

A Guide to **Public Rescue Equipment** for the New Zealand Coast



In memory of Wairongoa (Magoo) Renata

... who lost his life at Cable Bay, Northland in 2018 whilst attempting to save his children. He got caught in a rip current, and the subsequent recommendations by the Coroner led to the local community installing Public Rescue Equipment (PRE) along their beaches and the wider initiation of this national PRE project.

Wairongoa (Magoo) Renata was the kind of person who would do anything for anyone in need. He would help whānau, neighbours, and complete strangers at the drop of a hat and frequently sacrificed his own safety for the well-being of others. On the 2nd of January 2018, he made the ultimate sacrifice to save our three children and bring them back safely. His death, although horrendously tragic and life-changing for our whānau, hapu, and Iwi, initiated a movement to ensure that no one else has to endure the same experiences we have had to go through. I extend my gratitude to all those who have dedicated their time, efforts, and aroha to protect and provide a lifeline when all seems hopeless.

Leigh Albert

The Ode of Remembrance

They shall grow not old, as we that are left grow old:
Age shall not weary them, nor the years condemn.
At the going down of the sun, and in the morning,
We remember them.

E kore rātou e kaumātuatia
Pēnei i a tātou kua mahue nei
E kore hoki rātou e ngoikore
Ahakoa pehea i ngā āhuatanga o te wā
I te hekenga atu o te rā
Tae noa ki te arangamai i te ata
Ka maumahara tonu tātou ki a rātou
Ka maumahara tonu tātou ki a rātou



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www.surflifesaving.org.nz

and

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www.dpanz.org.nz

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www.nzsar.govt.nz/governance/nzsar-consultative-committee

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www.acc.co.nz

www.standards.govt.nz

The production of this manual has been inspired by Pat Millar, the founder of Operation Flotation. Her vision and passion to save lives, not only in her community but throughout New Zealand, led to the development of these guidelines.

www.opflot.co.nz

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<https://www.nsri.org.za/>

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Introduction

Every year bystanders undertake in-water rescues across New Zealand's coastal and inland waterways. Recent research indicates:

- 14% of New Zealand adults have rescued someone;
- 43% of rescues occurred at a beach;
- 58% of rescues occurred at an unpatrolled beach;
- 54% of rescues were conducted without the use of any rescue or personal flotation device (Omnipoll, 2023)

The number of bystanders who undertake a rescue without the use of any form of rescue or personal flotation device is concerning. Data retrieved from the Water Safety New Zealand (WSNZ) DrownBase further highlights the danger of not taking rescue or a personal flotation device when undertaking a rescue.

“In New Zealand between 2013-2023, 100% of those individuals who died while attempting a bystander rescue did not carry any form of personal flotation device”

(WSNZ, 2023)

This supports the notion that if a bystander decides to undertake an in-water rescue, taking some form of rescue or personal flotation device with them is the safest option.

Surf Life Saving New Zealand (SLSNZ) recommends using Public Rescue Equipment (PRE) as a crucial method to decrease the number of drowning incidents in New Zealand's coastal and inland waterways. PRE serves as a rescue tool and personal flotation device for both rescuers and individuals in danger, especially when there is no other alternative but to enter the water for a rescue.

The provision of flotation is an essential step in the Drowning Chain of Survival (Szpilman et al. 2014). This chain, recognised by the International Lifesaving Federation, New Zealand and European Resuscitation Councils, consists of five links that guide life-saving steps for lay and professional rescuers. These links include preventing drowning, recognising distress, providing flotation, removing the person from the water, and providing necessary care.

PRE must be appropriate for the features and conditions of the coastline and water. The equipment should be easy to use by members of the public with minimal hesitation and without putting the safety of the rescuer at risk.

It is not only the type of PRE that is important, but that it is positioned in the correct location and that maintenance and checking procedures are in place.

As with all coastal management issues, decisions should be based upon a robust and regular risk assessment process. This guide is intended to help land managers decide the PRE requirement only if a need is identified through a coastal risk assessment. Remember, in some cases the results of a risk assessment could indicate that PRE is not required, such as some very shallow shelving beaches or areas where historically no incidents have occurred.

Introduction

However, PRE requirements should never be looked at in isolation; there are other control measures available that complement PRE, such as education, signage and lifeguard services.

SLSNZ has produced this guide, which is based upon the New Zealand Standard 5823:2005 “Specification for buoyancy aids and marine safety harnesses and lines” and the internationally recognised 2416:2010 “Water safety signs and beach safety flags”. It is also based on recent research that we conducted and other international research that determined the optimum colour to use for PRE.

These guidelines are administered through Standards New Zealand, which is the national standards body for New Zealand. It is not intended to be a definitive document nor is it an exhaustive list of safety guidelines. However, it fulfils its aim of setting a standard for the design and associated signage design for PRE, as well as providing land managers with sufficient information to enable them to set up effective and consistent PRE systems on their coastline.

The number of PRE and their locations should be determined through a robust and regular risk assessment. PRE is only required if a need is indicated through the risk assessment process. Remember, in some cases the results of a risk assessment may indicate there are no PRE requirements, such as at isolated locations or a quiet beach where the level of risk is very low. The benefits of standardising the design and content of PRE are immeasurable, but one thing is certain, our coast will become safer as more land managers adopt these standard measures. We strongly urge all land managers to read and use this guide to help make all our coast a safer place to visit.

It is important that all coastal users understand the risks and, equally important, the need to take care of their own welfare when undertaking an in-water bystander rescue. PRE should never take away the responsibility that members of the public have for their own actions and subsequent safety.

Section 01

SLSNZ Drowning Prevention Strategy

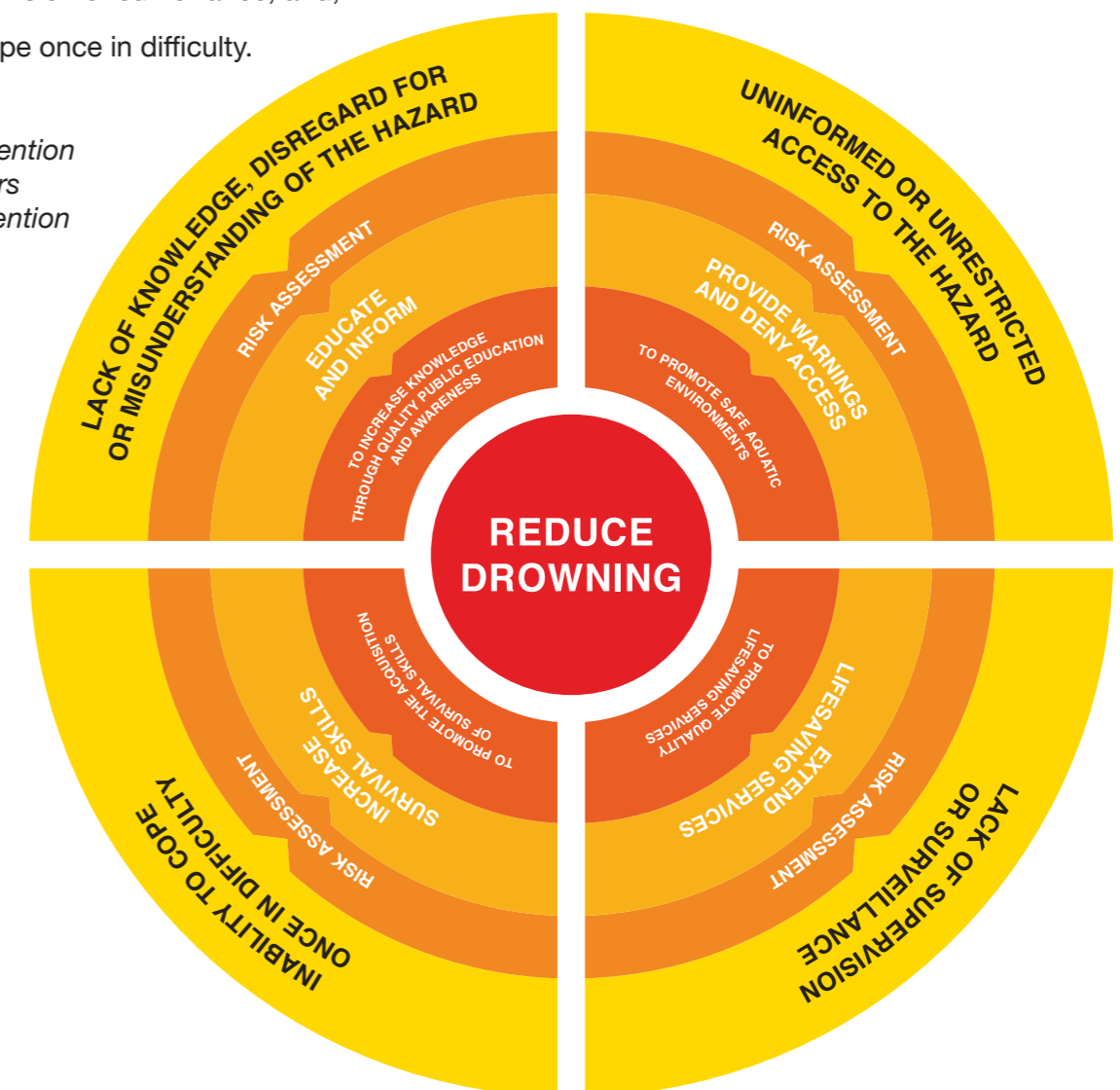
The drowning prevention strategy employed by SLSNZ is based upon the framework developed by the International Lifesaving Federation “Drowning Prevention Strategies, A framework to reduce drowning deaths in the aquatic environment for nations/regions engaged in lifesaving” (International Life Saving Federation, 2015).

A key component of this drowning prevention strategy is the 'Drowning Prevention Chain', which identifies four causal factors that, acting alone, or in any combination, can lead to death or injury by drowning. These are outlined below and shown conceptually in Figure 1.

The four causal factors are:

1. Lack of knowledge, disregard for or misunderstanding of the hazard;
2. Uninformed or unrestricted access to the hazard;
3. Lack of supervision or surveillance; and,
4. Inability to cope once in difficulty.

Figure 1
The Drowning Prevention Chain, causal factors and drowning prevention strategies.



Section 01

SLSNZ Drowning Prevention Strategy

Each causal factor has corresponding drowning prevention strategies and control measures that can reduce death or injury by drowning (Table 1).

The four drowning prevention strategies are:

1. Educate and inform;
2. Provide warnings and deny access;
3. Extend lifesaving services; and
4. Increase survival skills.

Table 1

Summary of the causal factors that lead to drowning and associated drowning prevention strategies and control measures to help prevent drowning. Signage is a recognised control measure.

CAUSAL FACTORS	DROWNING PREVENTION STRATEGIES	CONTROL MEASURES
1. Lack of knowledge, disregard for or misunderstanding of the hazard.	Educate and inform	<ul style="list-style-type: none"> • Community education • Arrival education
2. Uniformed or unrestricted access to the hazard.	Provide warnings and deny access	<ul style="list-style-type: none"> • Manage access • Safety signage • Activity management
3. Lack of supervision and surveillance	Extend lifesaving services	<ul style="list-style-type: none"> • Trained observers • Carer supervision • Lifeguard services and emergency response capacity • Remote monitoring
4. Inability to cope once in difficulty	Increase survival skills	<ul style="list-style-type: none"> • Community education • Emergency communications • Public Rescue Equipment

Section 01

SLSNZ Drowning Prevention Strategy

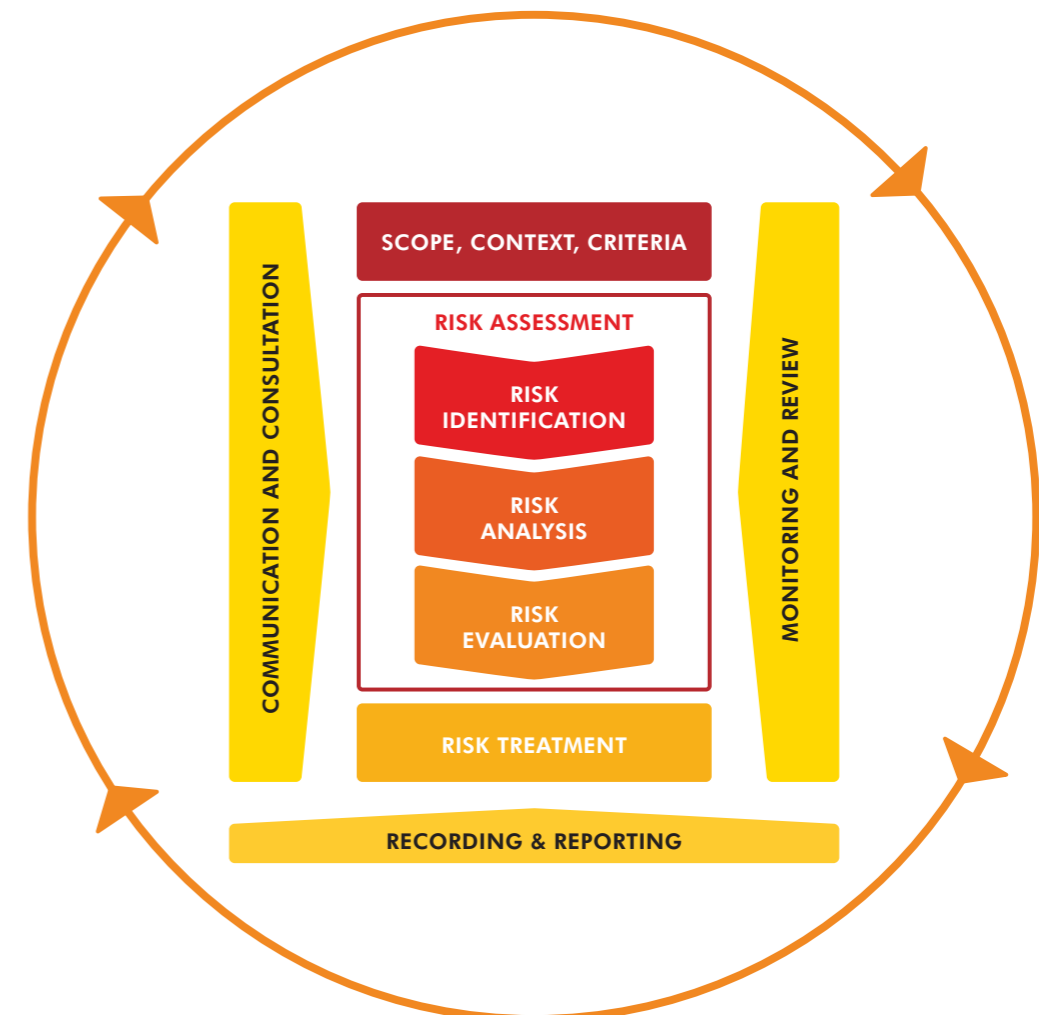
THE ROLE OF RISK ASSESSMENTS

A formal risk assessment should be conducted to decide on the most appropriate drowning prevention strategies and control measures for a specific location and/or population. It ensures that all risk elements in the coastal landscape are duly considered and addressed in the risk assessment reporting and implementation process.

SLSNZ uses the risk management standard, ISO 31000:2018-02 Risk management - Guidelines, which provides an internationally recognised framework for evaluating risk (International Organisation for Standardisation, 2018). This standard is supported by AS/NZS IEC 31010:2020 Risk management – Risk assessment techniques that guide selecting and applying techniques for assessing risk in a wide range of situations (Australia Standards/New Zealand Standards, 2020). The process is displayed in Figure 2 and further explained below.

Figure 2

Risk management process, adapted from ISO 31000:2018-02 Risk management - Guidelines (International Organisation for Standardisation, 2018).



Section 01

SLSNZ Drowning Prevention Strategy

ASSESSMENT PROCESS

The generic framework and the main elements of the risk assessment process identified are:

1. Communication and consultation

The purpose of communication and consultation is to assist relevant stakeholders in understanding risk, the basis on which decisions are made, and why particular actions are required. The communication seeks to promote awareness and understanding of risk, whereas consultation involves obtaining feedback and information to support decision-making. Close coordination between the two should facilitate an honest, timely, relevant, accurate, and understandable exchange of information, taking into account the confidentiality and integrity of information as well as the privacy rights of individuals.

2. Establish the scope, context, and criteria

Establishing the scope, context, and criteria is to customise the risk management process, enabling practical risk assessment and appropriate treatment. Scope, context, and criteria involve defining the scope of the process and understanding the external and internal context.

3. Risk assessment

Risk assessment is the overall process of risk identification, analysis, and evaluation. Risk assessment should be conducted systematically, iteratively, and collaboratively, drawing on the knowledge and views of stakeholders. It should use the best available information, supplemented by further enquiry as necessary.

- a. **Risk identification** - Risk identification aims to find, recognise and describe risks that might help or prevent an organisation from achieving its objectives. Relevant, appropriate, and up-to-date information is essential in identifying risks.
- b. **Risk analysis** - The purpose of risk analysis is to comprehend the nature of risk and its characteristics, including, where appropriate, the level of risk. Risk analysis involves a detailed consideration of uncertainties, risk sources, consequences, likelihood, events, scenarios, controls, and their effectiveness. An event can have multiple causes and consequences and can affect multiple objectives.
- c. **Risk evaluation** - The purpose of risk evaluation is to support decisions. Risk evaluation involves comparing the risk analysis results with the established risk criteria to determine where additional action is required.

4. Risk treatment

Risk treatment aims to select and implement options for addressing risk.

Risk treatment involves an iterative process of:

- a. Formulating and selecting risk treatment options;
- b. Planning and implementing risk treatment;
- c. Assessing the effectiveness of that treatment;
- d. Deciding whether the remaining risk is acceptable;
- e. If not acceptable, take further treatment.

Section 01

SLSNZ Drowning Prevention Strategy

5. Monitor and review

Monitoring and review aim to assure and improve the quality and effectiveness of process design, implementation, and outcomes. Ongoing monitoring and periodic review of the risk management process and its outcomes should be planned, with responsibilities clearly defined.

6. Recording and reporting

The risk management process and its outcomes should be documented and reported through appropriate mechanisms. Recording and reporting aim to:

- a. Communicate risk management activities and outcomes across the organisation;
- b. Provide information for decision-making;
- c. Improve risk management activities;
- d. Assist interaction with stakeholders, including those responsible for risk management activities.

For further information regarding the Risk Assessment Process, please contact:

Dr Mick Kearney
National Coastal Safety Manager
Surf Life Saving New Zealand

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Section 02

How to use this document

This document should be used as a guide by land managers when specifying and installing PRE for coastal environments. You may find it useful to initially visit each coastal site to carry out a risk assessment that will help determine your PRE control measures. If you have any questions when using this guide or would like some further guidance please contact the SLSNZ Coastal Safety team, who will be happy to assist with your queries; contact details can be found below the table of contents.

STEP 1: Understanding the coastal environment

Every coastal site has different features that will in turn affect which PRE is used. Coastal sites may also have different features depending on the state on the tide. A full understanding of coastal features should be gained before addressing on-site risks.

STEP 2: Understand risk management and carry out a risk assessment

It is important to base your PRE requirements on a full coastal risk assessment. If you are not familiar with coastal risk assessments, please contact the SLSNZ Coastal Safety team, who are able to provide coastal risk assessments. Please remember PRE is only part of a possible coastal safety solution; other control methods should be considered to complement PRE when undertaking a coastal risk assessment.

STEP 3: Public rescue equipment location

It is important that your PRE is sited at the correct location to ensure it can be recognised and deployed in an emergency. Your coastal risk assessment will help identify the most appropriate position to place your PRE.

STEP 4: Signage, housing and maintenance

You should ensure that all PRE has the correct signage and is maintained in order for it to be found and deployed effectively when required. It is also important that a regular checking system is in place when developing your PRE management plans. We recommend the PRE signage acts as the housing for PRE.

STEP 5: Consider incorporating Water Safety Signage with PRE signage

Combining PRE and Water Safety Signage at the same location provides a designated water safety focal point, which has numerous benefits. The Water Safety Signage alerts potential users to foreseen risks, while PRE signage provides instruction on PRE usage and housing. This will provide designated water safety focal points, while reducing signage costs and signage pollution.

If combining water safety signage with PRE signage please refer to “A Guide to Water Safety Signage in New Zealand”. SLSNZ has produced this guide, based upon the internationally recognised Australian / New Zealand Standard 2416:2010 “Water safety signs and beach safety flags” administered through Standards New Zealand. It is not intended to be a definitive document nor is it an exhaustive list of safety guidelines. However, we hope it fulfils its aim of setting a standard for the design and content of national coastal water safety signs and symbols as well as providing land managers with sufficient information to enable them to set up effective and consistent signage systems on their coastlines.

Section 03

International Signage Standards

SLSNZ recommends beach safety signage as an important preventative measure to reduce coastal drownings. SLSNZ urges all councils to adhere to the Australian / New Zealand Standard 2416:2010 “Water safety signs and beach safety flags” administered through Standards New Zealand (MBIE), which is the national standards body for New Zealand.

Standards New Zealand is the national body that promotes international standards. The AS/NZS 2416 Water safety signs and beach safety flags standards provide internationally recognised signage (Standards New Zealand, 2010a; 2010b; 2010c). These standards provide detailed guidance on symbol usage, signage layout and design. Adhering to these documents will provide signage consistency across New Zealand and help make our beaches a safer environment for users.

- I. AS/NZS 2416.1:2010 Water safety signs and beach safety flags - Specifications for water safety signs used in workplaces and public areas. Prescribes water safety signs intended for use with the aquatic environment. Adopted with national changes from ISO 20712-1:2008 (International Organisation for Standardisation, 2008; Standards New Zealand, 2010a).
- II. AS/NZS 2416.2:2010 Water safety signs and beach safety flags - Specifications for beach safety flags - Colour, shape, meaning and performance. Specifies requirements for the shape and colour of beach safety flags for the management of activities on coastal and inland beaches. Adopted with national changes from ISO 20712-2:2007 (International Organisation for Standardisation, 2007; Standards New Zealand, 2010b).
- III. AS/NZS 2416.3:2010 Water safety signs and beach safety flags - Guidance for use. Provides guidance for the selection and use of water safety signs as specified in ISO 20712-1 and beach safety flags as specified in ISO 20712-2, in aquatic environments. It provides guidance on their location, mounting positions, lighting and maintenance. It also provides guidance on the design and location of multiple signs (International Organisation for Standardisation, 2007, 2008; Standards New Zealand, 2010c).

These standards can be accessed through Standards New Zealand’s online library <https://www.standards.govt.nz/shop/asnzs-2416-12010/>. This may be a standard which you already have access to through your Standards New Zealand online library subscription. If not, please contact Standards New Zealand to organise adding this to your current subscription.

SLSNZ encourages the installation of water safety signage with PRE. This helps inform people using aquatic areas of the hazards present. This is only reasonable, as it cannot be expected that visitors to a unique area will understand the inherent hazards of these locations in the same way that experts such as surf lifeguards would.

Section 04

PRE Research Summary

Two research projects were undertaken in conjunction with Drowning Prevention Auckland in developing these guidelines. The first project was to determine bystander accuracy of throwing PRE 10 m toward a target, and the second was to determine the preferred in-water PRE by bystanders.

Research Project One – Accuracy of throw for various PRE

BACKGROUND

Public Rescue Equipment (PRE) to support bystander rescues has been occurring in New Zealand for over 20 years albeit on an ad hoc basis with little evidence of best type of PRE and whether or not they are best suited for bystander rescue. A lack of any standards and very little guidance for PRE to help coastal managers and emergency services to determine and plan their PRE requirements has resulted in much of the PRE found on our beaches and waterways not having been tested, and therefore, it may not be best suited for the environment. PRE must be appropriate for the features and conditions specific to each location and the personnel utilising it. In other words, are bystanders able to use the PRE to undertake a safe rescue in that specific environment?

METHODOLOGY

Participants were asked to throw four PRE types in various locations for a 10m accuracy throw without any instructions. The four types of PRE were selected from those being used currently in New Zealand; large life ring (Auckland west coast), rescue tube (Northland east coast and Hawaii), and those used with success in other countries; rescue buoy (South Africa) and small life ring (Ireland). The throw rope was also tested, attached, and unattached to the life ring PRE.

Throwing accuracy was measured on the following scale to get close to a target: 1 = up to 1 metre away, 2 = 1 - 3 metres from target, 3 = 3 - 5 metres from target, 4 = 5 or more metres from target.

Throws were made from a level or gentle slope as would be expected on a beach, and from a height to simulate from a jetty or rocky headland.

Responses were analysed on SPSS statistical software.

RESULTS

A total of 253 participants undertook the PRE testing. Throwing PRE from ten metres away was unlikely to reach within one metre of a victim in the water.

	Large life ring no throw rope	Large life ring with throw rope	Small life ring no throw rope	Small life ring with throw rope	Rescue buoy	Rescue tube	Throw rope
% within 1 m target level ground	7%* **	-	17%*	5%* **	9%* **	2%	34%* **
% within 1 m target from height	10%**	2%	33%	-	10%	10%	29%

* Significant difference gender

** Significant difference age under 15 years

Section 04

PRE Research Summary

The throw rope was the most accurate PRE to throw. The 'swimming' designed PRE (rescue tube and rescue buoy) and the large life ring are the most difficult to throw, especially the rescue tube and the large life ring.

Adding a throw rope to PRE makes it significantly more difficult to throw.

Throwing the life rings from height is more accurate than from level ground. Throwing the small life ring is more accurate than the large life ring from both levels.

Males and people aged 15 years and over were significantly more likely to throw accurately on level ground when compared with females and children under 15 years.

RECOMMENDATIONS

It is unrealistic to expect bystanders to successfully throw PRE ten metres or more at a beach type environment on level or gentle sloping ground. In-water rescue using either the rescue buoy or the rescue tube is likely to be required.

PRE to be used from height should be either the small or the large life ring without a throw rope attached, depending on the buoyancy required in that environment. Rougher, moving water such as around west coastlines would require the large life ring. The smaller life ring would be most suitable to environments such as waterholes.

A throw rope should be available either as a back-up for either inaccurate throws or for rescues very close to shore.

Section 04

PRE Research Summary

Research Project Two – Best in-water PRE

BACKGROUND

The previous study recommended the use of in-water rescue at beach-type environments. This study aimed to determine which of the rescue buoy or the rescue tube would be the best to recommend in New Zealand environments.

METHODOLOGY

Bystanders were asked to simulate a rescue as either the rescuer or a patient using both the rescue buoy and the rescue tube. Responses to their preferences on ease of use were recorded on an Alchemer survey for both the rescuer and the patient. Responses were transferred to SPSS for analysis.

RESULTS

A total of 82 people participated in trialing the in-water PRE (rescue buoy, 63; rescue tube, 65).

Almost all respondents (98%) indicated they would be comfortable using either of the PRE in a rescue situation.

Rescuers responded that rescue buoy was easier to put on (rescue buoy 36% vs rescue tube 23%), easier to tow without patient (61% rescue buoy vs rescue tube 18%) and with patient (57% rescue buoy vs rescue tube 27%), and easier to explain how to use (52% rescue buoy vs rescue tube 27%).

Patients found the rescue buoy easier to hold on to (61% rescue buoy vs rescue tube 39%).

RECOMMENDATION

The rescue buoy should be available for use on beach-type environments in New Zealand where in-water rescue may be required.

Section 05

PRE for beaches

A rescue buoy (sometimes referred to as a torpedo buoy) is the recommended PRE for beaches. This type of rescue buoy has been designed as a rescue and personal flotation device intended for use on in-shore waters where early rescue may be expected. The rescue buoy can be thrown, dropped or passed to a person in the water to assist affecting a rescue.

The specifications of the rescue buoy should adhere to the New Zealand Standard 5823:2005 “Specification for buoyancy aids and marine safety harnesses and lines”. This standard sets out general and specific requirements for buoyancy aids for surface water use. General design requirements, constructional requirements and requirements for individual components are specified in NZS 5823:2005. New Zealand Standard 5823:2005 can be accessed through Standards New Zealand’s online library <https://www.standards.govt.nz>.

ADVANTAGES OF THE RESCUE BUOY

- Distinctive and can be identified quickly.
- Designed to be thrown, dropped, or towed behind a swimmer to be passed to a person in the water.
- The attachment of a lanyard and shoulder strap allows the rescue buoy to be towed behind a swimmer enabling in-water rescue.
- Hydrodynamic and lightweight design creates very little drag for a person swimming with it.
- Useful buoyancy tool which can keep rescuers and swimmers afloat.
- The rescue buoy may also be connected to a landline device, which allows individuals onshore to pull the rescuer and persons back to shore.
- The rails, or sides, or the buoy have handles allowing people to grab on.
- Resistant to environmental degradation when made with UV resistant materials.
- Easily stored.

LIMITATIONS OF THE RESCUE BUOY

- Single person use: The rescue buoy can be used for more than one person but is designed for a single person.
- Does not secure an unconscious or semi-conscious person.
- Made from hard plastic material which may cause injury if it hits the person when thrown.

Section 05

PRE for beaches

Rescue Buoy Specifications

Design

The rescue buoy shall be of rigid construction to facilitate throwing and shall be fitted with handholds. It shall be of a shape that enables it to be easily grasped by a person in the water. It shall have provisions for fitting a rescue line, lanyard, and webbed shoulder strap, and it should have no sharp edges.

Flotation

A minimum positive flotation/buoyancy of 100 N to help support the person in the water.

Weight and dimensions

The unit should have a weight of 1–2 kg and approximate dimensions of length (70 cm), width (28 cm) and height (13.6 cm).

Lanyard and shoulder strap

The lanyard shall be a nylon filament rope that has a diameter of not less than 10 mm and a breaking force of not less than 22.1 kN. The rope shall be 190 cm long and spliced to the rescue buoy and the shoulder strap.

The shoulder strap shall be made from webbing that is not less than 5 cm in width. The shoulder strap drop should allow for a 60 cm opening for diagonal placement over the neck and under the arm.

Retroreflective tape

The rescue buoy shall include retroreflective tape as a means of making it visible at night. The retroreflective tape shall be attached at two places on the rescue buoy and be in such positions that they are not obstructed when a person is holding onto the rescue buoy.

Colour

Although New Zealand Standard 5823:2005 “Specification for buoyancy aids and marine safety harnesses and lines” sets out a range of different colours for lifejackets and personal flotation devices (PFDs), and recommends that rescue buoys should be one of these colours, the standards were issued in 2011. Since then new research has been conducted by WorkSafe BC (Canada), which has become internationally accepted and which suggested that fluoro green was the most visible on-water colour. SLSNZ has therefore considered this research, and at this time recommends that rescue buoys should be coloured fluoro yellow/green (Hex #DAEE01), which is also a standard ‘emergency services’ colour.

This then provides a number of benefits:

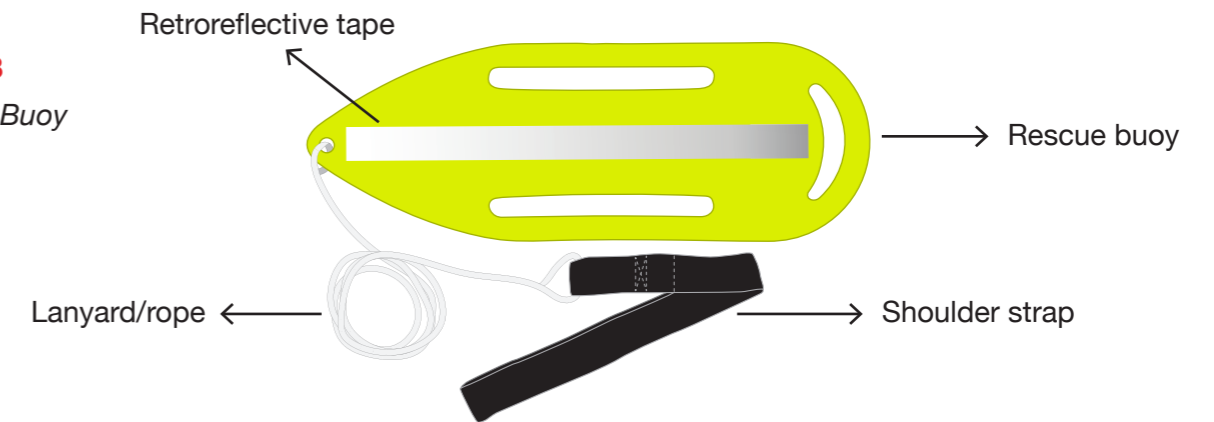
- It is likely to be the most visible colour on water during daylight and when viewed through night vision goggles;
- It is highly visible to the public when searching for PRE to access in an emergency;
- It is a colour that will be associated with ‘safety equipment’ and so less likely to be stolen;

Section 05

PRE for beaches

- It is already synonymous with the Emergency Services and so likely to be universally recognised and accepted.

Figure 3
Rescue Buoy



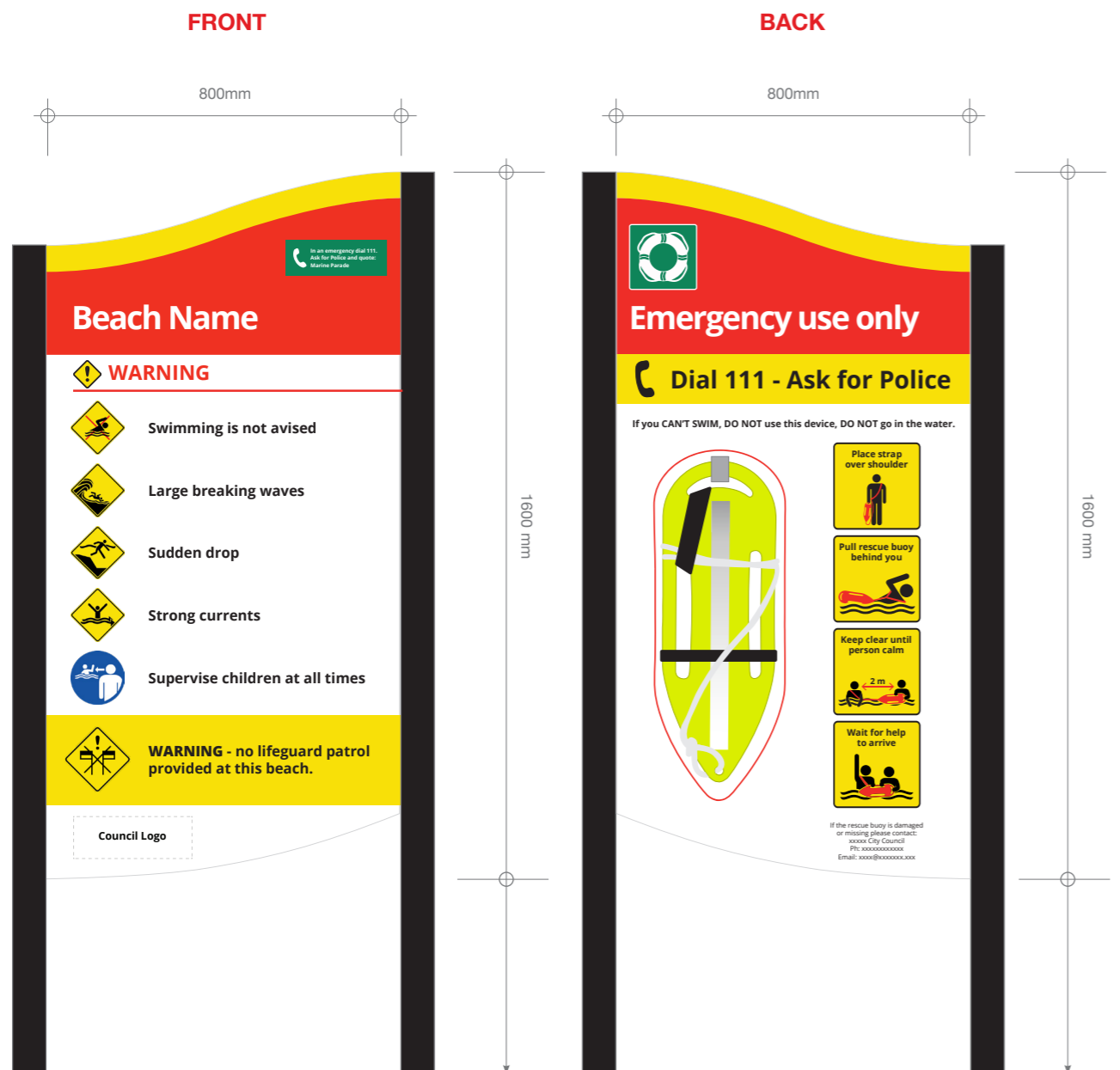
Section 06

Rescue buoy signage and housing

This section is dedicated to PRE signage and housing. Please note the signage also houses the PRE on the reverse of the sign. You can select which type of PRE signage/housing is best suited specific to location.

Level 1: Large signage for PRE (rescue buoy) incorporated with water safety signage *'Recommended'*

Figure 4
Front and Back (Dimensions shown are a guide only).



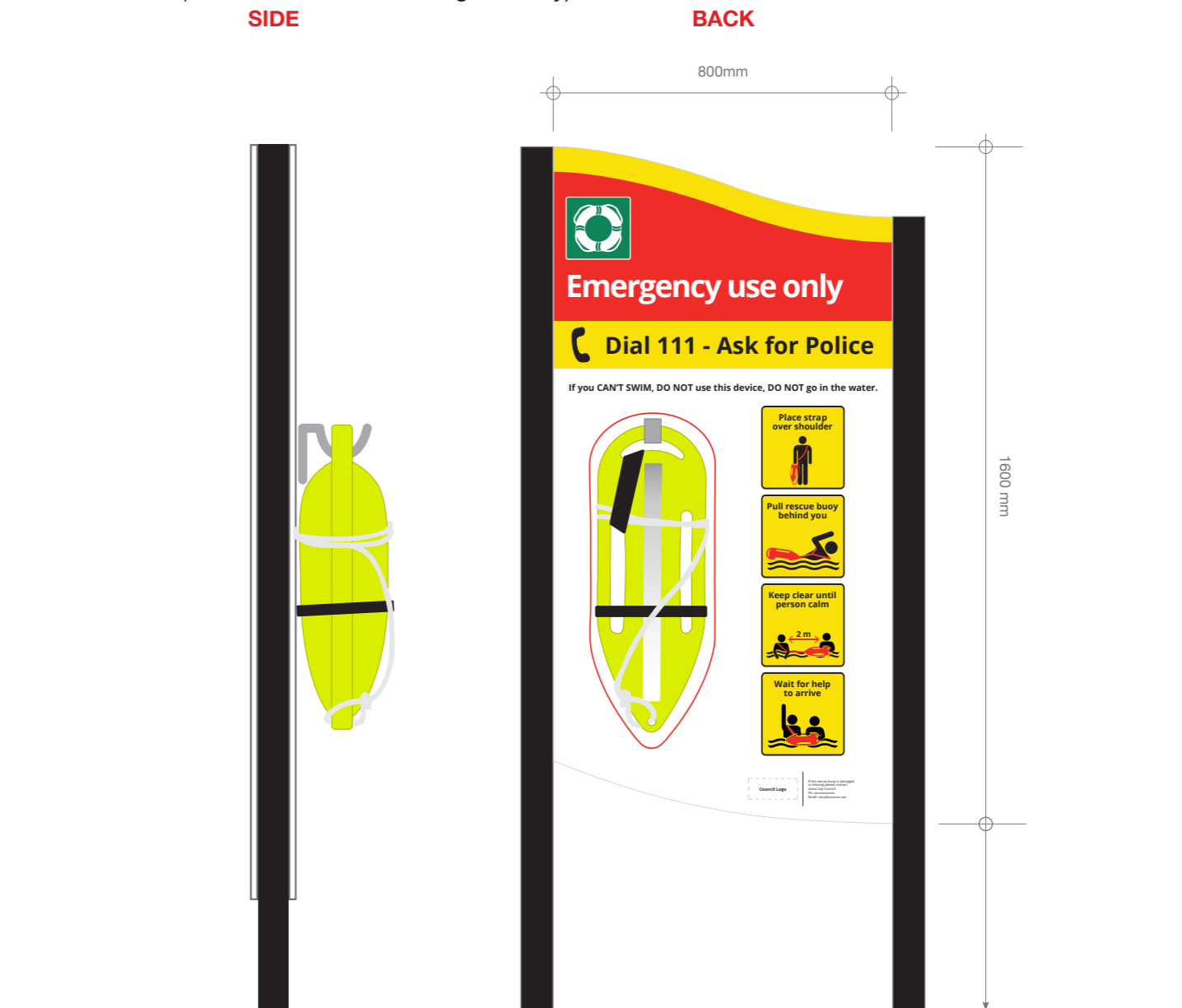
Section 06

Rescue buoy signage and housing

Level 1: Large signage for PRE (rescue buoy) incorporated with water safety signage *'Recommended'*

Wherever practicable, SLSNZ encourages the installation of water safety signage with PRE. This helps inform people using aquatic areas of the hazards present. This is only reasonable, as it cannot be expected that visitors to a unique area will understand the inherent hazards of these places in the same way that experts such as surf lifeguards would.

Figure 5
Side and Back (Dimensions shown are a guide only).

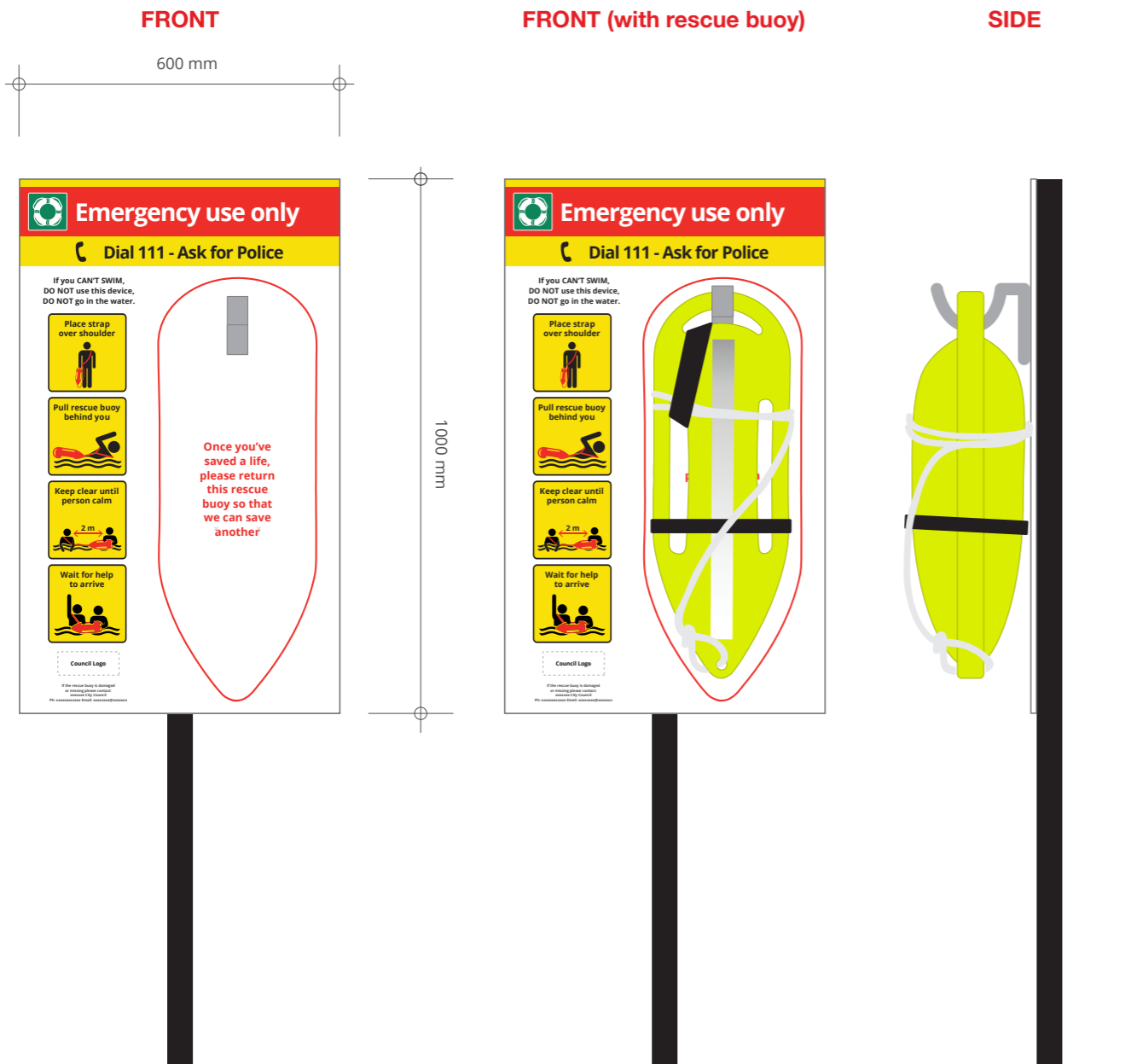


Section 06

Rescue buoy signage and housing

Level 2: Large signage for PRE (rescue buoy)

Figure 6
Front, Front with rescue buoy and Side (Dimensions shown are a guide only).

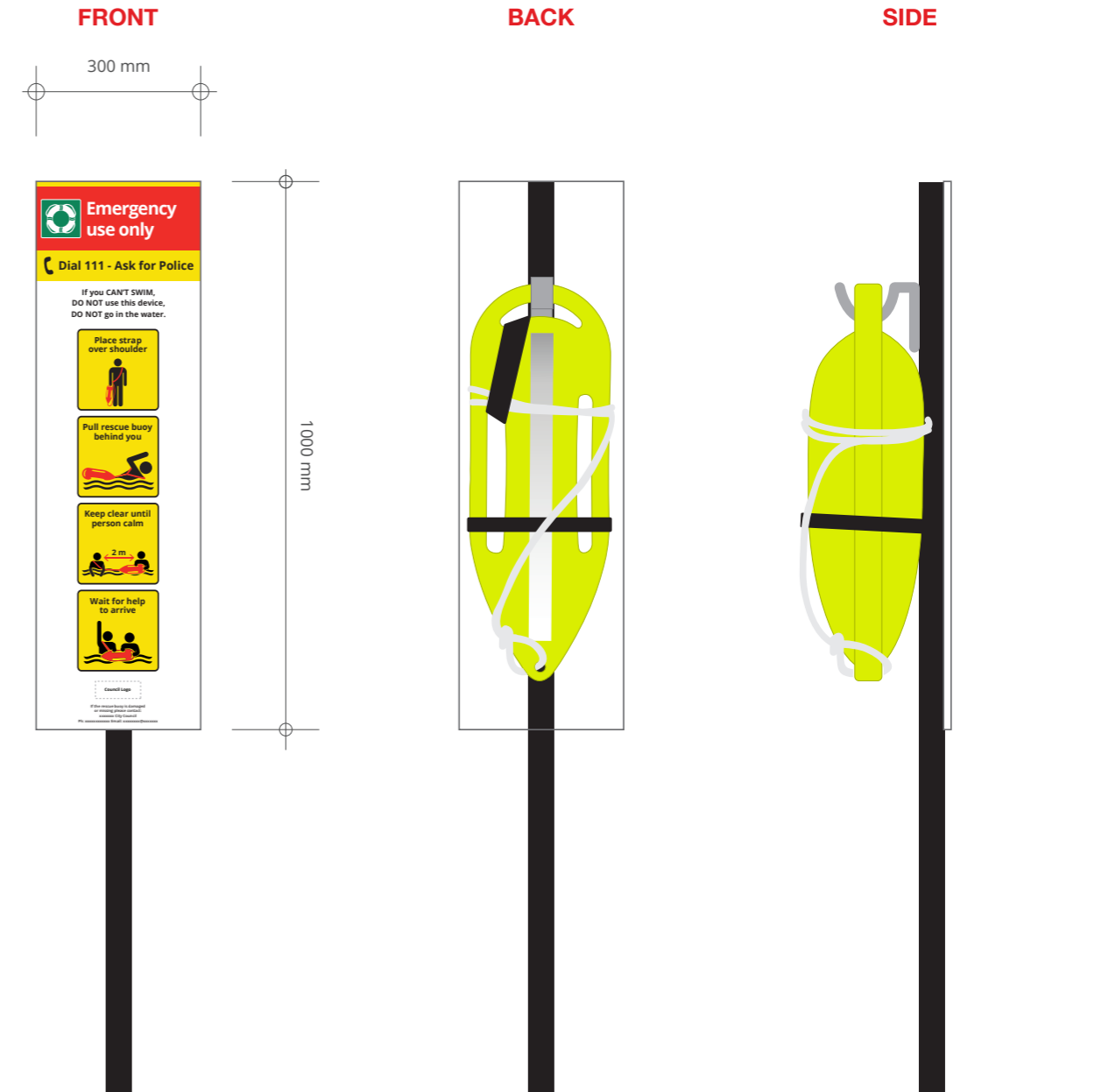


Section 06

Rescue buoy signage and housing

Level 3: Small signage for PRE (rescue buoy)

Figure 7
Front, Back and Side (Dimensions shown are a guide only).



Section 06

Rescue buoy signage and housing

User Information

IN WATER RESCUE INSTRUCTIONS

Figure 8

In water rescue instructions



SLSNZ offers a bystander rescue module which can be completed at your local beach. Get in touch with the SLSNZ Coastal Safety team, who will be happy to assist with your queries; contact details can be found on the inside back cover of this document.

Section 07

PRE for rocky coasts, tidal inlets and estuaries

A life ring (sometimes referred to as an angel ring) is the recommended PRE for rocky coasts, tidal inlets and estuaries. The life ring has been designed as a rescue and personal flotation device intended for use on in-shore waters where early rescue may be expected. The life ring can be thrown or dropped to a person in the water to assist affecting a rescue. The life ring may be connected to a rescue line, which allows individuals onshore to pull the persons back to shore.

Life rings with rescue lines attached are suitable at swift-water locations such as river mouths, estuaries and areas around rocky coasts where frequent strong currents are present and there are obvious access/exit points that allow for safe retrieval of the person from the water.

Life rings without a rescue line attached are recommended where the person might not be easily recovered from the water (for example, where there are no obvious access/exit points onto the rocks, where there is a large drop between the rocks and the water, or where large waves are breaking onto the rocks). In these instances the life rings keep the person afloat and away from the rocks until help arrives or a rescue can be organised.

The specifications of the life ring should adhere to the New Zealand Standard 5823:2005 “Specification for buoyancy aids and marine safety harnesses and lines”. This standard sets out general and specific requirements for buoyancy aids for surface water use. General design requirements, constructional requirements and requirements for individual components are specified in NZS 5823:2005. New Zealand Standard 5823:2005 can be accessed through Standards New Zealand’s online library <https://www.standards.govt.nz>.

ADVANTAGES OF THE LIFE RING

- Distinctive and can be identified quickly.
- Useful buoyancy tool which can keep swimmers afloat.
- The life ring may also be connected to a rescue line, which allows individuals onshore to pull the persons back to shore.
- The life ring has handles allowing persons to grab on.
- Resistant to environmental degradation when made with UV resistant materials.
- Easily stored.

LIMITATIONS OF THE LIFE RING

- Single person use: The life ring can be used for more than one person but is designed for a single person.
- Only effective where there is a straight drop between the rescuer and the person, with little or no throwing needed.
- Does not secure an unconscious person.
- Made from hard plastic material which can cause injury if it hits the person when thrown.

Section 07

PRE for rocky coasts, tidal inlets and estuaries

Life Ring Specifications

Design

The life ring shall be of rigid construction to facilitate throwing and shall be fitted with beackets or handholds. It shall be of such a shape as will enable it to be easily grasped by a person in the water. It shall have provisions for fitting a rescue line and have no sharp edges.

Flotation

A positive flotation/buoyancy of 125 N to help support the person in the water.

Weight

A life ring shall have a mass within the range of 1 kg to 6 kg.

Rescue line

Where a life ring is fitted with a rescue line, the line should not be less than 20 m long, not less than 5 mm in diameter, have a breaking strength not less than 3 kN, and be capable of floating.

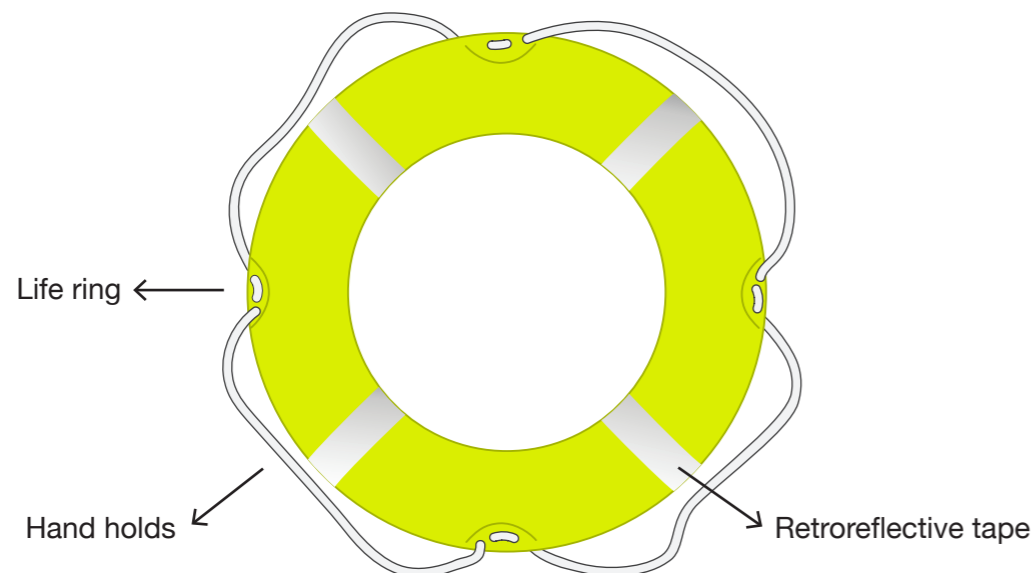
Retroreflective tape

The life ring shall include retroreflective tape as a means of making it visible at night. The retroreflective tape shall be attached at four places on the life ring and be in such positions that they are not obstructed when a person is holding onto the life ring.

Colour

SLSNZ recommends that for the same reasons outlined previously for rescue buoys, that the preferred colour for life rings should be fluoro yellow/green.

Figure 9
Life Ring



Section 08

Life ring signage and housing

This section is dedicated to life ring signage and housing. Please note the signage can also house the life ring. You can select which type of life ring signage/housing is best suited specific to location.

Level 1: Large signage for PRE (life ring) incorporated with water safety signage *'Recommended'*

Ideal for placement at locations where there is a lot of space for life ring housing and water safety signage. These include areas such as walkways and open spaces adjacent to rocky headlands, tidal inlets, and estuaries.

Figure 10
Front and Back (Dimensions shown are a guide only).



Section 08

Life ring signage and housing

Level 1: Large signage for PRE (life ring) incorporated with water safety signage *'Recommended'*

Wherever practicable, SLSNZ encourages the installation of water safety signage with PRE. This helps inform people using aquatic areas of the hazards present. This is only reasonable, as it cannot be expected that visitors to a unique area will understand the inherent hazards of these places in the same way that experts such as surf lifeguards would.

Figure 11
Side and Back (Dimensions shown are a guide only).



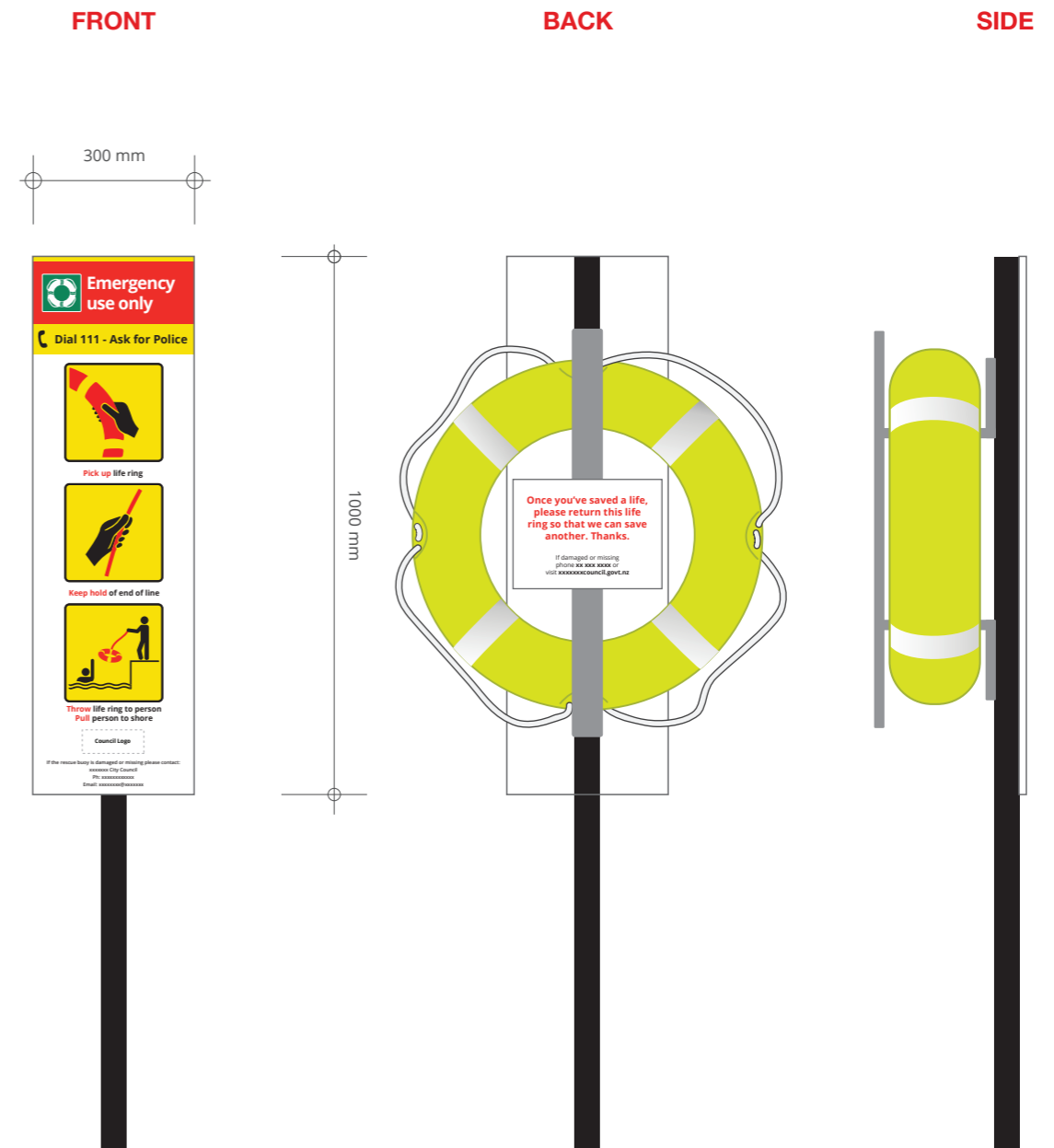
Section 08

Life ring signage and housing

Level 2: Small signage for PRE (life ring) on post mount

Ideal for placement at locations where there are limited sites to attach life ring housing. These include areas such as rock platforms and all the locations listed at Level 2.

Figure 12
Front, Back and Side (Dimensions shown are a guide only).



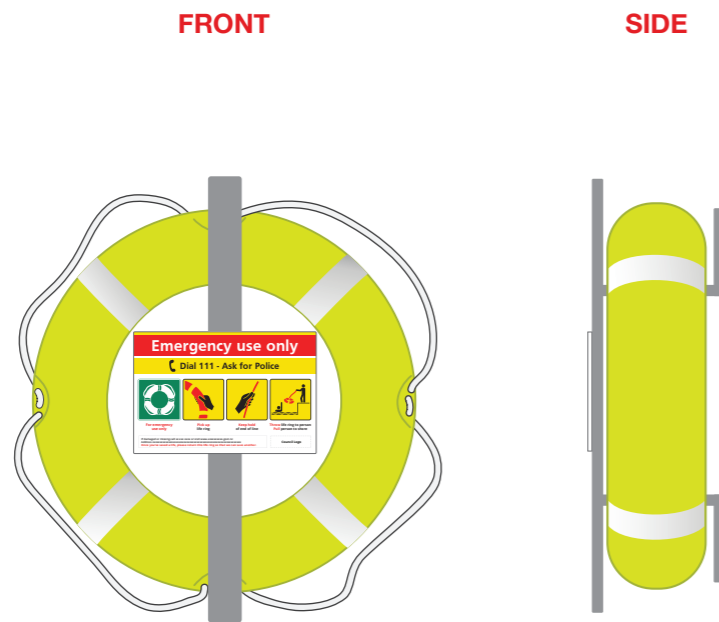
Section 08

Life ring signage and housing

Level 3: Small signage for PRE (life ring) on wall mount

Ideal for placement at locations where there are limited sites to attach life ring housing. These include areas such as rocky walls on headlands.

Figure 13
Front and Side (Dimensions shown are a guide only).



Section 08

Life ring signage and housing

User Information

ON LAND RESCUE WITH RESCUE LINE ATTACHED

Recommended where there are obvious access/exit points that allow for safe retrieval of the person from the water.

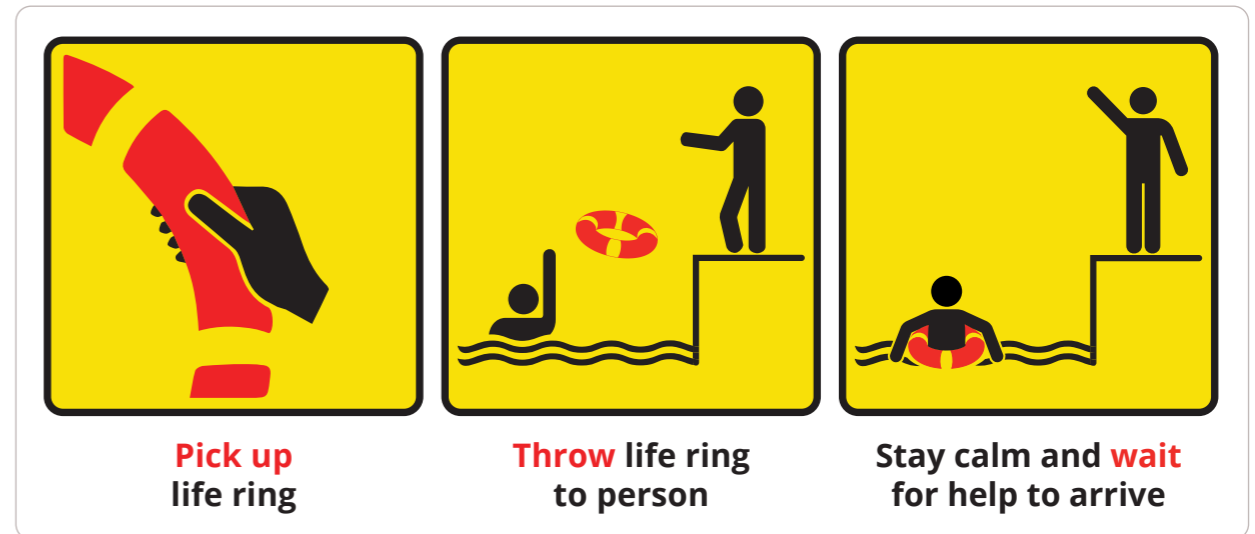
Figure 14
Instructions: On land rescue with rescue line attached



ON LAND RESCUE WITH NO RESCUE ROPE ATTACHED

Recommended where the person might not be easily or safely recovered from the water.

Figure 15
Instructions: On land rescue with no rescue line attached



Conclusion

Aquatic recreation areas are maintained for the safe enjoyment of the community. Many land managers espouse the beauty and uniqueness of their coastal areas and have strategies encouraging people to actively enjoy them.

Effective management increasingly needs to promote the safe enjoyment of aquatic areas through prudent and effective risk management. The provision of PRE provides a rescue and personal flotation device for people in distress, and also for those who decide to undertake an in-water bystander rescue.

1. PRE should be:
 - Easy to use with minimal hesitation;
 - Supported by internationally recognised signage standards and easy to follow instructions;
 - Supported by an education programme that teaches emergency service personnel and members of the public how to use the equipment before it is required in an emergency.
2. PRE is available as emergency flotation for anyone to use to protect themselves while they attempt to help a swimmer in distress.
3. PRE should minimise the risk to the rescuer.

The coastal risk assessment process offers the assuredness that recommendations from an independent and expert third party assessment of risk can provide. The benefits include more effective delivery of outcomes such as 'safe enjoyment of aquatic areas'.

SLSNZ encourages the installation of water safety signage with PRE. This helps inform people using aquatic areas of the hazards present. This is only reasonable, as it cannot be expected that visitors to a unique area will understand the inherent hazards of these places in the same way that experts such as surf lifeguards would.

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