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For Information Only

Fire Services Technical Response and Hazardous Materials (HAZMAT) Response

Resolution

For Information Only

Relationship to the Strategic Plan / Health Impact Assessment

This report refers to operational matters.

Report Summary

This report describes the Greater Sudbury Fire Services response to technical incidents and provides an update to the hazardous materials response program currently under development.

Financial Implications

There are no financial implications associated with this report.

Signed By

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Purpose

This report describes the Greater Sudbury Fire Services response to technical incidents and provides an update to the hazardous materials response program currently under development. These two disciplines represent core functions under the National Fire Protection Association (NFPA) standard 1006 and 1072 being that these are the focus of Provincial recommendations for delivery and training. Greater Sudbury Fire Services provides training and response in several technical disciplines across the entire municipality. This is done following the guidelines set forth under the Occupational Health and Safety Act (Section 21 Guidance Notes), the Office of the Ontario Fire Marshal (Academic Standards and Evaluation), and the National Fire Protection Association.

Executive Summary

The Ontario Fire Marshal released guidance for minimum performance standards on technical response and training with direct communication to Fire Departments in 2018. These job performance requirements (JPR's) ensure objectives, training and response shall be performed safely and competently. The Ontario Fire Marshal communicates to those who perform technical response the dangers of these activities which occur normally under adverse conditions. Maintaining a standard training program following NFPA 1006 is not mandatory but recommended by the Ontario Fire Marshal as a minimum for all rescue operations.

Greater Sudbury Fire Services, under the authority contained within the Establishing and Regulating Bylaw, provides six technical rescue disciplines at various levels of capability. These technical responses are deployed from specific stations, trained in the requisite knowledge to deliver the skill and service required, and who responds to all areas across the municipality.

Within each technical discipline is a defined level of capability of the firefighters:

1. Awareness – This level represents the minimum capability of individuals who provide response to technical rescue incidents, allowing them to identify the technical rescue implications and secure the scene until Operational or Technical level responders arrive.
2. Operations – This level represents the capability of individuals to respond to technical rescue incidents and to identify hazards, use equipment, and apply limited techniques specified in the standard to support and participate in technical rescue incidents.
3. Technician – This level represents the capability of individuals to respond to a technical rescue incident and to identify hazards, use equipment, and apply advanced techniques specified in the standard necessary to coordinate, perform, and supervise technical rescue incidents.

The specific disciplines and capability levels in Greater Sudbury Fire Services are:

1. Rope / High Angle Rescue – Technical Level
2. Vehicle (AutoExtrication) Rescue – Operations Level
3. Surface Water Rescue – Technical Level
4. Swift Water Rescue – Technical Level
5. Ice Rescue – Technical Level
6. Confined Space Rescue – Technical Level

Future considerations and planning are in progress for the following disciplines, which have training programs in various stages of development:

1. Watercraft Rescue – Training program under development
2. Trench Rescue – Training program under development, supported by CGS Water/Wastewater - Equipment procurement underway

Hazardous materials response is performed through a team of trained firefighters who specialize in detecting, containing and removing any release of defined substances in order to control or stabilize an incident. In 2019, Council approved the implementation of a Hazardous Response program to the Technician level by 2022.

The capability level in Greater Sudbury Fire Services for Hazardous Response is:

1. Full Time Firefighters – Awareness Level
2. Volunteer Firefighters – Awareness Level / Maintenance training scheduled (2021)
3. Hazmat Responders – Operations Level scheduled (2021)

The hazardous materials program encompasses incidents such as:

1. Chemical reactions that may overcome a person with fumes.
2. A fuel spill that is not contained and may impact life safety or the environment.
3. A release of chemical(s) from a facility or storage location that may require evacuation.
4. Substances of unknown origin or composition that can be life threatening.

Analysis

As Greater Sudbury has a network of over 3000 kms of traveled roadway, 330 lakes inside its borders, and is home to a vast industrial sector, there are significant risks within the municipality, which require Fire Services to maintain a level of technical response.

The definition of the disciplines that are provided across the municipality are:

1. Rope / High Angle Rescue – Ability to perform rescues using rope systems, which incorporate high or low angle scenarios that are an immediate threat to life safety.
2. Vehicle (Auto Extrication) Rescue – Utilization of specialized rescue tools which are applied to remove trapped occupants from vehicles.
3. Surface Water Rescue – Rescue of person(s) from standing water (water that does not move faster than a walking pace).
4. Swift / Ice Water Rescue – Rescue of person(s) from fast flowing water or water that has frozen to become ice.
5. Confined Space Rescue – The removal of person(s) from a space that has not been constructed for human occupancy or where hazards exist due to location or contents, such as manholes and underground utility vaults.

Training dedicated to the current technical response disciplines and the hazardous materials program encompasses over 600 hours of specific, instructor led theory and practical exercises. In addition, each discipline has a number of hours which must be completed annually in order to maintain certification and proficiency in that particular technical program.

Training hours for each specific discipline are:

1. Rope / High Angle Rescue – 140 Hours
2. Vehicle (Auto Extrication) Rescue – 178 Hours
3. Surface Water Rescue – 92 Hours
4. Swift / Ice Water Rescue – 230 Hours

Annual certification and proficiency hours for each specific discipline are set at 20% of the total training hours of each technical discipline. As an example, each year Swift/Ice Water responders will train a minimum 46 hours in this skill. To maintain certification, every five years, the entire discipline training program must be completed.

The extremely complex and technical nature of these responses dictate calculated risk mitigation plans that begin with a specialized dispatching protocol that allocates proper resources and trained personnel to the emergency incident.

Full Time Firefighter station assignment for Technical Response is as follows:

1. Station 1 (Van Horne) – Rope / High Angle / Vehicle Rescue
2. Station 2 (Minnow Lake) – Surface / Swift / Ice / Vehicle Rescue
3. Station 3 (New Sudbury) – Hazardous Material / Vehicle Rescue
4. Station 4 (Long Lake) – Surface / Swift / Ice / Vehicle Rescue
5. Station 16 (Val Therese) – Hazardous Material / Vehicle Rescue

Volunteer Firefighter station assignment for Technical Response is as follows:

1. Stations 6 (Waters) / 7 (Lively) / 8 (Whitefish) / 10 (Azilda) / 11 (Chelmsford) / 12 (Dowling) / 18 (Capreol) / 20 (Garson) / 23 (Coniston) / 24 (Wahnapitae) – Vehicle Rescue

Response to the technical disciplines occurs out of the assigned stations and is deployed to anywhere in the municipality as required. Travel time can be a factor depending on the technical discipline required and the location of the emergency incident.

The average number of technical responses per discipline (based on a three-year average) are:

1. Rope / High Angle Rescue – 2 incidents per year (see NOTE)
2. Vehicle (AutoExtrication) Rescue – 30 incidents per year
3. All Water Rescues – 6 incidents per year

   NOTE – Rope technical response can also be a part of water rescue and other fire suppression emergencies which are not specific incidents just for the rope discipline. The use of the Ladder Platform apparatus in the application of the rope discipline also lends to the utilization of these skills to many other non-technical incident types.

Summary

The technical response disciplines in the Greater Sudbury Fire Services are highly specialized, high risk, yet low frequency responses, which require a significant amount of dedicated time for training and skills development. These responses are critical in our municipality and provide protection to the public at all times. Building on these skills and ensuring resources are in place remain a priority to known risks within our community.