



Appendix 1

Water Safety Management Policy



October 2023

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1. Introduction and Terms of Reference

Portsmouth City Council (PCC) is responsible for the majority of open water within their jurisdiction, including beaches, estuaries and inland water. Areas of open water that are not the responsibility of PCC, for example the military base, are identified. PCC recognise the need for an independent audit of their water bodies and development of a Water Safety Management Policy (WSMP). The Council have also commissioned a Drowning Prevention Strategy (DPS), which forms part of the WSMP, to include the individual zones and to come up with general water safety principles and consistent messaging.

The WSMP is the foundation for managing all of the Councils water environments and activities, demonstrating a proactive and responsible approach to water safety, mitigating against risk and ultimately litigation challenges.

The policy includes is a systematic analysis of drowning risks across a site/zone and associated activities, including key hazards, people at risk for example visitors, residents, staff and contractors and design of cost effective proportionate control arrangements. The policy will also have reporting and recording procedures. The DPS addresses each link of the 'International Life Saving Federation' Drowning Prevention Wheel, to identify areas of risk and ensure that these are managed effectively, balancing risk, cost and benefit, see Figure 1 below.

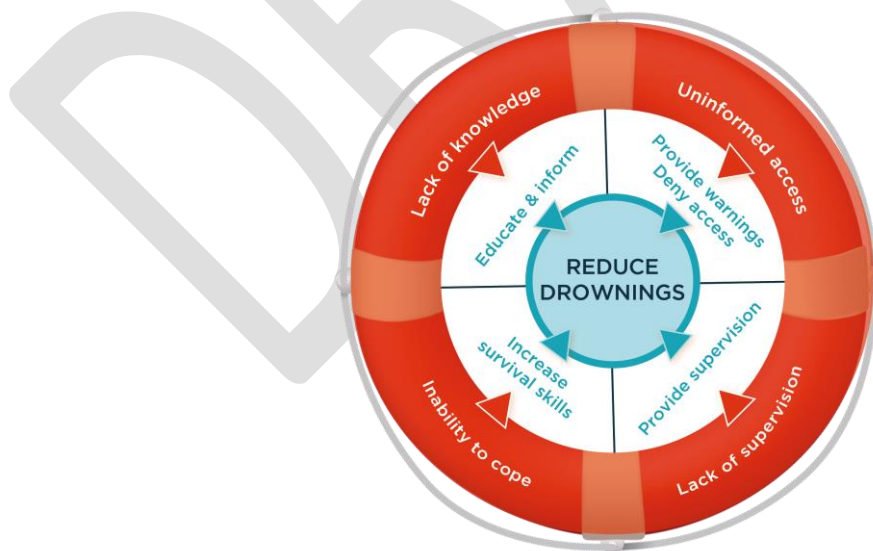


Figure 1 : ILS Drowning Prevention Wheel

1.1 Scope

The audit will comment on:

- Legal Responsibility
- Risk Management
- Generic Principles and Messaging
- Control arrangements

1.2 Purpose

The purpose of this report is to give a clear indication to Portsmouth City Council of the extent to which it is meeting its water safety obligations and of opportunities to improve the suitability and performance of control measures. The report advises as to current best practice and future options.

In the recommendations that follow Atlantic Crest has endeavoured to identify all the significant risks at key locations. However, it is essential that equipment, signage, risk assessments and operating procedures are continually developed and reviewed in response to changing legislation, best practice documents, active monitoring and the investigation and outcomes of accidents and near misses.

The Council will provide appropriate arrangements for the management of areas of open water under its control. These arrangements should ensure that, 'so far as reasonably practicable', all open water facilities and other water-based facilities for which the Council is responsible, are maintained in a safe condition for the benefit of the users and the safety of staff.

This report is supported by a risk management survey conducted in April 2023 and provides guidance on the individual zones. It is recommended that PCC staff undertake water risk assessment training, to keep the risk assessments up to date and amend as applicable. It is imperative that maintenance and continual monitoring of both coastal and inland water hazards and controls are integral to the Council's management systems.

1.3 Limitations

To determine key areas and locations to risk assess, direction was taken from Mark Collings, appointed by PCC. This project focuses solely on the sites listed and does not form a definitive list of all open waters and hazards within the City.

In carrying out this safety review Atlantic Crest would point out that audits and reviews are by nature a sampling exercise – based on observations made during a single site visit and environmental conditions at that

time and on information provided and gathered as part of the audit. Therefore, the reviewer cannot guarantee to identify all safety hazards around the sites. Opinion is formed by a review of the site at the time of the visit, and in prior and subsequent dialogue with council officers.

The absence of comment on any issue should not be taken to imply the absence of risk from that issue. It is implicit in these recommendations that PCC pro-actively monitors and reviews safety arrangements in the light of operational, environmental, activity or behavioural changes.

Representatives of PCC are responsible for making known any information of relevance to this audit.

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2. Water Safety Policy

The Water Safety Management Policy is a strategic working document, designed to manage water safety through effective risk management. The policy identifies a management structure of responsibility and maps key water safety locations and recommends measures to mitigate against risk as part of a drowning prevention programme. The policy should link to the Council's Health and Safety Policy.

This document relates to the coastline, estuaries and inland open water bodies managed by or under the responsibility of PCC. It does not cover water bodies within the borough that are not the responsibility of PCC.

2.1 Why have a policy

Any drowning is tragic and the emotional cost is immeasurable, impacting not only the victim but family and friends. PCC have taken a very responsible and proactive approach to developing a drowning prevention strategy, to minimize the risk of drowning within the community. The benefits of this policy includes:

- A proactive approach to water safety management
- Fewer drownings
- Effective risk management
- Development of water safety principles
- Effective and consistent messaging and signage
- Compliance with the law
- Development of a water safety culture

2.2 Responsibility

The policy should be the responsibility of an appointed senior manager, with a support team or working group that meets regularly and includes key stakeholders. Typical composition includes an operational manager, representatives from health and safety, environmental health, emergency planning and seaside officers, outside stakeholders and water safety experts. It is recommended that PCC invite the RNLI and MCA to be part of the working group. This group will be responsible for planning, action and reviewing of the document including revision of risk assessments, maintenance of signage and public rescue equipment.

3. Methodology

The water safety audit Atlantic Crest were commissioned to conduct by PCC included:

- 1 Risk assessment of all water bodies presented by
- 2 Provision an assessment of public rescue equipment at key coastal locations identified by PCC staff
- 3 Provision of key water safety management recommendations
- 4 Development of a Water Safety Management Policy

Following initial communications with the Council, the field work was conducted with Mark Collings on the 24th and 25th of April 2023. Mark provided the key locations and background at each site.

The field work focused on specific locations. Photographs and notes were taken of relevant features of the water sites and a risk management plan produced for each site. On completion of the field work, Mark was contacted again for a final review of the sites visited.

This policy document was compiled based on discussion, observations and comparison with industry best practice standards.

3.1 Best Practice Guidance

Advice and guidance about the range, nature, severity, risk rating and appropriate control options are drawn from best practice guidance found in RLSS UK Publications Safety on Beaches¹, Safety at Inland Water Sites² in addition to the HSE Risk Management³ and ISO 31 000 Risk Management⁴ standards. Please refer to the reference section.

The opinion of the Consultant, based on training and operational experience is also expressed where appropriate.

4. Sites and Locations

4.1 Water Sites

The schedule of coastal/estuary sites and inland water sites reviewed are listed in below.

Coastal Locations
Zone 1 Hotwalls to Clarence Pier
Zone 2a Hovertravel to Pyramids
Zone 2b Pyramids to Coffee Cup
Zone 3 Coffee Cup to Eastney
Zone 4 Eastney Peninsula
Zone 5 Milton Common
Zone 6 Eastney
Zone 7 Portsbridge Creek
Zone 8 Tipner Lake
Zone 9 Commercial & MOD
Zone 10 Southampton Road
Zone 11 Stamshaw Coastal Path
Zone 12 The Hard, Portsmouth Harbour

Inland Locations
Baffins Pond
Canoe Lake
Great Salterns Pond
Hilsea Lines
Hilsea Watersports
Paulsgrove Chalkpit

5. Legal Requirements

In addition to safeguarding lives, a key function of this policy document is to ensure compliance with legal requirements. Various pieces of legislation place statutory duties on the site owners of water-sites, or the person responsible for the sites, to provide for the safety and well-being of visitors, which includes employees, contractors and members of the public. The Consultant has highlighted those issues which directly relate to the recommendations which follow in this report. However, this does not constitute a complete list of all relevant law and regulation. Both statute and civil law are of relevance to PCC. Although not a complete legal description, here are extracts of applicable legal instruments, pertaining to managing water safety.

5.1 Statutory Health and Safety Requirements

5.1.1 Health and Safety at Work Act 1974:

The Health and Safety at Work Act 1974 (HASWA) is a primary piece of legislation which covers occupational health and safety. This is an enabling Act with the aim of securing health and safety in the workplace. Regulations made under the Act place more specific duties on employers than employees.

It sets out the general duties which:

- employers have towards employees and members of the public
- employees have to themselves and to each other
- certain self-employed have towards themselves and others

Section Three of the 74 Act specifically requires every employer to ensure, so far as is reasonably practicable, that he/she takes the necessary steps to ensure the safety of non-employees affected by his/her activities.

5.1.2 The Management of Health and Safety at Work Regulations 1999:

These were made under the enabling powers of the HASAWA. They require that health and safety is suitably managed so as to control risks effectively and present no harm to people. The regulations require that adequate and suitable assessments of work related hazards should be carried out to determine the preventative and protective steps that must be taken.

The Regulations state, with relation to organisations and companies:

'Their main duty is to plan, manage and monitor the work under their control in a way that ensures the health and safety of anyone it might affect (including members of the public)'.

They also require employers to have access to competent advice, to monitor and review their systems, to have emergency procedures and to provide information and training. Individually and in combination the Act and

Regulation (and others) have to apply directly to both users of (customers) and employees of (commercial) water sites.

5.1.3 Occupiers Liability Act 1957:

This states that the occupier must take reasonable steps to ensure the safety of visitors to his/her land or premises. However, the Act does not place an obligation to a visitor who chooses to willingly accept risks.

This duty is particularly onerous where children are concerned, as they do not perceive risk the same way as most adults. The Act assumes that parents will take responsibility for children's safety if dangers are obvious to a parent or is given a warning.

5.2 Civil Law

Under Liability to negligence may arise from the breach of fundamental duty, known as a 'duty of care'. The duty is described as follows, and applies to members of the public, employees and anyone and everyone who may be 'affected by your undertaking'.

'To take reasonable care to avoid acts or omissions which you can reasonably foresee would be likely to cause injury to your neighbour'.

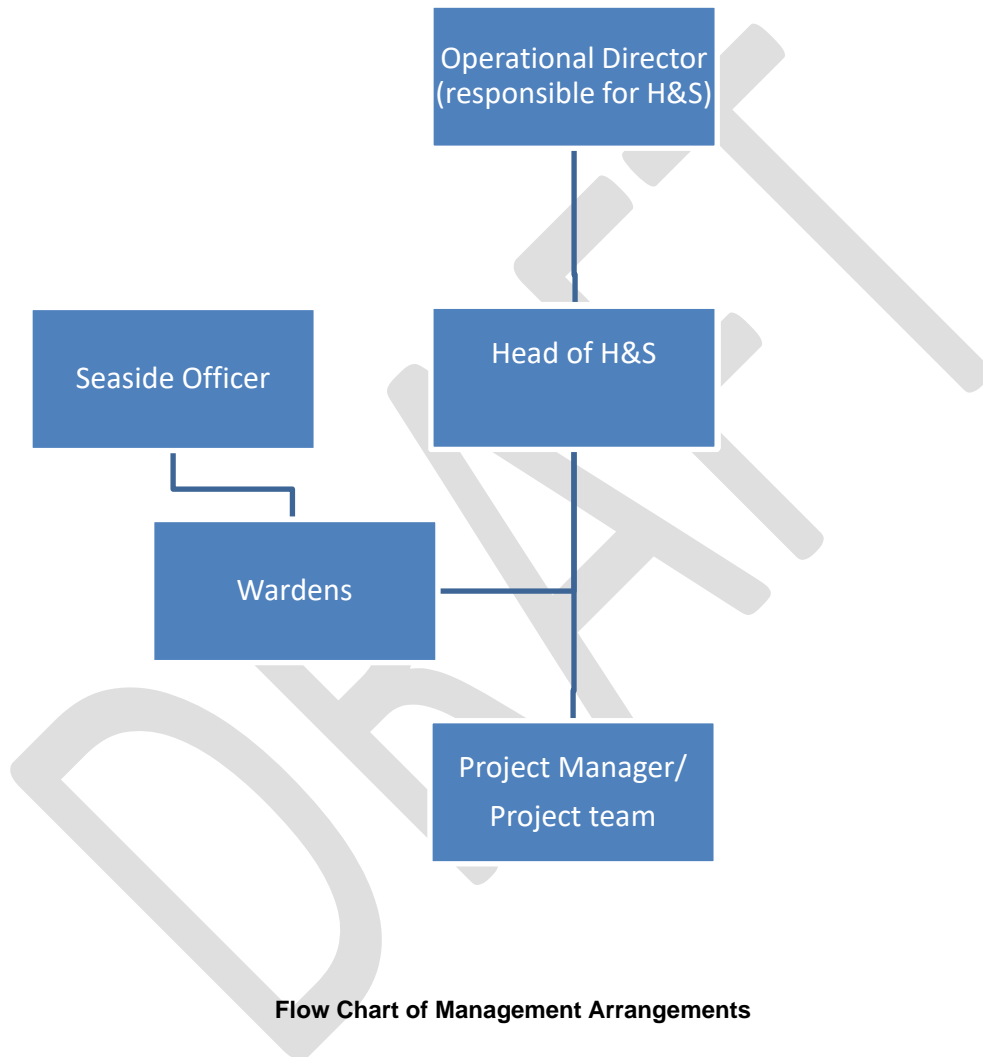
The duty specified is 'to take reasonable care'. This can be defined as 'what the reasonable man/woman would have foreseen as necessary'. A certain level of risk is acceptable and it is expected that safety measures will be applied 'as far as is reasonably practicable'. In other words, practicable measures have to be technically feasible and costs in time, money and effort should be reasonable.

5.3 Enforcement

In the event of breaches of law, injury or death it is likely that enforcement action would be taken by either (Local Environmental Officers) or HSE Inspectors who have wider ranging Investigative and enforcement powers. They may issue Prohibition or Improvement notices and may prosecute. The Police may initiate separate or combined investigations and will take action in the normal way if a criminal act has been or is suspected of being committed. Failing to comply with an Act or Regulation is a criminal act. Private individuals may sue for damages.

6. Management Arrangements

6.1 Organisational Structure



6.2 Staffing and Contractors

All Portsmouth City Council staff and contractors responsible for open water sites are required to implement the Council's Health and Safety Policy and to undertake suitable and sufficient risk assessments in relation to activities carried out adjacent to water.

7. Hazard Categories

7.1 Generic Categories

Hazards arising from being in, on or near coastal/estuarial/inland water locations fall into three generic categories, listed below. Each category will be examined independently. Of significant importance, when considering open water risks, is the dynamic nature of environmental hazards. Clearly, the natural environment is subject to change and quickly in addition to the magnification of risks, when certain environmental hazards interact. When preparing safety systems for open water, it is imperative that weather conditions and tidal state/water levels are taken into account including nationally available weather predictions, such as provided by the Environment Agency. PCC has a wide range of open water from coastal, estuarial and inland ponds.

- Environmental
- Operational/Occupational
- Human

7.2 Environmental Risks

The table below lists significant hazards associated with open water (this is not exhaustive). For each location consideration must be given to the key hazards at that site.

Water temperature	Water quality	Water depth and flow
Height of freeboard	Bank stability	Access/Egress
Submerged objects	Entrapment Sediment/ Structures/Vegetation	Slip hazards (trips and falls)
Tides	Waves	Animals

7.3 Operational/Occupational Risk

Operational risk includes risk to both personnel and equipment. Where personnel are operating close to the water's edge and using equipment, management measures need to be in place to minimise risk of injury or damage to equipment. Risk assessments should be provided by PCC for work operations. All workers on the coast must be aware of the changing nature of open water hazards and have received training to dynamically risk assess the operations undertaken and make informed decisions to ensure the safety of the team.

7.4 Human Risk

By very nature, humans make errors of judgement that can lead to injury or have negative financial implications. When designing safety processes, management systems need to take into account not only the dynamic nature of open water hazards but also provide an error margin to account for human error and the interaction between environmental and human hazards. Examples of human hazards include, collision between machines and personnel, and foolhardy behaviour, such as making a conscious decision to enter the water, ignorant of the temperature and danger. Research highlights the vulnerability of young people and the impact of both peer pressure and alcohol on drowning statistics.

7.5 Personnel at Risk

The main purpose for conducting risk assessments is safeguarding the welfare of the general public and council officers. Risk management needs to account for work operations where the general public are likely to be present and there is potential for injury.

The risk assessment needs to consider:

- Employees and contractors
- General public

8. Significant Risk Outcomes

8.1 Drowning

Let's start by clarifying our understanding of the nature of open water hazards. Water presents many hazards, which can lead directly or indirectly to drowning. The International Life Saving Federation (ILS) defines drowning as 'The process of experiencing respiratory impairment from submersion/immersion in liquid'.

This means that the drowning process doesn't always result in fatality. A tragic consequence of recovery from drowning can be permanent impaired brain function. Our challenge is to ensure appropriate arrangements are in place to prevent accidental immersion. We must be absolutely clear about the hazard from entering cold water and its potential for great harm.

There are four defined outcomes of drowning, these are:

- Death
- Morbidity (injury)
- No morbidity (no injury)
- Delayed drowning

The national 'Water Incident Database'⁵ (WAID), managed by the National Water Safety Forum records on average over 600 people drown per year, including intentional drowning. Although each of these may be a contributory factor, the major cause of potential risk on any site is likely to be ignorance or misjudgement of the danger. Analysis consistently shows that up to 47 per cent of people who drown do not intend to be in the water. That is to say they fell in or went in to assist someone else or an animal in difficulty.

One particular higher risk group are males between 20 and 29, especially where alcohol has been consumed and is linked to warm weather and impromptu waterside activity. These drownings are likely to occur close to home. The WAID database also identifies that 83% of drownings are male and 32% of drownings involve alcohol and or drugs. In terms of education and awareness this group presents difficulties as they are more likely to be swayed by peer pressure in the heat of the moment rather than by formal water safety messages.

Once the drowning process has begun, with the submersion/immersion of the casualty's airway, an intervention must be made as soon as possible to prevent the drowning resulting in a serious injury or death. Personal survival, self-rescue and rescue are interventions that can interrupt the drowning process. However, it is important to note that even after the drowning process is successfully interrupted, the drowning may still result in short or long term injuries to the casualty. For casualties

that have inhaled water they can experience Delayed Drowning which is when the lung function is impaired due to excessive liquid accumulation in the tissue and air spaces of the lungs. This affects the gas exchange leading to hypoxemia and respiratory failure. The medical term for this is pulmonary edema.

8.2 Cold Water Shock

The largest contributory risk factor that leads to drowning in cold water, is 'Cold Water Shock', particularly. This is due to the difficulty in maintaining a clear airway during hyperventilation (rapid breathing) and the effect on the heart (cardiac arrest) with sudden immersion in cold water. The casualty quickly loses the ability to function, the colder they become. Cold Water shock is the body's response to immersion in cold water and can be observed from temperatures as moderate as 25°C, although the severity of the body's response increases significantly in colder water.

The effects of Cold Water Shock has the following responses:

- Loss of performance
- Swim fatigue and swim failure
- Hypothermia

All rescues described in this policy are land based. There are no direct in-water rescue skills provided to the work team and they will be explicitly told that they are not to attempt an in-water rescue as this would immediately heighten the risk and the rescuer would also be subject to cold water shock.

8.3 Hypothermia

Water is a good conductor of heat and conducts heat away from the body four times faster than air. Hypothermia is when the body's temperature falls below 35°C. Immersion in UK waters, in particular in winter months, can result in hypothermia. The onset of hypothermia will take approximately 30 minutes and can result in unconsciousness and heart failure.

8.4 Impact Injury and Unconscious Casualty

Any fall can result in an impact injury. Any trip or fall that leads to an impact injury is compounded when falling into water. Limb injury can inhibit movement in the water and make extraction difficult. The biggest dangers are actually head injury, which could lead to unconsciousness and ultimately drowning and or spinal injury.

8.5 Infection from polluted water

Water can contain a range of pollutants and microbes that can lead generally to ear, nose and throat infections, sickness and skin infections. A particular hazard at inland water sites is leptospirosis, a bacteria that causes sickness and can lead to Weils disease which can be fatal.

Casualties who have been immersed in water must be taken to hospital if they have:

- Been unconscious
- Inhaled water
- Received a head injury or spinal injury

9. Drowning Prevention Control Measures

It is not practicable or reasonable to prevent drowning by denying access to water sites or employing supervision across every water's edge. The purpose of a water safety policy is to ensure a planned approach to actively considering and managing risk by applying appropriate control measures.

The overall strategy considers the array of options available and application of specific measures for each assessed zone. Control measures will depend on a number of factors, including demographics, environmental hazards and associated risks, accessibility, footfall and human activities.

9.1 Education

PCC education programme.....

9.2 Public Information and Signage

Signage can be used to highlight water dangers to the public and should be considered as part of a coordinated approach. Signs should be designed in accordance British Standards.

The RNLI have done a great deal of work in developing a comprehensive guide and format to beach safety signs⁶ which is now used at the majority of UK beaches.

Water safety signs need to consider:

- Prohibition notices (e.g. no swimming)
- Warning messages (e.g. strong currents)
- Location (grid reference number)
- Emergency Action

Additional information can include location of nearest telephone and a map detailing help points.

Those responsible for water safety signage are advised to read this document carefully before deciding on additional signage. Any new signage is recommended based on three classifications and linked to categories of activity.

9.2.1 Primary Signs

Places where the public visit because of an associated water based-amenity value.

Primary signs should be located at either entrance/gateway or at a most logically central point where the greatest number of visitors will see it. Key information on primary signs will include the safety message, e.g. 'Danger of Drowning' and /or 'No Swimming', location grid reference and reference to emergency services with pictorial diagrams for those who find reading difficult or do not have a conversant knowledge of English. Height of the sign needs to consider people in wheelchairs.

It is advised that primary safety signs do not include additional information, such as local amenities.

9.2.2 Secondary

Secondary signs are located where people are near to water and/or walk on known paths alongside waterways. These locations are not necessarily amenity sites in their own right. Secondary signs should be located at the main access points to walkways and possibly along the way particularly at locations where risk levels might increase.

9.3 Public Rescue Equipment

Public rescue equipment (PRE) has become the default response to providing control measures at coastal and inland locations, especially when a drowning incident has occurred.

There is little evidence to suggest that PRE alters perception of risk or that installations improve water safety. The most common types of equipment installed are the Lifebuoy, a circular floatation device, attached to a rescue line and a throw line. The Lifebuoy was designed for marine purposes, where somebody goes overboard and the rescuer can lower the Lifebuoy down to the casualty, through a vertical drop. Lifebuoys were not designed to be thrown horizontally to casualties, as this may well create injury through collision with the head.

A lifebuoy is not recommended for gentle shelving beaches or where there is a high tidal range and the PRE is only accessible for a small amount of time. A life ring is recommended for man-made coastal features described. The RNLI have a very useful guide 'Public Rescue Equipment'⁷. There are two sizes of lifebuoy: a small to medium-sized ring and a large-sized

ring. The large sized Lifebuoy, 25-32" diameter, is to be used where there is vertical drop to the casualty and a medium sized lifebuoy, 18-24" diameter, for steeply shelving beaches⁷.

The RNLI note 'throw bags or small to medium-sized lifebuoys are recommended PRE devices for rocky coastal locations, tidal inlets and estuaries. However, throw bags should only be used if there is at least 40N of positive buoyancy at the end of the line to assist the casualty. Throw bag devices are most suitable at swift-water locations such as river mouths, estuaries and areas around rocky coasts where frequent strong currents are present' and where the casualty is not far from safety.

Lifebuoys are best suited for vertical drops, where there is a steep edge, e.g. locks and marinas or where the casualty is not far from the bank. Research conducted by the RNLI on coastal PRE, confirms that horizontal throwing of Lifebuoys carries risk to the casualty. Both the use of lifebuoys and throw lines require training to use.

In addition, for PRE to be effective the following factors must exist (RLSS UK Safety at Inland Waters Sites²):

- the casualty must be seen by someone
- the casualty must be recognised as being in danger
- the casualty must remain afloat and within reach until rescue arrives
- appropriate rescue equipment must be to hand and in operational condition
- the rescuer must retrieve the PRE
- the rescuer must have the ability, judgement, strength and skill to effect a rescue
- there must be adequate length of rope with which to reach the casualty
- the weather conditions must be conducive to the rescue and
- the casualty must be able to co-operate, i.e. swim to towards the rescue device, if necessary, grasp it and maintain hold until towed towards the edge

In some areas PRE is used as a fun floatation device by people using them to throw in and use them as a float, which entices people to enter the water. In addition, provision of PRE encourages a member of the public to engage in a rescue which creates its own safety issues, during an incident. Theft is also a major concern, with PRE being taken from site, in particular throw lines being regularly stolen.

In this context, the Consultant believes that provision of PRE needs careful consideration at each site.

9.4 Recording

Risk assessment is not a one off exercise but a process. To ensure that all risk assessments are up to date, it is important to review and record all assessments and logs, including.

- Risk assessments
- Training logs
- Equipment logs
- Accident logs
- Lessons learnt

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10. Consultant

Dr. Cliff Nelson, Managing Director of Atlantic Crest, who specialise in water safety consultancy and training. Cliff has a Ph.D. in coastal management and 12 years' experience working with RLSS UK, as Head of Water Safety Management, responsible for open water consultancy and training. Cliff was the Vice Chair of the International Life Saving Federation (Europe) Rescue Committee and Secretariat to the National Water Safety Forum Beach Group. Currently Cliff is a board member of the Royal National Lifeboat International Lifeguard Programme and Swim Wales Advisory Open Water Swim Board.

Dr.Cliff Nelson
Head of Water Safety Management
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