minutes respectively. A 6-minute travel time to the new proposed station is identified in Map 7 (purple).

Observation #18

WNFES operates and maintains 9 active fire stations and 17 frontline apparatus located across the municipality. Many of these fire stations are in state of needing repair or upgrades to maintain as an active station. The volume of incidents and type of incidents responded to vary across the municipality. Station 1 is the busiest station with the highest potential risk, including the highest number of fires, and maintains the highest number of POC firefighters. Station 3 responds to the lowest annual incidents (less than 1) followed by Station 9 (3.75) and Station 8 (4.1). These stations also responded to the fewest fires in the municipality and maintain the lowest number of POC firefighters.

Recommendation #18a: WNFES permanently close Station 3, utilizing Station 2 for response coverage.

Suggested Completion: 6-12 months

Cost: Neutral, potential for cost savings/ avoidance on operating and capital budgets

Resource: WNFES staff time, Human Resources, operating budget, capital budget

Recommendation #18b: WNFES permanently close Station 9, utilizing Station 1 for response coverage.

Suggested Completion: 6-12 months

Cost: Neutral, potential for cost savings/ avoidance on operating and capital budgets

Resource: WNFES staff time, Human Resources, operating budget, capital budget

Recommendation #18c: WNFES explore a fire protection agreement with French River to provide response coverage to Station 8.

Suggested Completion: 6-18 months

Cost: Neutral

Resource: WNFES staff time

Observation #18

Recommendation #18d: WNFES permanently close Station 8 if recommendation #18c is successful.

Suggested Completion: 12-24 months (6-12 months after completion of recommendation 18c)

Cost: Neutral, Potential for cost savings/ avoidance on operating and capital budgets

Resource: WNFES staff time, Human Resources, operating budget, capital budget

Recommendation #18e: Consolidation of station 6 and station 7 to a central area between the two communities of Verner and Lavigne

Suggested Completion: 36-60 months

Cost: Operating cost for fire protection agreement, operating savings/ offsets for closure of stations 3, 9 and 8. Reduction to Capital costs on apparatus replacement due to closures.

Purchase of land for new station and the cost to construct (Station 6 & 7). Can be offset by the sale of stations 6 and 7.

Rationale: Each of these recommendations can be completed separately and except for recommendation 18d are not tied to each other. Operating the three stations recommended for closure have both operating and capital costs to maintain. Operating costs include staffing (POC firefighters), equipment, utilities, minor up-keep, vehicle operations and maintenance. Capital costs include Station systems maintenance, building condition repairs, vehicles. These three stations combined respond to approximately 9-10 calls annually. There are effective operational options to have alternative stations or municipalities respond to the recommended closed stations areas. These changes will have limited impact to response and risk within the municipality and will provide for greater efficiencies to be realized.

4.6 Effective Response Force

This section provides further explanation on the importance of assembling an effective response force (ERF) comprising of adequate firefighters and equipment to manage emergency incidents safely and effectively.

ERF standards are based on fire response research completed by organizations such as NFPA and the National Institute of Standards and Technology (NIST). These standards are established to ensure adequate resources are available to complete critical tasks in a safe and timely manner. NIST research identified over 22 essential fire ground tasks at a typical single-family house fire. Ideally, NFPA 1710 suggests a minimum of 16 firefighters, or four companies of four firefighters, are required for a full alarm assignment (17 if an aerial device is used) for residential house fire. This goal is typically only achieved by urban metropolitan fire departments. However, the key point is that even a low-risk structure fire requires considerable resources to complete concurrent tasks and initiate interventions as quickly as possible.

NFPA 1720 identifies the minimum number of firefighters that should respond to a fire incident within a specific timeframe. For urban responses, a minimum of 15 firefighters should arrive within 9 minutes, 90% of the time. Rural responses require a minimum of six firefighters to respond within 14 minutes, 80% of the time. timeframe however they did meet the 15 firefighters for structure fires 50% of the time. The number of firefighters responding and arriving on scene is not tracked and the data was not available to analyze.

Observation #19

The data identifying the number of WNFES POC firefighters that responded to incidents was not available, making it difficult to monitor when and how many firefighters were available to provide a timely response. Similarly, the time taken to assemble the necessary resources for larger, more complex incident types cannot be monitored or reported.

Recommendation #19: Identify the number of firefighters that respond and monitor the time taken to assemble an effective response force.

Suggested completion: 6 -12 months

Cost: Neutral

Resource: WNFES staff time

Observation #19

Rationale: Response performance is based on a timely first response and the ability to assemble the necessary resources to complete critical concurrent tasks and reduce intervention time. The reliability of the response provided by POC firefighters depends on several factors. The utilization of a POC or volunteer model is utilized across many smaller municipalities across Ontario. It is extremely cost efficient, yet it has inherent limitations such as extended assembly times and declining rates of participation which can impact its effectiveness. Therefore, monitoring the number of responding firefighters and the time taken to assemble adequate resources is key information required to assess a fire department's response effectiveness.

4.7 Critical Task Analysis

A critical task analysis for common incident types illustrates the resources required to achieve tactical objectives based on resource availability. The rationale for completing a critical task analysis is to identify whether response policies and guidelines align with available resources. In other words, are enough firefighters typically responding to complete the critical tasks on emergency scenes in a safe and timely manner.

However, the optimal number of firefighters are not always available. Response policies and guidelines should identify critical task assignments and tactical objectives based on available resources. The optimum numbers of firefighters to manage larger and more complex incidents may not be dispatched initially due to the availability of firefighters. As a result, tactical objectives should be scaled to reflect these limitations. For example, an interior fire attack or rescue may not be possible with a single engine company and a limited water supply. Response policies or guidelines should also identify a contingency plan to call-in additional volunteer stations or initiate mutual aid resources/automatic aid for larger incidents complex incidents.

The following tables provide examples of critical task analyses that should be embedded in fire department standard operating guidelines or policies. The purpose of completing a critical task analysis is to establish the ERF response requirements and embed task assignments in standard operating guidelines. The examples provided are intended to illustrate leading practices with respect to the ERF required to safely manage commonly occurring emergency incidents. They are provided as a guide and not intended to specifically represent WNFES response capacity or apparatus.

Table 42: Low Risk: Small fire (no exposures): garbage, vehicle – private, grass, investigate (external), monitoring alarm (w/o confirmation)

Initial Deployment	No. FF	Task Assignment
Pumper	4	Incident Command, Scene Safety, Size up, IAP Development, Accountability, Resource Determination, Water Supply, 360 assessment, Forcible Entry, Primary Search, Fire Control, Incident Stabilization
Total Personnel	4	

Table 43: Moderate Risk: Grass/wildland/brush fire (with exposures)

Initial Deployment	No. FF	Task Assignment
UTV (Support vehicle requested as required)	4	Incident Command, Scene Safety, Size up, IAP Development, Accountability, Resource Determination, Water Supply, Fire Control, Incident Stabilization
Tanker	2	Water Supply
Pumper	4	Firefighters for Operations
Command Officer	1	Transfer of Command, Scene Safety, IAP Confirmation and Evaluation, Accountability, Resource Management
Total Personnel	11	

Table 44: Moderate Risk: Attached garage, single family residential (detached/duplex)

Initial Deployment	No. FF	Task Assignment
Pumper	4	Incident Command, Scene Safety, Size up, IAP Development, Accountability, Resource Determination, Water Supply, 360 assessment, Forcible Entry, Primary Search, Fire Control, Incident Stabilization
Ladder (if available)	4	Scene Safety, Water Supply, Aerial Operations, On-deck Assignment, Primary Search, Fire Control
Rescue	4	Scene Safety, On-Deck, Primary/Secondary Search, Fire Control
2 nd Pumper	4	Scene Safety, Water Supply, On-deck Assignment, Primary Search, Fire Control
Command Officer	1	Transfer of Command, Scene Safety, IAP Confirmation and Evaluation, Accountability, Resource Management.
RDU & Pickup truck		Rehab, Command area, protection from elements
Total Personnel	17	

Table 45: Moderate Risk: Medical incident, cardiac arrest (VSA)

Initial Deployment	No. FF	Task Assignment
Pumper or Rescue	4	Scene safety, Patient Assessment/CPR, Patient History, Apply Automatic External Defibrillator, Assist with Patient Packaging
Total Personnel	4	

Table 46: Moderate Risk: Medical incident, vehicle vs. pedestrian

Initial Deployment	No. FF	Task Assignment
Pumper	4	Incident Command, scene safety, patient assessment / Care, patient packaging, Traffic Management
Rescue	4	Stabilization, Extrication, Traffic Management
Total Personnel	8	

Table 47: Moderate Risk: Motor vehicle crash (1-3 private vehicles)

Initial Deployment	No. FF	Task Assignment
Rescue	4	Incident command and size-up, safety, establish outer perimeter, pump operation, 2 FFs prepare hand line.
Pumper	4	Establish inner perimeter, triage patients, patient care, extrication, patient packaging.
Total Personnel	8	

Table 48: Moderate Risk: Surface water, swift water or ice rescue, animal rescue

Initial Deployment	No. FF	Task Assignment
Water Rescue Unit	4	Officer of first arriving unit on scene assumes command, size up, scene safety and communications, patient contact, shore rescue if possible or water/ice rescue if required.
Rescue	4	Addition Resources for Shore operations, On Deck, Patient care
Pumper	4	Addition Resources for Shore operations, On Deck, Patient care
Command Officer	1	Overall Incident Command, safety, accountability, resource management.
Total Personnel	13	

Table 49: Moderate Risk: Small quantity (<20 L) of known product (gasoline, anti-freeze), open space natural gas smell or odor from unknown source

Initial Deployment	No. FF	Task Assignment
Pumper	4	Incident Command, Scene Safety, Size up, IAP Development, Accountability, Resource Determination, Water Supply, 360 assessment, Forcible Entry, Incident Stabilization
HAZMAT Unit	4	- Hazard and risk evaluation - Selection of personal protective equipment - Information management and resource coordination - Implement response objectives. - Decontamination and clean-up operations - Terminate the incident
Total Personnel	8	

Table 50: High Risk: Commercial, industrial, strip mall, warehouse, mid-rise residential

Initial Deployment	No. FF	Task Assignment
Ladder (if available)	4	Incident Command, Scene Safety, Size up, IAP Development, Accountability, Resource Determination, Water Supply, 360 assessment, Aerial Operations, Forcible Entry, Primary Search, Fire Control, Incident Stabilization
Pumper	4	Scene Safety, Water Supply, On-deck Assignment, Primary Search, Fire Control
Rescue	4	Scene Safety, On-Deck, Primary/Secondary Search, Fire Control
3 rd Pumper	4	Scene Safety, Water Supply, On-deck Assignment, Primary Search, Fire Control
Command Officer	1	Transfer of Command, Scene Safety, IAP Confirmation and Evaluation, Accountability, Resource Management
RDU & Pickup	2	Rehab, Command area, protection from elements
Total Personnel	19	

Observation #20

WNFES standard operating guidelines could be enhanced by identifying the number of firefighters and resources required to complete critical tasks. A critical task analysis embedded in response policies or guidelines will clarify incident resource requirements and the tactical priorities based on resource availability.

Recommendation #20: Complete a critical task analysis for common emergency incident types.

Suggested completion: 6-12 months

Cost: Neutral

Resource: WNFES staff time

Rationale: It is an industry practice to ensure response policies include a critical task analysis. Guidelines and policies developed should include, as per National Fire Protection Agency (NFPA) standards: a. identification of the standard firefighting functions based on the emergency services to be offered, including functions that must be performed simultaneously; b. the minimum number of firefighters required to safely perform each identified firefighting function or evolution.

4.8 Measuring, Managing and Reporting Performance

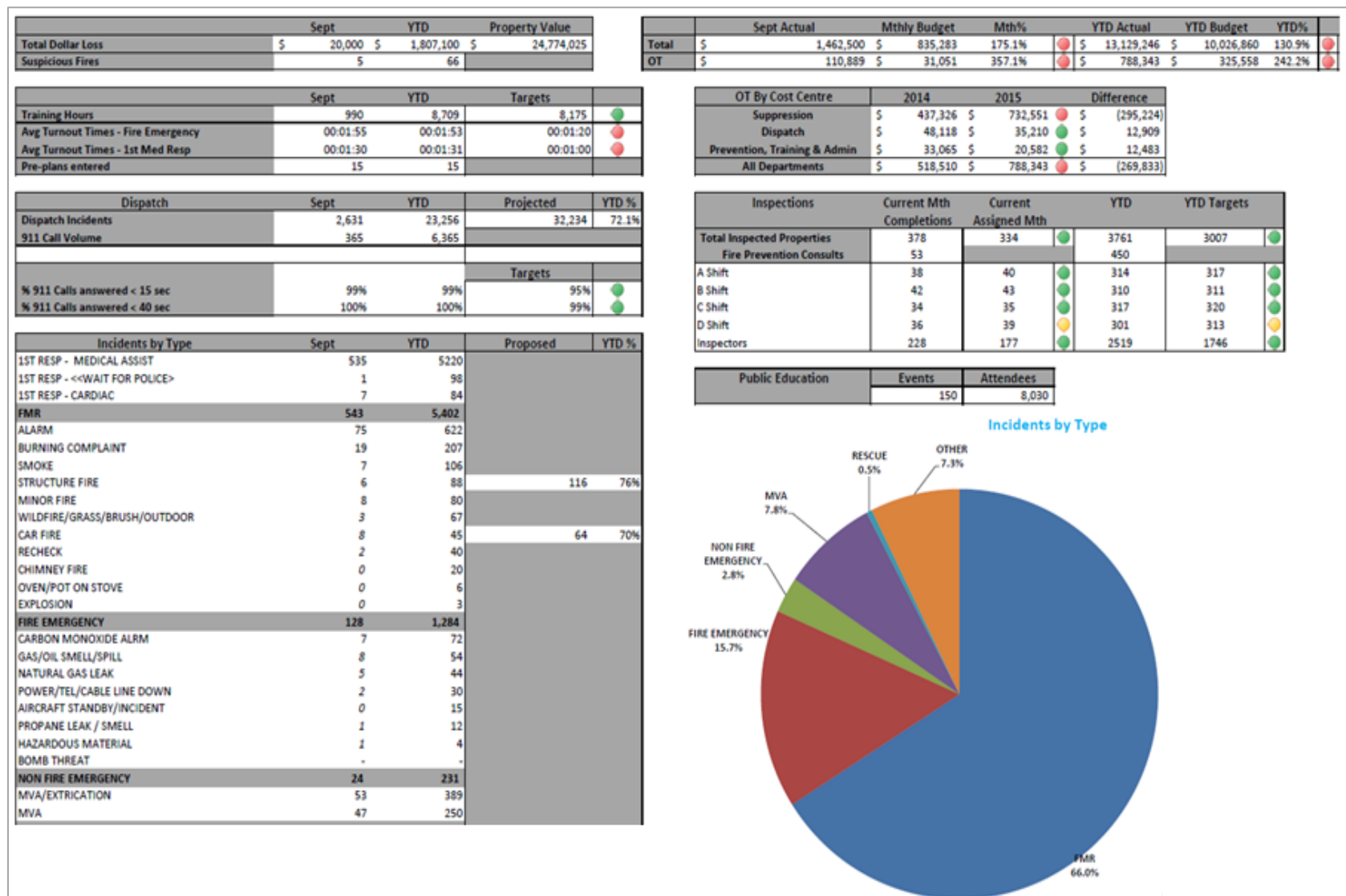
Performance measurement and reporting is key to moving towards a databased culture of performance improvement and away from mere opinion. Performance measurement and reporting supports the following:

- Determining a baseline performance level according to the indicators
- Establishing achievable service goals based on current performance.
- Identifying the gap between desired goals and current performance levels
- Tracking progress toward achieving goals.
- Benchmarking performance between departments
- Identifying problems and root causes
- Planning for the future

Performance data must be valid and reliable to generate useful and trusted performance reports. The dispatcher identifies the incident type and captures a series of incident response time benchmarks. This information is then passed on to WNFES officer and used to complete their incident report. The report data is entered into the department's record management system (RMS). Manual entry of response timestamp data is time consuming and prone to have more errors.

Operational performance data and service level expectations should be regularly reported to staff. Timely performance reporting reflecting operational performance metrics and service levels is key to implementing performance management and system improvements. One approach to providing timely information to fire staff is to develop a performance dashboard. CAD and RMS technologies must be integrated to support this tool. Figure 14 provides an example of the information that could be reported on a performance dashboard.

Figure 14: Performance Dashboard



Observation #21

WNFES reports as required to council on a variety of topics including call volume, public education events, firefighter turnout, incident types, ongoing fire department projects. The current data does not all for the measurement or monitoring of performance goals or historical information, the ability to identify benchmarks. Monitoring changes in service demand and response performance is an important management function.

Recommendation #21: Utilize a purpose-built fire service records management system to ensure support to all programs required to meet the service levels.

Suggested completion: 12-24 months

Costs: \$100,000-\$150,000 is the average cost for record management systems for WNFES sized departments

Resource: WNFES staff time, operating budget, capital budget

Rationale: Changes in service demand and response performance is an important management function. In particular, the incorporation of spatial data (latitude and longitude or addresses) into reports will allow enhanced understanding of where risk exists within the municipality. Furthermore, the ability to measure and report performance is critical in maintaining department accountability and transparency for response performance.

The first step in performance measurement is to develop the processes to collect reliable and valid data. As already discussed, fire and emergency services are typically data rich agencies. Use of integrated computer aided dispatch (CAD) and records management systems can improve the accuracy of the data captured and streamline the reporting process. These technologies simplify the conversion of data into useful information. Performance measurement and reporting is at the core of moving toward a databased culture and moves it away from mere opinion for fire services.

SECTION 5

CONCLUSION

The goal of developing this Fire Services Master Plan is to conduct a comprehensive review of the West Nipissing fire service and produce a strategic plan for the next 5-7 years. This will provide a systematic and comprehensive approach to evaluate current response capabilities by identifying and mitigating risks and assist in formulating and communicating strategic directions for the fire service, while highlighting opportunities for improved service delivery. The FMP will also assist in conveying information to the public, staff, and municipal council about what to expect in the municipality's approach to fire and emergency service planning, service delivery model, policy, and development.

The WNFES is functioning well with evidence of the typical challenges with volunteer services such as turnover, retention, recruitment, and training requirements. The emergency response capabilities analysis indicates that the total response time 80th percentiles are well beyond of the industry practice for the municipality. Further, WNFES was not able to assemble an effective response force of 10 firefighters within the 80th percentile to perform the critical tasks required in a structural fire. It is important to note that WNFES is providing the best possible emergency response service given the limitations of the volunteer staffing model, the community risk factors, and the current built up areas within the municipality's boundaries.

There are several observations and recommendations provided in this master plan to improve operational effectiveness and efficiencies and enhance administrative and operational processes. Key among the 29 recommendations is:

- Improve efficiencies through closing of low call volume, low risk stations.
- Establish service levels for emergency response that includes the analysis and risk factors identified in the community risk assessment.
- Establish dedicated fire and life safety education and dedicated inspection and enforcement positions with a focus on risk reduction through lines 1 and 2.
- Ensuring all fire fighters and fire service staff are certified to appropriate levels as identified by the Council approved service levels.
- Ensure appropriate records management systems for Fire Prevention, Operations and Response, Training, and Capital Assets.
- Undertake a complete building envelope study assessment of all WNFES fire stations.

Although each recommendation has a corresponding timeframe, it is important to note this FMP needs to be revisited on a regular basis to confirm that the observations and recommendations remain relevant. The recommendations outlined in this FMP will better position WNFES to mitigate and manage community risks, monitor response capabilities and performance, and maintain excellent community relationships and value for money.

Notwithstanding operational observations around emergency response performance, achievement of an effective response force and the WNFES is a fire service that is serving the community well.

Finally, our interactions with the West Nipissing staff revealed a highly professional and dedicated organization that is committed to providing the best possible service to the citizens of the municipality.

APPENDICES

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Appendix A: Glossary of Terms

Apparatus	Any vehicle provided with machinery, devices, equipment, or materials of the Fire department for firefighting as well as equipment used to transport firefighters or supplies.
Assembly Time	From the time the notification sounds in the fire station until the first vehicle leaves the station. In a full-time department this is expected to be within 80 seconds but for volunteer departments the time to collect a response crew can vary widely depending on location and time of emergency as well as all the factors that impact travel time.
Chute Time	See Assembly Time
Dangerous Goods	This term is synonymous with the terms hazardous materials and restricted articles. The term is used internationally in the transportation industry and includes explosives, and any other article defined as a combustible liquid, corrosive material, infectious substances, flammable compressed gases, oxidizing materials, poisonous articles, radioactive materials, and other restrictive articles.
Discovery	This is the time between the start of the emergency and when someone or an engineered system has detected the incident.
Dispatch Time	This is the time required to extract the necessary information from the caller to allow the proper response to be initiated. The dispatcher identifies the correct fire location and initiates the dispatch by paging the appropriate fire station.
Emergency Call	This is the period between discovery and the actual notification of emergency services.
Emergency Communications Centre (ECC)	A facility dedicated to service receives calls, processes them, and then dispatches emergency units to the correct location in the appropriate period.
Emergency Operations Centre (EOC)	The protected sites from which civil officials coordinate, monitor, and direct emergency response activities during an emergency or disaster.
Emergency	Any occasion or instance that warrants action to save lives and to protect property, public health, and safety. A situation is larger in scope and more severe in terms of actual or potential effects.
Fire Suppression	The application of an extinguishing agent to a fire at a level such that an open flame is arrested; however, a deep-seated fire will require additional steps to assure total extinguishment.

Hazard Analysis	A document, which identifies the local hazards that have caused, or possess the potential to adversely affect public health and safety, public and private property, or the environment.
Impact	The effect that each hazard will have on people such as injury and loss, adverse effects on health, property, the environment, and the economy.
Incident	A situation that is limited in scope and potential effects.
Intervention Time	The time from fire reporting to the point where the first arriving pumper, or other apparatus providing comparable functions, arrives at the fire scene and directs an extinguishing agent on the fire.
Mutual Aid Agreement	An agreement between jurisdictions to assist each other during emergencies by responding with available manpower and apparatus.
National Fire Protection Association	The National Fire Protection Association (NFPA) is an internationally recognized trade association established in 1896 that creates and maintains standards and codes for usage and adoption by local governments to reduce the worldwide burden of fire and other hazards. This includes standards and guidelines which many fire departments utilize to carry out day-to-day operations.
Response	Those measures undertaken immediately after an emergency has occurred, primarily to save human life, treat the injured, and prevent further injury and losses. They include response plan activation, opening and staffing the EOC, mobilization of resources, issuance of warnings and direction, provision of aid, and may include the declaration of a State of Local Emergency.
Risk	The chance or likelihood of an occurrence based on the vulnerability and known circumstances of a community.
Setup Time	This is the time necessary on site to evaluate the necessary actions, position the required resources and commence the intervention. In the case of a fire, completing size-up, assigning the necessary tasks, and deploying resources can provide delays on scene. A well-trained crew can minimize these delays while providing a safe, successful response.
Standard Operating Guidelines (SOG)	A written organizational directive that establishes or prescribes specific operational or administrative methods to be followed routinely, which can be varied due to operational need in the performance of designated operations or actions.

Standard Operating Procedures (SOP)	A written organizational directive that establishes or prescribes specific operational or administrative methods to be followed routinely for the performance of designated operations or actions.
Travel Time	Once a vehicle leaves the station, it must negotiate the best route between that point and the location of the emergency. Factors to consider for travel time are driver skill, weather, traffic, topography, road conditions and vehicle capabilities.

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Appendix C: Theoretical Response Mapping Methodology

Response travel times are directly influenced by station location and can be varied based upon a cost/risk analysis and the development of performance targets.

Base Data Layers Requested

- Hydrology
- Single Line Road/Transportation Network
- Railways
- Municipal Boundaries
- Parks
- Projection File
- Orthophoto (GeoTIFF, Mr.SID), if available
- Emergency Services Locations

Data Formats

- Preference of ESRI Shapefiles

Purpose of Files

A. Hydrology

- i. Identify needs for response to water locations (if dependent on a water response unit)
- ii. Can be identified and analyzed with the rail network to locate spill contaminations, as well as containment for overland flow & flooding to water spills.
- iii. Locations of bridge crossings which can convert to varying incidents, as MVC/MVA, spill contaminants, etc.
- iv. Assists in the definition of the map for locational awareness by others.
- v. Completes the map.

B. Single Line Road/Transportation Network

- i. Used to determine response times from emergency locations to determine a network based on road speeds.
- ii. Roads are created into a network for response.

C. Railways

- i. Identified risk areas for impeding response time when crossing a roadway or proximity to municipal areas will also determine the response and apparatus used for a derailment response or other rail emergency or risks, such as chemical spill evacuations.

D. Municipal Boundaries

- i. Identifies the limits to response for mutual aid and responsibilities when overlaps occur within a response area. Also identifies sub areas for specific mapping and identification of municipal and regional response zones. Provides information for gap analysis for future state locations or refinement of locations.

E. Parks

- i. Identifies the potential risk areas due to accessibility issues for tracts of land, as well as constraints and opportunities for new locational analysis for or against new stations within a municipality. Ability to determine development of new locations due to proximity. Parks are identified as local, regional, provincial, and national.

F. Projection File

- i. To ensure that we have the same data set up as being used by the Municipality or Client, measurements (both distance and time) and spatial location are correct when determining analysis.

G. Orthophoto (GeoTIFF, Mr.SID), if available

- i. We typically do not use the ortho on the output maps, but the analysis sometimes needs clarification of what is on the ground, and we use it to quickly ground truth locations and information needed prior to asking clients for clarification, or to substantiate clarification of an area.
- ii. Is nice to have, yet hard to use, as it takes up a lot of memory/space and is difficult to ship/transfer.

H. Emergency Services Locations

- i. Identify the actual location rather than a theoretical location based on an address match to ensure that the data location is as correct as possible, and no mis-locations are identified on the initial running of the theoretical response times.
- ii. Locations may be moved from within a parcel to the front of the parcel whereby it touches the road network. Ensures the response from the station is captured. There are no corrections made to the movement of station to time, as it is typically within 50 metres.

Theoretical Response Zone

A. Assumptions

- i. Weather is average – no storms, rain, snow etc.
- ii. Roadway segments contain a node/junction at intersections
 - If not available, road network needs to be cleaned and fixed
- iii. Roadways need to sometimes extend beyond some municipalities
- iv. Emergency responders are trained on response vehicles
- v. Response vehicles are in good condition
- vi. Roads are dry and in good condition
- vii. Left turns are not reduced by a time %
- viii. Road speeds are provided by client, if not
 - Road class table used to populate speeds based on road classification
 - Road speeds are reduced from the posted sign, typically no more than 5%
- ix. Traffic volume is average, there is no congestion or there is a free-flowing lane to be used
- x. Rail crossings are free to cross and do not impede response
- xi. Time of day is based on an average time from 9 am – 9 pm
- xii. Opticom (or similar product for traffic light manipulation) are present to allow for free moving response
- xiii. Intersections of roads are not reduced (the roads are reduced from other project limits and averaged over time for generality of best fit)
- xiv. School zones are not adjusted unless identified, then changes to road net are made

B. Response Time

- i. Customized response based on Emergency Services Input
- ii. Response time includes 80% of all calls for service
- iii. Total drive time along roads (determined above by road speeds)
- iv. Variances are identified and are tweaked based on known data or other trends

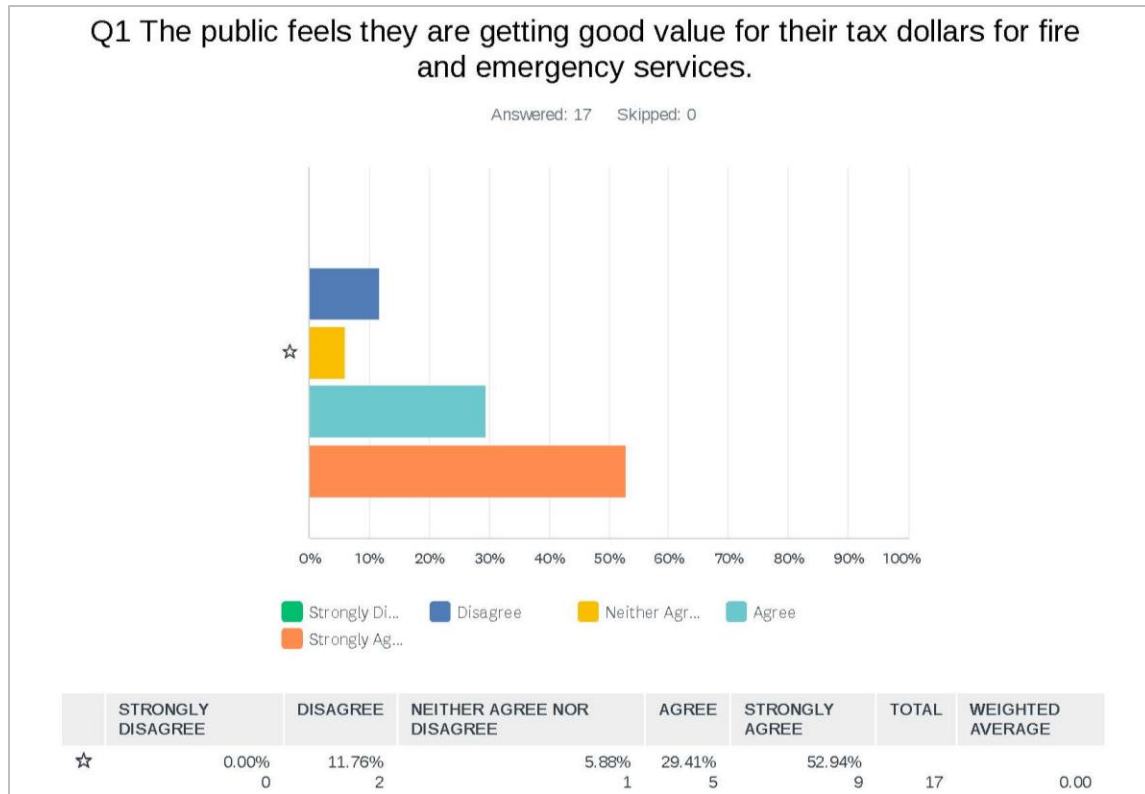
C. Response Polygons

- i. Identify general area of response from the outer most limits driven
- ii. Also identify response zones for mutual aid
- iii. Identify gaps in response
- iv. Aid in the development of Fire Zones for response
- v. Assist in the identification of new stations
- vi. Also identifies needs to move stations to another location, as required

Additional Analysis

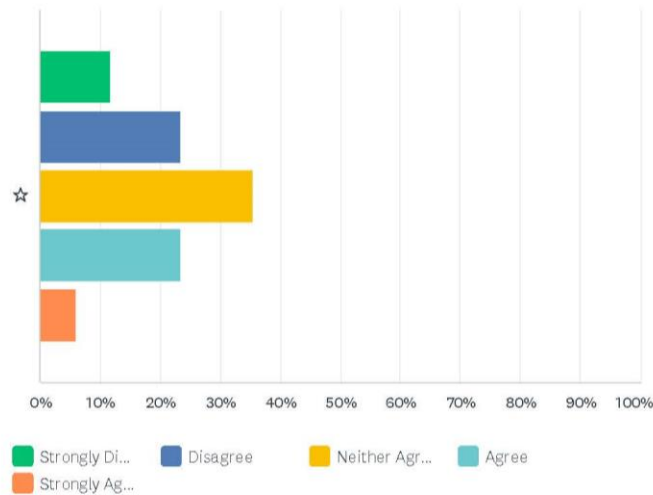
- A. Out of Scope Analysis (needs further discussion with client)
 - i. Transition from project to operationally based:
 - Specific distance and travel
 - Based on time of day
 - Based on time of year
 - Call volume
 - Call types
 - Modeling
 - Scripting for batch work
- B. Data Availability
 - i. When data available from clients is detailed enough, it is used
 - ii. Not all data is detailed enough, and assumptions are made
- C. Analysis
 - i. Additional analysis can be performed (as reduction of road speeds to an intersection)
 - For above example, identification of intersections can be complex, and data not always available:
 - Stop Sign
 - 3-Way Stop
 - Yield
 - Lights
 - Flashing Light
 - ii. Tends to be time consuming
 - Clients not willing to engage cost of this project
 - Levels of data may not be accessible
 - Missing detail
 - Usually is a one-off project and new data being typically not leveraged

Appendix D: Online Firefighter Questionnaire Results



Q2 The public has a good understanding of the fire service and its capabilities.

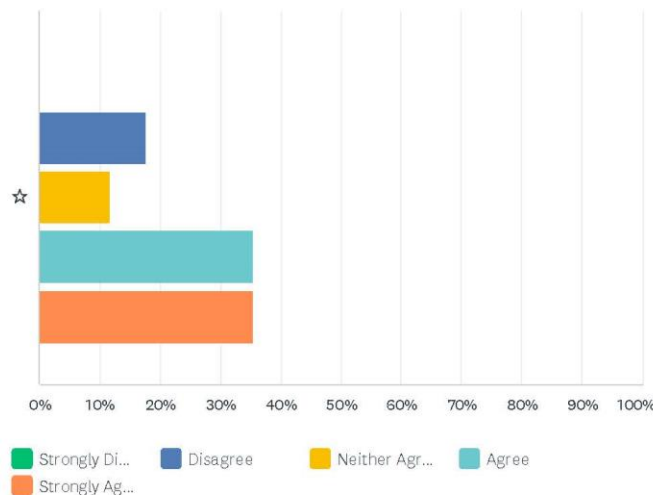
Answered: 17 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	11.76%	23.53%	35.29%	23.53%	5.88%	17	0.00
	2	4	6	4	1		

Q3 Your community receives adequate fire/rescue protection.

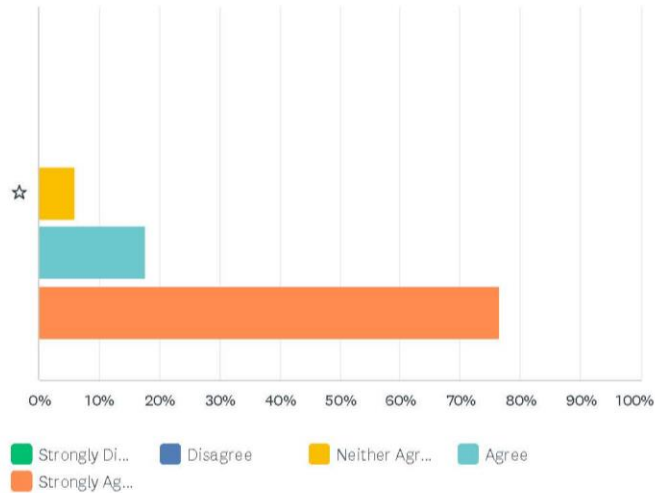
Answered: 17 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	0.00%	17.65%	11.76%	35.29%	35.29%	17	0.00
	0	3	2	6	6		

Q4 Based on the rate of community and economic growth, fire service demands will increase in the future.

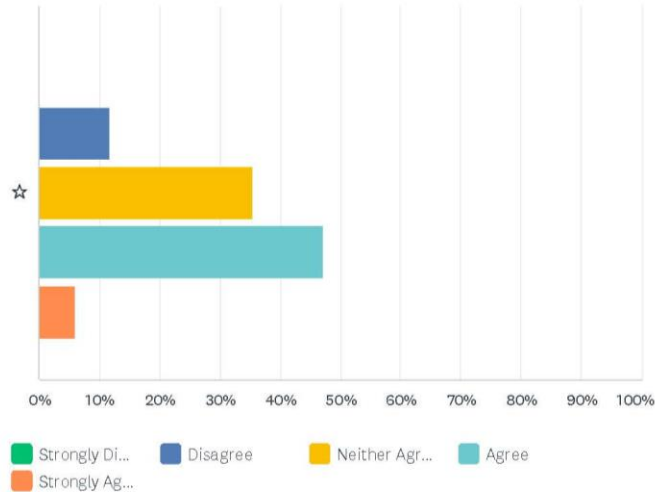
Answered: 17 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE OR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	0.00%	0.00%	5.88%	17.65%	76.47%	17	0.00
	0	0	1	3	13	17	

Q5 The community has adequate alternate fire risk reduction strategies (e.g. residential sprinklers, FireSmart program, public education).

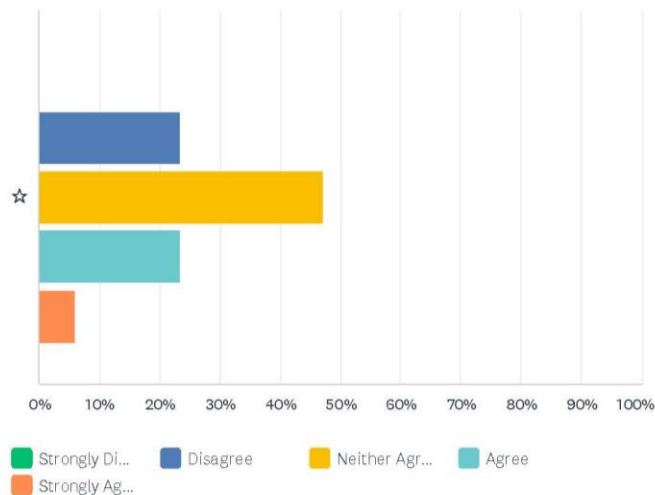
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	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	0.00%	11.76%	35.29%	47.06%	5.88%	17	0.00
	0	2	6	8	1		

Q7 The fire service's current response model is adequately staffed for fire/rescue response.

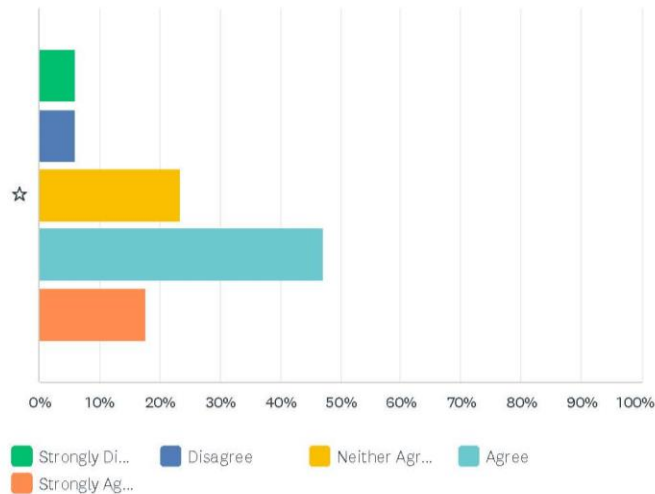
Answered: 17 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	0.00%	23.53%	47.06%	23.53%	5.88%	17	0.00
	0	4	8	4	1		

Q8 The fire service's policies/procedures reflect fire/rescue industry best practices.

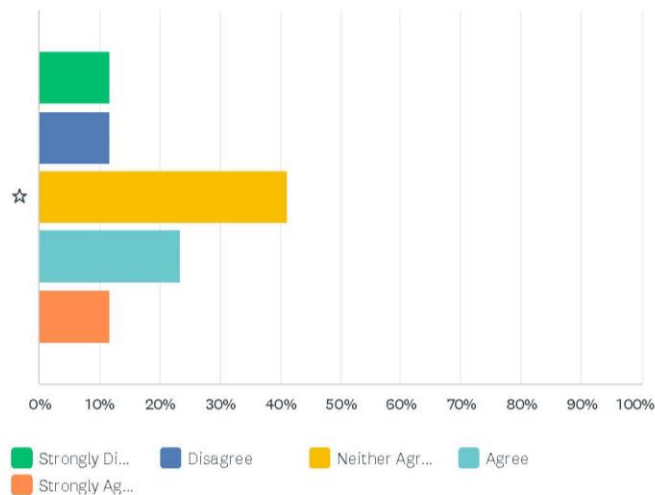
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	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	5.88%	5.88%	23.53%	47.06%	17.65%	17	0.00
	1	1	4	8	3		

Q9 Medical responses are over tasking the service's response capacity.

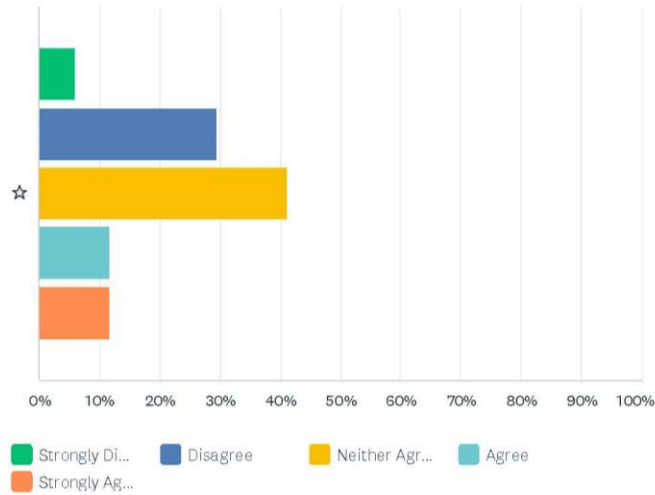
Answered: 17 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	11.76%	11.76%	41.18%	23.53%	11.76%	17	0.00
	2	2	7	4	2		

Q10 Your fire service experiences a high rate of turnover.

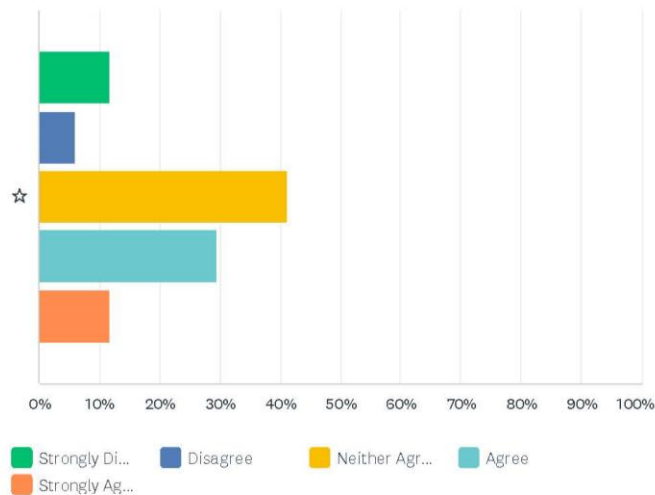
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	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	5.88%	29.41%	41.18%	11.76%	11.76%	17	0.00
	1	5	7	2	2		

Q11 Your current recruiting program is effective.

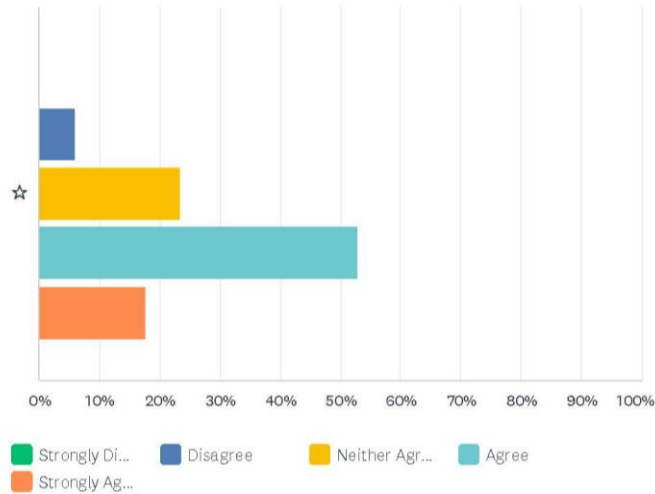
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	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	11.76%	5.88%	41.18%	29.41%	11.76%	17	0.00
	2	1	7	5	2		

Q12 The current level of live-fire and specialty team training is adequate for the services provided.

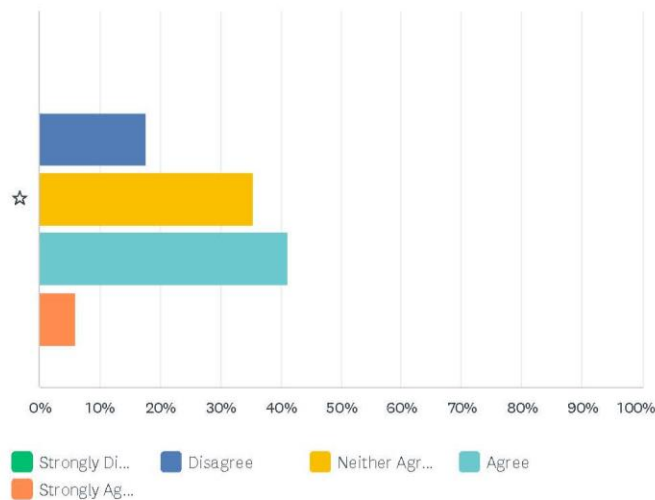
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	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	0.00%	5.88%	23.53%	52.94%	17.65%	17	0.00
	0	1	4	9	3	17	0.00

Q13 The current level of theoretical fire/rescue or leadership training you receive is adequate.

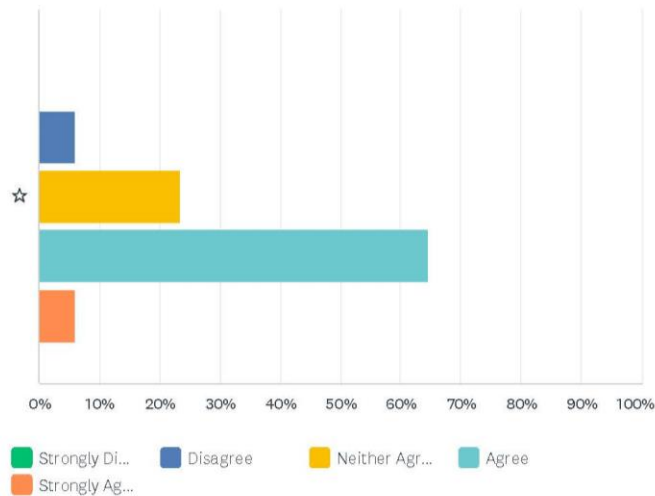
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	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	0.00%	17.65%	35.29%	41.18%	5.88%	17	0.00
	0	3	6	7	1	17	0.00

Q14 You receive adequate training to maintain competencies and certifications.

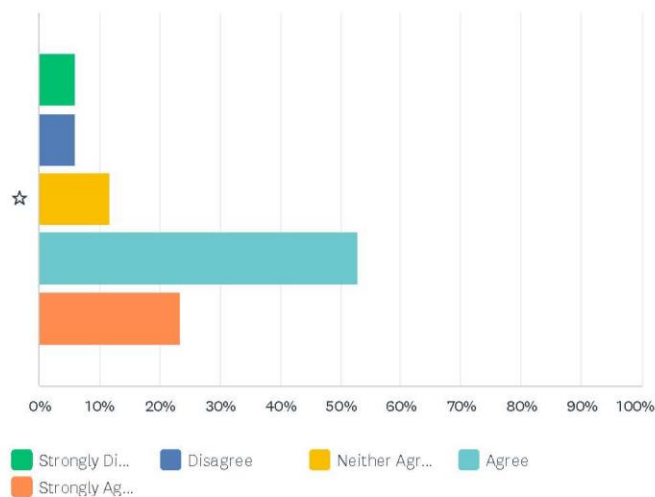
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	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	0.00%	5.88%	23.53%	64.71%	5.88%	17	0.00
	0	1	4	11	1		

Q15 Recruits are adequately trained before they are assigned to full duty.

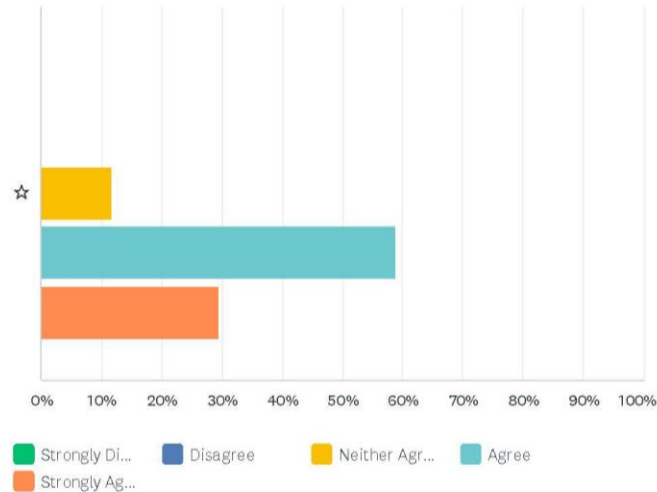
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	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	5.88%	5.88%	11.76%	52.94%	23.53%	17	0.00
	1	1	2	9	4		

Q16 The service is adequately resourced with small equipment (i.e. SCBA, light duty vehicles, loose equipment and consumables).

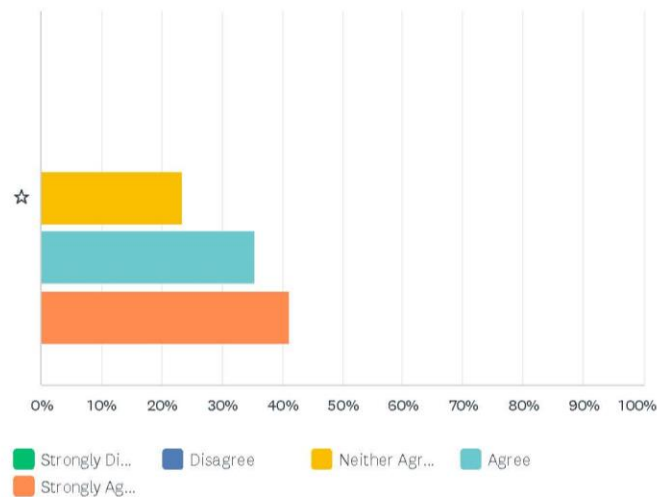
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	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	0.00%	0.00%	11.76%	58.82%	29.41%	17	0.00
	0	0	2	10	5		

Q17 The current vehicle fleet of fire apparatus provides the capacity/capability necessary to meet the demands and types of responses.

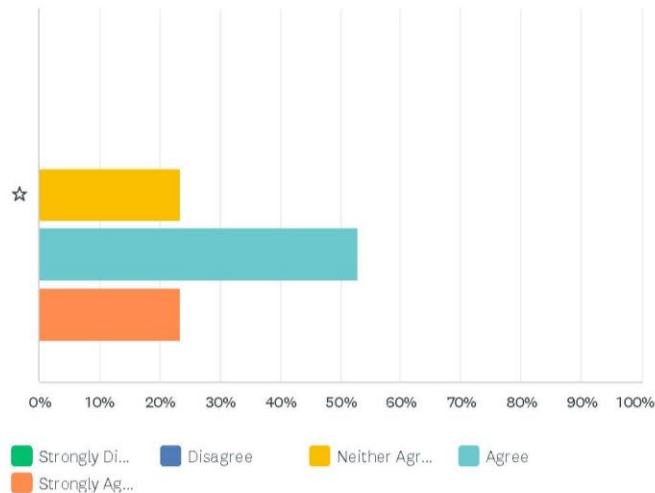
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	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	0.00%	0.00%	23.53%	35.29%	41.18%	17	0.00
	0	0	4	6	7		

Q18 Fire apparatus are appropriately life-cycled.

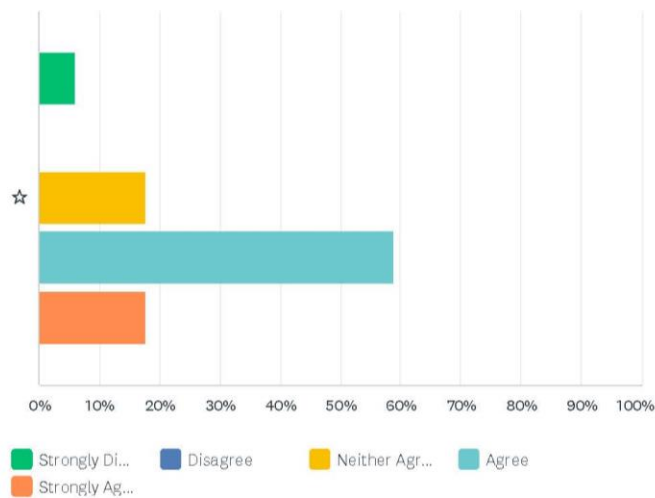
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	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	0.00%	0.00%	23.53%	52.94%	23.53%	17	0.00
	0	0	4	9	4		

Q19 The maintenance of fire apparatus is adequate.

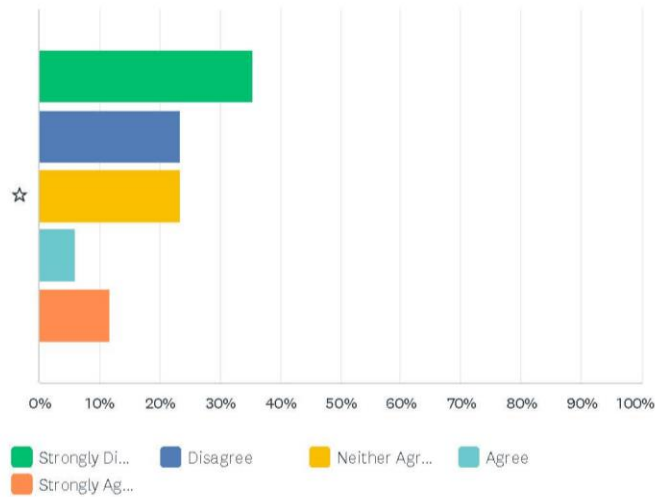
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	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	5.88%	0.00%	17.65%	58.82%	17.65%	17	0.00
	1	0	3	10	3		

Q20 The current fire station is functional and meet the operational requirements of the department.

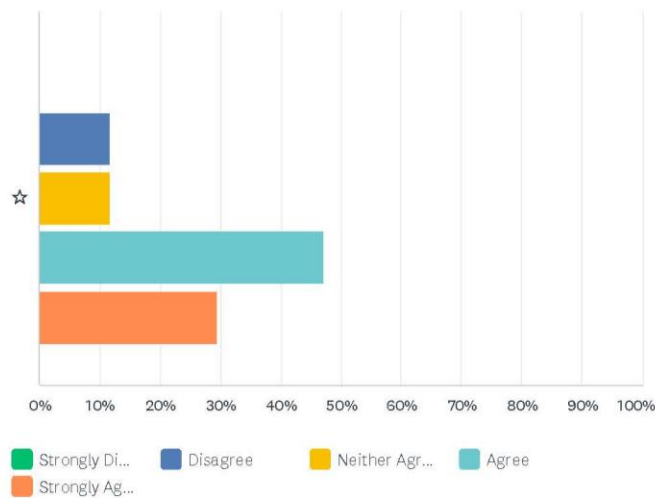
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	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	35.29%	23.53%	23.53%	5.88%	11.76%	17	0.00
	6	4	4	1	2		

Q21 The current fire station is strategically located for adequate geographic coverage.

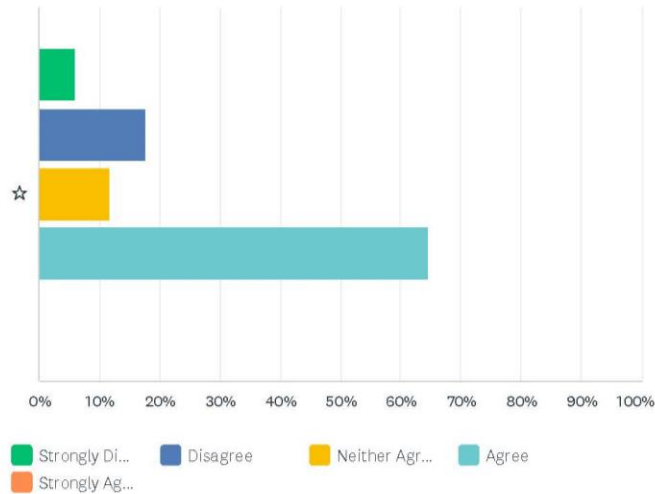
Answered: 17 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	0.00%	11.76%	11.76%	47.06%	29.41%	17	0.00
	0	2	2	8	5		

Q22 The service keeps pace with leading technology in communications systems.

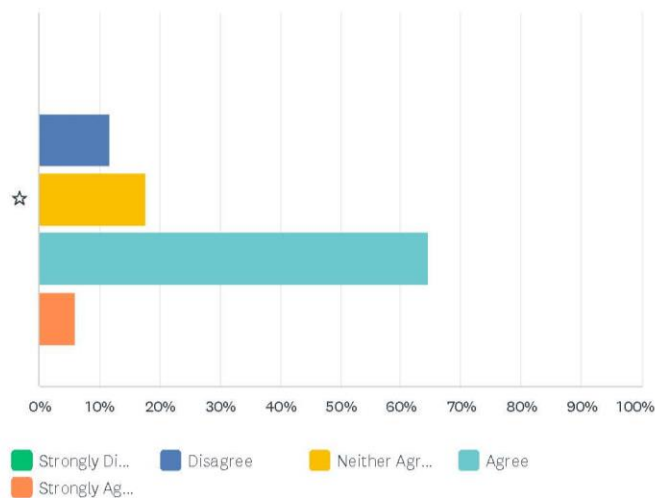
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	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	5.88%	17.65%	11.76%	64.71%	0.00%	17	0.00
	1	3	2	11	0		

Q23 The service keeps pace with leading technology in records management system and mobile CAD systems.

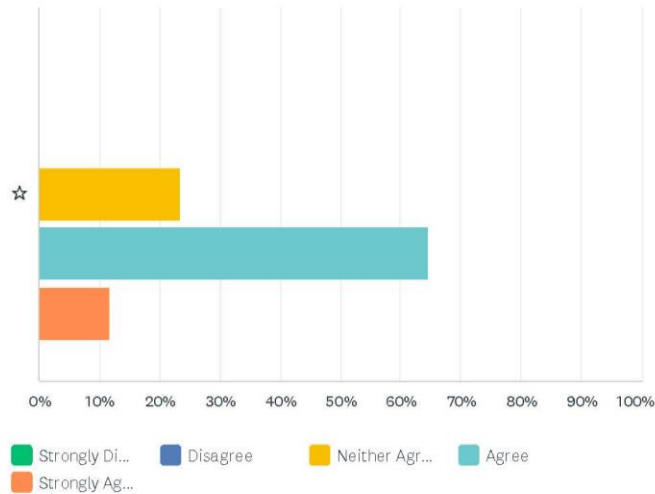
Answered: 17 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	0.00%	11.76%	17.65%	64.71%	5.88%	17	0.00
	0	2	3	11	1		

Q24 The service keeps pace with leading technology in station alerting and pre-alerting.

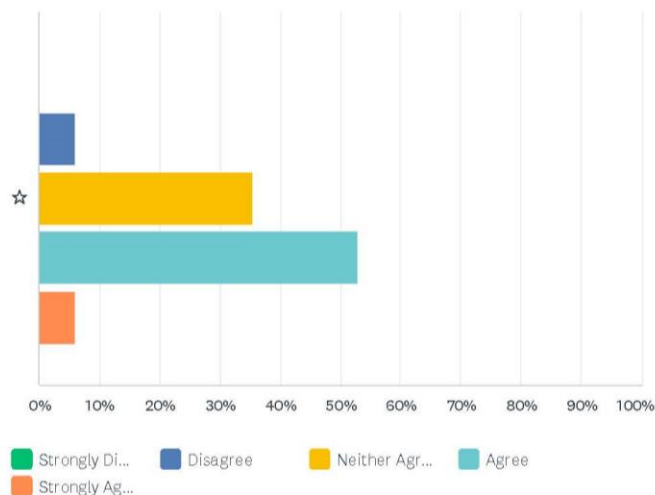
Answered: 17 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	0.00%	0.00%	23.53%	64.71%	11.76%	17	0.00
	0	0	4	11	2		

Q25 The service keeps pace with leading technology in records management and fire reporting systems.

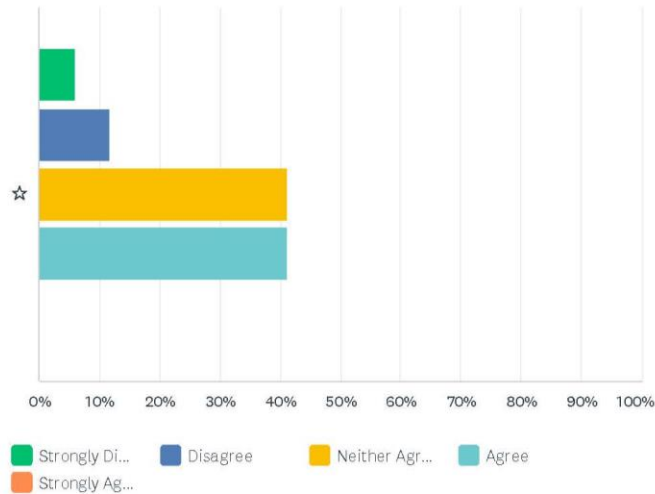
Answered: 17 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	0.00%	5.88%	35.29%	52.94%	5.88%	17	0.00
	0	1	6	9	1		

Q26 The service keeps pace with leading technology in online learning management systems (LMS).

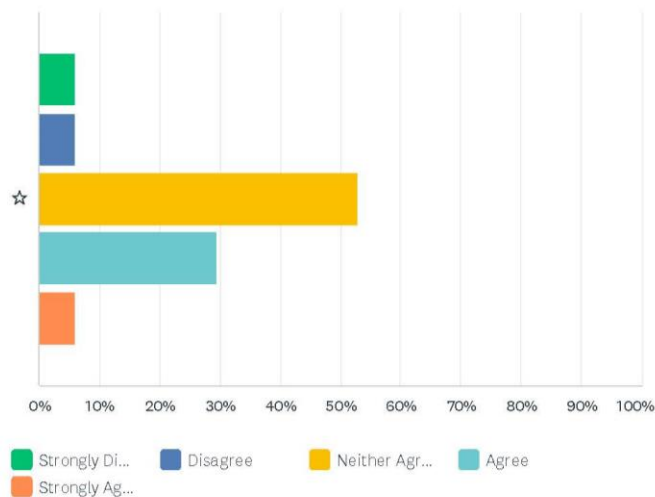
Answered: 17 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	5.88%	11.76%	41.18%	41.18%	0.00%	17	0.00
	1	2	7	7	0		

Q27 The service keeps pace with leading technology in traffic pre-emption system.

Answered: 17 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	5.88%	5.88%	52.94%	29.41%	5.88%	17	0.00
	1	1	9	5	1		

Appendix E: West Nipissing Fire Apparatus and Light Duty Fleet

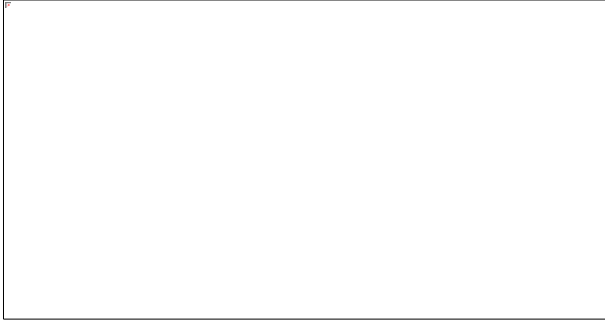
Pumper 1		Tanker 1	
			
Unit Number:	Pumper 1	Unit Number:	Tanker 1
Year/Make:	2012 Spartan	Year/Make:	1999 Freightliner
Type:	Pumper Truck	Type:	Tanker truck
Pump Capacity:	1250 GPM @ 150 PSI	Pump Capacity:	625 GPM @ 150 PSI
Tank Capacity:	1000 Gallons Water	Tank Capacity:	2000 Gallons Water
Replacement	2027	Replacement	2024
Usage:	Suppression/Rescue Services	Usage:	Suppression/Rescue Services
Rescue 1		Ladder 1	
			
Unit Number:	Rescue 1	Unit Number:	Ladder 1
Year/Make:	2001 Spartan	Year/Make:	2011 HME
Type:	Special Equipment Rescue	Type:	Elevated device
Pump Capacity:	N/A	Pump Capacity:	1500 GPM @150 PSI
Tank Capacity:	N/A	Tank Capacity:	500 Gallons Water
Replacement	20225	Replacement	2036
Usage:	Suppression/Rescue Services	Usage:	Suppression/Rescue Services

Command 1		Command 2	
			
Unit Number:	Command 1	Unit Number:	Command 2
Year/Make:	2019 F150	Year/Make:	2016 F250 (Diesel)
Type:	Command	Type:	Incident command/ Fire Prevention
Pump Capacity:	N/A	Pump Capacity:	N/A
Tank Capacity:	N/A	Tank Capacity:	N/A
Replacement:	2044	Replacement	2031
Usage:	Command/ Prevention Vehicle	Usage:	Command/ Prevention Vehicle
Air Boat		Air Boat	
			
Unit Number:	Command 3	Unit Number:	Air Boat
Year/Make:	2014 F250	Year/Make:	2005 1000 Island
Type:	Command/ Prevention	Type:	Air boat/ rescue marine unit
Pump Capacity:	N/A	Pump Capacity:	N/A
Tank Capacity:	N/A	Tank Capacity:	N/A
Replacement:	2029	Replacement:	2035
Usage:	Command/ Prevention Vehicle	Usage:	Ice & Water rescue

Fire Boat		6-Wheeler	
			
Unit Number:	Fire Boat	Unit Number:	6-Wheeler
Year/Make:	2011 Stanley	Year/Make:	2001 Polaris
Type:	Fire Boat	Type:	Off Road vehicle
Pump Capacity:	500 GPM	Pump Capacity:	N/A
Tank Capacity:	N/A	Tank Capacity:	N/A
Replacement:	N/A	Replacement	N/A
Usage:	Offshore Fires/ Rescue	Usage:	Brush Fires
UTV		Snowmobile	
			
Unit Number:	UTV	Unit Number:	Snowmobile (2)
Year/Make:	2018 Honda Pioneer 1000	Year/Make:	2015 SkiDoo
Type:	Off Road vehicle	Type:	Snow machine
Pump Capacity:	N/A	Pump Capacity:	N/A
Tank Capacity:	N/A	Tank Capacity:	N/A
Replacement:	N/A	Replacement:	N/A
Usage:	Remote rescues and brush fires	Usage:	Winter rescues and fires

Boat 2		Pumper 2	
			
Unit Number:	Boat 2	Unit Number:	Pumper 2
Year/Make:	2022 Bayview	Year/Make:	2008 GMC
Type:	Watercraft	Type:	Pumper Truck
Pump Capacity:	N/A	Pump Capacity:	750 GPM
Tank Capacity:	N/A	Tank Capacity:	300 Gallons Water
Replacement:	N/A	Replacement	2033
Usage:	Water rescues and fires on smaller waterways	Usage:	Pumper at station 2 and 3
Tomiko 3		Pumper 4	
			
Unit Number:	Tomiko 3	Unit Number:	Pumper 4
Year/Make:	2009 Chevrolet	Year/Make:	2006 International
Type:	Support Vehicle	Type:	Pumper Truck
Pump Capacity:	N/A	Pump Capacity:	1025 GPM
Tank Capacity:	N/A	Tank Capacity:	1000 gallons
Replacement:	2026	Replacement:	2031
Usage:	Support vehicle & portable pump	Usage:	Station 4 pumper

Tanker 4		Pumper 5	
			
Unit Number:	Tanker 4	Unit Number:	Pumper 5
Year/Make:	1999 Pierce	Year/Make:	2017 Ford
Type:	Tanker truck	Type:	Mini pumper truck
Pump Capacity:	525 GPM	Pump Capacity:	1050 GPM
Tank Capacity:	2000 Gallons Water	Tank Capacity:	300 Gallons Water
Replacement:	2026	Replacement:	2042
Usage:	Water Shuttle	Usage:	Station 5 Pumper
Tanker 5		Pumper 6	
			
Unit Number:	Tanker 5	Unit Number:	Pumper 6
Year/Make:	2004 Sterling	Year/Make:	2009 Kenworth
Type:	Tanker Truck	Type:	Pumper truck
Pump Capacity:	525 GPM	Pump Capacity:	1250 GPM
Tank Capacity:	2000 Gallons Water	Tank Capacity:	1000 Gallons Water
Replacement:	2027	Replacement:	2029
Usage:	Water Shuttle	Usage:	Station 6 pumper

Tanker 6		Pumper 7	
			
Unit Number:	Tanker 6	Unit Number:	Pumper 7
Year/Make:	2000 GMC	Year/Make:	2007 Kenworth
Type:	Tanker Truck	Type:	Pumper Truck
Pump Capacity:	N/A	Pump Capacity:	1250 GPM
Tank Capacity:	2000 Gallons Water	Tank Capacity:	1000 Gallons Water
Replacement:	2025	Replacement:	2027
Usage:	Water Shuttle	Usage:	Station 7 Pumper
Tanker 7		Pumper 8	
			
Unit Number:	Tanker 7	Unit Number:	Pumper 8
Year/Make:	2000 GMC	Year/Make:	2019 Ford
Type:	Tanker Truck	Type:	Mini pumper truck
Pump Capacity:	N/A	Pump Capacity:	1050 GPM
Tank Capacity:	2000 Gallons Water	Tank Capacity:	300 Gallons Water
Replacement:	2025	Replacement:	2044
Usage:	Water Shuttle	Usage:	Station 8 pumper

Tanker 8		Pumper 9	
			
Unit Number:	Tanker 8	Unit Number:	Pumper 9
Year/Make:	2000 GMC	Year/Make:	2001 Kenworth
Type:	Tanker Truck	Type:	Pumper Truck
Pump Capacity:	525 GPM	Pump Capacity:	1050 GPM
Tank Capacity:	2000 Gallons Water	Tank Capacity:	1000 Gallons Water
Replacement:	2025	Replacement	2027
Usage:	Water Shuttle	Usage:	Station 9 Pumper

Appendix F: Mandatory Certification for Fire Protection Services

Item	Fire protection service	Minimum Certification Standard	Compliance Deadline
1	Firefighter Exterior Attack: Fire suppression operations from the exterior of the building only.	The following job performance requirements of NFPA 1001, “Standard for Fire Fighter Professional Qualifications”, 2019 Edition, Chapter 4 (Firefighter I) and Chapter 5 (Firefighter II): 4.1, 4.2, 4.3.1, 4.3.2, 4.3.3, 4.3.6, 4.3.7, 4.3.8, 4.3.10 (A1-A9, B1-B3, B4 (exterior stairway), B5-B10), 4.3.15, 4.3.16, 4.3.17, 4.3.18, 4.3.19, 4.3.20, 4.3.21, 4.5 5.1, 5.2, 5.3.1, 5.3.2 (A1-A4), 5.3.3, 5.3.4, 5.4.2, 5.5.3, 5.5.4, 5.5.5	July 1, 2026
2	Firefighter Exterior Attack and auto extrication: Fire suppression operations from the exterior of the building only and auto extrication rescue.	All job performance requirements in item 1 and the following job performance requirements of NFPA 1001, “Standard for Fire Fighter Professional Qualifications”, 2019 Edition, Chapter 5 (Firefighter II): 5.4.1	July 1, 2026
3	Firefighter Exterior Attack and hazardous materials response: Fire suppression operations from the exterior of the building only and Operations-level hazardous materials response.	All job performance requirements in item 1, all job performance requirements of NFPA 1072, “Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications”, 2017 Edition, Chapter 5 (Operations) and the following job performance requirements of Chapter 6 (Operations Mission Specific): 6.2 and 6.6	July 1, 2026

Item	Fire protection service	Minimum Certification Standard	Compliance Deadline
4	Firefighter Exterior Attack, auto extrication and hazardous materials response: Fire suppression operations from the exterior of the building only, automobile extrication rescue and Operations-level hazardous materials response.	All job performance requirements in items 1, 2 and 3.	July 1, 2026
5	Firefighter Interior Attack: Fire suppression operations that enter the interior of the building and can perform rescue.	All job performance requirements in item 1 and the following job performance requirements of NFPA 1001, “Standard for Fire Fighter Professional Qualifications”, 2019 Edition, Chapter 4 (Firefighter I) and Chapter 5 (Firefighter II): 4.3.4, 4.3.9, 4.3.10 (A10-A11, B4 (interior stairway), B11), 4.3.11, 4.3.12, 4.3.13, 4.3.14 5.3.2 (A5-A9, B1-B6)	July 1, 2026
6	Firefighter Interior Attack and auto extrication: Fire suppression operations that enter the interior of the building and can perform rescue and automobile extrication rescue.	All job performance requirements in item 5 and the following job performance requirements of NFPA 1001, “Standard for Fire Fighter Professional Qualifications”, 2019 Edition, Chapter 5 (Firefighter II): 5.4.1	July 1, 2026
7	Firefighter Interior Attack and hazardous materials response: Fire suppression operations that enter the interior of the building and Operations-level hazardous materials response.	All job performance requirements in item 5, all job performance requirements of NFPA 1072, “Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications”, 2017 Edition, Chapter 5 (Operations) and the following job performance requirements of Chapter 6 (Operations Mission Specific): 6.2 and 6.6	July 1, 2026

Item	Fire protection service	Minimum Certification Standard	Compliance Deadline
8	Firefighter Interior Attack, auto extrication and hazardous materials response: Fire suppression operations that enter the interior of the building and can perform rescue, automobile extrication rescue and Operations-level hazardous materials response (full-service firefighter).	All job performance requirements of NFPA 1001, "Standard for Fire Fighter Professional Qualifications", 2019 Edition, Chapter 5 (Firefighter II).	July 1, 2026
9	Team Lead Exterior Attack: Supervision of firefighters that provide fire suppression operations from the exterior of the building only.	All job performance requirements in item 1 and the following job performance requirements of NFPA 1021, "Standard for Fire Officer Professional Qualifications", 2020 edition, Chapter 4 (Fire Officer I): 4.1.1, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.4.1, 4.4.2, 4.4.4, 4.4.5, 4.5.3, 4.6, 4.7.1, 4.7.3	July 1, 2026
10	Team Lead Exterior Attack and auto extrication: Supervision of firefighters that provide fire suppression operations from the exterior of the building only or that provide auto extrication rescue.	All job performance requirements in item 2 and the following job performance requirements of NFPA 1021, "Standard for Fire Officer Professional Qualifications", 2020 edition, Chapter 4 (Fire Officer I): 4.1.1, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.4.1, 4.4.2, 4.4.4, 4.4.5, 4.5.3, 4.6, 4.7.1, 4.7.3	July 1, 2026
11	Team Lead Exterior Attack and hazardous materials response: Supervision of firefighters that provide fire suppression operations from the exterior of the building only or that provide Operations-level hazardous materials response.	All job performance requirements in item 3 and the following job performance requirements of NFPA 1021, "Standard for Fire Officer Professional Qualifications", 2020 edition, Chapter 4 (Fire Officer I): 4.1.1, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.4.1, 4.4.2, 4.4.4, 4.4.5, 4.5.3, 4.6, 4.7.1, 4.7.3	July 1, 2026

Item	Fire protection service	Minimum Certification Standard	Compliance Deadline
12	Team Lead Exterior Attack, auto extrication and hazardous materials: Supervision of firefighters that provide fire suppression operations from the exterior of the building only or that provide automobile extrication rescue or Operations-level hazardous materials response.	All job performance requirements in item 4, and the following job performance requirements of NFPA 1021, “Standard for Fire Officer Professional Qualifications”, 2020 edition, Chapter 4 (Fire Officer I): 4.1.1, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.4.1, 4.4.2, 4.4.4, 4.4.5, 4.5.3, 4.6, 4.7.1, 4.7.3	July 1, 2026
13	Team Lead Interior Attack: Supervision of firefighters that provide fire suppression operations from the interior of the building and can perform rescue.	All job performance requirements in item 5 and the following job performance requirements of NFPA 1021, “Standard for Fire Officer Professional Qualifications”, 2020 edition, Chapter 4 (Fire Officer I): 4.1.1, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.4.1, 4.4.2, 4.4.4, 4.4.5, 4.5.3, 4.6, 4.7.1, 4.7.3	July 1, 2026
14	Team Lead Interior Attack and auto extrication: Supervision of firefighters that provide fire suppression operations from the interior of the building and can perform rescue or that provide automobile extrication rescue.	All job performance requirements in item 6 and the following job performance requirements of NFPA 1021, “Standard for Fire Officer Professional Qualifications”, 2020 edition, Chapter 4 (Fire Officer I): 4.1.1, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.4.1, 4.4.2, 4.4.4, 4.4.5, 4.5.3, 4.6, 4.7.1, 4.7.3	July 1, 2026
15	Team Lead Interior Attack and hazardous materials response: Supervision of firefighters that provide fire suppression operations from the interior of the building and can perform rescue or that provide Operations-level hazardous materials response.	All job performance requirements in item 7 and the following job performance requirements of NFPA 1021, “Standard for Fire Officer Professional Qualifications”, 2020 edition, Chapter 4 (Fire Officer I): 4.1.1, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.4.1, 4.4.2, 4.4.4, 4.4.5, 4.5.3, 4.6, 4.7.1, 4.7.3	July 1, 2026

Item	Fire protection service	Minimum Certification Standard	Compliance Deadline
16	Team Lead Interior Attack, auto extrication and hazardous materials response: Supervision of firefighters that provide fire suppression operations from the interior of the building and can perform rescue or that provide automobile extrication rescue or Operations-level hazardous materials response (full-service fire officer).	All job performance requirements of NFPA 1021 “Standard for Fire Officer Professional Qualifications”, 2020 edition, Chapter 4 (Fire Officer I).	July 1, 2026
17	Pump Operations: Operation of a pumper apparatus without driving the apparatus, or where the apparatus does not require a class D licence.	All job performance requirements of NFPA 1002, “Standard for Fire Apparatus Driver/Operator Professional Qualifications”, 2017 Edition, Chapter 5 (Apparatus Equipped with Fire Pump), without pre-requisites in Chapter 4.	July 1, 2026
18	Pump Operations: driver: Driving and operating a pumper apparatus that requires a class D licence.	All job performance requirements in NFPA 1002 “Standard for Fire Apparatus Driver/Operator Professional Qualifications”, 2017 Edition, Chapter 5 (Apparatus Equipped with Fire Pump).	July 1, 2026
19	Fire Prevention/Inspection Level I: conducting fire and life safety inspections.	All job performance requirements of NFPA 1031, “Standard for Professional Qualifications for Fire Inspector and Plan Examiner”, 2014 Edition, Chapter 4 (Fire Inspector I).	July 1, 2026
20	Fire Prevention/Inspection Level II: conducting fire and life safety inspections including in facilities that store, handle or use flammable/combustible liquids.	All job performance requirements in item 19 and NFPA 1031, “Standard for Professional Qualifications for Fire Inspector and Plan Examiner”, 2014 Edition, Chapter 5 (Fire Inspector II).	July 1, 2026
21	Fire Investigator: conducting fire cause and origin investigations.	All job performance requirements of NFPA 1033, “Professional Qualifications for Fire Investigator”, 2014 Edition, Chapter 4 (Fire Investigator).	July 1, 2026

Item	Fire protection service	Minimum Certification Standard	Compliance Deadline
22	Fire and Life Safety Educator: providing fire and life safety education.	All job performance requirements of NFPA 1035, “Standard on Fire and Life Safety Educator, Public Information Officer, Youth Firesetter Intervention Specialist, and Youth Firesetter Program Manager Professional Qualifications”, 2015 Edition, Chapter 4 (Fire and Life Safety Educator I).	July 1, 2026
23	Training Officer Level I: providing training and education to other fire personnel.	All job performance requirements of NFPA 1041, “Standard for Fire and Emergency Services Instructor Professional Qualifications”, 2019 Edition, Chapter 4 (Fire and Emergency Services Instructor I).	July 1, 2026
24	Training Officer Level II: providing training and education to other fire personnel including lead instructor roles at live fire and above or below grade technical rescue practical training.	All job performance requirements in item 23 and NFPA 1041, “Standard for Fire and Emergency Services Instructor Professional Qualifications”, 2019 Edition, Chapter 5 (Fire and Emergency Services Instructor II).	July 1, 2026
25	Emergency Communicators Level I: taking emergency calls.	All job performance requirements of NFPA 1061, “Standard for Public Safety Telecommunications Personnel Professional Qualifications”, 2018 Edition, Chapter 4 (Public Safety Telecommunicator I).	July 1, 2026
26	Emergency Communicators Level II: taking emergency calls and dispatching emergency vehicles.	All job performance requirements in item 25 and NFPA 1061, “Standard for Public Safety Telecommunications Personnel Professional Qualifications”, 2018 Edition, Chapter 5 (Public Safety Telecommunicator II).	July 1, 2026

Item	Fire protection service	Minimum Certification Standard	Compliance Deadline
27	Incident Safety Officers: undertaking the primary role of incident safety officer at emergency calls.	All job performance requirements of NFPA 1521, “Standard for Fire Department Safety Officer Professional Qualifications”, 2020 Edition, Chapter 5 (Incident Safety Officer).	July 1, 2026
28	Hazardous Materials Response — Operations Mission Specific Level: responding to emergencies involving hazardous materials at the Operations Mission Specific Level.	All job performance requirements of NFPA 1072, “Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications”, 2017 Edition, Chapter 6 (Operations Mission Specific)	July 1, 2026
29	Hazardous Materials Response — Technician Level: responding to emergencies involving hazardous materials at the Technician Level.	All job performance requirements of NFPA 1072, “Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications”, 2017 Edition, Chapter 7 (Hazardous Materials Technician).	July 1, 2026
30	Rope Rescue — Operations: rope rescue at the Operations Level.	The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 5 (Rope Rescue) (Operations): 5.2	July 1, 2028
31	Rope Rescue — Technician: rope rescue at the Technician Level.	The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 5 (Rope Rescue) (Technician): 5.3	July 1, 2028

Item	Fire protection service	Minimum Certification Standard	Compliance Deadline
32	Structural Collapse — Operations: structural collapse rescue at the Operations Level.	The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 6 (Structural Collapse Rescue) (Operations): 6.2	July 1, 2028
33	Structural Collapse — Technician: structural collapse rescue at the Technician Level.	The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 6 (Structural Collapse Rescue) (Technician): 6.3	July 1, 2028
34	Confined Space — Operations: confined space rescue at the Operations Level.	The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 7 (Confined Space Rescue) (Operations): 7.2	July 1, 2028
35	Confined Space — Technician: confined space rescue at the Technician Level.	The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 7 (Confined Space Rescue) (Technician): 7.3	July 1, 2028

Item	Fire protection service	Minimum Certification Standard	Compliance Deadline
36	Trench Rescue — Operations: trench rescue at the Operations Level.	The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 12 (Trench Rescue) (Operations): 12.2	July 1, 2028
37	Trench Rescue — Technician: trench rescue at the Technician Level.	The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 12 (Trench Rescue) (Technician): 12.3	July 1, 2028
38	Surface Water Rescue — Operations: surface water rescue at the Operations Level.	The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 17 (Surface Water Rescue) (Operations): 17.2	July 1, 2028
39	Surface Water Rescue — Technician: surface water rescue at the Technician Level.	The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 17 (Surface Water Rescue) (Technician): 17.3	July 1, 2028

Item	Fire protection service	Minimum Certification Standard	Compliance Deadline
40	Swift Water Rescue — Operations: swift water rescue at the Operations Level.	The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 18 (Swiftwater Rescue) (Operations): 18.2	July 1, 2028
41	Swift Water Rescue — Technician: swift water rescue at the Technician Level.	The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 18 (Swiftwater Rescue) (Technician): 18.3	July 1, 2028
42	Ice Water Rescue — Operations: ice water rescue at the Operations Level.	The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 20 (Ice Rescue) (Operations): 20.2	July 1, 2028
43	Ice Water Rescue — Technician: ice water rescue at the Technician Level.	The following job performance requirements of NFPA 1006, “Standard for Technical Rescue Personnel Professional Qualifications”, 2021 Edition, Chapter 20 (Ice Rescue) (Technician): 20.3	July 1, 2028