

FRED HENNE BEACH NORTHWEST TERRITORIES AQUATIC SAFETY AUDIT



**REPORT
OCTOBER 22, 2013**



LIFESAVING SOCIETY
The Lifeguarding Experts



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The Lifeguarding Experts

FRED HENNE BEACH, NORTHWEST TERRITORIES AQUATIC SAFETY AUDIT

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The Lifesaving Society is Canada's lifeguarding expert. The Society works to prevent drowning and water-related injury through its training programs, Water Smart® public education initiatives, water-incident research, aquatic safety management services, and lifesaving sport.

Annually, well over 1,000,000 Canadians participate in the Society's swimming, lifesaving, lifeguard, and leadership training programs. The Society sets the standard for aquatic safety in Canada and certifies Canada's National Lifeguards.

The Society is an independent, charitable organization educating Canadian lifesavers since the first Lifesaving Society Bronze Medallion Award was earned in 1896.

The Society represents Canada internationally as an active member of the royal Life Saving Society and the International Life Saving Federation. The Society is the Canadian governing body for lifesaving sport - a sport recognized by the International Olympic Committee and the Commonwealth Games Federation.

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AQUATIC SAFETY AUDIT

FRED HENNE BEACH
NORTHWEST TERRITORIES



LIFESAVING SOCIETY®

The Lifeguarding Experts

About the Lifesaving Society

- Saving lives for over 100 years



The Lifesaving Society is a full service provider of programs, products, and services designed to prevent drowning. The Society saves lives and prevents water-related injuries through its training programs, Water Smart® public education, drowning research, aquatic safety management and lifesaving sport. The Society is a national volunteer organization and registered charity composed of ten provincial/territorial branches, tens of thousands of individual members, and over 4,000 affiliated swimming pools, waterfronts, schools, and clubs.

The Society has been teaching swimming, water safety and water rescue in Canada since 1986. Established in England (1891) as the Swimmers' Lifesaving Society, it became The Royal Lifesaving Society in 1904. Today, it is known simply as the Lifesaving Society. The Lifesaving Society is a leader and partner in the delivery of water safety education throughout Canada and around the world.

Teaching Canadians to save themselves and rescue others

Annually 1,000,000 Canadians participate in the Lifesaving Society's swimming, lifesaving, lifeguard, first aid, and leadership programs. Each year, the Society certifies thousands of instructors who provide the leadership for its training programs. Over 30,000 Canadians earn the Society's Bronze Medallion each year. As Canada's lifeguarding experts, the Lifesaving Society sets the standard for lifeguard training and certifies Canada's National Lifeguards.

Making Canadians Water Smart

The Lifesaving Society focuses Water Smart drowning prevention efforts on people most at risk - like men fishing in small boats - or on those who can make a significant difference, such as parents of young children. The Society delivers Water Smart messages through its swim program, through the media and community action. The Society's Swim to Survive® Program provides the essential minimum skills required to survive an unexpected fall into deep water.

Drowning Research

The Lifesaving Society conducts research into fatal and non-fatal drowning, aquatic injury and rescue interventions. Ongoing research and analysis supports the Society's evidence-based water rescue training and Water Smart drowning prevention education.

Setting the Standard

The Lifesaving Society establishes aquatic safety standards and consults on aquatic safety issues for the aquatic industry, governments and the judiciary. The Society offers a suite of services to help aquatic facility operators maintain and improve safe pool and waterfront operations. The Society performs aquatic safety audits and serves as experts in legal cases involving aquatic safety.



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Aquatic Safety Audits

Section 1

Purpose

The Government of Northwest Territories department of Industry, Tourism and Investment retained the Lifesaving Society to undertake a comprehensive aquatic safety audit on the **unsupervised waterfront beach** and **unsupervised boat launch facilities** at Fred Henne Territorial Park.

It was agreed that the purpose of the aquatic safety audit was to analyse and provide recommendations to maximize the safety and customer service for guests of the Fred Henne Territorial Beach. Recommendations will be ranked as priority, primary, and secondary recommendations (See Appendix I for recommendation summary). The aquatic safety audit would identify what steps should be taken to minimize the risk of drowning or serious water-related injuries.

It was agreed that the scope of the aquatic safety audit would include discussions with management and staff in addition to an evaluation of the facility's operation. This evaluation would report only on those items that require attention. It would not address aspects that were satisfactory or exceptional.

On-going Support

The Lifesaving Society is a national charity working to prevent drowning and water-related injury. We save lives and prevent injury through our training programs, Water Smart®, public education, water incident research, aquatic safety management services, and lifesaving sport.

The Lifesaving Society enhances the quality of life of Albertan's and NWT residents by setting health and safety standards and collaborating with partners for injury prevention, sport, recreation and active living initiatives, making Alberta and the Northwest Territories the safest place to live, work, and play.

The Waterfront Safety Standards are Lifesaving Society standards that recommend evidence based best practices for the safe operation and use of waterfronts. The standards are intended to assist owner/operators in making decisions for optimal safety at waterfronts. These best practices are evidence based, reflect the expert option, and position of the Lifesaving Society.

Aquatic Safety Audit Process

Section 2

Aquatic Safety Audit AUDIT REPORT

Auditor

The Lifesaving Society was represented by Kelly Carter as chief auditor; Barbara Costache certified aquatic safety auditor; and Jonathan Kusyano, auditor in training. The Lifesaving Society has extensive experience in aquatics and facility evaluation.

The Government of Northwest Territories appointed Richard Zieba, Director of Industry, Tourism and Investment as the primary contact for the auditors.

Audit Components

The auditors followed a process that included:

- On-site safety inspection of the waterfront/beach
- On-site safety inspection of the boat launch
- On-site safety inspection of the boat launch swim area
- Interviews with staff at various levels within the department of Industry, tourism and investment
- Interview with campground contractor
- Meetings with City of Yellowknife staff
- Meetings with citizens
- A review of existing facility documentation provided to staff concerning the operation of the waterfront
- Completion of a draft and final report

Facility Safety Inspections

The auditors completed the inspection of the facility on July 15-16, 2013. In the detailed inspection, the auditors examined the facility applying criteria developed by the Lifesaving Society from sources that include:

- Government of Northwest Territories statutes and regulations governing public waterfronts
- Past recommendations from fatality inquiries/coroners' inquests from across Canada
- Lifesaving Society standards concerning the operation of public waterfronts
- Lifesaving Society research into drowning at waterfronts

Results were recorded in the audit documentation which will be retained by the Lifesaving Society.

During the audit and inspection, the staff member designated on the inspection day as the facility representative, was accessed for additional information and clarification regarding specific facility operations, organizational structure, park staff roles and responsibilities, staff training and certifications, and other general topics.

If priority concerns were identified, they were discussed by the auditors with the designated facility representative immediately following the facility inspection.

Site Inspection Process

The auditors followed a process when conducting the site inspection that included:

- Signage (behavior expectations, hazards, rules, emergency information, etc.)
- Boat launch parking lot (access, signage)
- Boat launch
- Boat launch swim area (entry, depth, bottom, temperature, size, buoy system, etc.)
- Boat launch washrooms
- Campground parking lot
- Change rooms and washroom facilities
- Waterfront access points
- Beach amenities (playground, volleyball, physical structures)

- Swim area inspection (entry, depth, bottom, temperature, size, buoy system, etc.)
- Access to swim area by boat

Staff Interviews

Following the facility inspections, the auditors conducted interviews with a selected cross-section of staff representing various relevant functions. The interviews were designed to gather the input of staff on the facility operations.

The auditors interviewed staff members, after which staff were invited to share additional thoughts with assurances that specific comments would be unattributed.

The auditors conducted meetings with selected individuals to obtain background information on the history, operation, and safety systems of the facility.

Documentation Review

The auditors examined the related literature supplied by the department of Industry, Tourism and Investment and reviewed all relevant documentation.

- Facility Procedures and Checklists
- Operations and Construction Documentation
- Various Job Descriptions
- Site Schematic (2010)
- Marketing Materials

Reporting Process

Drawing on all documentation supplied by the department of Industry, Tourism and Investment, auditor notes, assessments and observations, the Lifesaving Society has documented a draft report for review by the department of Industry, Tourism and Investment.

Upon receiving feedback and updated information from the department of Industry, Tourism and Investment, the final report was formalized and delivered to for consideration of implementation.

Summary Findings

Section 3

The Lifesaving Society's Aquatic Safety Audit reports Priority Concerns, Primary and Secondary Recommendations in five categories:

- Personnel
- Emergency and Operating Procedures
- Safety Systems
- Communication and Education
- Facility and Equipment

Priority Concerns

Priority Concerns represent safety risks to the public or staff and merit immediate action. The Society alerts facility owner/operators to Priority Concerns at the time of facility inspections.

- The Society's aquatic safety audit presents **Four (4)** observations to warrant Priority Concern status.

Primary Recommendations

Primary Recommendations address situations in contravention of a relevant statute, regulation or the Lifesaving Society's Waterfront Facility Safety Standards on what constitutes reasonable safe practices. Primary Recommendations should receive focused attention by facility management.

- The Society's aquatic safety audit presents **Four (4)** Primary Recommendations

Secondary Recommendations

Secondary Recommendations are designed to enhance the safe use of the facility. Secondary recommendations may also refer to items that affect the comfort and experience of users or that may be recommended as "Best Practices". Action on Secondary Recommendations can proceed within the facilities' ongoing operations.

- The Society's aquatic safety audit presents **Twenty-Seven (27)** Secondary Recommendations

Range of Safe Practice

The Lifesaving Society recognizes a range of Safe Practice.

The Lifesaving Society considers a facility to be operating within the range of Safe Practice if the aquatic safety audit identifies no Priority Concerns, and only Primary or Secondary Recommendations.

The Lifesaving Society considers a facility to be operating below the range of Safe Practice if any Priority Concerns are identified, or if any Primary Recommendations address unreasonable risk to public safety.

Each of the five categories is assessed according to whether a facility is operating within or below the range of Safe Practice. If one or more categories (ie: Emergency and Operating Procedures) receives an assessment below the range of Safe Practice, this will result in an overall audit assessment of "below the range of Safe Practice."

- Based on the information and materials supplied to the Lifesaving Society and the site inspection of the facility on July 15-16, 2013, it is the Lifesaving Society's expert opinion that at the time of the audit, the facility was operating **BELOW** the range of Safe Practice.
 - Personnel - **WITHIN** range of safe practice
 - Emergency and Operating Procedures - **BELOW** range of safe practice
 - Safety Systems - **BELOW** range of safe practice
 - Communication and Education - **BELOW** range of safe practice
 - Facility and Equipment - **WITHIN** range of safe practice

Sections 4-8 of this report include auditor observations and recommendations with respect to the range of safe practice indicated above in each of the five categories. A summary of the recommendations can be found in Appendix J on page 35.

Personnel - Unsupervised Waterfront

Section 4

At the time of the aquatic safety audit, the Personnel were **WITHIN** the range of Safe Practice.

Priority Concerns

No Priority Concerns.

Primary Recommendations

No Primary Recommendations.

Secondary Recommendations

3.1 At the time of the audit it was noted that the campground staff and parks officers are not trained in emergency procedures related to water rescue. It is recommended that consideration be given to train campground staff and parks officers who work at the park in the facility emergency procedures related to the waterfront. Staff can be encouraged to take additional training to enhance their ability to respond to emergencies (drowning, missing person, etc.) at the unsupervised waterfront.

Note

Existing staff at the facility included contractors, and the department of Industry, Tourism and Investment parks officers. During staff interviews it was identified that contractors and parks officers have not received formal training and practice for emergency situations that may occur at the waterfront.

Personnel - Boat Launch

Section 4

At the time of the aquatic safety audit, the Personnel were **WITHIN** the range of Safe Practice.

Priority Concerns

No Priority Concerns.

Primary Recommendations

No Primary Recommendations.

Secondary Recommendations

No Secondary Recommendations.

Emergency & Operating Procedures - Unsupervised Waterfront

Section 5

At the time of the aquatic safety audit, the Emergency and Operating Procedures were **BELOW** the range of Safe Practice.

Priority Concerns

1.1 At the time of the audit it was noted that bacteriological water samples are taken sporadically but not on a weekly bases while the swimming area is open to the public. It is recommended that the Department of Health and Social Services be consulted to establish a protocol for water sampling that is appropriate for the unique conditions of the Northwest Territories. Taking water samples on a regular basis assists to confirm the water is safe to access. If water samples do not meet the minimum standard for bather safety, the swimming area shall be closed until subsequent testing confirms that the swimming area is safe for use. If the swimming area must be closed, signs shall be posted at the access points informing users of the closure and the risk to their health (Appendix - Waterfront Safety Standards).

Primary Recommendations

2.1 At the time of the audit it was noted that the emergency procedures for the territorial park do not include procedures to close the beach. It is recommended that management analyse the types of emergencies that may occur on the beach and develop procedures for them (Appendix - Waterfront Safety Standards). At a minimum emergency procedures should be expanded to include procedures for extreme weather, beach evacuation, drowning, and first aid response. Having emergency procedures in place will help to provide a coordinated and planned response.

Secondary Recommendations

3.2 At the time of the audit it was noted that the facility did not have a safety and supervision plan. A safety and supervision plan will set clear expectations for maintaining the safety of bathers at the facility. It is recommended that the facility reference the Lifesaving Society's Safety and Supervision toolkit to assist them in developing a safety and supervision plan.

3.3 At the time of the audit it was noted that the parks staff track numbers in the day use area but there is no process in place to document the physical environment. It is recommend that a staff record bather attendance figures, air and water temperature, list of maintenance items performed, and any emergencies or incidents that may have taken place.

3.4 At the time of the audit it was noted that there is no cleaning procedure for the beach. It is recommended that a regular cleaning schedule be implemented to clean the beach which includes sifting the sand to remove needles, glass, or other hazardous material. Cleaning the sand will help to provide a welcoming environment and reduce the chance of injury from uneven ground or unexposed hazards.

3.5 At the time of the audit it was noted that there is no system to track and map incidents that occur on the beach. It is recommended that a system be implemented to map, track, and code incidents on the beach. This could be achieved by campground contracted staff in conjunction with the parks officers. This will allow management to analyse the types of incidents occurring and create a plan to address frequently occurring incidents.

Emergency & Operating Procedures - Boat Launch

Aquatic Safety Audit AUDIT REPORT

Section 5

At the time of the aquatic safety audit, the Emergency and Operating Procedures were **BELOW** the range of Safe Practice.

Priority Concerns

1.1 At the time of the audit it was noted that bacteriological water samples are taken sporadically but not on a weekly bases while the swimming area is open to the public. It is recommended that the Department of Health and Social Services be consulted to establish a protocol for water sampling that is appropriate for the unique conditions of the Northwest Territories. Taking water samples on a regular basis assists to confirm the water is safe to access. If water samples do not meet the minimum standard for bather safety, the swimming area shall be closed until subsequent testing confirms that the swimming area is safe for use. If the swimming area must be closed, signs shall be posted at the access points informing users of the closure and the risk to their health (Appendix - Waterfront Safety Standards).

Primary Recommendations

2.1 At the time of the audit it was noted that the emergency procedures for the territorial park do not include procedures to close the boat launch facility. It is recommended that management analyse the types of emergencies that may occur at the boat launch facility and develop procedures for them (Appendix - Waterfront Safety Standards). At a minimum emergency procedures should be expanded to include procedures for extreme weather, beach evacuation, drowning, and first aid response. Having emergency procedures in place will help to provide a coordinated and planned response.

Secondary Recommendations

3.2 At the time of the audit it was noted that the facility did not have a safety and supervision plan. A safety and supervision plan will set clear expectations for maintaining the safety of bathers at the facility. It is recommended that the facility reference the Lifesaving Society's Safety and Supervision toolkit to assist them in developing a safety and supervision plan.

3.3 At the time of the audit it was noted that the parks staff track numbers in the day use area but there is no process in place to document the physical environment. It is recommend that a staff record bather attendance figures, air and water temperature, list of maintenance items performed, and any emergencies or incidents that may have taken place.

3.4 At the time of the audit it was noted that there is no cleaning procedure for the beach. It is recommended that a regular cleaning schedule be implemented to clean the beach which includes sifting the sand to remove needles, glass, or other hazardous material. Cleaning the sand will help to provide a welcoming environment and reduce the chance of injury from uneven ground or unexposed hazards.

3.5 At the time of the audit it was noted that there is no system to track and map incidents that occur on the beach. It is recommended that a system be implemented to map, track, and code incidents on the beach. This could be achieved by campground contracted staff in conjunction with the parks officers. This will allow management to analyse the types of incidents occurring and create a plan to address frequently occurring incidents.

Safety Systems - Unsupervised Waterfront

Section 6

At the time of the aquatic safety audit, the Safety Systems were **BELOW** the range of Safe Practice.

Priority Concerns

1.2 At the time of the audit it was noted that there was no emergency equipment available for public use. It is recommended that the following equipment be available on the beach in appropriate locations:

- At least 1 reaching pole at least 3 metres in length
- At least 1 buoyant throwing assist with a line 15 metres long

(Appendix - Waterfront Safety Standards) See Appendix H - locations for rescue equipment.

Primary Recommendations

2.2 At the time of the audit it was noted that there was only one buoy line across the lake. It was unclear if this buoy line was to prohibit watercraft or to mark the swim area. The buoy line did not meet the requirements set out by Transport Canada prohibit motorized watercraft or identify a swimming area. It is recommended that the buoys marking the swim area are white in colour (The Canadian Aids to Navigation System 2011). The government may also want to consider placing buoys that prohibit motorized watercraft around the swim area. Prohibiting boating near the swim area will help to protect bathers using the swim area. Following the Canadian Aids to Navigation system will help to ensure boaters recognize the swim area and associated restrictions (See Appendix G - Sample Buoy System).

Secondary Recommendations

3.6 At the time of the audit it was noted that this can be a busy unsupervised waterfront. At the time of the audit the auditors would rate the level of protection at level 2. It is recommended that the level of protection on the beach be increased and that the government determine which level of protection is reasonable to provide taking capacity and resources into consideration (see Appendix C - Layers of Protection). When determining which level of protection is reasonable to provide, the government may give consideration to a number of options ranging from increased signage/public education campaigns, providing rescue equipment, installing an emergency communication system, providing basic staff training in water rescue, to placing national lifeguards on the beach. If lifeguards are to be considered as an option, a supervised waterfront audit is recommended and other priority and primary recommendations will still need to be implemented. The chart below outlines the levels of protection for unsupervised waterfronts.

Level of Protection	Primary Signage	Secondary Signage	Public Education	Public Rescue Equipment	Emergency Communication	Basic Staff Training	Lifeguard Supervision
1	No	No	No	No	No	No	No
2	Yes	No	No	No	No	No	No
3	Yes	Yes	No	No	No	No	No
4	Yes	Yes	Yes	No	No	No	No
5	Yes	Yes	Yes	Yes	No	No	No
6	Yes	Yes	Yes	Yes	Yes	No	No
7	Yes	Yes	Yes	Yes	Yes	Yes	No

Note

The waterfront was previously supervised by lifeguards. See Appendix F for a brief history.

Safety Systems - Boat Launch

Section 6

At the time of the aquatic safety audit, the Safety Systems were **BELOW** the range of Safe Practice.

Priority Concerns

1.2 At the time of the audit it was noted that there was no emergency equipment available for public use. It is recommended that the following equipment be available on the beach in appropriate locations:

- At least 1 reaching pole at least 3 metres in length
- At least 1 buoyant throwing assist with a line 15 metres long

(Appendix - Waterfront Safety Standards) See Appendix H - locations for rescue equipment.

Primary Recommendations

2.2 At the time of the audit it was noted that the swimming area by the boat launch had buoys on a rope that were anchored in two locations and tied to two trees on land. The buoy line did not meet the requirements set out by Transport Canada to prohibit motorized watercraft or identify a swimming area. It is recommended that the buoys marking the swim area are white in colour (The Canadian Aids to Navigation System 2011).

Secondary Recommendations

3.7 At the time of the audit it was noted that placing "no wake" buoys around the boat launch could assist to protect the public using the boat launch swim area (See Appendix G - Buoy System). It is recommended that buoys be considered to indicate a no wake area near the boat launch. This will help to protect public unloading and loading their boats, along with minimizing waves from boats in the swim area located next to the boat launch.

3.8 At the time of the audit it was noted that it would be beneficial to indicate where motorized watercraft is permitted around the boat launch. It is recommended that a system of signage and buoys be used to indicate where boating access is permitted/restricted around the boat launch. During staff interviews it was identified that multiple activities take place in this area (loading/unloading of motorized watercraft, swimming, etc.).

3.6 At the time of the audit the auditors would rate the level of protection at level 2. It is recommended that the level of protection on the beach be increased and that the government determine which level of protection is reasonable to provide taking capacity and resources into consideration (see Appendix C - Layers of Protection). When determining which level of protection is reasonable to provide, the government may give consideration to a number of options ranging from increased signage/public education campaigns, providing rescue equipment, installing an emergency communication system, providing basic staff training in water rescue, to placing national lifeguards on the beach. If lifeguards are to be considered as an option, a supervised waterfront audit is recommended. The chart below outlines the levels of protection for unsupervised waterfronts.

Level of Protection	Primary Signage	Secondary Signage	Public Education	Public Rescue Equipment	Emergency Communication	Basic Staff Training	Lifeguard Supervision
1	No	No	No	No	No	No	No
2	Yes	No	No	No	No	No	No
3	Yes	Yes	No	No	No	No	No
4	Yes	Yes	Yes	No	No	No	No
5	Yes	Yes	Yes	Yes	No	No	No
6	Yes	Yes	Yes	Yes	Yes	No	No
7	Yes	Yes	Yes	Yes	Yes	Yes	No

3.9 At the time of the audit it was noted that there are a number of hazards associated with the boat launch swim area. Although steps have been taken for bather safety more is required. It is recommended that the government reconsider permitting swimming in this area and post "No Swimming" signage due to the following concerns:

- There is a steep drop off right outside the buoyed area
- Boats frequently load and unload in the area immediately adjacent to the swim area
- Signage in the area contradicts itself (Some says swimming prohibited, others no lifeguard on duty, unsupervised swim area)

If swimming is permitted then appropriate layers of protection are required.

Communication & Education - Unsupervised Waterfront

Section 7

At The Time Of The Aquatic Safety Audit, Communication & Education Were **BELOW** The Range Of Safe Practice.

Priority Concerns

1.3 At the time of the audit it was noted that there are some notices for public safety posted and it is recommended that additional information be posted for the public. Signage for unsupervised waterfronts should include:

- Admission requirements
- Identification of hazards
- Non swimmers should wear a lifejacket
- Children require direct supervision
- Don't swim alone
- Water conditions may change
- Location of emergency telephone
- Location of closest first aid station
- Location of emergency equipment
- Diving can result in serious injury or death
- Name of the facility, operated by
- Report any deficiencies to
- Posted rules for use
- Hours of use

(Appendix - Waterfront Safety Standards)

1.4 At the time of the audit it was noted that there were no emergency numbers posted at the unsupervised waterfront. It is recommended that emergency numbers (Police, Fire, EMS, etc) be placed next to the phone and at the public access points to the beach (Appendix - Waterfront Safety Standards).

Primary Recommendations

2.3 At the time of the audit it was noted that there was no signage posted educating public of emergency signals that could be used to clear/close the beach. It is recommended that emergency signals are established to clear/close the beach and that signage be placed to inform users as to what the emergency signals are and how they should respond (Appendix - Waterfront Safety Standards). This will help to reduce confusion among the public when an emergency signal is used on the beach.

2.4 At the time of the audit it was noted that the location of the emergency phone was not posted at the waterfront. It is recommended that a phone be identified for emergency use and that signage be placed as to the location of the emergency phone (Appendix - Waterfront Safety Standards). Identifying the location of the emergency phone will minimize confusion and could result in faster contact to emergency services.

Secondary Recommendations

3-10 At the time of the audit it was noted that there is no communication system between the beach area and park staff. It is recommended that management consider installing an emergency box or phone that is connected directly to the park staff office or RCMP. Having direct access to emergency personnel could decrease response times to the beach and offer users an added sense of security.

3-11 At the time of the audit it was noted that some signage is hidden behind fences and obstructed by plant growth (Appendix A - Photo 24). It is recommended that fences, signage, and barriers be inspected, maintained, and repaired/replaced as needed. This will help to provide clear lines of sight to signage and provide a safe secure environment.

3-12 At the time of the audit it was noted that there are no posted admission policies for the waterfront. It is recommended that admission policies be developed and communicated to the public. These policies should include:

- Age for unaccompanied access (consider what is written in the NWT public pool regulations - 12 years)
- Age of caregiver (consider what is written in the NWT public pool regulation - 16 years)
- Caregiver to bather ratio (Lifesaving Society recommends maximum of 4)
- Requirement for caregivers to remain within arms reach of persons in their care
- People under the influence of drugs or alcohol are not permitted to use the beach

3-13 At the time of the audit, it was noted that there are no notices for public safety posted in the change rooms. It is recommended that signage be posted in each change room. Posting signage in the change rooms can educate users as to the rules of use for both the change room as well as the beach.

3-14 At the time of the audit it was noted that public sometimes jump off the cliffs to the North East of the beach and there is no signage present in this area (Appendix A - Photo 36). It is recommended that "No Swimming" and "No Jumping/Diving Rocks Below" signage be placed in this area to deter swimming in this area. This signage will educate the public of the hazards present and the restriction of activity.

3-15 At the time of the audit it was noted that there are volleyball courts located on the beach (Appendix A - Photo 25). It is recommended that there is signage placed outlining the rules for use (ie. responsible play, etc.). Placing signage in this area will authorize the activity and educate public on acceptable use.

3-16 At the time of the audit it was noted that safety could be enhanced with public information stations designed to educate the public on hazards present at the waterfront and Water Smart(R) behaviors. These information stations could be both physical (on site) and virtual (web). Virtual information could be accessed through a website or QR codes that take users to a virtual information station for the beach.

3-17 At the time of the audit it was noted that safety could be enhanced with the placement of a Lifejacket Loner Station. The Lifesaving Society collaborates with owner/operators in the placement, design, and messaging associated with a Lifejacket Loaner Station Program. This program provides lifejackets free of charge to the public on the honour system of borrow and return.

3-18 At the time of the audit it was noted that there is no safety messaging regarding the use of inflatables in the swim area. It is recommended that signage be placed to warn public of the risks to using inflatables at the beach or consideration be given to banning the use of inflatables (See Appendix C). It was identified that inflatables were associated with the majority of the rescues on the beach previously (See Appendix F - History).

3-19 At the time of the audit it was noted that there was no emergency exit signage posted in the change rooms. It is recommended that exits be identified to assist users in identifying their way out of the room in case of an emergency.

Note

The Public Pool Regulations (NWT) require for unsupervised swim areas that signage be posted stating "No Lifeguard on Duty, bathers under 12 years of age are not allowed in the water unless supervised by a parent or adult at least 16 years of age."

Communication & Education - Boat Launch

Section 7

At The Time Of The Aquatic Safety Audit, Communication & Education Were **BELOW** The Range Of Safe Practice.

Priority Concerns

1-3 At the time of the audit it was noted that there are some notices for public safety posted and it is recommended that additional information be posted for the public. Signage for unsupervised waterfronts should include:

- Admission requirements
- Identification of hazards
- Non swimmers should wear a lifejacket
- Children require direct supervision
- Don't swim alone
- Water conditions may change
- Location of emergency telephone
- Location of closest first aid station
- Location of emergency equipment
- Diving can result in serious injury or death
- Name of the facility, operated by
- Report any deficiencies to
- Posted rules for use
- Hours of use

(Appendix - Waterfront Safety Standards)

1-4 At the time of the audit it was noted that there were no emergency numbers posted at the waterfront. It is recommended that emergency numbers (Police, Fire, EMS, etc.) be placed next to the phone and at the public access points to the beach (Appendix - Waterfront Safety Standards).

Primary Recommendations

2-4 At the time of the audit it was noted that the location of the emergency phone was not posted at the waterfront. It is recommended that a phone be identified for emergency use and that signage be placed as to the location of the emergency phone (Appendix Waterfront Safety Standards). Identifying the location of the emergency phone will minimize confusion and could result in faster contact to emergency services.

Secondary Recommendations

3-10 At the time of the audit it was noted that there is no communication system between the beach area and park staff. It is recommended that management consider installing an emergency box or phone that is connected directly to the park staff office or RCMP. Having direct access to emergency personnel could decrease response times to the beach and offer users an added sense of security.

3-12 At the time of the audit it was noted that there are no posted admission policies for the waterfront. It is recommended that admission policies be developed and communicated to the public. These policies should include:

- Age for unaccompanied access (consider what is written in the public pool regulations - 12 years)
- Age of caregiver (consider what is written in the public pool regulation - 16 years)
- Caregiver to bather ratio (Lifesaving Society recommends maximum of 4)
- Requirement for caregivers to remain within arms reach of persons in their care
- People under the influence of drugs or alcohol are not permitted to use the beach

3-13 At the time of the audit, it was noted that there are no notices for public safety posted in the change rooms. It is recommended that signage be posted in each change room. Posting signage in the change rooms can educate users as to the rules of use for both the change room as well as the beach.

3-16 At the time of the audit it was noted that safety could be enhanced with public information stations designed to educate the public on hazards present at the waterfront and Water Smart(R) behaviors. These information stations could be both physical (on site) and virtual (web). Virtual information could be accessed through a website or QR codes that take users to a virtual information station for the beach.

3-18 At the time of the audit it was noted that there is no safety messaging regarding the use of inflatables in the swim area. It is recommended that signage be placed to warn public of the risks to using inflatables at the beach or consideration be given to banning the use of inflatables (See Appendix C). It was identified that inflatables were associated with the majority of the rescues on the beach previously (See Appendix F - History).

Note

The Public Pool Regulations (NWT) require for unsupervised swim areas that signage be posted stating "No Lifeguard on Duty, bathers under 12 years of age are not allowed in the water unless supervised by a parent or adult at least 16 years of age."

Facility & Equipment - Unsupervised Waterfront

Section 8

At the time of the Aquatic Safety Audit, the Facility and Equipment were **WITHIN** the range of safe practice.

Priority Concerns

No Priority Concerns.

Primary Recommendations

No Primary Recommendations.

Secondary Recommendations

3-20 At the time of the audit it was noted that the department of public works and services does inspect the playground equipment but there are no documented inspections of the beach. It is recommended that management create an inspection checklist to assess the beach for any hazards. A process will need to be put in place to address any deficiencies found which would include how and when to close the beach or a section of the beach for public safety.

3-21 At the time of the audit it was noted that size of the swim area at the main beach is approximately 20,000 square metres. It is recommended that the size of the swim area be reduced. Reducing the distance of the swim area to a maximum of 30 metres from shore along with the creation of a wading area can assist in containing the swim area (See Appendix D - Designated Swim Area).

3-22 At the time of the audit it was noted that the lighting in washrooms and change rooms is supplied by natural light. It is recommended that lighting with a minimum of 215 lux at floor level be provided in dressing rooms and any other area used by the public. The lighting requirements help to provide a safe environment for the public.

3-23 At the time of the audit it was noted that there was no soap available in the washrooms (Appendix A - Photo 9). It is recommended that users have a way to clean/disinfect their hands after using the washroom. This could be accomplished by providing soap or hand sanitizer in the washrooms. This will help to encourage good hygiene among the public.

3-24 At the time of the audit it was noted that there was staining on the floor in the washrooms (Appendix A - Photo 10). It is recommended that all washrooms and change areas be in good repair and maintained. This will help staff to keep the area clean and in good condition for users.

3-25 At the time of the audit it was noted that there were no showers provided for the public using the beach. It is recommended for bather comfort that management consider installing showers to allow the public to wash before and after swimming.

3-26 At the time of the audit it was noted that there were no infant change tables provided in the change rooms. It is recommended that infant change tables be installed to provide caregivers with a safe location to change their child.

Facility & Equipment - Boat Launch

Section 8

At the time of the Aquatic Safety Audit, the Facility and Equipment were **WITHIN** the range of safe practice.

Priority Concerns

No Priority Concerns.

Primary Recommendations

No Primary Recommendations.

Secondary Recommendations

3-20 At the time of the audit it was noted that there are no documented inspections of the boat launch facility. It is recommended that management create an inspection checklist to assess the boat launch facility for any hazards. A process will need to be put in place to address any deficiencies found which would include how and when to close the beach or a section of the beach for public safety.

3-27 At the time of the audit it was noted that the buoy line in the swim area near the boat launch is not anchored adequately (Appendix A - Photo 18). This allows the line to be extended by the wind or by people pushing/pulling on it. It is recommended that the buoys be anchored to prevent the extension of the swim area.

3-23 At the time of the audit it was noted that there was no soap available in the washrooms. It is recommended that users have a way to clean/disinfect their hands after using the washroom. This could be accomplished by providing soap or hand sanitizer in the washrooms. This will help to encourage good hygiene among the public.

Audit Photos

Appendix A

Aquatic Safety Audit AUDIT REPORT

Public Parking Lot



Photo 1: Public parking lot



Photo 2: Public parking lot



Photo 3: Public parking lot signage



Photo 4: Signage from public parking lot



Photo 5: Public parking lot emergency access route

Campground Parking Lot



Photo 6: Campground parking lot



Photo 7: Signage by entry points



Photo 8: Change rooms



Photo 9: No soap in washrooms



Photo 10: Staining around toilets

Boat Launch Facility



Photo 11: Boat launch



Photo 12: Boat launch signage



Photo 13: Boat launch parking area



Photo 14: Boat launch



Photo 15: Boat launch

Boat Launch Facility Unsupervised Swim Area



Photo 16: Swim area signage



Photo 17: Day use area



Photo 18: Buoy line by boat launch moves with the wind



Photo 19: Washrooms



Photo 20: Buoy line by boat launch moves with the wind



Photo 21: Access to swim area

Fred Henne Unsupervised Waterfront Facility



Photo 22: Entrance signage from campground parking lot



Photo 23: Signage at entry points



Photo 24: Signage located behind fence, obstructed by plant growth



Photo 25: Volleyball courts



Photo 26: Playground on beach



Photo 27: Playground signage



Photo 28: Shelter on beach



Photo 29: Wooden posts on beach



Photo 30: Exit from beach



Photo 31: Bike racks

Fred Henne Unsupervised Waterfront Facility Swim Area



Photo 32: Swim area markers are a long distance from shore



Photo 33: Difficult to see swim buoys when approaching by boat



Photo 34: Swim line anchored by rope strung across lake



Photo 35: Swim buoys are not white in colour

Cliff Jumping



Photo 36: Cliffs people are jumping off (North East of unsupervised waterfront)

Principals of Waterfront Risk Management

Appendix B

The information provided in this section pertains to layers of protection. This is general information to provide education on principals of waterfront risk management. This is not specific to the audit performed.

An Aquatic Safety Audit is an integral part of a plan for risk assessment and management that an owner/operator should carry out to:

- Improve safety by assessing and controlling identified hazards
- Reduce the risk of injury and death through prevention and emergency procedures
- Provide guidance for the development of policies, procedures and practices
- Implement recommended steps in managing risks

As the owner/operator of the waterfronts in question, the Government of Northwest Territories (and other stakeholders) is responsible for taking reasonable measures to ensure the safety/education of the users regarding:

1. The condition of the area
2. The activities in the area
3. The conduct of area users

1. Area Condition

The condition of the area includes a number of factors including:

- Water conditions
 - Temperature
 - Shelf drop-offs
 - Underwater hazards
- Beach conditions
 - Sandy or rocky
 - Cleanliness
 - Waterfowl droppings
- Structures
 - Sign condition & regular maintenance
 - Dock condition & regular maintenance
 - Ladder/diving board stability
 - Designated swimming areas
 - All present and future play structures

2. Area Activities

The activities in the area can be managed mainly through adequate signage that provides the public with guidance as to safe and unsafe activities. Maintenance/cleaning visits from park staff can provide an opportunity to observe activities and notify users if unacceptable behaviour is observed. For safe activity the public's common sense and personal responsibility is relied upon.

3. User Conduct

As with area activities, on an unsupervised waterfront, it is unreasonable to expect that public conduct can be controlled except through personal responsibility on the part of the public after receiving adequate education, either through signage or public education.

Layers of Protection

Appendix C

The information provided in this section pertains to layers of protection. This is general information to provide education in the layers of protection. This is not specific to the audit performed.

As with all activities, on an unsupervised waterfront, it is unreasonable to expect that user conduct can be controlled except through personal responsibility on the part of users after receiving adequate education, either through signage or public education.

Waterfront safety can be accomplished in a variety of ways and at varying levels of protection. The following chart outlines eight levels of protection that owner/operators can consider based on the level of protection they are capable of providing.

Level of Protection	Primary Signage	Secondary Signage	Public Education	Public Rescue Equipment	Emergency Communication	Basic Staff Training	Lifeguard Supervision
1	No	No	No	No	No	No	No
2	Yes	No	No	No	No	No	No
3	Yes	Yes	No	No	No	No	No
4	Yes	Yes	Yes	No	No	No	No
5	Yes	Yes	Yes	Yes	No	No	No
6	Yes	Yes	Yes	Yes	Yes	No	No
7	Yes	Yes	Yes	Yes	Yes	Yes	No
8	Yes	Yes	Yes	Yes	Yes	Yes	Yes

NOTE: All of the other layers of protection are recommended regardless if the waterfront is supervised by lifeguards or not.

Signage (Level 2 & 3 protection)

A critical component of ensuring that waterfronts are kept reasonably safe is the responsibility of the owner/operator to warn users of any hazards which may not be known or obvious. Clear and appropriate signage is the predominant method of providing warnings such as water depth or diving prohibition.

Primary signage contains warnings positioned at a conspicuous point as the user accesses the general area, typically between the parking area and the waterfront, allowing for the best opportunity to capture the attention of users prior to their entry into the beach area.

Secondary signage is positioned right at the area of concern, such as on the beach. Because many users may not stop to read primary signage consisting of a list of posted rules upon entering the general area, additional signage in a hazardous area must be conspicuous and preferably use graphic symbols to overcome language and comprehension barriers. It is also highly recommended that such signage be:

- Placed to promote readability
- Placed in a location where the width of travel pathway is minimal
- Placed at a height close to an average adult's line of sight (approximately 1.7 m. above ground level)
- In an area without other distractions
- Not obscured by vegetation

Public Education (Level 4 protection)

Providing educational materials and information to the public can assist in preparing them for use of the waterfront and in providing them with helpful tips as to how best to safely enjoy the beach. Methods can include:

- Rack cards in local retail outlets

Layers of Protection (Continued)

Appendix C

- Rack cards at beach entrances
- Local radio public service announcements
- Choose a few strategic days during which park staff provide information such as:
 - No lifeguard on duty
 - Keep children under a watchful eye and remember the 'within arm's reach' messaging
 - Know your swimming ability and stay within your own limits
 - Weather can change quickly; watch for wind and rough water conditions
 - Use of inflatables devices (ie. air mattress) is discouraged - if you fall off a flotation device, let it go and swim to shore
 - Check for beach signage and abide by it
 - Non swimmers should wear a lifejacket

Public Rescue Equipment (Level 5 protection)

The decision to locate rescue equipment for use by the public in case of an emergency is open to discussion. The potential for theft and vandalism is an issue and must be taken into account. Some options to consider include having equipment available all the time, or having parks staff place equipment only during the hours of operation.

Emergency Communication & Incident Response Considerations (Level 6 protection)

In the case where an injury or aquatic emergency occurs access to emergency services may be required. This can range from providing one or more of the following:

- The local emergency services phone number(s)
- Direction to the nearest emergency services
- An emergency phone
- Emergency rescue/first aid equipment for public use
- Access to park staff trained in and equipped for first aid/water rescue
- Occupational Health and safety requirements for any staff working in, on or around the water

It is recommended that beach signage include the location that emergency services should be directed to, in case the caller is unfamiliar with the area and beach name.

Staff Training (Level 7 protection)

Short of having a full lifeguard service parks staff could provide some emergency assistance until fire or ambulance crews arrive on scene.

Additional training could include educating staff on prevention, recognition, and response procedures. There are various levels of training that staff can access based on their role and comfort with the water along with the level of risk they are prepared to take. Standardized training programs in water rescue may be beneficial. Programs and training can be customized to suit the waterfront and level of staff readiness.

A key component of the this layer of protection is providing personnel with rescue equipment appropriate to their training and ensuring that equipment is on hand and ready for use in case of an emergency.

Layers of Protection (Continued)

Appendix C

Lifeguard Supervision (Level 8 protection)

The decision is open for discussion regarding supervision requirement for waterfronts. In waterfronts with high risk, high user statistics and severe conditions, lifeguards are advisable. Other than the obvious budget considerations, factors influencing the decision include:

- 99% of drownings in Canada occur in areas not supervised by a lifeguard (See Appendix - Canadian Drowning Report for more information)
- Of these, many occur in areas where a lifeguard system is in place, but incidents occur outside of the lifeguard-supervised schedule or outside the lifeguard supervised area.

Due to its mandate of drowning prevention, the Lifesaving Society recommends lifeguards at all waterfronts, but also recognizes the owner/operator decision must be based on budget considerations and a risk assessment. If a lifeguarding system is put in place the Society encourages owner/operators to evaluate their ability (capacity and expertise) to establish and maintain a comprehensive surveillance system and manage the risk. Risk management is a compressive process that must be evaluated, planned, and maintained.

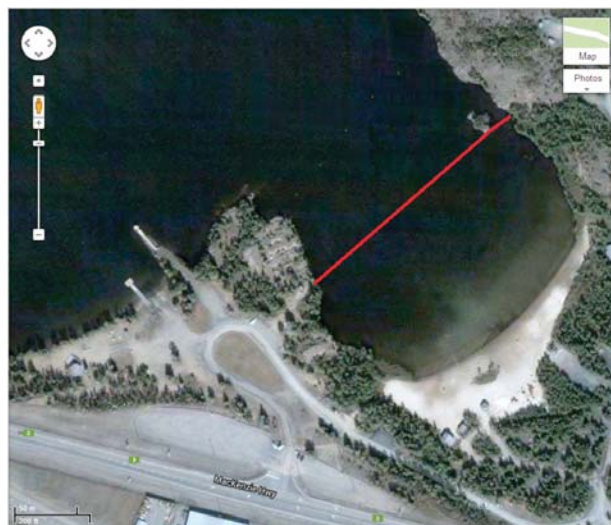
Even when certified National Lifeguards are present, the Lifesaving Society believes that the public must take personal responsibility for their actions. All levels of protection are still required even when lifeguards are on duty.

Drowning is preventable. It takes a community to create a Water Smart(R) culture.

Designated Swim Area

Appendix D

Below is a map of the Fred Henne unsupervised waterfront indicating the existing access points and designated swim area.



The Auditors observed three (3) open beach access points that can be secured at night (top left image) on the main beach. A fourth entrance was locked at the North East end of the beach. During interviews it was identified that public can also gain access to the beach by swimming in at night. The boat launch beach did not have any method to restrict access after hours.

The current identification system for the main beach swim area consists of a rope of buoys that are strung across the lake (top right image). The boat launch swim area also consists of rope buoys that are anchored at 2 spots in the water and tied to tree's on shore.

The map below can be considered by the government to reduce the size of the swim area. This proposal includes constructing both a swim area and wading area. It is recommended that the maximum depth for the wading area be 3 feet deep and the maximum depth of swimming areas be 5 feet deep. It is also recommended that consideration be given to reducing size of the swim area to extend a maximum of 30 meters from shore. It was noted by auditors that plant growth is present on both sides of the existing swim area, it is recommended that the swim area be reduced to not include areas of plant growth.



A minimum of 60 meters is recommended as a buffer between the designated swim area and boating area. In the map to the left the orange dots represent the restricted boating area, white dots represent the designated swim area, and the green lines represent a designated wading area.

Sign Samples

Appendix E

Where possible the Lifesaving Society recommends that signage utilize pictures to convey the message. The use of universal symbols provides instant recognition and avoids confusion if readers cannot read or do not read English.

Standards for Signage

Colour

- Red slash - the activity is prohibited
- Yellow background - warning or caution
- Green boarder - activity is permitted

Rules:

Clearly indicate which activities are prohibited or permitted. Including the reason for the rule increases compliance.













Duty to Warn:

Identify hazards, the risk or consequence of the hazard and how to avoid it.

Location:

Post warnings at the hazard and where possible, at the access points or routes.

Sample Signage

Information Signs	Mandatory Action Signs	Prohibition Signs	Warning Signs
 Water Rescue	 Lifejacket	 No Lifeguard on Duty	 Drop-off
 First Aid Station	 Supervision	 No Diving	 Deep Water
 Operational Hours	 Within Arms Reach	 No Swimming	 Rocky Bottom

Fred Henne Beach History

Appendix F

Fred Henne Beach contracted lifeguards from the City of Yellowknife for waterfront surveillance until 2002. When the beach had lifeguards they were contracted to provide surveillance for an 8 hour period and there was public education signage present reminding caregivers to remain within arms reach of children. A large speaker was available to make announcements to the public on the beach.

There did not used to be a swim area by the boat launch. It is noted that this is a faster and steeper drop off than at the main beach.

Rescue equipment available at the main beach (until 2002):

- paddle board
- small boat
- 4 ring buoy stations set up along the beach.

Challenges noted by lifeguards:

- Hours of lifeguard operations - hard for staff to determine when to close the beach. Lifeguards would stay longer as beach would be busy. It was difficult to meet the public's expectation of providing lifeguard surveillance at all times.
- Incidents - incidents would still occur outside the scheduled lifeguarded times.
- Resourcing/capacity challenges - it was difficult to staff both the beach and the pool. The staff capacity was not there and this resulted in the closure of the indoor pool at times..
- Budget - the contract did not adequately reflect the costs associated with providing lifeguard surveillance on the beach. The City of Yellowknife had to subsidize operating costs from the pool budget.
- Staff retention - it was hard to recruit and retain staff to work the beach as it was only a summer position.
- Within arms reach - parents were not remaining within arms reach of their children even with lifeguards present on the beach.
- Inflatables - one of the most common rescues that lifeguards had to perform while on duty was for public on inflatables. The wind would push them out beyond where they could touch the bottom and they did not have the swimming ability to get back. Lifeguards would respond and return them to the swimming area.
- Size - it is a large area to provide lifeguard surveillance to. It would require multiple lifeguards to provide surveillance to this area.
- Glare - there is lots of glare from the high sun making it challenging for lifeguards to provide surveillance.
- Intoxication - people thought the beach was a party spot.
- Playground - lots of activity would be taking place behind the lifeguard. The playground was a challenge with kids falling and sustaining injuries.
- Cliff Jumping - teenagers would go to the cliff and jump or dive off. Lifeguard had to respond to a spinal as a result of this activity.

Since 2002 the main beach has remained accessible to the public as an unsupervised waterfront. The swim area at the main beach has increased in size and a second unsupervised swimming area was designated near the boat launch where buoys were put out to warn boaters of swimmers. Signage has been updated to reflect that there is no lifeguard on duty.

Sample Buoy System

Appendix G

Standards for Buoys

It is recommended that the buoy system meet the Canadian Aids to Navigation System 2011.

Colour

For all buoys other than "special buoys", retroreflective material must be the same colour as that of a light for that buoy. For example:

- green - port
- red - starboard
- yellow - special buoys, including swimming and diving buoys
- orange - hazard, information, control and keep-out buoys.

Transport Canada may require you to add retroreflective material where there is a need for increased visibility or better identification of your buoy.

(Transport Canada)

- White - Swimming

(Canadian Aids to Navigation System 2011)

Buoy Shape

The shape of an unlighted buoy indicates the position of the buoy with respect to the channel and thus the side on which the buoy should be passed:

A pointed (conical) shape indicates that the buoy is marking the starboard (right) side of the channel or the location of a danger which must be kept on the vessel's starboard (right) side when proceeding upstream.

A flat top or cylindrical (can) shape indicates that the buoy is marking the port (left) side of the channel or the location of a danger which must be kept on the vessel's port (left) side when proceeding upstream. Flat topped (can) buoys are also used for some applications where the shape of the buoy has no significance (for example, special buoys and cardinal buoys). In the placement of such buoys, care is taken not to convey an unsafe message in the event that the meaning of the buoy is interpreted by shape only.

A spherical shape indicates that the buoy is marking the centre of the channel or safe water and that it may be safely passed on either side although generally it should be kept on the vessel's port (left) side when proceeding in either direction.

(Canadian Aids to Navigation System 2011)

Location Recommendations:

- It is recommended that no wake buoys are placed around the boat launch.
- It is recommended that boating prohibited buoys are placed outside the swimming area as proposed in Appendix D - Designated Swim Area.
- It is recommended that swim area buoys are used to mark the swim area.

Sample Buoys



Locations For Rescue Equipment

Appendix H

Below is a map of the unsupervised beach and the unsupervised boat launch facility at Fred Henne Territorial Park suggesting locations for consideration the government of Northwest Territories.



Rescue equipment located at these stations could include:

- Ring buoys
- Reaching pole
- Throw bag

Locations for Signage

Appendix I

Below is a map of the Fred Henne unsupervised waterfront indicating areas to consider including signage.



Primary Signage - Red dots (Entrances)

Secondary Signage - Blue dots (Waters Edge)

Additional public education messaging could be places on garbage cans, washroom stalls/doors, buildings, etc.

Below is a map of the Fred Henne unsupervised boat launch facility indicating areas to consider including signage.



Primary Signage - Red dots (Entrances)

Secondary Signage - Blue dots (Waters Edge)

Additional public education messaging could be places on garbage cans, washroom stalls/doors, buildings, etc.

Recommendation Summary

Appendix J

Section	Priority Recommendation	Primary Recommendation	Secondary Recommendation
Personnel	None	None	3-1 (LOP Level 7) Train park staff in the waterfront related facility emergency procedures. Encourage staff to advance their lifesaving training to include basic water rescue certifications.
Emergency & Operating Procedures	1-1 Consult with the Department of Health and Social Services to establish a regular schedule for taking bacteriological water samples of the swim area during the swim season.	2-1 Management analyze the types of emergencies that may occur on the beach & develop procedures for them. 2-1 Expand Emergency procedures to include extreme weather, beach evacuation, and first aid response procedures.	3-2 The facility reference the Lifesaving Society's Safety and Supervision toolkit and develop a facility safety and supervision plan. 3-4 Implement a regular cleaning schedule to sift the sand to remove hazardous materials 3-3 Staff record bather attendance figures, air and water temperature, list of maintenance items performed, and any emergencies or incidents that may have taken place as part of daily statistics. 3-5 Develop a system to map, track, and code beach incidents. Plan to address frequently occurring incidents.
Safety Systems	1-2 (LOP Level 5) Make available emergency equipment on the beach in appropriate locations including: at least 1 reaching pole at least 3 metres in length and 1 buoyant throwing assist with a line 15 metres long.	2-2 Place white colored buoys marking the swim area and consider placing buoys that prohibit motorized watercraft around the swim area.	3-6 Increase the level of protection on the beach from a level 2 and have the government determine which level of protection is reasonable to provide. 3-8 (LOP Level 3) Implement a signage/buoy system to indicate where boating access is permitted/restricted. 3-9 The government reconsider allowing swimming in the boat launch swim area. Remove contradicting signage. 3-7 (LOP Level 3) Place "no wake" buoys around the boat launch to minimize waves in the swim area.

LOP Level - Layer of protection level

Recommendation Summary

Appendix J

<p>Communication & Education</p>	<p>1-3 (LOP Level 2 & 3) Signage for unsupervised waterfronts also contain information including: admission requirements, identification of hazards, non swimmers should wear a lifejacket, children require direct supervision, don't swim alone, water conditions may change, location of emergency telephone, location of closest first aid station, location of emergency equipment, diving can result in serious injury or death, name of the facility/ operated by, report any deficiencies to, posted rules for use, hours of use.</p> <p>1-4 (LOP Level 6) Place emergency numbers next to the phone and at the beach public access points.</p>	<p>2-4 (LOP Level 6) Identify a phone for emergency use and place signage as to the location of the emergency phone.</p> <p>2-3 (LOP Level 2 & 3) Establish emergency signals and place public signage as to the emergency signals and appropriate response.</p>	<p>3-12 (LOP Level 2 & 3) Develop and communicate to the public admission policies that include: age for unaccompanied access/ caregiver (consider public pool regulations – 12 and 16 years respectively), caregiver to bather ratio (Lifesaving Society recommends maximum of 4), requirement for caregivers to remain within arms reach of persons in their care, people under the influence of drugs or alcohol are not permitted to use the beach.</p> <p>3-14 (LOP Level 3) Place "No Swimming" and "No Jumping/ Diving Rocks Below" signage in the cliff area to the North East of the beach (Appendix A – Photo 9).</p> <p>3-17 (LOP Level 4) Enhance safety with a Lifejacket Loaner Station, which provides free lifejackets to the public on the honor system of borrow and return. For collaboration on the placement, design, and messaging of the Lifejacket Loaner Station Program, contact the Lifesaving Society.</p> <p>3-16 (LOP Level 4) Educate public on hazards present at the waterfront and Water Smart® behaviors with physical (on site) and virtual public information stations. Virtual information could be accessed via a website or QR codes that takes users to a virtual beach information station.</p> <p>3-13 (LOP Level 2) Post public safety notice signage in change rooms. This can educate users as to the change room and beach rules.</p> <p>3-10 (LOP Level 6) Consider installing an emergency box/phone that connects directly from the beach area to the park staff office or RCMP.</p> <p>3-18 (LOP Level 4) Place signage to warn public of the risks of / or consider the banning of using inflatables at the beach.</p> <p>3-15 Place signage outlining rules of use for the volleyball courts.</p> <p>3-19 Identify change room emergency exits to assist users in exiting in the case of an emergency.</p> <p>3-11 (LOP Level 2 & 3) Inspect, maintain, and repair/replace as needed the fences, signage, and barriers.</p>
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LOP Level - Layer of protection level

Facility & Equipment	None	None	<p>3-21 Reduce the size of the swim area from to a maximum of 30 metres from shore and create a wading area.</p> <p>3-20 Management create an inspection checklist for a beach hazard assessment and prepare a process to address deficiencies including how and when to close the beach or a section of it.</p> <p>3-27 Anchor the buoys in the swim area near the boat launch to prevent the extension of the swim area due to the extension of lines by wind or people pushing/pulling on it.</p> <p>3-23 Provide soap or hand sanitizer in washrooms.</p> <p>3-24 Keep washroom and change areas in good repair and conduct maintenance when required.</p> <p>3-26 Install infant change tables in change rooms.</p> <p>3-25 Consider installing showers on or near the beach.</p> <p>3-22 Provide lighting with a minimum of 215 lux at floor level in dressing rooms and other public areas. This helps provide a safe public environment.</p>
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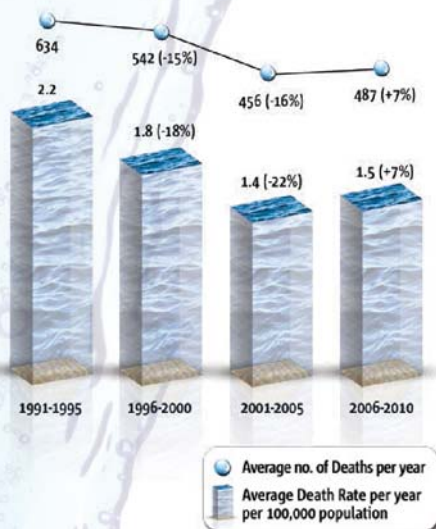
LOP Level - Layer of protection level

Canadian DROWNING Report

2013 Edition

Prepared for the Lifesaving Society Canada by
the Drowning Prevention Research Centre Canada

Change in Number of Preventable Water-Related Deaths and Death Rates in Canada, 1991 to 2010



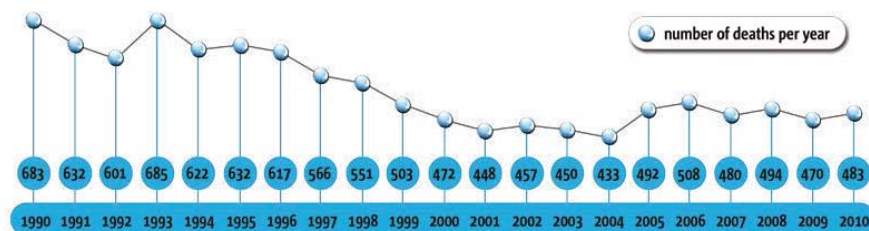
MORE drownings as Canadians get older

The surge in drownings continues in the latest Coroners' data. An uptick to 483 drownings in 2010 marks the 6th successive year of 470 or more drownings in Canada (see Chart). Drownings are up 7% during the most recent 5 years (2006-2010) versus the previous 5-year average (2001-2005).

This upswing may, at least in part, reflect Canadian weather trends, particularly in the summer when participation in recreation in, on or near water is at its highest. Summer 2010 was the 3rd warmest summer on record since Environment Canada began tracking temperatures in 1948. For the total year, 2010 set a new record high, with all parts of the country above normal and the national average temperature 3°C above normal.

Taking population into account, the national water-related death rate also increased slightly to 1.5 per 100,000 population during 2006-2010, which is up 7% versus the previous 5 years (see Chart). However longer-term, the drowning death rate is down significantly from the higher drowning death rates of the 1990's (2.2 and 1.8 deaths per 100,000 recorded during 1991-1995 and 1996-2000 respectively). There has been significant **long-term** progress in reducing death by drowning in Canada, but the more recent upswing reinforces the need for continued strong drowning prevention efforts.

Number of Preventable Water-Related Deaths in Canada, 1991 to 2010



As the Canadian population ages, the drowning prevention challenge is increasingly with “Baby Boomers”, “Seniors” and the high-risk group of 18-24-year-old men.

- The biggest increase in drownings is among “Baby Boomers” 50-64 years of age. Drownings are up among “Seniors” 65+ years as well. In contrast, encouraging progress has been made with young Canadians under 18 years of age, who have fewer drownings and lower drowning death rates.
- The risk-taking 18-24-year-olds continue to have the highest water-related death rate of any age group in Canada at 2.2 per 100,000 population.
- More drownings are happening at times that have traditionally been “off-peak” times for drowning incidents, but reflect when older victims are getting into trouble: winter/spring months, weekdays and daytime.
- More drownings are occurring during daily living activities, especially among “Baby Boomers”. Recreationally, there are more “Baby Boomer” deaths while swimming and walking near water. For powerboating, there are fewer deaths among younger adults under 50 years and more deaths among 50+ “Baby Boomers” and “Seniors”.

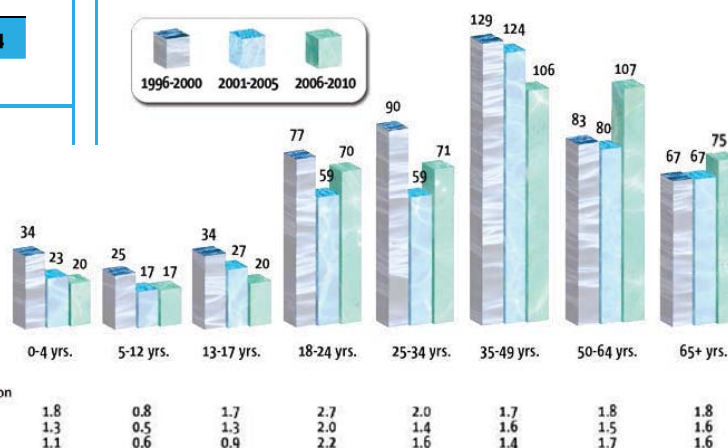
Number of Canada-Wide Preventable Water-Related Deaths, 2011 to 2012

Preliminary interim data from media and Internet reports

	2011	2012
Alberta	31	29
British Columbia	54	62
Manitoba	20	14
New Brunswick	9	10
Newfoundland and Labrador	12	11
Northwest Territories	0	6
Nova Scotia	9	17
Nunavut	6	1
Ontario	97	105
Prince Edward Island	3	0
Quebec	83	77
Saskatchewan	21	10
Yukon	2	2
Total	347	344

Age Group

Number of Preventable Water-Related Deaths and Death Rates in Canada, 1996 to 2010



WHO is drowning?

Drowning victims in Canada are getting older. The 50-64-year-old population increased far faster than any other age group in Canada during the past 5 years (+19% in 2006-2010 vs. 2001-2005; four times higher than overall Canadian population growth of +5%). At the same time, we are experiencing a spike in water-related deaths among “Baby Boomers” (+34% for 50-64-year-olds). See Chart.

The second fastest growing population group in Canada is seniors 65+ years of age. The number of drowning victims who were “Seniors” increased 12% during the past 5 years, in-line with their +11% population growth.

Also contributing to more overall drownings in Canada is more deaths among 18-34-year-olds during 2006-2010. Although their population growth is more moderate (+5%), 18-34-year-olds accounted for a 19% increase in 2006-10 fatalities. In particular, **risk-taking 18-24-year-olds continue to have the highest water-related death rate of any age group in Canada** at 2.2 per 100,000; albeit improved from the even higher drowning death rate among young men in the 1990s.

Lower numbers of deaths and death rates are especially evident among teenagers 13-17 years of age, with fewer deaths (-26% in 2006-2010) reflecting steady progress in significantly reducing the drowning death rate.

For children under 5 years, the number of drownings is down (-13%) in 2006-2010 compared to 2001-2005. This reflects a lower drowning death rate of 1.1 per 100,000 population, which is much improved from the early 1990s when children under 5 years had a drowning death rate as high as young, male adult risk-takers.

Drowning prevention education efforts with children and their parents appear to be having an impact. It is hoped that this will help contribute to fewer drownings in the future among older Canadians as well, as these youngsters carry safer aquatic behaviours and attitudes forward with them.

The vast majority of drowning victims continue to be men. Year after year, 8 out of 10 drowning victims are male. The skew to male victims is evident across all age groups, but most pronounced among 18-34-year-olds where 9 of every 10 victims are male. This reflects higher risk behaviour around water among men than women. Overall, men accounted for 83% of Canada’s water-related deaths during 2006-2010.



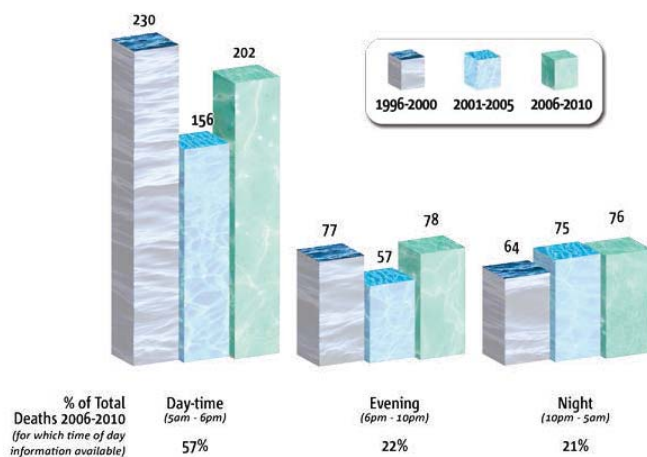
WHEN are they drowning?

By time of year, **the warmer summer months (May through August) still account for the majority (57%) of 2006-2010 drownings**, peaking in July/August (34%). However, **the biggest seasonal increase was during November through April** (+23% during 2006-2010 vs. 2001-2005). This increase reflects more winter/spring deaths among 50-64-year-olds (+85%), on ice (+52%) and involving recreational snowmobiling (+39%).

By day of week, **half (51%) of 2006-2010 fatalities occurred on the weekend (Friday-Sunday) and half (49%) during the week (Monday-Thursday)**. There was a bigger increase for weekday drownings (+13%) than weekends (+2%). This reflects large increases in weekday deaths among 50-64-year-old victims (+40%) and 18-34-year-old victims (+30%).

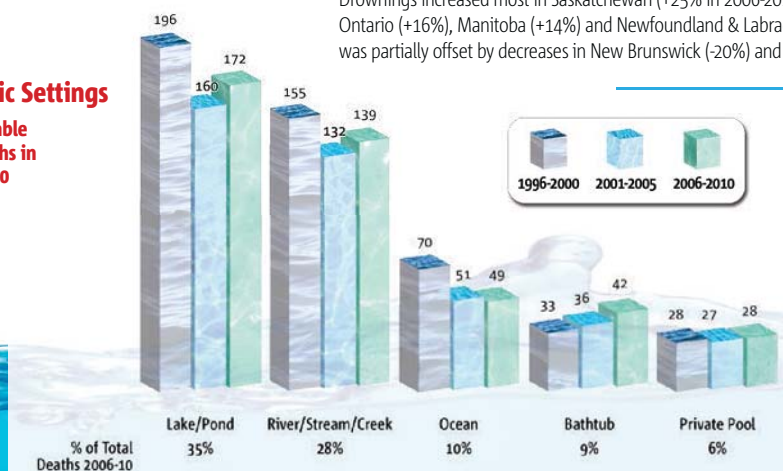
By time of day, **the majority of deaths (57%) occur during daytime hours (5 a.m.-6 p.m.)**. Drownings increased sharply during 2006-2010 for daytime (+30%) and evening (+37%) incidents. This reflects big increases among 50-64-year-olds for daytime (+77%) and evening (+85%) deaths; and among seniors 65+ years for daytime (+49%) and evening (+224%) deaths.

Time of Day Number of Preventable Water-Related Deaths in Canada, 1996 to 2010

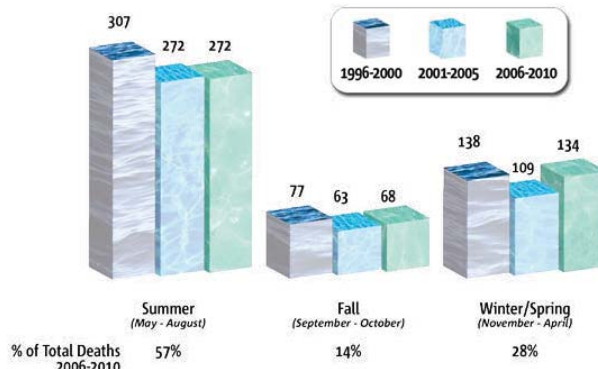


Top Five Aquatic Settings

Number of Preventable Water-Related Deaths in Canada, 1996 to 2010



Time of Year Number of Preventable Water-Related Deaths in Canada, 1996 to 2010



WHERE are they drowning?

Lakes (35%) and rivers/streams (28%) continue to account for two-thirds of Canadian drownings. Bathtubs (9%) are a less frequent setting for water-related deaths, but on the increase (+17% in 2006-2010 vs. 2001-2005). Almost all (92%) bathtub victims were alone. **Young children under 5 years and seniors 65+ years are especially at-risk in the bathtub** – 19% and 15% of drowning deaths occurred in the bathtub for these two age groups respectively. Among 50-64-year-olds, bathtub fatalities almost tripled in 2006-2010 vs. 2001-2005, up to 9% of “Baby Boomer” drownings.

Private backyard swimming pool deaths are fewer in number (6%) and continue at about the same level as in previous years. However, **backyard pools continue to be the number 1 setting where children under 5 years of age most often drown**. For half of private pool fatalities for which information was available, there was either no gate (29%) or the gate was neither self-closing nor self-latching (22%).

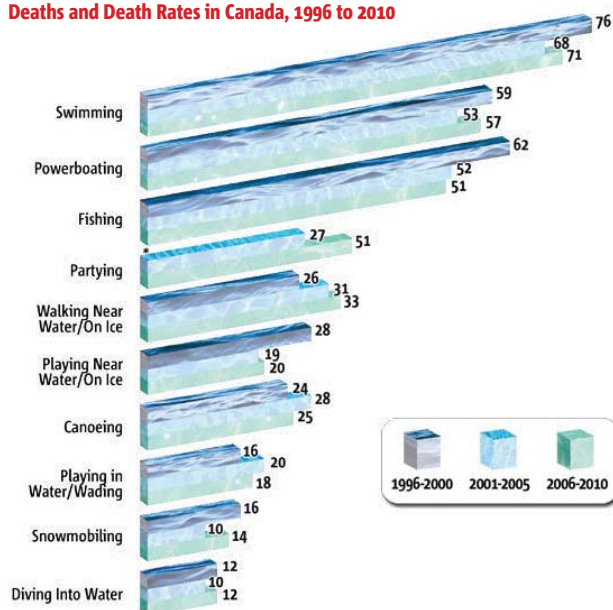
Drownings in public pools and waterparks continue to be few in number in these lifeguard-supervised environments – averaging 4 deaths per year during 2006-2010 (low of 2 in 2007 and 2010; high of 6 in each of 2006 and 2009). Children 5-12 years were the most prevalent age group, accounting for half (48%) of public pool/waterpark victims.

By region, **the three northern territories have the highest water-related death rates**. The next highest rates are in Newfoundland & Labrador followed by Manitoba, British Columbia, Nova Scotia and Saskatchewan (see Chart).

Drownings increased most in Saskatchewan (+25% in 2006-2010 vs. 2001-2005), Ontario (+16%), Manitoba (+14%) and Newfoundland & Labrador (+14%). This was partially offset by decreases in New Brunswick (-20%) and B.C. (-6%).

Top Ten Recreational Activities

Number of Preventable Water-Related Deaths and Death Rates in Canada, 1996 to 2010



* not available

WHAT were they doing?

By purpose of activity, **recreational activities continue to account for the majority of Canadian drownings** (60%) and were up slightly (+3% in 2006-2010 vs. 2001-2005). Swimming continues to account for the largest number of drownings, followed by powerboating and fishing. The biggest increase was for snowmobiling (+45%). Among 50-64-year-olds there were particularly large increases in drownings while swimming (+60%) and walking near water (+38%). For powerboating, there were fewer deaths among younger adults 18-34 years (-9%) and 35-49 years (-14%), but more deaths among "Baby Boomers" (+18%) and "Seniors" (+58%).

Daily living activities continue to account for a high proportion of fatalities among seniors 65+ years (35%).

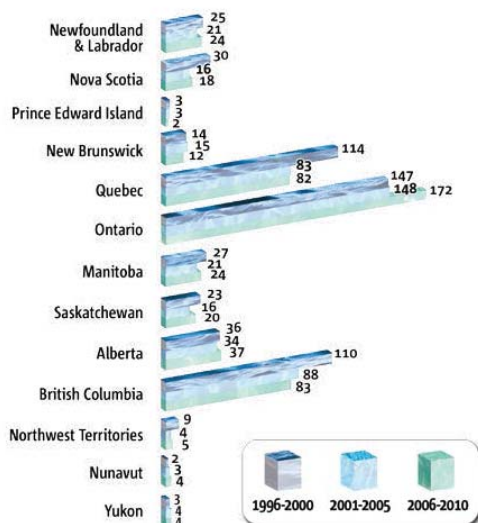
By type of activity, **the biggest increases during 2006-2010 compared to 2001-2005 were for bathing (+18%), near-water, non-aquatic activities (+20%) and transportation incidents (+35%).**

Boating deaths during 2006-2010 were down 7% vs. 2001-2005. By type of craft, this reflects fewer powerboat deaths (-7%). By size of powerboat, the decrease traces to small craft 5.5 m and under (-8%). As well, there were fewer fatalities involving sailboats (-62%).

Deaths among 50-64-year-old "Baby Boomers" were up sharply for aquatic activities (+48%) and non-aquatic activities (+52%).

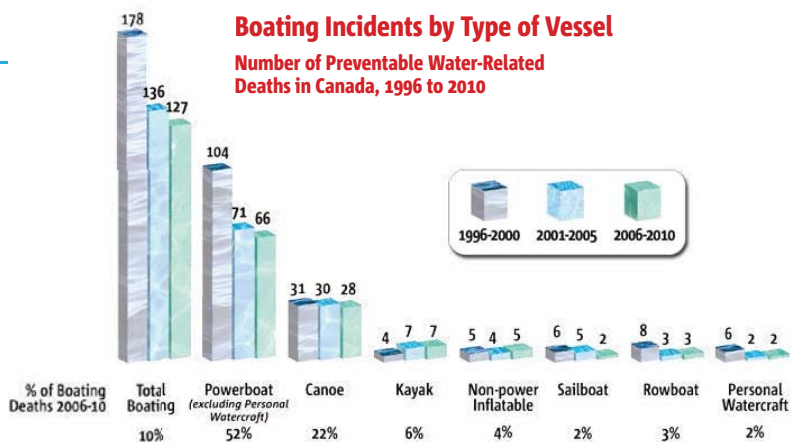
Province and Territory

Number of Preventable Water-Related Deaths and Death Rates in Canada, 1996 to 2010



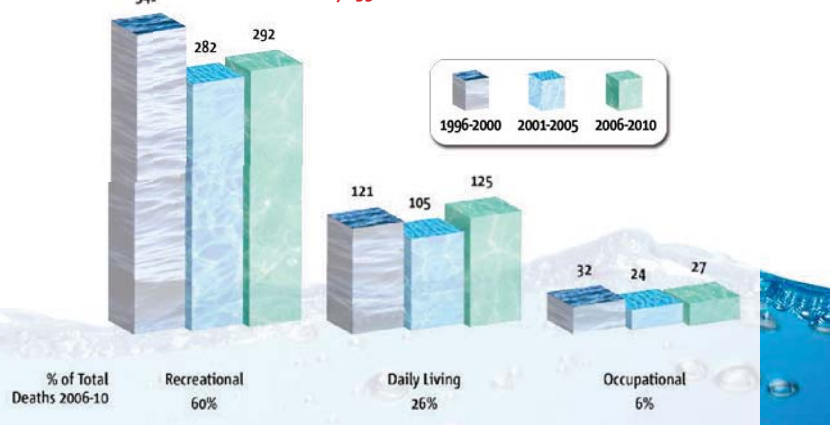
Boating Incidents by Type of Vessel

Number of Preventable Water-Related Deaths in Canada, 1996 to 2010



Type of Activity

Number of Preventable Water-Related Deaths in Canada, 1996 to 2010



Key Risk Factors

Percentage of Preventable Water-Related Deaths and Death Rates in Canada, 1996 to 2010

	Total			2006–2010					
	1996-2000	2001-2005	2006-2010	Boating	Swimming	Under 5 yrs.	18-34 yrs.	50-64 yrs.	65+ yrs.
PFD/lifejacket not worn (percentage of known relevant situations)	82	80	77	79	*	*	83	73	83
Alcohol consumption	33	33	36	39	32	0	51	38	20
With others	58	54	53	70	77	39	69	43	27
Alone	42	46	47	30	23	61	31	57	73
Momentary absence of caregiver**	n.a.	n.a.	32**		14	53			
Cold water	67	52	51	45	7	38	46	55	51
Rough water				21					
Capsized				37					
Fell overboard				26					
After dark	24	24	25	18	11	2	35	23	17
Heart disease	9	11	16	14	19	0	2	24	48

* Very small sample size, too small to report.

** Percentage of deaths where victim was a child less than 15 yrs. and was under adult supervision at time of incident.

Significant risk factors

Not as applicable to these subgroups, or sample size too small to report

WHY did they drown? ...risk factors

The major risk factors contributing to “why” victims drowned remain consistent with those the Lifesaving Society has identified in the past.

Boating: Not wearing a PFD/lifejacket (79% of 2006-2010 boating deaths for which PFD information was available); cold water (45%); capsizing (37%) and falling overboard (26%), often in rough water (21%); alcoholic beverage consumption (39%); boating alone (30%) versus 70% of boating victims with companion(s) who were unable to rescue them.

Swimming: Victim unable to swim (34% of all victims for whom swimming ability information was available); alcohol consumption (32%); swimming alone (23%) versus 77% of swimming victims with companion(s) who could not rescue them; and heart disease/suffering a heart attack while swimming (19%).

Children under 5 years of age: Alone near water (61%) often during a momentary absence/lapse of caregiver attention (53%).

Young men 18-34 years of age: Not wearing a PFD (83% of relevant situations); alcoholic beverage consumption (51%); cold water (46%); after dark (35%); alone (31%) or 69% with companion(s) who could not rescue them.

Baby Boomers 50-64 years of age: Not wearing a PFD in relevant situations (73%); alone (57%) or with a companion(s) who could not rescue them (43%); cold water (55%); alcoholic beverage consumption (38%); heart disease/suffering a heart attack (24%); after dark (23%).

Seniors 65+ years: Not wearing a PFD in relevant situations (83%); alone (73%) or with a companion(s) who could not rescue them (27%); cold water (51%); heart disease/suffering a heart attack (48%); alcoholic beverage consumption (20%).

RESEARCH METHODOLOGY

Complete data from 1995-2010

The drowning research process involves data collection; research tabulation and analysis. The water-related death data is extracted from the offices of the Chief Coroners and Medical Examiners in each province/territory. The scope of this research:

- collects the data needed to profile victims of aquatic incidents, including the circumstances and contributing factors under which these incidents occurred.
- includes all deaths in each province/territory and Canada overall resulting from incidents "in, on or near" water; "near-water" incidents were included if the incident was closely related to water-based recreational, vocational or daily living activity, or if the presence of water appeared to be an attraction contributing to the incident.
- includes only preventable (unintentional) deaths. It does not include deaths due to natural causes, suicide, or homicide.

Interim data

Complete final data on more recent drownings and other water-related deaths are not yet available from the offices of the provincial/territorial Chief Coroners and Medical Examiners. The interim, preliminary data are derived from media releases, media clippings, news reports and internet searches.

ACKNOWLEDGEMENTS

We gratefully acknowledge the support, co-operation and efforts of:

- The Chief Coroner's Office and the Chief Medical Examiners in each province/territory, who permitted and facilitated confidential access to coroners' reports on preventable water-related deaths. This provided the base data for this research and report.
- The volunteers who contributed their time and energy including data extraction on preventable water-related deaths from coroners' files.

The Lifesaving Society

The Lifesaving Society – Canada's lifeguarding experts – works to prevent drowning and water-related injury through its training programs, Water Smart® public education, aquatic safety management, drowning research and lifesaving sport. Annually, over 800,000 Canadians participate in the Society's swimming, lifesaving, lifeguard and leadership training programs. The Society sets the standard for aquatic safety in Canada and certifies Canada's National Lifeguards.



CONTACT US

National Office

Tel: 613-746-5694
Email: experts@lifesaving.ca
www.lifesaving.ca

British Columbia & Yukon

Tel: 604-299-5450
Email: info@lifesaving.bc.ca
www.lifesaving.bc.ca

Alberta and Northwest Territories

Tel: 780-415-1755
Email: experts@lifesaving.org
www.lifesaving.org

Saskatchewan

Tel: 306-780-9255
Email: lifesaving@sasktel.net
www.lifesavingsociety.sk.ca

Manitoba

Tel: 204-956-2124
Email: aquatics@lifesaving.mb.ca
www.lifesaving.mb.ca

Ontario

Tel: 416-490-8844
Email: experts@lifeguarding.com
www.lifesavingsociety.com

Quebec

Tel: 514-252-3100
Email: alerte@sauvetage.qc.ca
www.lifesaving.qc.ca

New Brunswick

Tel: 506-455-5762
Email: info@lifesavingnb.ca
www.lifesavingnb.ca

Nova Scotia

Tel: 902-425-5450
Email: experts@lifesavingsociety.ns.ca
www.lifesavingsociety.ns.ca

Prince Edward Island

Tel: 902-368-7757
Email: pei.lifesaving@islandtelecom.com
www.lifesavingpei.ca

Newfoundland & Labrador

Tel: 709-576-1953
Email: lifeguard@bellaliant.com
www.lifesavingnl.ca

Drowning Prevention Research Centre Canada

The Drowning Prevention Research Centre is the lead agency for drowning and water-related research in Canada. The Centre conducts research into fatal and non-fatal drowning, significant aquatic injury and rescue interventions. Contact Barbara Byers, Research Director, Email: experts@drowningresearch.ca, Telephone: 416-490-8844.



Waterfront Safety Standards

July 2004



LIFESAVING SOCIETY®

The Lifeguarding Experts

Other Safety Standard Publications available from the Lifesaving Society include:

Public Aquatic Facility Safety Standards: designed to assist public aquatic facility owners and operators in providing a safe aquatic environment. It recommends minimum safety standards for public aquatic facility operation.

Private Pool Safety Standards: designed to assist private pool owners and operators in providing a safe aquatic environment. It recommends minimum safety standards for private pool operation.

Semipublic Swimming Pool Safety Standards: designed to assist semipublic swimming pool owners and operators in providing a safe aquatic environment. It recommends minimum safety standards for semipublic swimming pool operation.

Public Wading Pool Safety Standards: designed to assist public wading pool owners and operators in providing a safe aquatic environment. It recommends a minimum safety standards for public wading pool operation.

Waterfront Safety Standards

July 2004



LIFESAVING SOCIETY®

The Lifeguarding Experts

WATERFRONT SAFETY STANDARDS

Published by the Lifesaving Society

13123 - 156 Street

Edmonton, Alberta, Canada T5V 1V2

Phone: (780) 415-1755; Fax: (780) 427-9334

Email: experts@lifesaving.org; Website: www.lifesaving.org

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The Lifesaving Society is Canada's lifeguarding experts. The Society is a national charitable organization working to prevent drowning and water-related injuries through lifeguard, lifesaving, and swimming training, competitive lifesaving, safety management standards and services, and Water Smart® public education.

The Society is an independent, charitable organization educating Canadian lifesavers since the first Lifesaving Society Bronze Medallion Award was earned in 1896.

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EXECUTIVE SUMMARY

Every owner of a waterfront facility has an obligation to provide a safe environment for every user of the waterfront. This obligation has been very clearly identified and affirmed by court decisions across Canada. In order to meet this obligation, you need the assistance of the experts – the Lifesaving Society. The Lifesaving Society is the authority in aquatic standards and safety. Our standards and expertise are based on extensive research and over 100 years of public safety education and service. We are leaders in research and prevention of injury and drowning.

The Lifesaving Society has a mandate for public safety. The Lifesaving Society *Waterfront Safety Standards* are your source of information about how to provide a safe environment and understand the regulations and standards that you must follow to achieve this goal. The Society developed and published these standards to educate waterfront owners about what they can do to safely operate their waterfront. Applying these standards to your waterfront will help you protect your customers – the public. It will also help you reduce the risk of injury or legal actions resulting from injuries.

The information in the Lifesaving Society *Waterfront Safety Standards* is organized in a logical order to help you understand the material and take the necessary actions to create and maintain a safe environment for your waterfront users. The following sections of the Standards address information for specific needs:

- **The Drowning Problem** – Provides you with information from the Lifesaving Society Drowning Research about who is at risk of drowning or being injured at your waterfront and the behaviors that may result in injuries.
- **Definitions** – Definitions of terms used in the standards.
- **Risk Management** – Provides you with information about your responsibility as the waterfront owner for the safe operation of your waterfront. Explains the risk management process that you can use to analyze and understand the risks associated with your waterfront and take steps to eliminate or reduce these risks.
- **Personnel and Supervision** – Explains the requirements for staff to operate and supervise a waterfront. It also includes recommendations for staff training and safety.
- **Emergency Procedures** – Emergency procedures are the steps waterfront staff can take to respond to an incident or help an injured person. This section provides guidance to help you identify and plan for the procedures you will need for your waterfront and select the necessary emergency equipment.
- **Safety Systems** – Safety systems are the day to day actions and policies established to prevent incidents and injuries. They include

such things as waterfront rules and how they are to be implemented, procedures for controlling access to the waterfront, suggestions for signs to educate users about hazards and safe behaviors for using the waterfront, and systems for supervising patrons.

- **Waterfront Operation** – Presents recommendations for the procedures used to operate the waterfront and maintain a safe waterfront. This includes maintaining safe water quality, and inspecting and testing waterfront equipment.
- **Safe Environment** – This section provides you with direction about how to make the physical environment of the waterfront safe. This includes items such as buoylines, recreational equipment such as swimming rafts, safe water quality, waterfront and equipment maintenance and much more.
- **Resources** – This section includes information about additional support resources and information available from the Lifesaving Society. This includes Lifesaving Society links to Government resources and other organizations which can assist aquatic facility owners and operators to provide a safe environment. The *Safety Management* section of the Lifesaving Society website, www.lifesaving.org, is your key to the most complete and current resources from the Society. The website will also have information about emerging issues that may not have been included in this edition of the Lifesaving Society *Waterfront Safety Standards*.

The Lifesaving Society recommends that you read the Lifesaving Society *Waterfront Safety Standards* and use this document to evaluate your waterfront and determine what steps you can take to create a safe environment for your patrons. This information should be shared with facility staff such as lifeguards as well as management who have a safety management role such as a parks director and your organizational risk manager. At least one copy of the Lifesaving Society *Waterfront Safety Standards* should be kept in the waterfront office for easy reference by facility staff. Additional copies are recommended for the other safety managers who should be aware of these standards.

Contact the Lifesaving Society for assistance to understand, interpret and implement the recommendations in the Standards. The Society contact information is located on the inside back cover.

FOREWORD

Faced with the potential for multi-million dollar lawsuits, waterfront owners are becoming more proactive in assessing and managing risk in their aquatic environment. The Lifesaving Society believes that many incidents are foreseeable and therefore preventable.

As the lifeguarding experts, the Lifesaving Society is the authority in aquatic standards and safety. The Society establishes standards for public safety and consults on aquatic safety issues. The Society sets public safety standards for the aquatic industry such as the owners and operators of waterfronts, interprets safety standards for aquatic facility owners, advises government and serves as an expert witness in legal cases involving aquatic safety issues. The Lifesaving Society *Waterfront Safety Standards* present the Lifesaving Society standards and recommendations for the safe operation of waterfront facilities.

The Lifesaving Society has developed and published public safety standards for aquatic activities and facilities throughout our history. The Lifesaving Society Safety Standards are compilations of aquatic safety guidance from Lifesaving Society research that has been published over many years in a variety of Society manuals and publications as well as external publications. The scope of Society research into public safety and risk management practices includes research and real operational experience from across Canada and around the world. In turn, the Society's expertise is shared internationally with the Royal Life Saving Society Branches throughout the Commonwealth and with the International Life Saving Federation.

The Lifesaving Society *Waterfront Safety Standards* assembles the standards published in these many different sources into a single document to make this information available and readily accessible to the waterfront owner. This document provides owners of waterfront facilities a set of clear recommendations from the Lifesaving Society for the safe operation of their waterfront. In addition to the Society's recommendations, this document also refers waterfront owners to other codes, regulations, statutes or standards that should be considered when developing safe operating practices for their waterfront. This document does not in any way replace or supersede current legislation. Owners and users must obey all provincial and municipal legislation, regulations and by-laws specific to their waterfront and community.

The Lifesaving Society recognizes that the recommendations provided in the Lifesaving Society *Waterfront Safety Standards* are not the only solutions that waterfront owners can use to provide a safe environment for their customers. The Lifesaving Society also recognizes that each waterfront has

unique features. No single document can address every situation and need. In situations where owners implement alternative safety measures, the Society recommends that they thoroughly evaluate and document these measures. Contact the Lifesaving Society for assistance to understand, interpret and implement the recommendations in the Standards.

THE DROWNING PROBLEM

Drowning is the second leading cause of unintentional death in Canada. The great tragedy is that the vast majority of these deaths are preventable. More than 99% of these fatalities occur in aquatic environments without lifeguard supervision. Aquatic facilities that are supervised by trained lifeguards are the safest locations for Canadians to go to enjoy aquatic activities. These supervised facilities include supervised waterfronts as well as public swimming pools and waterparks.

Over a 10 year period from 1991 to 2000, 2,224 people drowned in natural lakes and ponds, and artificial waterbodies such as reservoirs, retention ponds and artificial lakes. Recreational swimming in these waterbodies claimed the lives of over 300 Canadians and many more people were injured and needed medical attention. Some of these deaths and injuries occurred at waterfront facilities.

Waterfront facilities have a drowning prevention role both within the waterfront as well as within the larger community. Within the facility, they must make every effort to identify potential hazards and take effective steps to protect bathers from injury.

Within the larger community, the staff of a supervised waterfront can provide training in swimming and lifesaving skills as well as Water Smart® education to teach the public to protect themselves around aquatic settings or during aquatic activities. Information about Lifesaving Society training programs and Water Smart® education can be accessed through the Society website, www.lifesaving.org, or by directly contacting the Lifesaving Society. Water Smart® education materials available from the Lifesaving Society includes posters such as the “Within Arm’s Reach” poster and brochure, safety messages for signs and brochures, videos and activities that can be used to educate the public.

At unsupervised waterfronts, safety signs and posters can be used to educate patrons about the risks of aquatic activities and how to make Water Smart® choices to minimize these risks. Providing information about how to contact sources of Water Smart® education such as the Lifesaving Society is another strategy for protecting patrons.

The following Water Smart® information can be used to help develop safety rules for your facility and educate your patrons.

Children & Aquatics

While all age groups are at risk around water, deaths involving children are of particular concern. Drowning fatalities in children under the age of 5 are more than double that of any other age group. A major contributing factor in the deaths of children is the lack of adult supervision. For children under 5 years old, 85% were unsupervised when they drowned. For children age 5-12, 61% were unsupervised and in the age group from 13-15, 34% were unsupervised. These are alarming statistics, and speak volumes to the need for supervision of bathers at your waterfront.

Children are naturally curious about water. They are persistent and ingenious in finding a way to it. Tragedy can strike quickly. Ten seconds of unsupervised play or exploration can result in a drowning. That's all the time it takes! It also only takes a few inches of water for a drowning to occur. To prevent such tragedies, children must be supervised any time they have access to the waterfront. The best protection is to insist that all young children at the waterfront be directly supervised "Within Arm's Reach" distance by a caregiver. The message to your patrons should be: "If you are not within arm's reach, you have gone too far". At a Supervised Waterfront, the role of the lifeguard should be to provide an additional level of supervision and educate caregivers about their supervision and drowning prevention roles. School age children also need Water Smart® education about safe ways to enjoy the waterfront. Requiring a buddy system for these children is a good way to provide another layer of supervision.

The key to protecting children at a waterfront is always insisting that they be closely supervised when in the waterfront area.

Adults at Risk

Children aren't the only ones at risk of drowning in the waterfront. Adults are the second largest group at risk after young children under the age of 5. Drowning usually occurs when the adult goes for a dip alone. This may include swimming for fitness or just cooling off on a hot day. Nobody is around to notice, give assistance or get help if the adult gets into difficulty in the water.

The adult at risk of drowning, like the young child, swims unsupervised. And that's where the greatest danger lies! Everyone should swim with a buddy – adults too.

Diving & Shallow Water

Lifesaving Society Drowning Research has found that shallow water presents risks that the waterfront owner should consider. Any structure that patrons can walk on such as a dock or climb onto may be used for diving and possibly result in a diving injury. For shallow water (less than 2.5m deep), the only safe entry method is feet first. Patrons who dive into shallow water are at great risk. They risk hitting the bottom head-first and injuring their spine from the impact. Many of these victims are young men. The consequences

are tragic. Death sometimes occurs, but most times, the person is paralyzed. One dive into the waterfront can change their quality of life forever.

Approximately 34 Canadians become partially or completely paralyzed each year as a result of breaking their necks in water-related incidents. Most of these injuries occur while diving into shallow water. They also occur as a result of roughness or “horseplay” around the waterfront – throwing or pushing a person into the water, diving from high heights, diving off shoulders, or being “boosted” into the air by another swimmer. Dangerous play can result in a range of injuries which include possible spinal injuries, injuries resulting from collisions with the waterfront bottom as well as injuries resulting from collisions between bathers. Patrons need Water Smart® education and rules about safe ways to enter, play and enjoy the waterfront. Steps should be taken to minimize the risk that they will use waterfront structures to dive into shallow water.

Alcohol

Alcoholic beverages are involved in approximately one-third (36%) of all Canadian preventable water-related deaths, and half (48%) of fatalities where the victim was 18 to 34 years of age.

The high incidence of drowning and alcohol is an important factor for the waterfront owner to keep in mind. Many Canadian adults do not understand the increased risk from mixing aquatic activities and alcohol consumption. The effects of alcohol can include impaired judgement and physical coordination. Impaired patrons may not recognize hazards and may engage in dangerous behavior. In addition they are at increased risk of injury as a result of their physical impairment. Consumption of alcohol at the waterfront or using the swimming area while under the influence should be prohibited.

Waterfront Risks

The nature of a waterfront poses risks that are not present in swimming pools. The following Water Smart® messages will help protect your patrons:

- **Always swim with a buddy and be each other's lifeguard.** Friends can challenge poor risk choices or help rescue each other. 40% of drowning victims were alone.
- **Swim at a marked swimming beach.** Go to a marked swimming area and keep within the boundaries. Nonswimmers should wear a lifejacket or PFD in the water. Floating toys require close supervision. Also beware of special hazards such as currents and offshore winds.
- **Check the weather and avoid storm conditions.** Get off the water if you spot a storm coming.
- **Choose It. Use It. Wear your PFD and insist that everyone in your boat use it.** Wearing a PFD while boating is a Water Smart® choice that can help protect against hypothermia and help the boater rescue himself during an incident. Lifesaving Society's drowning statistics show that only one in ten boaters were wearing a PFD and

half did not have one in the boat.

- **Get trained.** Learn to swim and learn lifesaving skills. The Lifesaving Society Swim for Life program teaches critical self rescue and swimming skills, and the Canadian Lifesaving Program teaches lifesaving skills to rescue others. Most drowning victims (67%) were less than 15 metres from a point of safety. Many were closer at only 2 - 3 metres. Simple reaching and throwing assists can make all the difference in these circumstances.

Groups

Waterfronts may be used by a variety of groups within the community. At a Supervised Waterfront, lifeguards will be present to educate the group members about how to enjoy the waterfront safely and be part of the safety supervision of the group. At unsupervised waterfronts, the group is responsible for providing for the safety of its members while using the waterfront. Owners of unsupervised waterfronts can assist groups to plan for their safety through a variety of mechanisms which may include:

- Safety signs that provide recommendations for groups including safety rules and safety systems with recommendations for the group to provide lifeguard supervision;
- Contacting local groups that may be known to use the waterfront and providing safety recommendations;
- Safety planning recommendations on a website associated with the waterfront;
- Recommending that they contact the Lifesaving Society at the Society website: www.lifesaving.org.

Recommendations for Water Smart® safety rules and safety systems for groups are available on the Lifesaving Society website.

DEFINITIONS

Waterfront means an aquatic facility composed of a water area designated for swimming, the associated beach area of the shoreline and any associated structures such as washrooms and change rooms. The facility may be located on a natural water body such as a lake or a similar artificial water body such as a man-made lake. The waterfront may be a public facility open to the general public or a private facility whose use is restricted to registered guests, customers, owners, tenants and their guests.

Facility Manager or Operator means a person designated by the waterfront owner as being responsible for the management and operation of the waterfront facility.

Owner means the person or corporation who is the owner of a waterfront .

Swimmer or Bather means a person participating in any recreational activity in or on the water.

Patron means any person using the aquatic facility. This includes swimmers or bathers plus any spectators or other persons on the beach or in other associated areas such as change rooms.

Lifeguard means a person holding a current National Lifeguard (NLS) certification appointed by the owner or operator to maintain supervision over the swimmers while they are on the beach or in the swimming area.

Swimming Area means the water area designated and marked for swimming.

Beach means the shore area immediately surrounding the waterfront and designated as part of the waterfront facility.

Diving Board means a flexible board intended for use by divers.

Diving Platform means a rigid board or platform intended for use by divers.

Current Award means a training certification which is valid for a specified period from the date of certification or examination. The length of time that a certificate is current may be set by the certifying body and/or government regulation. For example, Lifesaving Society National Lifeguard Award is current for 2 years from the date of certification and Lifesaving Standard First Aid certification is current for 3 years from the date of certification.

Lifeguard Supervision is the deliberate and conscious act of observing facility users to ensure the lifeguard is immediately aware of any incident or behavior which may prove life-threatening or injurious.

RISK MANAGEMENT

Who is Responsible?

Ultimately the owner of a waterfront is responsible for the safe operation of the facility. The responsibility for the operation of the facility may be delegated to a Facility Manager or Operator. This responsibility may be further delegated to individuals such as Supervisors or Lifeguards who may be left in charge of the facility if it is a supervised waterfront. When the owner or manager is not present, the “in-charge” person, regardless of title, assumes full responsibility for the safe operation of the facility.

The Lifesaving Society *Waterfront Safety Standards* outlines the Lifesaving Society’s recommendations for minimum safety requirements for waterfronts. Safety shall be the primary concern of waterfront owners and managers. All facility staff are encouraged to go beyond the minimum requirements in their mandate to provide a safe environment. This means practising risk management: working diligently to prevent emergencies, but also responding to them quickly and efficiently if they do happen.

Risk Management Process

Risk Management is an ongoing process that is used to identify risks associated with your waterfront and activities at the waterfront, and take measures to reduce risk and prevent incidents and injuries. The process includes the following steps:

1. Identify risks
2. Evaluate: Why are they happening? What is the source?
3. Develop controls and strategies to minimize or eliminate risks including education of facility users regarding safe behaviors
4. Implement
5. Monitor efforts and evaluate results

Preventing Incidents

All waterfront personnel and owners/operators shall view incident prevention as an integral part of their jobs. An attitude should be fostered and encouraged among staff that they are hired to anticipate incidents and take steps to prevent them, as well as respond to emergencies.

Establishing safety systems are important steps in prevention. One way of doing this is to keep accurate incident records. Tracking incidents and analyzing these records to develop strategies to reduce risk is critical to risk management.

Facility analysis is an important means to reduce risk. Is equipment in good working order? Are there danger zones where incidents tend to occur or may occur? Are there problems created by structures or design? How secure is the area? Are the marking systems for the swimming area adequate? Can these be changed or the potential risk be reduced?

Insurance The owner of a waterfront facility shall make certain that an insurance policy and liability coverage are in place to cover the facility, staff, volunteers and patrons. Check with your insurance broker or agent to make certain that you have the appropriate insurance coverage and understand any requirements, limitations or exclusions that may be conditions of the insurance policy.

PERSONNEL AND SUPERVISION

Waterfront Categories

For the purposes of these standards, waterfronts are divided into two categories:

- **Unsupervised Waterfront** – public or private waterfront which is not supervised by lifeguards.
- **Supervised Waterfront** - public or private waterfront which is supervised by lifeguards.

Note: Waterfronts for use at camps for children are categorized as Supervised Waterfronts and shall provide lifeguard supervision.

Supervision

Lifesaving Society drowning research statistics show that most drownings occur in aquatic settings without lifeguard supervision. Almost half of the victims were alone at the time of their death. These are alarming numbers, and this is why the Lifesaving Society encourages all owners of waterfront facilities to consider the need and options to supervise the waterfront when it is used by patrons.

Supervision options include:

1. A lifeguard who is responsible for continuous surveillance of bathers in the swimming area. **The lifeguard system is the approach recommended by the Lifesaving Society.** Lifeguarded facilities provide the highest level of public safety for facility users and owners.
2. A buddy system where waterfront patrons should be accompanied by another person with the clear expectation that they are responsible for supervising each other. Swimming alone should not be an acceptable practice.

If the waterfront is not supervised by a lifeguard; the owner of a waterfront shall post signs in visibly conspicuous locations on the beach and at all access points stating the following or something similar:

Warning: No Lifeguard on Duty. Children must be supervised by an adult.

Lifeguard Supervision

At Supervised Waterfronts, lifeguards shall be on duty and in position at all times during the hours of supervision. Signs shall be posted and clearly visible to patrons indicating the hours of supervision. In the event that the waterfront is being used solely for aquatic instruction, a qualified aquatic instructor may be substituted for a lifeguard only if each instructor is also a qualified lifeguard. Each instructor can only supervise one class or group. Direct supervision means direct and uninterrupted control of the bathers by the aquatic instructor who is charged with their care. If even one instructor is not a lifeguard, a qualified lifeguard shall supervise the waterfront area.

Lifeguard Qualifications

Lifeguard - Required minimum qualifications

- Minimum age 16;
- Hold a current National Lifeguard Award (National Lifeguard Waterfront option is recommended, any other National Lifeguard Award is acceptable);
- Hold a current Standard First Aid (Aquatic Emergency Care Award or Lifesaving Standard First Aid recommended);
- Be trained in the waterfront safety systems and emergency procedures.

Aquatic Instructor Qualifications

Aquatic Instructor - Required minimum qualifications

- Minimum age 15;
- Hold a current Instructor award such as Swim for Life Instructor or Lifesaving Instructor;
- Hold a current lifesaving or lifeguarding award - minimum Bronze Cross (Distinction and National Lifeguard exceed the Bronze Cross minimum);
- Be trained in the waterfront safety systems and emergency procedures.

Note: If the instructor is required to also function as a lifeguard, he shall meet the required minimum qualifications for a lifeguard.

Orientation Training

All new or returning supervision staff shall receive orientation training before assuming their supervision duties. This training should include:

- Introduction to fellow staff members;
- Exploration of job description and responsibilities;
- Introduction to and evaluation of hazards and risks in the facility, and a review of facility rules and policies concerning them;
- Review of personnel policies and procedures;
- Specific job-related training required to familiarize staff with the facility's programs, activities, operation and maintenance, and policies and procedures concerning supplies and equipment;
- Specific training in the waterfront safety systems and emergency procedures;
- Specific training in public relations and effectively dealing with the patrons.

Inservice Training

Waterfront staff and employers shall recognize the need for regular review of procedures and skills assessment. Inservice training should include:

- Evaluation and practice of emergency procedures designed specifically for the waterfront;
- Review and practice of supervision, recognition and rescue skills;
- Practice use of safety equipment;
- Review of supervision policies and procedures including number of staff per patron and guidelines for patron and staff conduct;

- Review and practice of first aid skills including use of first aid equipment and supplies;
- Practice of public relations and effectively dealing with the patrons;
- WHMIS training appropriate to the materials and equipment they may be expected to use.

Aquatic Facility Supervision Standard

Every owner/operator of a supervised waterfront shall establish an Aquatic Facility Supervision Standard. This standard shall define the minimum requirements for lifeguards and instructors who are responsible for the supervision of bathers. The standard should include:

- Fitness and skill standards appropriate for the waterfront;
- Minimum vision and hearing standards;
- Practices to evaluate if conditions such as injuries, illness and pregnancy prevent the staff person from meeting the standard;
- Minimum training to effectively perform all required supervision duties;
- A process to identify and replace on duty any staff member who is not able to meet the standard at any time she is scheduled to work in a supervision role.

Two parties have a responsibility to ensure that staff are able meet their obligations - the employer and the lifeguard/instructor. The employer is required to take reasonable steps to ensure that supervision staff are able to perform to the Aquatic Facility Supervision Standard when employed in a supervision role. The lifeguard/instructor also has a personal responsibility to be able to meet the required Aquatic Facility Supervision Standard at anytime that she is lifeguarding or instructing. It also requires that anytime she is not able to meet the standard (eg. due to illness or injury) she shall inform her employer. A lifeguard/instructor who is unable to meet the minimum standard to lifeguard or instruct at her facility should not work in a supervision role until she is able meet the standard.

Staff Manual

Every waterfront should develop a Staff Manual. This manual should be readily available to the waterfront staff. The Lifesaving Society recommends that all staff be provided with a personal copy of the Staff Manual. The intent of this manual is to function as a training and reference resource for the waterfront staff and management. The suggested content should include:

- All facility supervision procedures and requirements;
- All specific safety systems and emergency procedures that the staff member is required to know and be able to do;
- Relevant employment policies and procedures as well as any specific employment standards such as the Aquatic Facility Supervision Standard.

The Staff Manual may be a subset of the more comprehensive Facility Operating Manual.

Staff Communication

A system shall be implemented which provides for regular communication and updates for facility staff. The primary purpose is to communicate information that is useful in maintaining the safety of patrons and staff.

Examples of this information includes:

- Notice of large groups scheduled to attend the facility;
- Reporting of equipment in need of repair and steps taken to protect users;
- Notice of equipment closure or repair.

Health and Safety

Barrier Devices

All waterfront staff shall have access to barrier devices to prevent cross contamination in a first aid situation. At minimum this shall include a rescue breathing barrier device with a one-way valve and disposable surgical gloves. Because waterfront staff may be required to initiate first aid before the facility first aid kit arrives, the Lifesaving Society recommends that all staff have barrier devices that can be carried with them while on duty.

Sun Protection

All waterfront staff shall have effective protection from sun and weather. Protection from the sun may include protective clothing, SPF 30 sunscreen and/or shade structures at the lifeguard stations. The Lifesaving Society position statement – Sun Protection in the Aquatic Environment – is posted in the Safety Management section of the Society website at www.lifesaving.org.

EMERGENCY PROCEDURES

Lifeguard Present

All supervised waterfront facilities shall develop and document a set of emergency procedures appropriate to the needs of the facility. The emergency procedures may be a combination of general and specialized emergency procedures designed to address incidents or injuries that may be expected to occur at the specific waterfront. It may be necessary to have different versions to accommodate different staffing levels (eg. 1 lifeguard vs. 2 lifeguards on duty).

General Procedures

These are generalized procedures which can be adapted to a variety of incidents or injuries.

- **Minor Emergencies** - adequate waterfront coverage can be maintained at all times by one or more lifeguards (eg. simple first aid, public relations)
- **Major Emergencies** - adequate waterfront coverage cannot be maintained and the swimming area must be cleared until lifeguard attention can be directed back to waterfront supervision (eg. multiple victims, serious first aid, pullout requiring resuscitation)

An excellent reference for developing emergency procedures for your waterfront is the Lifesaving Society lifeguarding manual – *Alert, lifeguarding in action*. This manual also provides excellent guidance for many of the safety practices that are required for a safe environment. Additional resources are available on the Lifesaving Society website at www.lifesaving.org.

Specialized Procedures

Specialized procedures are designed to address very specific situations that may require very clear, detailed procedures. These situations may include events which threaten multiple individuals such as a fire or lightning. Other situations such as the treatment of possible spinal injuries benefit from developing very clear and detailed procedures which can be practised and developed to a competent and consistent level of skill. Facility management and staff should analyse the types of situations that would benefit from specialized procedures and develop the appropriate emergency procedures.

Examples of common specialized emergency procedures include:

- Evacuation procedures for fire or lightning;
- Missing person;
- Bomb threat;
- Scuba injury.

Emergency procedures should include and document at least these elements:

- Emergency signals;
- Procedures for clearing the swimming area;
- Roles of all responding staff;
- Roles of bystanders;
- Procedures for contacting emergency services;
- Defined focal points for removing a victim from the water and providing treatment;
- Emergency equipment required;
- Procedures for notifying any other persons (eg. management, a victim's family members, other persons that might be affected by the incident);
- Practices for dealing with media inquiries.

Unsupervised Waterfront

Basic emergency procedures should be addressed and may be as simple as posting a sign with instructions about what to do in the event of an emergency (eg. location of emergency phone, call 911, cover with a blanket, etc.).

Required Emergency Equipment

Supervised Waterfront

Every supervised waterfront shall have the following emergency equipment available and appropriately located for use in an emergency:

- A dedicated emergency telephone with posted emergency numbers;
- A rescue aid such as a rescue can or tube for each lifeguard;
- At least 2 buoyant throwing assists with a 15 metre buoyant line attached;
- At least 2 reaching poles at least 3 metres in length. Ideally the pole should have a large hook that can be used to pull a person to safety;
- At least one spine board with an effective immobilization system. At least one extra spine board with head immobilizer is recommended for backup when a spine board is removed from the facility to transport a spinal injury victim;
- At least one Number 2 first aid kit with a rescue breathing barrier device with a one-way valve and disposable surgical gloves. Extra supplies for high use items such as bandages should be available;
- A designated first aid area;
- Rescue craft such as a paddle board or boat when any part of the swimming area extends more than 50 metres from shore. A paddle board is recommended if the distance is greater than 25 metres.

The following equipment may also be appropriate for lifeguard use:

- Skin diving equipment including mask, fins and snorkel for water searches;
- Binoculars;
- Oxygen inhalator capable of a flow rate of 10 - 15 litres/minute.

Inclusion of a pocket mask with oxygen fitting can permit oxygen resuscitation of a nonbreathing victim;

- One or more extra spine boards with head immobilizers for training purposes;
- An Automated External Defibrillator (AED).

Unsupervised Waterfront

Every unsupervised waterfront shall have the following emergency equipment available and appropriately located for use in an emergency:

- A dedicated emergency telephone with posted emergency numbers;
- At least 1 buoyant throwing assist with a 15 metre buoyant line attached;
- At least 1 reaching pole at least 3 metres in length.

Note: Emergency equipment can be purchased from the Lifesaving Society and various safety equipment suppliers. Instructions for building throwing assists and reaching poles are available on the Lifesaving Society website www.lifesaving.org.

Contacting Emergency Services

Every waterfront shall have an emergency telephone which is easily accessible and has a dedicated line to EMS. The telephone shall be able to work in the event of a power failure. At an unsupervised waterfront, a pay phone is acceptable if it provides direct EMS access without requiring any payment. If the emergency phone is not easily accessible, directions to the nearest phone shall be posted at the beach.

Emergency contact telephone numbers shall be posted by the emergency telephone.

It is recommended that a script for the emergency call be posted beside the emergency phone. This is particularly important if the emergency procedures include the use of bystanders to contact emergency services. The script should be designed to provide the information required to direct the request for emergency assistance. This may include information such as: facility address, phone number, a prompt to describe the nature of the emergency, the location for emergency access, etc.

Critical Incident Stress

In the event of a serious injury incident, all persons involved in the incident such as rescuers or bystanders should be provided access to Critical Incident Stress Management (CISM) education and support. The Lifesaving Society can provide contacts for CISM support. Local EMS and victim services organizations can also provide local contact information for Critical Incident Stress Management services in your community.

SAFETY SYSTEMS

All waterfronts shall develop and document a set of safety systems appropriate to the needs of the facility. Safety systems are the day to day actions and policies established to prevent incidents and injuries. They include such things as waterfront rules and how they are to be implemented, and procedures for preparing the waterfront area for bathers. Safety systems are an important part of minimizing risk and preventing injury.

Facility Operating Manual

Every Waterfront shall develop and maintain a comprehensive Facility Operating Manual. This manual should document all facility operating standards, expectations, policies and procedures required for the safe operation of the facility. The purpose of the manual is to serve as a training and reference resource. It should be stored in an easily accessible location.

Waterfront Safety Rules

Every waterfront owner/operator shall develop and apply a set of rules to guide safe use of the waterfront and its equipment. These rules are intended to reasonably control the risks associated with the use of a waterfront while also facilitating the enjoyment of the aquatic recreation experience. The rules shall be documented in the Facility Operating Manual. Staff should carefully analyze the facility and equipment to identify risks which may be inherent in their design and construction. Patterns of patron use will also provide useful data. The results of this analysis should be used to develop the safety rules. These rules should be communicated to patrons through the use of signs, announcements and other forms of public education.

Safe Diving Rules

Diving injuries are a leading cause of spinal injuries. Over 90% of spinal injuries occur in water less than 1.8 metres (6 feet) deep. Based on this research, the Lifesaving Society's Standard for a minimum safe water depth for diving entries off a dock or swimming raft is 2.5 metres. Entries into water less than 2.5m deep should be feet first. Structures that could be used for diving such as docks or swimming rafts should be evaluated for diving hazards and appropriate safety rules developed.

Recreational Equipment Rules

Rules for the safe use of recreational equipment such as diving boards and platforms, slides, inflatables, etc. shall be developed. These rules should include directions for safe use as well as any necessary restrictions such as age or height restrictions.

Signage

Signs serve three functions in a waterfront:

- Inform users about supervision requirements;
- Inform users about the suggested rules for safe use of the facility;
- Warn users of hazards and ways to avoid these hazards.

Signs with general safety rules shall be posted in a conspicuous location in the waterfront area. Where possible, utilize signs which use pictures to convey the message. Use of universal symbols provides instant recognition and avoids confusion if readers cannot read or do not read English.

Standards for Signage

Color:

- Red slash - the activity is prohibited.
- Yellow background - warning or caution
- Green Border - activity is permitted

Rules: clearly indicate which activities are prohibited or permitted. Including the reason for the rule increases compliance.

Duty to Warn: identify hazards, the risk or consequence of the hazard and how to avoid it.

Location: should be posted at the hazard and where possible, at the access points or routes.

Facility Safety Rules Signs

The facility safety rules signs should list general rules to guide the safe use of the waterfront. Some sample rules which should be posted are:

- Suggested minimum age and requirements for supervision of children (eg. all children under the age of 7 should be accompanied “Within Arms Reach” by a responsible person 16 years of age or older);
- Request for lifeguard notification of medical conditions that may affect bather safety; eg. seizure disorder (eg. please alert the attendant of any medical conditions you may have);
- Anyone not toilet trained must wear protective water resistant swimwear to prevent fouling and contamination of the water;
- Play safe;
- No glass containers are allowed in the swimming area or on the beach.

Recreational Equipment Signs

Recreational equipment such as swimming rafts, waterslides, diving boards or rope swings require specific rules and restrictions for safe use of each item.

These rules shall be posted in a readily visible location near each piece of equipment.

Diving Signs

Signs providing clear direction about where diving is permitted or restricted shall be posted in locations readily visible to the diver.

Other Signs

Signage should be considered in appropriate locations that informs customers about emergency signals and the facility admission policy. Waterfront owners and staff should regularly evaluate if the existing signs are effective or whether other signage is required and take appropriate follow-up measures.

Note: The Lifesaving Society can provide assistance to locate suppliers of waterfront safety signs.

Admission Policies

Admission policies shall be established as part of the facility rules and communicated to the public through signs and public education. Suggested topics for admission policies include:

- Minimum age and requirements for supervision of children;
- Notification of medical conditions that may affect bather safety; eg. seizure disorder;
- Requirements for group admissions such as orientation to the facility and its rules;
- Additional supervision requirements.

Group Admissions

As part of the admission policies, groups should be required to notify the waterfront owner/operator in advance of the group's planned attendance at the facility. This information should be used to prepare waterfront staff and/or the group to use the waterfront safely.

Supervised Waterfront – ensure that enough lifeguards will be present for the size and type of participants in the group, orient the group to the safety rules and address any specific safety needs of the group.

Unsupervised Waterfront – recommend that group provide a qualified lifeguard to supervise the group at the waterfront. The lifeguard should be one element of a safety plan that includes safety rules, planned emergency procedures, an emergency communication system, rescue and first aid equipment and defined supervision roles of other supervisors such as teachers, group leaders, and parents. Information about these safety plans can be found in the *Safety Management* Section of the Lifesaving Society website.

Supervision Systems for Supervised Waterfronts

Every Supervised Waterfront shall establish systems to provide effective supervision of all persons and activities within the waterfront area.

Minimize Distractions

The primary duty of lifeguards is supervision. All efforts shall be made to minimize distractions which may interfere with this duty. Short conversations between lifeguards and bathers are necessary for public education about safe use of the facility and are key injury prevention practices. Longer conversations are not recommended because they interfere with effective supervision. Assigning duties such as equipment maintenance which may distract the lifeguard is not recommended.

Lifeguard Positioning

The supervision position(s) of lifeguards shall be designed to eliminate blind spots in the waterfront area. It shall be possible for the lifeguard team to observe all bathers in the waterfront area. Waterfront owners and staff shall analyse the waterfront area and implement systems that provide coverage of blind spots. These systems might include the use of elevated lifeguard stations, patrols based on a rescue craft and walking lifeguard patrols.

Vigilance

Lifeguarding is a vigilance task. Every effort shall be made to keep the lifeguard alert and focused on supervision. Regular rotation between stations and regular breaks from the vigilance task are required. If two or more lifeguards are on duty, they should rotate lifeguard stations every 15 - 30 minutes.

The Lifesaving Society recommends that lifeguards should be provided with a minimum 15 minute break from the supervision task every 2 hours. During this break lifeguards may be required to perform other duties such as maintenance.

Scanning

All lifeguards shall be able to continuously scan their area of responsibility. Short interruptions which are designed to prevent injury (eg. safety education) are acceptable.

Lifeguard Identification

All lifeguards shall wear a uniform which permits them to be easily and quickly identified. The purposes of the lifeguard uniform is to make the lifeguards stand out so that they are readily distinguished from bathers and spectators, and can be quickly contacted in case of an emergency or when assistance is required.

Number of Lifeguards

At least one lifeguard shall be on duty and in position in order to open the waterfront for supervised use. The Lifesaving Society recommends that at least one other trained responder be on duty, within call and on the premises. This additional person should be trained in the emergency procedures for the waterfront. While this person may be another staff person such as a cashier, janitor or manager, it is recommended that this person be a lifeguard. This recommendation for an additional person also applies during periods when the waterfront is being used for instruction or competition under the direct supervision of one aquatic instructor.

Note: “Within call” means the lifeguard on duty shall be able to call the additional person by voice or by a prearranged alarm system. The lifeguard shall not have to leave the lifeguard position or the victim to summon the assistance of the additional person. The additional person shall be on-site. Use of a pager or cell phone to call for assistance from an additional person who is off-site does not fit the meaning of “within call”.

An adequate number of lifeguards to safely supervise the swimming area shall be on duty during the scheduled hours of supervision. The number of lifeguards changes according to the needs and conditions of each waterfront. Waterfront owners and staff shall analyze their specific waterfront facility, equipment and bather behaviors to determine appropriate numbers of lifeguard for their waterfront. Some of the factors to consider include:

- Length of shoreline;
- Geographical features such as curves or bends in shoreline that may impact on lifeguard sightlines and rescuer response times;
- Distance from shore to outer edge of swimming area;
- Water and weather conditions;
- Experience and training of lifeguards;
- Number and concentration of bathers;
- Age or ability/disability of patrons;
- Level of adult supervision such as parents or teachers;
- Type of bather activity;
- Danger areas;
- Recreational equipment in use (eg. toys, inflatables, slides);
- Public education and relations requirements.

Lifeguards should regularly (eg. every 30 minutes) count the number of bathers in the waterfront. This count should be used to select the number of lifeguards required for that bather load. It is recommended that these counts be documented and used to regularly evaluate lifeguard requirements.

Instructional Programs Supervision

Every Waterfront shall establish systems to provide effective supervision during instructional programs. These systems may include:

- Defined meeting locations where students meet their instructor;
- Procedures to safely guide students out of the swimming area after completion of the program;
- Supervision practices for instructors designed to provide continuous observation of all students.

Aquatic Instructor to Student Ratios

Facility management shall consider patron safety foremost when setting instructor to student ratios. The instructor shall be able to effectively manage the number of students and prevent emergencies. Some factors to consider include the type of activity and the age and swimming ability of the students.

Incident Tracking and Analysis

Effective injury prevention requires an understanding of what types of injuries may occur and the circumstances under which the injuries may result. Every supervised waterfront shall institute a system to document and analyze all injuries and rescues that occur in the waterfront. This data shall be used to evaluate and where appropriate modify emergency procedures, safety systems, staff training or any other practices that might benefit from this analysis.

Unsupervised waterfronts should encourage patrons to report injuries or incidents to the waterfront owner/operator. These reports should be used to identify and correct any safety concerns.

WATERFRONT OPERATION

Water Quality

Maintaining excellent water quality is a critical component of operating a safe environment for your patrons. The water quality shall protect the health and safety of the users by protecting them from disease transmission. Good water quality also contributes to the swimmer's enjoyment of the waterfront.

Water Testing

At least one microbiological sample of water from the swimming area shall be taken at intervals of not more than 7 days and shall be submitted to the Provincial Laboratory of Health. If the water sample does not meet the minimum standard for bather safety, the swimming area shall be closed until subsequent testing confirms that the swimming area is safe for use. If the swimming area must be closed, signs shall be posted at the access points informing patrons of the closure and the risk to their health.

Note: Some waterfronts may be at risk of contamination from sources such as septic systems after a heavy rain storm. These facilities should also submit a water sample for testing after a storm which may result in contamination of the swimming area.

Waterfront Fouling

Every waterfront should take steps to minimize the risk of contamination of the swimming area with fecal material. These may include:

- Recommending that children who have not been toilet trained wear a cloth or pool diaper covered by an impermeable pant with closures that seal around the leg and waist openings;
- Ensuring that effluent from washrooms cannot enter the swimming area;
- Recommending that persons with diarrhea, or who have had diarrhea in the past 2 weeks stay out of the waterfront until they are well;
- Prohibiting dogs from using the swimming area or beach.

Waterfront fouling is a serious concern. Illness involving E Coli and cryptosporidium have been traced to exposure in waterfronts.

Inspections and Testing

All areas and equipment of the waterfront shall be thoroughly inspected at the beginning of the season. The inspection should identify any hazards that must be corrected or marked to protect the waterfront patrons. Examples include drop offs, debris in the swimming area and hidden underwater dangers.

A regular schedule of inspection and testing should be carried out. The schedule should be designed for the needs of the specific equipment or area of the waterfront including inspecting the beach looking for hazards that

may be introduced by patrons at the waterfront such as broken glass, fire pits and deep holes. The inspections may range from a simple visual inspection to a process to test the safe operation of the equipment. Tools such as checklists should be used to document the inspection results and insure that the inspection process is consistent and comprehensive. Any deficiencies identified shall be documented and recommendations for corrective measures identified.

Deficiencies which affect the safe operation of the waterfront or equipment should be corrected immediately. If this is not possible, effective steps shall be taken to protect users and staff. In some cases it may be necessary to close the waterfront or equipment until it can be returned to a safe condition.

Note: Because the waterfront may be affected by environmental conditions such as the weather and water currents which can introduce hazards, the inspection process should anticipate these potential changes. Example: after a storm, the swimming area should be inspected to identify hazards such as debris that may have been introduced into the swimming area or onto the beach.

Recreational Equipment

All recreational equipment (eg. swimming rafts, water slides, diving boards) should be inspected regularly. If it is used heavily this may need to be daily. Equipment in unsafe condition shall be closed until repairs can be completed and evaluated.

Emergency Equipment

Waterfront emergency equipment shall be inspected daily. All equipment shall be maintained in a state of readiness. Any deficient equipment shall be repaired or replaced immediately.

GFI - Ground Fault Interrupters

Electrical circuits that wet patrons may contact such as in change rooms shall be protected by a GFI. All GFIs shall be tested at least monthly. Any GFI that fails the test shall be disabled and the circuit it controls removed from use until the GFI can be repaired or replaced.

SAFE ENVIRONMENT

The waterfront owner shall be familiar with all codes and regulations that apply to the operation of a waterfront. This includes the building code which sets minimum construction standards for a public waterfront. Where applicable, relevant information from these standards should be incorporated into the policies and procedures of the facility and documented in the Facility Operating Manual.

Note: The Lifesaving Society lifeguarding manual – *Alert, lifeguarding in action* provides excellent guidance for many of the safety practices that are required for a safe environment at a waterfront.

Designating the Waterfront

The swimming area and beach intended for use by patrons shall be clearly designated through signs, buoylines, buoy markers or a combination of these. The following design factors should be considered when designating the waterfront:

- If boating occurs as part of waterfront operations, boating and swimming areas shall be separated.
- Where possible, limit access to the waterfront to one point of entry and to pedestrian traffic only. If conflicting activities occur at the waterfront (eg. swimming and boating) separate points of entry to each area are recommended.
- Any permanent hazards (eg. non-movable rocks, sudden changes in water depth such as drop offs) must be clearly marked.
- If the size of the swimming area and water and weather conditions permit, the swimming area should be surrounded on all water sides with a continuous float line of rope and buoys. The boundaries of the swimming area should be visible from land and water by swimmers and boaters.
- Where swimming areas are located adjacent to motor boat traffic, a set of swimming buoys shall be placed at the outer perimeter of the swimming area to alert boaters to the swimming area. The buoys should be designed so that they can be easily seen by the boat operator. Information about swimming buoys can be found in the Lifesaving Society BOAT Study Guide or the Canadian Coast Guard Safe Boating Guide.
- When choosing the dimensions of a swimming area for a Supervised Waterfront, the operator should take lifeguarding requirements into consideration (eg. rescue response time, scanning the entire area, etc.).

Recreational Equipment Safety Standards

Waterslides

Waterslides shall be maintained and inspected according to the instructions supplied by the manufacturer. Controls should be implemented which minimize the risk of collision or injury within the slide or the landing area at the bottom of the slide.

Swimming Rafts

Some waterfronts may choose to locate a swimming raft within the swimming area. Waterfront owners should recognize that placing this type of structure within the swimming area creates hazards that should be carefully considered before choosing to install a swimming raft.

- Distance from shore – many swimmers will be attracted to swim to the raft and may be tempted to swim beyond their ability. Minimizing the distance from shore can reduce this risk.
- Minimum water depth – the water depth under and around the swimming raft shall be a minimum of 2.5 metres deep. If the top of the platform is more than 20cm above the water level, the swimming platform should be considered a diving platform, and the minimum depth based on the FINA Standard.
- Anchoring – the anchoring system for the raft should be designed to minimize the risk of bather entrapment or possible collision by a diver.

Diving Boards or Platforms

Minimum standards for safe entries off a diving board or platform are provided in the FINA (Federation Internationale de Natation Amateur) preferred standard. The latest version of the standard is available through links at the Lifesaving Society website or in the Alberta Building Code. The FINA standards were designed to protect skilled competitive divers who are trained and supervised by diving coaches. Untrained recreational divers may experience a greater level of injury risk than competitive divers.

Diving boards and platforms should not be installed on floating platforms such as docks or swimming rafts. Movement by waves or persons on the platforms can change the depth under the diver and increase the risk of injury.

Note: The Lifesaving Society recommends that all diving board installations comply with the FINA preferred standard. The Lifesaving Society recommends that diving boards and platforms which cannot meet the current FINA standard should be removed from use.

Other Recreational Equipment

Other recreational equipment such as rope swings or large inflatable structures shall be installed and maintained in accordance with the manufacturer's instructions. These installations shall be analysed to identify any hazards or risks and steps taken to control these risks. Where entry from

a height is involved, the FINA Diving standard may be useful for evaluating safe depth requirements.

Recreational Equipment Installation

Installation of all recreational equipment shall be in compliance with the Alberta Building Code. This code covers all permanently installed play equipment. The hardware of this equipment should be corrosion resistant and the design and location approved. The owner/operator shall be aware of the specific regulations governing diving boards and water slide flumes. Recreational equipment shall be installed, maintained and operated in accordance with the manufacturer's specifications unless it contravenes the Alberta Building Code. These specifications can be obtained from either the manufacturer or the distributor of the equipment.

Recreation equipment shall not contain any protrusions, means of entanglement or other obstruction that might cause the entrapment of a bather. All new equipment should be tested by the waterfront staff and appropriate rules for use be determined and posted before being released for use.

RESOURCES

Lifesaving Society Resources

Many resources are available from the Lifesaving Society to assist waterfront facility owners and operators to evaluate the safety needs of their facility and to develop practices for the safe operation of the facility. These resources include information about safety standards, training programs, resource manuals, sample practices, forms and much more. Visit the *Safety Management* section of the Lifesaving Society website, www.lifesaving.org, for the most complete and current list and links to resources from the Society. You can also contact the Lifesaving Society with questions or requests for assistance.

Lifesaving Society standards, programs, products and services include:

- *Lifesaving Society Safety Standards*: designed to assist aquatic facility owners and operators in providing a safe aquatic environment. Includes standards for public facilities, semipublic pools, wading pools, beaches and private pools.
- *Lifesaving Society Reference Manuals*: examples include Canadian Lifesaving Manual (definitive lifesaving training reference) and Alert: lifeguarding in action (the lifeguard training reference).
- *Lifesaving Society Training Programs*: Swim for Life Learn to Swim Program - the national standard for swimming; Canadian Lifesaving Program - lifesaving training including the Bronze Cross award; National Lifeguard Program - training awards for lifeguards at pools, waterparks, waterfronts and surf beaches; Lifesaving First Aid - includes CPR, Lifesaving Emergency and Standard First Aid, Aquatic Emergency Care, Oxygen Administration; and more.
- *Lifesaving Society Position Statements*: formal Society Positions on a variety of topics such as use of defibrillators by lifeguards and sun protection in aquatic environments.
- *Risk Management Articles*: used to educate facility owners about public safety issues and the measures they can take to create safe environments and enhance public safety. Sample topics include: pool color and design, inservice training, facility lighting, lifeguard positioning, suction hazards, and pool fouling.
- *Drowning Research*: Drowning Reports – analysis of the Society’s annual drowning research.
- *Public Education*: Water Smart® messages about choices to reduce risks in, on and around the water; Within Arm’s Reach video, brochure and posters; Sudden Impact video, and much more.
- Sample forms and tools for developing risk management practices for your facility. Examples include first aid forms, major incident documentation, EMS telephone scripts, Critical Incident Stress Management, suggested contents for Aquatic Staff Manual.
- *Aquatic Safety Management Services*: Lifesaving Society services to help you operate a safe aquatic environment. Includes aquatic safety

audits, facility design and operation consulting, safety standards and expert witness services.

- *Safety Equipment and Training products*: includes spineboards and head immobilizers, barrier devices such as pocket masks, whistles, rescue tubes, lifeguard clothing, Actar CPR training manikins and much more.

Note: Visit the Lifesaving Society website to find new resources, products and services that are added and updated regularly on the website.

Government Resources

The Lifesaving Society *Waterfront Safety Standards* summarizes standards, guidelines and recommendations from the Lifesaving Society intended to provide guidance for the safe operation of waterfront facilities. This guidance is not intended to replace requirements that may be included in statutes, regulations or guidelines of the Government. Waterfront owners should also be aware of these government requirements. Information about these requirements and links to government websites are included in the *Safety Management* section of the Lifesaving Society website: www.lifesaving.org. Relevant Government statutes, regulations or guidelines may include:

- Small Vessel Regulations
- Canadian Aids to Navigation System
- Alberta Building Code
- Fire Regulations
- WHMIS
- Employment Standards Regulation
- Occupational Health and Safety Code
- Occupiers Liability Act
- First Aid Regulation
- Working Alone Safely

Other Relevant Resources

Resources from other organizations such as the Centres for Disease Control (CDC) and FINA are valuable resources to assist aquatic facility owners to evaluate the safety needs of their facilities and to develop practices for the safe operation of their aquatic facilities. Information about these organizations and links to their websites are included in the *Safety Management* section of the Lifesaving Society website: www.lifesaving.org.

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HOW TO REACH US

For more information about Lifesaving Society programs and services, contact the branch in your area.

Alberta & Northwest Territories Branch

13123 - 156 Street
Edmonton, Alberta T5V 1V2
Telephone: (780) 415-1755
Fax: (780) 427-9334
E-mail: experts@lifesaving.org
Web site: www.lifesaving.org

British Columbia & Yukon Branch

112 - 3989 Henning Drive
Burnaby, British Columbia V5C 6N5
Telephone: (604) 299-5450
Fax: (604) 299-5795
E-mail: info@lifesaving.bc.ca
Web site: www.lifesaving.bc.ca

Manitoba Branch

504 - 138 Portage Avenue East
Winnipeg, Manitoba R3C 0A1
Telephone: (204) 956-2124
Fax: (204) 944-8546
E-mail: aquatics@lifesaving.mb.ca
Web site: www.lifesaving.mb.ca

National Office

287 McArthur Avenue
Ottawa, Ontario K1L 6P3
Telephone: (613) 746-5694
Fax: (613) 746-9929
E-mail: experts@lifesaving.ca
Web site: www.lifesaving.ca

New Brunswick Branch

440 Wilsey Road, Suite 105
Fredericton, New Brunswick E3B 7G5
Telephone: (506) 455-LSNB (5762)
Fax: (506) 450-SWIM (7946)
E-mail: lifesave@nb.aibn.com
Web site: www.lifesavingnb.ca

Newfoundland & Labrador Branch

P.O. Box 8065, Station "A"
St. John's, Newfoundland A1B 3M9
Telephone: (709) 576-1953
Fax: (709) 738-1475
E-mail: lifeguard@nl.rogers.com
Web site: www.lifesavingnl.ca

Nova Scotia Branch

5516 Spring Garden Road
Box 3010 South
Halifax, Nova Scotia B3J 3G6
Telephone: (902) 425-5450
Fax: (902) 425-5606
E-mail: experts@lifesavingsociety.ns.ca
Web site: www.lifesavingsociety.ns.ca

Ontario Branch

400 Consumers Road
Toronto, Ontario M2J 1P8
Telephone: (416) 490-8844
Fax: (416) 490-8766
E-mail: experts@lifeguarding.com
Web site: www.lifesavingsociety.com

Prince Edward Island Branch

P.O.Box 2411
Charlottetown, Prince Edward Island C1A 4A0
Telephone: (902) 368-7757
Fax: (902) 368-7757
E-mail: pei.lifesaving@islandtelecom.com

Quebec Branch

4545 Pierre de Coubertin Avenue
P.O. Box 1000, Station "M"
Montreal, Quebec H1V 3R2
Telephone: (514) 252-3100 or 1-800-265-3093
Fax: (514) 254-6232
E-mail: alerte@sauvetage.qc.ca
Web site: www.sauvetage.qc.ca

Saskatchewan Branch

2224 Smith Street
Regina, Saskatchewan S4P 2P4
Telephone: (306) 780-9255
Fax: (306) 780-9498
E-mail: lifesaving@sasktel.net
Web site: www.lifesavingsociety.sk.ca



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