

For Information Only

Fire Services – Water/Ice Rescue

Presented To: Emergency Services Committee

Presented: Wednesday, Jun 27, 2018

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Type: Presentations

Resolution

For Information Only

Relationship to the Strategic Plan / Health Impact Assessment

This report refers to operational matters.

Report Summary

This report, for information only, was prepared to provide the Emergency Services Committee with a supplementary update to a communication to Council on November 26, 2017 regarding the current status of Greater Sudbury Fire Services' response to water/ice rescue incidents. A review was conducted to identify opportunities and gaps of the ice/water rescue program. It was determined that the Service was not fully compliant with requirements under the Canada Shipping Act as it relates to small commercial vessel operations. As a result, steps have been taken to become fully compliant with the Canada Shipping Act and Transport Canada's requirements for the operation of small commercial vessels.

Financial Implications

There are no financial implications associated with this report.

Signed By

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Fire Services – Water/Ice Rescue

Background

The City of Greater Sudbury is the largest municipality in Ontario based on land mass. Within the City limits, there are 330 lakes over 10 hectares in size. Approximately 12.2% of the City consists of lakes, rivers and creeks. Lake Wanapitei is the largest city-contained lake in the world at 13, 257 hectares, maximum depth of 142 meters and 160 kilometers of shoreline.

There are seven significant river systems (Spanish, Onaping, Wahnapiatae, Whitson, Rapid, Vermilion, Nelson) and a number of large creek systems (Sandcherry, Junction) running through the City limits. These rivers and creeks have high seasonal water flows, sections of whitewater, a number of Hydro One and VALE hydro dams and other water control structures. Junction Creek flows through the City core and includes a one kilometer stretch of tunnel waterway.

Ice and water rescue events are low frequency but high risk when they occur (11 events between January 1, 2017 and May 28, 2018). These events often occur at night, in adverse weather, unknown water, ice and snow conditions. The consequences of these incidents can be life threatening to both the victims and the rescuers, if not responded to quickly. Successful rescues require appropriate equipment, competent vessel operators, crew and rescuers.

On November 26, 2017, an incident involving two boaters stranded on an island on Lake Wanapitei occurred. Following that incident, an after-action review of the ice/water rescue program was conducted and gaps were identified. It was determined that Greater Sudbury Fire Service was not fully compliant with Transport Canada legislation regarding vessel operations. As a result of the review:

- The Chief/General Manager of Community Safety has now been appointed as the Authorized Representative under The Canada Shipping Act.
- Firefighters operating and crewing Fire Service vessels are now trained, certified and in compliance with Transport Canada's requirements.
- Opportunities to improve response capability have been identified.
- Vessel safety equipment and electronics have been upgraded.
- All vessels have been registered with Transport Canada as commercial workboats.

Legislative Requirements

By-law 2014-84, a By-law of the City of Greater Sudbury to Establish and Regulate the City of Greater Sudbury Fire Services, establishes four components of water rescue across all fire beats. These components, as approved by Council, are:

- **Water Shore Based – Level 1:** Rescue of persons from water by reaching or throwing rescue lines (no water entry).
- **Water Surface – Level 2:** Rescue of persons from the surface of the water through the use of a rescue boat.
- **Swift Water – Level 2:** Rescue of persons from watercourses with any current greater than 0.5 m/sec (1 knot).
- **Ice and Cold Water:** Rescue of persons in water that is below 21°C (70°F) including use of shoreline techniques and rescue boats.

Ontario Regulation 379/18, new legislation under the Fire Protection and Prevention Act, 1997, will require mandatory certification of all firefighters to National Fire Protection Association (NFPA) standards. This will include all aspects of ice and water rescue identified in NFPA Standard 1006. The NFPA standards are considered best practice, internationally recognized and evidence-based. This regulation is the result of numerous coroner's inquests identifying the need to implement mandatory certification of fire service personnel to ensure public and firefighter safety (Fire Marshal's Communiqués 2017-06 and 2018-02). Further information concerning the implementation of this new regulation and the impact on the delivery of fire services will be provided to Council at a future date.

The Occupational Health and Safety Act (OHSA) requires that employers provide information, instruction and supervision to their workers to protect their health and safety. Vessels are considered workplaces under this act. OHSA Section 21 Guidance Note GN#6-3 states, "when using boats, ensure that the boat has the appropriate safety equipment and that the operator is competent to operate the vessel in the conditions encountered".

The Canada Shipping Act, federal legislation administered by Transport Canada, requires that all commercial vessels be properly registered, certified to commercial vessel standard, and equipped with mandatory safety and VHF radio equipment. Transport Canada considers all government-owned or operated vessels as commercial vessels. There are no exemptions for fire vessel operation. Commercial vessel operators and crew must be trained and certified to standards based on the size of the vessel and the size of the waterbody the vessel operates on.

Under the Canada Shipping Act, every Canadian vessel must have a person designated as the "Authorized Representative". The Chief/General Manager of

Community Safety has been designated as the "Authorized Representative" for Fire Service vessels. Under the Act, the "Authorized Representative" of a Canadian vessel shall: a) ensure that the vessel and its machinery and equipment meet the requirements of the regulations; b) develop procedures for the safe operation of the vessel and for dealing with emergencies; and c) ensure that the crew and passengers receive safety training.

Discussion

Greater Sudbury Fire Services conducts water rescue boat activities with three Zodiac boats on trailers, equipped with 25 hp outboard motors and located at Stations 1 (Van Horne), 10 (Azilda), and 16 (Val Therese). A 6.7 metre Stanley Pulsecraft aluminum boat, powered by a 150 hp outboard motor, is located at Station 22 (Skead) and is docked at a private marina on Lake Wanapitei generally from mid-May to mid-October. This vessel (Marine 22) was manufactured in 2005 by Connor Industries in Parry Sound. The vessel has primarily been operated by volunteer firefighters from Station 22 with support from Career Station 3 (Leon). Following the after-action review, this vessel and trailer received a complete inspection and refurbishing at Connor Industries. The electronics have been upgraded, including the installation of a marine radio with Digital Select Calling (DSC) capability. DSC is a system designed to replace voice calling in emergency situations. Vessels equipped with this system can send and receive distress signals that include GPS location coordinates. Distress calls can also be pre-defined when they are sent, i.e "fire", "disabled and sinking", "man overboard."

Marine 22, although functional, is not the most appropriate watercraft for rescue work. The vessel has high vertical sides that make re-boarding of casualties difficult and would likely require rescuers to leave the vessel and enter the water to assist with casualty re-boarding. The boat is equipped with a mechanical bow ramp that can be lowered to water level; however, the boat manufacturer has advised that it should not be lowered in any type of wave action as the free surface water entering the boat could cause it to capsize.



Marine 22

← Vertical side view

Bow ramp view →



Inflatable Zodiac boats are best suited for rescue, trailer easily and can be rapidly deployed. The current Zodiac boats used by Fire Services however, are too small for effective rescue work on the larger bodies of water in the City of Greater Sudbury.

Efficient and safe water rescue in the City of Greater Sudbury will require a rationalization of the existing vessel fleet in terms of best locations to provide emergency response from and appropriate selection of watercraft to conduct that response.



Sudbury Fire Zodiac with two rescuers and a vessel operator

The acquisition of a rigid hull inflatable boat (RHIB) of a size and configuration for quick and safe response to emergencies needs to be considered. As quoted by the Canadian Coast Guard Search and Rescue, "The CCG utilizes RHIBs as standard vessels for SAR (search and rescue) across our fleet. Rescue services from Canada to Australia, Great Britain to the United States rely on Rigid Hull Inflatable Boats to service inland, bay, near coastal and ocean rescues, law enforcement and environmental missions. It is because these vessels offer such a wealth of different mission platform support, and stability in adverse conditions, that they have become indispensable tools of the International Search and Rescue (SAR) Community."

In addition to using boats for ice/water rescue situations, Greater Sudbury Fire Services also utilizes "human-powered" craft including Rapid Deployment Craft (RDCs) and RIT-Craft. These craft are carried on all five career response trucks, inflated upon arrival on scene, and rapidly deployed over ice or into water. They are designed for multi-season use and can be easily paddled or dragged by the rescuers. In addition, these craft can be towed by a boat, all-terrain vehicle or snowmobile. RDCs and RIT-Craft enhance rescue capabilities in swift water and poor ice conditions while providing a safe working platform that enables swift casualty retrieval.



Rapid Deployment Craft

Training

Water and ice technical rescue is provided at an enhanced level by all career stations, the Val Therese composite station, and some volunteer firefighters in the Azilda and Skead stations. Awareness level is provided to the remaining volunteer stations. In addition to the training components of rescue, Fire Services must comply with the federal government requirements related to the operation of vessels and the use of marine radios.

Under the Canada Shipping Act, the majority of lakes and rivers in the City of Greater Sudbury are classified as Sheltered Waters Voyage. The exception is Lake Wanapitei, which because of its size, is classed as Near Coastal Voyage, Class 2. In order to be the operator of a commercial vessel less than eight metres in length on Lake Wanapitei, the operator must possess a Transport Canada Small Vessel Operators Proficiency Certification (SVOP, 26 hours classroom) and a Marine Emergency Duties Certification (MED A3, 8 hours classroom) issued by Transport Canada. Search and rescue boats operate in conjunction with the Canadian Joint Forces Rescue Co-ordination Centre in Trenton for all air and water emergencies, and to communicate with other boaters using marine radios. As such, operators must possess a Restricted Operator's Certificate, Maritime (ROCM, 8 hours classroom) in order to utilize marine radios. Industry Canada is the federal regulating body for radio communications.

Operators of commercial vessels less than eight metres in length on Sheltered Waters, require a Transport Canada Pleasure Craft Operators Card (PCOC), MED A3 and a ROCM for marine radio communications.

Crew members on commercial vessels less than eight metres in length, operating in Sheltered Waters or Near Coastal Voyage Class 2 waterways, require: a PCOC, MED A3 certification, and if operating a marine radio, a ROCM.

Additional Transport Canada requirements for all vessel operators and crew include: First Aid certification at either the Marine Level or Standard First Aid Level; emergency equipment practice; person overboard drills; and, agency specific training.

In April of 2018, 27 volunteer firefighters at the Azilda, Skead and Garson stations received MED A3 and ROCM training. Garson station, although not designated as an ice/water rescue station, is the closest responding volunteer station to provide assistance to Skead station.

In May of 2018, volunteer firefighters at the Skead and Garson stations were offered SVOP training which would certify them to operate vessels on Lake Wanapitei. Nine volunteers received the training, two from Skead and seven from Garson. During the same time period, 70 career firefighters received SVOP, MED A3 and ROCM training.

It is important to note that complying with Transport Canada's proficiency requirements does not achieve the necessary training for conducting technical water rescue. It only meets the legal requirements to operate a small commercial vessel and/or crew the vessel. This can be considered as the non-emergency requirement. The training of firefighters for the actual rescue of persons on water, in swift water and on ice is a separate component that requires extensive training and a maintenance component that is in adherence to the NFPA 1006 standard. This can be considered as the emergency requirement. In April and May of this year, 13 instructor-level career firefighters received this training consistent with the NFPA 1006 standard.

Conclusion

In a municipality containing a significant number of waterbodies and river systems, the public has an expectation that Fire Services will respond to water-related emergency situations. City Council has established the level of response to be provided under the Establishing and Regulating By-Law #2014-84.

Greater Sudbury Fire Services is now fully compliant with the Canada Shipping Act and Transport Canada's requirements for the operation of small commercial vessels. However, as Council may be aware, the Government of Ontario has recently legislated training requirements for firefighter and technical rescue. Additional information on the impact of this requirement will be provided to Council in a future report.

Reference documents

- 2017-06e Municipal Bylaws Swift Water Rescue
- 2018-02e NFPA 1006, Standard for Technical Rescue

COMMUNIQUE

du commissaire des incendies

October 10, 2017

No. 2017-06

MUNICIPAL ESTABLISHING AND REGULATING BYLAWS

In accordance with [recommendations](#) from the jury of the coroner's inquest into the deaths of Gary Kendall and Adam Brunt, the Office of the Fire Marshal and Emergency Management (OFMEM) is providing information to Ontario fire departments about establishing and regulating bylaws for fire department services, and encouraging them to review their respective establishing and regulating bylaw in regard to "ice / cold 'swift' water rescue services", if applicable in their jurisdiction.

The administration and governance of a fire department may be guided by an establishing and regulating bylaw, other municipal bylaws¹, council resolutions, agreements, policies, operating guidelines, and the interaction of the fire department with other municipal services, departments, committees and officials. Through bylaws and resolutions, municipal council has the means to identify the core services of the fire department, and the types and level of fire protection services it provides, based on local needs and circumstances.

Please note that, under section 14 of the *Municipal Act, 2001*, when there is a conflict between a bylaw and a provincial or federal statute or regulation, the latter prevails.

An establishing and regulating bylaw is a municipal council document outlining policy for fire departments. It can be used to show how the municipality delivers fire protection services it has determined are necessary according to its needs and circumstances, as is required by the *Fire Protection and Prevention Act, 1997* (FPPA). An establishing and regulating bylaw can state the type and level of fire protection services provided and may include policy direction in the following areas:

- legislative/regulatory requirements that may affect the delivery of fire protection services (e.g., FPPA, *Occupational Health and Safety Act*, and *Environmental Protection Act*);

¹ These bylaws may include bylaws to authorize or regulate the following: records retention; service delivery agreements (e.g., for inspections or investigations); open air burning; fees for service; cost recovery for demolition during fire suppression and fire investigations; safe handling, storage, sale and discharge of fireworks; and anything requiring council authorization by law.

- Fire Marshal directives;
- best practices (e.g., Ontario Fire Service Section 21 Advisory Committee guidance notes, National Fire Protection Association standards);
- general functions and core services to be delivered;
- goals and objectives of the fire department;
- general responsibilities of fire department personnel;
- organizational structure;
- authority to proceed beyond established response areas;
- authority to apply costs to property owners for fire investigations; and
- authority to effect necessary fire department operations, in consultation with the municipality's legal resources.

When setting or amending the levels of service in the establishing and regulating bylaw, municipal council, in consultation with the fire chief, should keep in mind the following considerations:

- the current needs and circumstances of the municipality;
- requirements and expectations, such as the following:
 - training requirements based on current standards and practices;
 - acquisition and maintenance of appropriate equipment; and
 - appropriate record keeping.
- the extent of fire department funding necessary to achieve and maintain the stated levels of service.

The OFMEM recommends that municipal councils review their establishing and regulating bylaws annually to ensure the level of services they are providing are in accordance with the current needs and circumstances of their municipality.

Fire chiefs are encouraged to share the present communiqué with municipal councils and clerks, as appropriate.

Enquiries regarding establishing and regulating bylaws should be directed to Field and Advisory Services; staff members can be reached by telephone at 1-844-638-9560 (toll free) or by e-mail at OFMEM-FAS-AA@ontario.ca.

COMMUNIQUE

du commissaire des incendies

January 12, 2018

No. 2018-02

NFPA 1006, STANDARD FOR TECHNICAL RESCUER PROFESSIONAL QUALIFICATIONS

In light of the [recommendations](#) from the jury of the coroner's inquest into the deaths of Gary Kendall and Adam Brunt, the Office of the Fire Marshal and Emergency Management (OFMEM) is providing information and guidance to Ontario fire departments about NFPA 1006, *Standard for Technical Rescuer Professional Qualifications*, published by the National Fire Protection Association (NFPA).

The purpose of this standard is to specify minimum job performance requirements for service as a rescuer in an emergency response organization. The standard states "Each performance objective shall be performed safely, competently, and in its entirety".

A municipality is responsible for the delivery of fire protection services it has determined are necessary according to its needs and circumstances, as is required by the *Fire Protection and Prevention Act, 1997* (FPPA). Municipalities are encouraged to have an establishing and regulating bylaw¹ for fire department services and to state in this bylaw the type and level of fire protection services it provides. In addition, municipalities are responsible for ensuring their personnel have appropriate training.

Technical rescue is inherently dangerous and technical rescuers are frequently required to perform activities in adverse conditions. Accordingly, the OFMEM recommends that fire departments complete a stringent site assessment for all technical rescue operations and training. When developing training activities for technical rescue, municipalities should use and reference recognized standards for professional standards, equipment and safety, such as the NFPA 1006 and NFPA 1670 standards.

Although training and certification based on the NFPA 1006 standard is not mandatory in Ontario, the OFMEM strongly recommends that the NFPA 1006 standard and other relevant NFPA standards be used as guides when undertaking rescue operations and when designing training for such operations.

Enquiries regarding the information above should be sent to the Academic Standards and Evaluations Unit, OFMEM, by e-mail to ofmtestingandcertification@ontario.ca.

¹ For further information on establishing and regulating bylaws, see [Fire Marshal's Communiqué 2017-06, Municipal Establishing and Regulating Bylaws](#).