

# Establishing and managing anchorages

under the Port and Harbour Marine Safety Code

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PORT & HARBOUR  
Marine Safety Code

NEW ZEALAND



**Te Kāwanatanga o Aotearoa**  
New Zealand Government

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Image on front cover shows Marsden Point anchorages, courtesy of Land Information New Zealand.

## **Disclaimer**

This document includes general information about safety, environmental and other considerations when establishing and managing anchorages. Parties should note that this guidance is of a general nature and does not cover all possible things that might be required in any particular scenario. This document does not create legal duties or substitute applicable legal requirements, nor is it itself a rule. It is not intended to operate as legal advice. It is your obligation to ensure you are operating to the latest rules and other legislation and to obtain legal advice where appropriate. While every effort is made to ensure that the information in this document is current and accurate, parties should ensure that they have up-to-date information about their legal obligations and comply with those obligations as required by law.

# 1. Introduction

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## 1.1 What this guidance is about

This guidance provides information for harbourmasters and ports about establishing and managing anchorages. It was prompted by a growing awareness of the risks associated with anchoring in Aotearoa New Zealand waters, and is adapted for New Zealand from Maritime Safety Queensland's 'Anchorage Area Design and Management' guideline: <https://www.msg.qld.gov.au/-/media/MSQInternet/MSQFiles/Home/About-us/Right-to-information/Published-information/anchorage-area-design-and-management-guideline.pdf?la=en>

Applying these guidelines will help harbourmasters and ports to consider a range of potential safety, environmental, and other impacts when establishing anchorages, and help with the ongoing management of anchorages in their harbour.

In this guidance, 'you' usually means the harbourmaster or council; however, not all ports and councils work together in the same way and the division of roles and responsibilities will be up to each region and port to establish.

## 1.2 Application of this guidance

This guidance has been developed under the Port and Harbour Marine Safety Code (the Code). It is one of a series of guidelines that support the Code. Parts of the Code relevant to anchorages include guidance to harbourmasters and ports to:

- identify safe anchorages taking into account the types of ships that will anchor there, other waterway users, and local conditions
- identify areas where no anchoring is allowed, for example, to protect seabed infrastructure or avoid obstructing traffic
- provide this information to all users of the harbour, and distribute it to shipping as appropriate.<sup>1</sup>

## 1.3 Roles and responsibilities

Under section 33C of the Maritime Transport Act 1994 (MTA), regional councils are responsible for regulating harbours for the purpose of ensuring maritime safety. Although the master of a ship is responsible for the safe navigation of the ship and the safety and wellbeing of the people on board, regional councils should consider what constitutes a safe place to mark as an anchorage.

Councils also have duties under the Health and Safety at Work Act 2015 (HSWA), as do workers and others at the workplace. Each party should be aware of their duties and the extent of them. A council's duties under HSWA as a Person Conducting a Business or Undertaking (a PCBU) includes an obligation to ensure, so far as is reasonably practicable, that the health and safety of workers and other persons are not put at risk by its work. This includes considering whether designating an area as an anchorage puts the safety of anyone at risk, and ensuring the ongoing management of anchorages is done safely. There is also a duty to consult, cooperate and coordinate with others, where appropriate to do so.

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<sup>1</sup> Port and Harbour Marine Safety Code, 2020, Appendix 1, Point 5.

Harbourmasters/councils should also consider any obligations they may have under the Resource Management Act 1991 (RMA) with regard to the management of the environment.

## 1.4 How to read this guidance

This guidance is in three parts:

1. Establishing an anchorage, which explains the process for identifying, assessing, and implementing an anchorage.
2. Planning an anchorage, which provides information about what to consider when planning and implementing an anchorage.
3. Managing an anchorage, which provides information about principles and procedures for good anchorage management.

## 1.5 Key terms

**Anchorage:** an area which is suitable for a ship to anchor, or where ships are permitted to anchor.

**Council:** the regional council or unitary authority that regulates maritime activity within their regional waters.

**Dangerous Goods:** the substances, materials and articles covered by the International Maritime Dangerous Goods Code.

**Port:** an area of land or water (often within a larger harbour area) used for berthing and servicing of ships, and for the loading and unloading of goods or passengers. This may include mooring buoys and associated facilities.

**Harbour:** an area of enclosed or coastal waters where ships can shelter, and includes natural and artificial harbours. Harbours are gazetted and detailed within council bylaws for the purposes of regulating maritime activity.

**Harbourmaster:** in relation to a port, a harbour, or other waters in a region, means any person appointed by the council as a harbourmaster of that port or harbour, or those waters, under section 33D of the Maritime Transport Act 1994.

**Regional waters:** the area of water controlled by the Regional Council or unitary authority.

## 2. Establishing a new anchorage

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### 2.1 Assess the need for an anchorage

Most anchorages in New Zealand have been established over time through custom and practice. However from time to time, new anchorages, or expansions to existing anchorages, may be needed for reasons including:

- there are, or are likely to be, significant increases in harbour traffic or the size of ships anchoring in the harbour
- a new or specific use for an anchorage is required, for example, quarantine
- to provide a place for ships to shelter from rough weather, or conduct essential work that cannot be completed while underway
- a significant event such as an earthquake or flood has affected the seabed, which means it is no longer suitable for anchoring
- impacts on other waterway users need to be managed.

### Alternatives to anchoring

Generally, anchorages are required to allow ships to wait before entering the port to discharge or load cargo. However, if there is no obligation to anchor or to remain at anchor for berth priority or to fulfil Notice of Readiness requirements, then ships may choose to drift or slow-steam until it is time to enter the port.<sup>2</sup> In some cases, alternatives to anchoring – such as slowing speed to allow a ship to arrive just in time for entry into the port – might be preferable, for example, if the weather is unsuitable or it is not safe to anchor. Potential impacts of anchoring and things to consider are described in more detail in Section 3 of this guidance.

### 2.2 Survey and assess proposed area

Before establishing a new anchorage, you should survey and assess the proposed area for suitability.

#### Hydrographic Survey

A hydrographic survey of the proposed anchorage should be undertaken to assess:

- the depth
- the location of any obstructions
- the seabed type.

It is important to use up-to-date information about the dimensions and characteristics of a proposed anchorage. The harbour risk assessment (required under the Code) should include a policy about how often hydrographic surveys should be undertaken.<sup>3</sup> Good practice guidelines for carrying out hydrographic surveys are listed under 'More Information' at the end of this guidance.

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<sup>2</sup> The safety of the vessel is paramount under obligations for Notice of Readiness.

<sup>3</sup> Port and Harbour Marine Safety Code Appendix 1 Point 2.2.

## **Environmental assessment**

In some cases it is useful to undertake an environmental assessment of the proposed anchorage to determine if there are any site-specific environmental concerns that need to be taken into account when planning an anchorage. Usually, the coastal plan will include this information, and show zones such as 'areas of significant conservation value'. If a coastal plan already allows for, or designates, anchoring in certain areas, then further environmental assessment may not be needed.

## **Appraise conditions**

Before establishing an anchorage, appraise weather, tide, sea and sea swell data. This will provide essential information about where the most suitable anchorage location(s) is likely to be, and the operating limits that should be considered for the anchorage(s).

## **AIS data**

Automatic Identification Systems (AIS) data and heatmaps can be useful sources of information as they show where ships typically anchor, as well as established routes in and out of the harbour.

## **2.3 Consultation and approval**

Consultation may be required before establishing an anchorage. If consultation is required, it is a good idea to start this early in the planning stage as it may identify constraints and conditions that affect the anchorage's location, size, layout or use. Consultation would usually be undertaken by the regional council in line with the coastal plan/regional council procedures.

Harbourmasters can establish anchorages within their regional waters without requiring any approval. A peer review could be considered before the anchorage is finalised. An anchorage is not an aid to navigation, so it does not need to be approved by Maritime New Zealand.

## **2.4 Notify Land Information New Zealand**

When an anchorage or other hydrographic feature is planned or changed, notify Land Information New Zealand (LINZ) by completing and submitting a Hydrographic Note. You can access this on the LINZ website: <https://www.linz.govt.nz/products-services/maritime-safety/safety-sea/report-hazard-navigation-hydrographic-nnote>

When completed, send the hydrographic note to [ntm@linz.govt.nz](mailto:ntm@linz.govt.nz) with any additional data such as coordinates or shapefiles outlining the location of the anchorage point or zone. Identify the type(s) of the anchorage such as quarantine or dangerous goods zones.

Depending on the complexity of the change, some discussion may be needed to ensure that all the data necessary for charting the anchorage is provided. When the anchorage is ready to chart, it can be completed and released in the next 'Notice to Mariners'. If the changes are substantial, consider implementing them in conjunction with planned hydrographic surveys and publication of new charts for the area.

## 3. Planning an anchorage

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### 3.1 What to consider

There are a number of factors to consider when planning an anchorage, including:

- proximity of the anchorage to the coastline and any hazards
- how the anchorage will be used
- site characteristics including water depth, seabed composition, and shelter
- space and site layout
- whether the anchorage is required for quarantine and explosive/dangerous goods
- environmental considerations
- significance for iwi and hapū Māori
- other waterway users.

The rest of this section provides guidance on these, and what to take into account.

### 3.2 Risk assessment

Harbours around New Zealand have their own characteristics and priorities, and some of the considerations outlined in this guidance will be more relevant in some places than others. A good starting point is to refer to the risk assessment for your harbour (required under the Code) when planning and implementing anchorages. If appropriate, conduct a separate risk assessment for the anchorage. Consideration of the local conditions, for example, weather, tide, sea, and sea swell, is essential when determining where to place an anchorage. Further information about risk assessment is available under 'More Information' in this guidance. The final outcome is usually a balance between providing a safe place to anchor, protecting the marine environment, and catering for the unique risks and circumstances of the port.

#### Limitations

Anchorages are typically located in, or adjacent to, harbours within regional waters. Many places will not have much choice of anchorage location as not every harbour has a conveniently close and sheltered area of the correct depth.

In some cases, an anchorage area may overlap waters which are controlled by two different regional authorities. This means ships may be directed into neighbouring regional waters to anchor, for example, ships waiting to enter Nelson Port are often directed into Tasman waters to anchor. In these situations, both regional councils need to agree how the anchorage will be managed, taking into account available resources and capacity, for example, capacity to respond to emergencies. It is important in these cases to decide who is responsible for making decisions and giving instructions, for example, when heavy weather approaches, or ships drag. This can be established and agreed by way of a Memorandum of Understanding between both authorities.



### 3.3 Proximity of the anchorage to the coastline and any hazards

It is important to make sure that anchorages are far enough from hazards and the shore to give a ship's master enough time to move the ship and avoid collision or grounding if it begins to drag (for more information about anchorage operating limits, see Section 4.3 of this guidance). Anchorages should be well clear of current and planned infrastructure (for example, underwater cables or gas pipelines). Anchoring is prohibited in protected areas under the Submarine Cables and Pipelines Protection Act 1996: <https://legislation.govt.nz/act/public/1996/0022/latest/DLM375803.html>

Anchorages should not block busy shipping lanes or channel approaches, but they still need to allow safe passage for ships from the shipping channel to the anchorage and port. AIS heatmaps can be used to identify established routes.

### 3.4 How the anchorage will be used

How the anchorage is likely to be used may influence where to locate it. Table 1 below shows some examples of things to consider.

Table 1: Things to consider – anchorage use

Accessibility	Access to anchored ships (by small launch) may be needed if anyone will need to board ships, for example, customs checks, pilot transfers, or service providers.
Communication	The anchorage will need to be within marine VHF radio or other communications range if communication with the port is required.
Proximity to port	Ship type should be considered when deciding on where to locate an anchorage to a port. For example, passenger ships may need to be closer to port if passenger transfers will take place (passenger transfers would usually only take place in a port where the anchorage is very sheltered).
Ship-to-ship transfers	Ship-to-ship transfers are highly weather dependent so a well-protected anchorage is critical. A ship-to-ship transfer would require an individual risk assessment specific to the location and activity. Transfers of oil or noxious liquid substances to or from ships are regulated under sections 230 and 233(1)(a) of the Maritime Transport Act: <a href="https://www.legislation.govt.nz/act/public/1994/0104/latest/DLM337289.html">https://www.legislation.govt.nz/act/public/1994/0104/latest/DLM337289.html</a> (section 230) and <a href="https://www.legislation.govt.nz/act/public/1994/0104/latest/DLM337293.html">https://www.legislation.govt.nz/act/public/1994/0104/latest/DLM337293.html</a> (section 233)

### 3.5 Water depth

Anchorages need to be deep enough for anchored ships to operate safely, but a depth of greater than 40 metres could be beyond the scope of most anchoring equipment. The ideal anchorage depth is between 15 m–30 m, depending on the sizes and draughts of the ships using it, the required space between ships, and the unique characteristics of the anchorage, for example, the nature of the seabed and weather exposure. The deeper the water, the more scope of chain that needs to be put out, and the greater the risk of dragging. Anchoring in deep water may also increase stress on a ship's windlass when the chain is hove up. For more information about anchoring in deep water see the CHIRP Maritime guideline 'Anchoring and Anchoring Equipment', listed under 'More Information' at the end of this guide.

Sufficient depth for safe Under Keel Clearance will be required, taking into account ship size and type, any tidal height changes, wave and swell heights. Depth information should ideally be taken from the most recent survey, which is done as part of the planning process.

More detailed guidance on water depth is available in the PIANC (The World Association for Waterborne Transport Infrastructure) report 'Harbour Approach Channels – Design guidelines', which is listed under 'More Information' in this guidance.

### **3.6 Seabed composition**

The physical composition of the seabed in an anchorage is critical for providing a safe and effective anchorage. Ideally, it should be:

- reasonably flat
- free from natural or manmade obstructions so that the anchor chain does not get caught or tangled
- composed of mud, sand or sand/shell so that the anchor can bite into the seabed.

If the seabed does not provide good holding capacity, alternatives to anchoring should be considered, or increased distance needed between vessels and from nearest dangers due to the increased risk of dragging anchor. It is possible that within an anchorage there may be areas with very different holding capacities.

### **3.7 Shelter**

Anchorage should provide as much shelter as possible, taking into account prevailing winds, currents, and tidal variations. Ideally, the prevailing wind should be out-to-sea rather than lee shore, bearing in mind that wind direction can change in bad weather, and that ports and harbours may not have much choice in these matters. Anchorages that are more exposed to wind and high seas may need to be larger as ships may need to deploy more anchor chain, and there is a higher risk of dragging anchor.

### **3.8 Space and site layout**

The size and layout of an anchorage is generally determined by the number, size, and type of ships that are expected to use it. When determining the size and capacity of an anchorage, consider:

- the size and type of ships expected to use it
- the size of each individual anchorage position (if these will be designated on charts), taking into account the type of ships expected and their swinging distance (see below for more information about swing radii)
- if quarantine or explosive/dangerous goods anchorage positions are required within the anchorage (see Section 3.9 of this guidance)
- how frequently the anchorage will be used
- how long ships will spend at anchor and the prevailing weather conditions (adverse weather can result in delays).

#### **Swing radii**

When establishing an anchorage, consider how many ships will need to fit, and the swing radii required. This will depend on a number of variables, for example:

- the size and type of ships coming in to anchor

- how much chain they are likely to put out
- an additional margin of safety to allow for the inability of conventional vessels to drop anchor precisely.

The PIANC and CHIRP Maritime guidelines listed under 'More Information' provide guidance on how to calculate swing radius and the size of individual anchorage positions, which can be used if anchorage positions will be designated. An anchorage area could have individual anchorage positions of different sizes to cater for ships of different sizes with varying swing radii, while also allowing for the topography of that anchorage. For example, as the topography changes and depth increases, deeper draught vessels may be able to anchor, and swing radius will increase.

### **Number of anchorages**

If you expect the anchorage to be used infrequently, then a single anchorage position may be sufficient. If there is potential for a lot of users at any one time, or ships are expected to wait at anchor (for example, outside busy or congested ports such as Tauranga), then more than one individual position or an area(s) of sufficient size may be required. Consider whether an overflow anchorage, or policy to restrict the anchorage to a certain number of ships, might help manage shipping traffic in and out of the port.

### **Designated anchorage positions**

Consider whether having designated anchorage positions within the anchorage area would be beneficial. This may be useful where:

- larger numbers of ships are expected to anchor
- space is limited
- there are environmental concerns (see Section 3.10 for more information about reducing disturbance to the seabed).

Designated anchorage positions may not be suitable for every circumstance, and are generally more appropriate where anchoring is well-monitored and it is possible to direct ships to a specific place. For more information about designating anchorages, including examples showing anchorages with designated drop points, see Maritime Safety Queensland's guidance listed under 'More Information'.

## **3.9 Quarantine and explosive or dangerous goods anchorages**

For safety and security reasons, specific, separate anchorages may be required for ships that are:

- naval ships
- required to quarantine until a free pratique is issued
- carrying explosives or Dangerous Goods.

This can be achieved by identifying either a more remote anchorage that is used solely for these purposes, or a separate area within an anchorage with sufficient distance from other ships.

Consider adequate or appropriate separation of ships carrying Dangerous Goods or engaged in the transfer of Dangerous Goods and pollutants. Depending on the type and volume of Dangerous Goods handled, and the sizes and types of ships involved, you could consider establishing a designated Dangerous Goods and/or explosives anchorage, but this will be dependent on the unique circumstances of each port. Each situation should be dealt with on a case-by-case basis, and discussed with any other relevant authorities, for example, customs or health officials.

### 3.10 Environmental considerations

When considering environmental factors, the overall objective should be to minimise the environmental impacts of anchoring as much as possible. Detailed information about environmental impacts of anchoring, and recommendations for how to manage these, is available in the Great Barrier Reef report and Scientific Reports article listed under 'More Information' at the end of this guidance.

Some key things to consider are summarised below. Also consider any restrictions set out in the RMA, and check the coastal plan, local pollution rules, and environmental assessment for information about local environmental issues.<sup>4</sup> In some cases, an ecological or environmental risk assessment may be required; an example is the assessment undertaken for cruise ships anchoring at Akaroa Harbour: <https://www.ecan.govt.nz/get-involved/news-and-events/2020/guidance-for-cruise-ships-anchoring-at-akaroa-harbour/>

#### Disturbance to seabed and biodiversity

Anchors and chains disturb the seabed — as they drag, they may remove plant and animal life in their path. Recent research shows that:

'high-tonnage ship anchors excavate the seabed by up to 80 cm, with the impacts preserved for at least 4 years. The calculated volume of sediment displaced by one high-tonnage ship (> 9000 Gross Tonnage) on anchor can reach 2800 m<sup>3</sup>. This physical disturbance would be enough to induce variations of sedimentation patterns, destroying soft sediment habitats and ecosystem function.'<sup>5</sup>

Light and noise from anchored ships may also affect marine species. This can be avoided, or reduced, by limiting the need for ships to go to anchor and by minimising the area affected by the anchor and chain.

Things to consider that can help reduce or manage environmental impacts include:

- minimising the anchorage area as much as possible
- minimising the number of ships that are required to anchor
- using designated anchor drop points, as this reduces anchoring to a concentrated area
- providing permanent mooring buoys. However, permanent mooring buoys are an expensive solution usually limited to specific purposes, for example, offshore loading facilities or layup berths
- locating the anchorage in an area of lower biodiversity
- limiting the time ships spend at anchor.<sup>6</sup>

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<sup>4</sup> Marine reserves and wildlife sanctuaries are shown on charts. Coastal plans show 'areas of significant value'. Also consider any obligations around environmental protection under the Resource Management Act 1991 and Marine Protection Rules. Further information is provided in Appendix 2.

<sup>5</sup> Watson, S.J., Ribó, M., Seabrook, S. *et al.* The footprint of vessel anchoring on the seafloor. *Sci Rep* **12**, 7500 (2022): <https://doi.org/10.1038/s41598-022-11627-5>

<sup>6</sup> Summarised from 'GHD 2013 Ship anchorage management in the Great Barrier Reef World Heritage Area', Great Barrier Reef Marine Park Authority, Townsville. For original text, see Appendix 1.

## **Pollutants and wastes**

Consider whether the anchorage needs to be close enough to a port for services such as garbage and fuel barges to safely service the ships. Generally, garbage, sewage, grey water and oily waste can be held on board a ship, but waste disposal services and port facilities may be required depending on:

- the type of ships that are expected to use the anchorage,
- how long ships will spend at anchor, and if they might reach capacity to manage their own waste while anchored
- distance from open sea to allow legal discharge of waste.

For more information about discharges of wastes and pollutants see Section 4.4 of this guidance.

## **Aesthetic value**

Anchored ships can affect the aesthetics of the vista and – if they can be seen from land – may be a problem for local residents if they spoil a view or create a lot of noise. Ship crew may also be able to see into properties that are visible from the ship, which can affect the privacy of people living there. Try to avoid placing anchorages in a location that degrades a well-known and appreciated vista, or compromises residents' privacy.

### **3.11 Areas of significance for iwi and hapū Māori**

The Marine and Coastal Area (Takutai Moana) Act 2011 and Ngā Rohe Moana o Ngā Hapū o Ngāti Porou Act 2019 (the Takutai Moana legislation) provide for recognition of customary interests of iwi, hapū and whānau in the common marine and coastal area of Aotearoa New Zealand and its offshore islands. Local authorities have special responsibilities to groups that hold customary interests under the Takutai Moana Act. All parties must be conscious of and comply with obligations under that legislation when considering suitable locations for an anchorage, and significance for iwi and hapū. The Takutai Moana Act and broader customary interests have not been actively considered in this guidance. Further information can be found at: <https://tearawhiti.govt.nz/te-kahui-takutai-moana-marine-and-coastal-area/information-for-local-authorities-on-the-marine-and-coastal-area-act/>

### **3.12 Other waterway users**

As anchorage areas are usually relatively big open spaces with large distances between ships at anchor, there is generally no need to exclude other waterway users from the area. However, consider whether other people may need or want to use the area; some areas may have a large number of waterway users, for example, recreational boaters, charter fishing ships, or ferry operators. It may be necessary to require other vessels, for example, small craft, to keep a certain distance away from anchored ships, especially tankers, cruise ships, and log ships where venting, safety, and fumigation are factors. This could be managed through local bylaws.

## 4. Anchorage management

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### 4.1 Introduction

Serious incidents can occur while ships are at anchor, which can result in harm to crew, damage to ships, and damage to the environment. Active management of anchorages can help to prevent these types of incidents occurring. This section provides information about things to consider as part of the regulation and management of an anchorage.

### 4.2 Anchorage guidelines

As part of the port and harbour's Safety Management Systems (SMS), it is good practice to provide guidelines to ships coming in to anchor so that they are aware of the local conditions and anchorage rules.<sup>7</sup> This information could also be promulgated through the harbour, port, or pilotage guides.

Anchorage guidelines should include information about where to anchor, when ships should leave, and rules around what ship crews are allowed to do while at anchor. Some of these rules may be enforceable if they are made bylaws, are in the coastal plan, or are given as harbourmaster's directions.<sup>8</sup> These guidelines/directions would be made available by the port company through its usual communications with ships coming into anchor.

### 4.3 Expected conditions and operating limits

Anchorage guidelines should provide information about the conditions that can be expected and any operating limits for the anchorage(s), for example:

- where to anchor, including whether any anchorage points are designated and if these are compulsory
- weather conditions that can be expected, including information about prevailing winds (such as wind roses), currents and tides
- information about the dimensions and characteristics of the anchorage including: water depth, location of any hazards, and the holding capability of the seabed.
- any limitations on how long ships can stay at anchor
- recommended notice period for vessels to get propulsion systems ready so that they can get underway if the weather deteriorates or the anchor drags (or for any other reason). Usually, this would be about 30 minutes or less, but should be appropriate for the specific anchorage
- weather limits and when ships should leave, for example, in daylight before wind speeds reach 25 knots (or whichever limit is considered suitable). Wind direction is also an important consideration.

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<sup>7</sup> Providing adequate information about the prevailing environmental conditions in the harbour to harbour users is part of the SMS. It is also considered good practice under the Code (see Appendix 1, point 5).

<sup>8</sup> Section 33F of the MTA.

## Length of Time at Anchor

If a ship spends some time at anchor, there is a good chance that the chain will twist up as the ship turns on each tide. This can cause knots to form in the chain, making the anchor difficult to recover. To help prevent this from happening, consider setting a period for changing the anchor or re-anchoring. This also ensures that ships run up the engines, stay in a state of readiness and are seaworthy.

## 4.4 Anchorage rules

In your anchorage guidelines consider providing information about rules for the anchorage, and what ship crews are allowed to do while anchored. Table 2 below shows some things to consider.

Table 2: Things to consider – anchorage rules

Biosecurity	Ships travelling between international ports have the potential to carry and introduce marine pests as biofouling or in ballast water. It is important that ships at anchor follow any applicable rules around discharge of ballast water and biofouling.
Communication with port	<p>The port company is usually responsible for communicating with ships that are entering or leaving the port, through Harbour Control. The port company and/or harbourmaster should have plans and procedures for providing and receiving ship information, for example:</p> <ul style="list-style-type: none"> <li>- ship arrival time</li> <li>- expected anchoring and anchor heaving time</li> <li>- other information such as security alerts and traffic information.</li> </ul> <p>If ships are at anchor for extended periods, more regular radio checks to ensure they are manned and proper watchkeeping is in place should be considered. It is important for harbourmasters to work closely with the port to ensure that any harbourmaster directions are communicated to ships, for example, if you need to give an urgent direction to weigh anchor.</p>
Fees	<p>Section 33R of the MTA allows regional councils to charge ships to use anchorages. Section 150 of the Local Government Act (LGA) allows regional councils to set those charges through bylaws, or following consultation (consultation principles are set out in section 82 of the LGA: <a href="https://www.legislation.govt.nz/act/public/2002/0084/latest/DLM6236814.html">https://www.legislation.govt.nz/act/public/2002/0084/latest/DLM6236814.html</a>).</p> <p>If a fee is going to be charged to use an anchorage, it should recover 'reasonable costs' related to the anchorage. It is up to each council to determine how fees are charged. Fees may vary depending on factors such as length of stay and ship gross tonnage.</p>
Permissible activities	<p>Management of ship activities at anchor can help reduce any adverse effects that could happen as a result. Some things to consider include:</p> <ul style="list-style-type: none"> <li>- <b>Engine immobilisation:</b> generally, ships should be required to maintain engine availability while at anchor. Requests for engine immobilisation must be approved by the harbourmaster on a case-by-case basis, taking into account the anchorage's exposure to adverse weather, quality of the holding ground, and how long the ship wants to immobilise for and why. Always consider the weather forecast before approving engine immobilisation. Your priority should always be the safety of those on board, taking into account that immobilisations carried out at anchor in the right conditions are safer than carrying out work at sea.</li> </ul>

	<ul style="list-style-type: none"> <li>- <b>Hot-work or work over-the-side:</b> may be permitted in suitable weather conditions. Crew should take appropriate measures to ensure that no material enters the marine environment.</li> <li>- <b>Lifeboat drills:</b> may be permitted depending on customs regulations in the port, the expected weather, sea states and local currents. It is important that crew use their lifeboats and davits in safe conditions, but also that drills are practiced regularly for the safety of the crew.</li> </ul>
Ship waste and emissions	<p>Disposal of ship waste and release of emissions is regulated by international and national legislation, as well as local bylaws and pollution rules. Ship crews should have a good understanding of their obligations under international and national legislation, which they implement by using onboard incinerators, holding tanks, and permitted discharges. If there are additional requirements under local bylaws for the disposal and management of waste or emissions, include information about these as part of your anchorage guidelines. Factors to consider include:</p> <ul style="list-style-type: none"> <li>- disposal/management of waste</li> <li>- use of scrubbers at anchor</li> <li>- shipboard incineration.</li> </ul> <p>Rules about discharges and waste/emissions management can be found in the coastal plan; these should reflect MARPOL, and national and regional regulations. Strategies for managing waste and emissions include providing ships with access to waste disposal facilities (for example, on-shore reception facilities or by on-water contractors), limiting time at anchor, and monitoring ships to minimise the risk of waste being discharged.</p> <p>See Appendix 2 of this guide for more information about relevant international and national legislation. It is important to stay up-to-date with relevant legislation and rules in this area, as they may change.</p>
Using designated anchorage sites	<p>If the anchorage has designated sites, ships can be directed to anchor in whichever is most suitable. This may be according to an allocation regime, or may depend on the size of the ship. Section 3.8 of this guidance contains information about designating anchorages.</p>

## 4.5 Jettisoned and slipped anchors

A slipped or jettisoned anchor is a safety risk for other ships in the anchorage. If a ship slips or jettisons its anchor, the ship's master must notify the harbourmaster and Maritime New Zealand immediately, and give the approximate position of the anchor. The retrieval process should start as soon as possible. All users of the anchorage should be notified when the retrieval process starts, and again once the anchor has been removed. A 'Notice to Mariners', or other means of alerting all users to the potential hazard, may be required.



## **4.6 Emergencies**

Emergencies such as medical emergencies, fires, and damage to ships may occur while at an anchorage. Emergency procedures are part of the harbour SMS and should cover procedures for incidents on ships at anchor.

Emergency drills and exercises are also covered in the port and harbour's SMS. These drills should test how effective emergency procedures are and cover potential incidents for ships at anchor, for example, a fire on a ship at anchor.

## **4.7 Monitoring and inspections**

It is good practice to monitor ships at anchor to check they are in the right place, not dragging anchor, and are complying with anchorage rules (for example, rules around discharges and releases of pollutants). Active monitoring should be part of the harbour's SMS. Tools for monitoring could include using AIS data, radar, and drones; the most suitable tool will depend on how far away the anchorage is from port and the resources available. If regular pollution of the anchorage is suspected, then you may need to do further targeted monitoring to understand what is happening and how to address it. Regular monitoring at anchorage sites can also help early detection of marine pests, and support early intervention if an incursion occurs.

## 5. More information

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### 5.1 Guidance and information

CHIRP Maritime 'Anchoring and Anchoring Equipment', (pp 70-75):

<https://chirp.co.uk/app/uploads/2022/07/Annual-digest-2020-72dpi-RGB-online-edition-v4-2.pdf>

Maritime Safety Queensland, Anchorage Area Design and Management guideline:

<https://www.msq.qld.gov.au/-/media/MSQInternet/MSQFiles/Home/About-us/Right-to-information/Published-information/anchorage-area-design-and-management-guideline.pdf?la=en>

Ministry for the Environment (MfE), Non-statutory guidance on the use of exhaust scrubbers:

<https://environment.govt.nz/guides/guidance-on-the-use-of-exhaust-gas-cleaning-systems-scrubbers-for-ports-regional-authorities-and-ships/>

PIANC, the World Association for Waterborne Transport Infrastructure 'Harbour Approach Channels – Design guidelines': <https://www.pianc.org/publications/marcom/harbour-approach-channels-design-guidelines>

Ship Anchorage Management in the Great Barrier Reef World Heritage Area Synthesis Report:

<https://www.awe.gov.au/sites/default/files/documents/gbr-anchorage-management.pdf>

Watson, S. J., Ribó, M., Seabrook, S., Strachan, L., Hale, R., & Lamarche, G. (2022). 'The footprint of ship anchoring on the seafloor'. Scientific Reports, 12. Retrieved from:

<https://doi.org/10.1038/s41598-022-11627-5>

### 5.2 Port and Harbour Marine Safety Code

Key principles for marine safety risk management:

<https://www.maritimenz.govt.nz/content/commercial/ports-and-harbours/documents/key-principles-marine-risk-management.pdf>

Port and Harbour Marine Safety Code: <https://www.maritimenz.govt.nz/commercial/ports-and-harbours/port-and-harbour-safety-code.asp>

### 5.3 Legislation

Biosecurity Act: <https://www.legislation.govt.nz/act/public/1993/0095/latest/DLM314623.html>

International Dangerous Goods Code:

<https://www.imo.org/en/OurWork/Safety/Pages/DangerousGoods-default.aspx>

Local Government Act 2021:

<https://www.legislation.govt.nz/act/public/2002/0084/latest/DLM170873.html>

Marine and Coastal Area (Takutai Moana) Act 2011:

<https://www.legislation.govt.nz/act/public/2011/0003/latest/DLM3213131.html>

<https://www.tearawhiti.govt.nz/te-kahui-takutai-moana-marine-and-coastal-area/>

Maritime and Marine Protection Rules: <https://www.maritimenz.govt.nz/rules/>

Maritime Transport Act: <https://www.legislation.govt.nz/act/public/1994/0104/latest/DLM334660.html>

Resource Management Act 1991:

<https://www.legislation.govt.nz/act/public/1991/0069/latest/DLM230265.html#DLM230271>

## Appendix 1: Key points about environmental impacts of anchoring in the Great Barrier Reef

The quoted text below is from the following report: GHD 2013, Ship anchorage management in the Great Barrier Reef World Heritage Area, Great Barrier Reef Marine Park Authority, Townsville. It shows some of the source information for the points summarised in Section 3.10 of this guidance.

'The primary impacts that may be realised on a frequent basis from vessel anchorage were identified to be:

- Disturbance to seabed and supported biodiversity from anchor drop and chain drag
- Minor releases of emissions or pollutants/wastes from vessels
- A reduction or alteration of the aesthetic value of the coastal vista
- Interference with other users [sic] access to resources within the World Heritage Area
- Potential for marine pest introduction
- Interference with species [sic] behaviour....

Consideration of minimising potential environmental impacts which can result from vessel anchorage could be achieved by giving regard to minimising the area needed for safe anchorage, minimising the number of vessels that are required to anchor and using defined anchor drop points to minimise the area of seabed affected by anchoring....

Without use of designated vessel anchor drop points there is increased potential of seabed fragmentation and potential for impacts to be realised across a larger spatial footprint than if the anchorage area was designated....

Improvements in whole of supply chain management may lead to a more efficient use of existing anchorage sites. For instance, vessels may not be required to anchor if they can proceed direct to loading/unloading berths on arrival in the port. Alternatively time spent at anchor may be reduced if supply chain logistics are aligned to provide the most efficient operation.'

## Appendix 2: Summary of legislation relating to discharges of pollutants and wastes from ships

INTERNATIONAL LEGISLATION	
<b>International Maritime Organization (IMO) Convention for the Prevention of Pollution from Ships (MARPOL) Annexes I, II, III, V, and VI</b>	<p>New Zealand has signed up to the International Maritime Organization (IMO) Convention for the Prevention of Pollution from Ships (MARPOL) Annexes I, II, III, V, and VI. MARPOL is the main international convention covering prevention of pollution from shipping activities.</p> <p>More information about MARPOL and relevant rules can be found here: <a href="https://www.imo.org/en/About/Conventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx">https://www.imo.org/en/About/Conventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx</a> and on the Maritime New Zealand website here: <a href="https://www.maritimenz.govt.nz/content/rules/">https://www.maritimenz.govt.nz/content/rules/</a></p>
NATIONAL LEGISLATION/GUIDANCE	
<b>Marine Protection Rules</b>	<p>Part 300 of the Marine Protection Rules details the rules for controlling and managing ballast water in New Zealand (Part 300 gives effect to the IMO's Convention for the Control and Management of Ships' Ballast Water and Sediments): <a href="https://www.maritimenz.govt.nz/content/rules/part-300/Part300-marine-protection-rule.pdf">https://www.maritimenz.govt.nz/content/rules/part-300/Part300-marine-protection-rule.pdf</a></p> <p>Refer to Subpart K of Part 300 and Section 226A of the MTA for rules about where permitted discharges are allowed: <a href="https://www.legislation.govt.nz/act/public/1994/0104/latest/DLM6641115.html">https://www.legislation.govt.nz/act/public/1994/0104/latest/DLM6641115.html</a></p>
<b>Ministry for the Environment (MfE) guidance on exhaust scrubbers</b>	<p>MfE is responsible for the management of discharges to the coastal marine environment from exhaust scrubbers. MfE has issued non-statutory guidance on the use of exhaust scrubbers: <a href="https://environment.govt.nz/guides/guidance-on-the-use-of-exhaust-gas-cleaning-systems-scrubbers-for-ports-regional-authorities-and-ships/">https://environment.govt.nz/guides/guidance-on-the-use-of-exhaust-gas-cleaning-systems-scrubbers-for-ports-regional-authorities-and-ships/</a></p> <p>Refer to MfE's website for any applicable environmental legislation.</p> <p>Also see the Marine Protection Rules Part 199 (which give effect to MARPOL Annex VI) for information about scrubbers, available here: <a href="https://www.maritimenz.govt.nz/content/rules/marpol-annex-vi/default.asp">https://www.maritimenz.govt.nz/content/rules/marpol-annex-vi/default.asp</a></p>
<b>Biosecurity Act 1993</b>	<p>The Ministry for Primary Industries (MPI) has strict rules to control discharge of ballast water in New Zealand under the Biosecurity Act 1993. These rules are set out in the 'Import health standard – Ballast water from all countries': <a href="https://www.mpi.govt.nz/dmsdocument/1167-Ballast-Water-from-all-Countries-Import-Health-Standard-">https://www.mpi.govt.nz/dmsdocument/1167-Ballast-Water-from-all-Countries-Import-Health-Standard-</a></p> <p>More information about MPI requirements is available at: <a href="https://www.mpi.govt.nz/import/border-clearance/ships-and-boats-border-clearance">https://www.mpi.govt.nz/import/border-clearance/ships-and-boats-border-clearance</a></p>
<b>Resource Management Act 1991</b>	<p>In coastal waters (within the 12 nautical mile limit), discharges are controlled and managed by regional and port authorities under the Resource Management Act 1991. See: <a href="https://www.legislation.govt.nz/act/public/1991/0069/latest/DLM231985.html">https://www.legislation.govt.nz/act/public/1991/0069/latest/DLM231985.html</a></p>