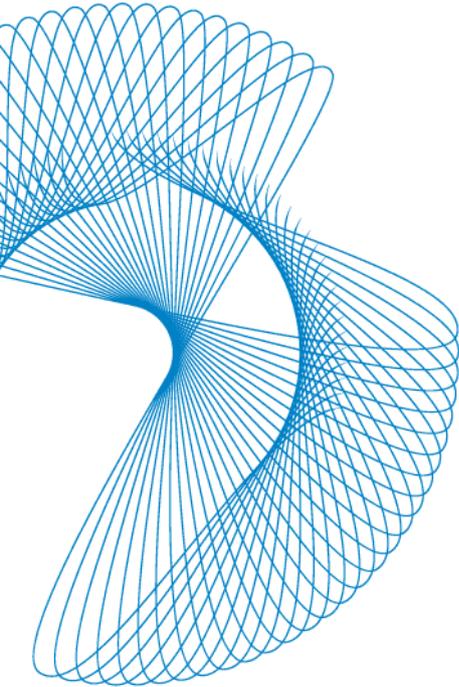


Advice to the reader

References to Aquaculture Management Areas under the Resource Management Act 1991 are out of date. Refer to the current Act and Council plans. These Maritime New Zealand guidelines are currently under review.



Guidelines for Aquaculture Management Areas and Marine Farms

December 2005



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1.0 INTRODUCTION

On the 28th November 2001, the process of marine-farm applications and approvals changed overnight with the announcement of an aquaculture moratorium. During the period 26th March 2002 to 26th March 2004 (then extended to December 2004) no new applications for marine farms were to be considered. This was to give the councils time for planning and decision-making, and to prepare for the new legislation. The Resource Management Amendment Act (No. 2) 2004 and Aquaculture Reforms (Repeals and Transitional Provisions) Act 2004 established a new regime for the management of marine farming in New Zealand. The new legislation now requires regional councils to develop 'Aquaculture Management Areas' (AMAs, see section 1.0.2 for definition). From 1 January 2005 regional councils are the lead agencies for the management of aquaculture. Such activities can occur only within an AMA.

1.0.1 This document supersedes all other marine farm policy and guideline documents issued by Maritime New Zealand, (previously Maritime Safety Authority of New Zealand), and in respect of location shall apply to "new farms" and further development of existing farms. A marine farm whose existing consent expires and new consent is applied for, will be considered a "new farm" for the purpose of these guidelines.

1.0.2 Aquaculture Management Areas (AMAs) as defined in Resource Management Amendment Act (No.2) 2004 and for these guidelines:

(a) means a coastal marine area described as an aquaculture management area and included in a regional coastal plan or proposed regional coastal plan in accordance with section 165C; and

(b) includes—

- (i) an interim aquaculture management area that becomes an aquaculture management area under section 44 of the Aquaculture Reform (Repeals and Transitional Provisions) Act 2004; and
- (ii) part of an aquaculture management area

It should be noted that an AMA does not define the boundaries of a marine farm. An AMA only defines an area where marine farming can take place under the coastal plan.

2.0 PURPOSE OF DOCUMENT

2.0.1 This document sets out the guidelines of Maritime New Zealand in relation to AMAs and marine farms. The information contained herein is intended to support the appropriate authorities while they develop their AMAs, and to give guidance to marine-farm applicants on areas of concern for Maritime New Zealand with respect to navigational safety. The guidelines identify relevant navigational issues and describe the criteria that regional councils¹ and marine farm applicants should be aware of during the process of the creation of AMAs, and the establishment and management of marine farms.

¹ regional councils are referred to throughout this document. The term is intended to encompass all local and territorial bodies having the responsibilities of a regional council under the Resource Management Act 1991 (as amended).

3.0 LEGISLATION

3.1 Aids to Navigation

Maritime New Zealand's functions in respect of marine farms are derived from Section 64, Section 395 and the First Schedule to the Resource Management Act (RMA). In addition, the Director of Maritime New Zealand has the function under Section 200(7) of the Maritime Transport Act 1994 (MTA) of approving any aid to navigation² (AtoN) that is erected, altered or removed. This includes any AtoN required to mark a marine farm.

3.2 Structures

3.2.1 Under Section 395 of the RMA, the Minister for Transport has functions including that of commenting on any navigation related matters relevant to applications for coastal permits in respect to the construction of structures.

3.2.2 Section 36 of the MTA gives rule-making powers to the Minister of Transport, and one of the purposes (s 36(1)(ta)) is "*prescribing standards and requirements for navigational aids.*" The Minister has delegated the development and enforcement of this sphere to the Director of Maritime New Zealand.

3.2.3 Section 200(7) of the MTA (navigational aids) states:
"No person may erect or place a navigational aid³, alter the character of a navigational aid, or alter or remove the position of a navigational aid, without the approval of the Director."
Section 200(8) of the MTA (navigational aids) states:
"Navigational aids must be provided and maintained in accordance with, and otherwise conform with, the maritime rules."

3.3 Consultation with Maritime New Zealand

3.3.1 Under section 64 of the RMA, regional councils will follow the process in the First Schedule to the Act when developing AMAs. Under Schedule 1, Part 1, secn 3 (3)(b) of the RMA, a regional council must consult during the preparation of the plan with the Minister of Transport in relation to matters to do with navigation and the Minister's functions under Parts 18 to 27 of the MTA. The Director of Maritime New Zealand holds a delegation from the Minister of Transport in respect of this consultation function (dated 24 January 1995).

3.3.2 Therefore, all regional councils are advised that consultation with Maritime New Zealand must be sought on navigational safety during the development of and during change to each Regional Coastal Plan in respect of Aquaculture Management Areas.

4.0 MARITIME NEW ZEALAND'S ROLE AND REQUIREMENTS FOR CONSULTATION

4.0.1 Maritime New Zealand's interest in the development of AMAs is limited to matters of navigational safety, and lies in four spheres:

- (1) Location,
- (2) Marking and lighting,
- (3) Safety management,

² The Maritime Transport Act actually uses the term 'navigational aid', however in this document the international term 'Aids to Navigation' or AtoN is used unless quoting the Act directly. (See appendix.)

³ See Aids to Navigation definition in the appendix

(4) Control and compliance.

- 4.0.2 Regional councils that develop plans for AMAs in their coastal waters should use this document as a guideline for the positioning and ongoing management of potential AMAs.
- 4.0.3 Regional councils are required to consult with Maritime New Zealand during the preparation of regional coastal plans in relation to matters to do with navigation. In identifying important safety issues, Maritime New Zealand envisages that regional councils will want to ensure that they provide appropriate measures to mitigate the attendant risks. When developing plans for AMAs, authorities are requested to consult as early as possible in the developmental stages so that Maritime New Zealand can review their plans and provide best advice on matters concerning navigational safety.
- 4.0.4 In the event the regional council grants resource consent for a marine farm, the farm shall comply with the applicable minimum marking and lighting requirements as detailed herein (section 6). The applicant must obtain written approval for the placement of these aids to navigation. Maritime New Zealand can delegate this approval and, if all parties are in agreement, then this authority in all likelihood will be delegated to the local/regional harbour master. However, in all cases, Maritime New Zealand, or harbour master if delegated, must approve any changes to aids to navigation.
- 4.0.5 To obtain approval, marine farm applicants should submit NavAid Application Form 16006 to the concerned harbourmaster for signatures. This form should then be sent to Maritime New Zealand for approval. In areas where there is no harbourmaster, applicant should contact Maritime New Zealand. This form can be downloaded from Maritime New Zealand's website as follows:
- www.maritimenz.govt.nz/publications/navigation/MNZ_NavAid_ApplicationForm_16006.pdf
- Along with the completed form, the applicant should attach a copy of the marine farm approval, the location of the farm, the dimensions of the farm and the proposed location (latitude and longitude) of the buoys and lights. Copies of the specification sheet of the lights, buoys and radar reflectors are also to be attached.
- 4.0.6 Once the coastal permit is granted, the applicant and regional council must inform the location and size of the marine farm to the Hydrographer of Land Information New Zealand.

5.0 LOCATION

Risk: The incorrect positioning of marine farms can increase their potential as a navigational hazard, both through their geographical positioning with regard to other users of marine areas, and their physical positioning and size with respect to currents and sea states.

5.1 Creation of AMAs

- 5.1.1 When considering potential sites for AMAs, allowance should be made for the prevailing currents and sea states in each area. If exposed areas are selected then special consideration will need to be given to mooring requirements and construction.
- 5.1.2 Maritime New Zealand supports an approach to the development of AMAs that involves 'constraint mapping'; provided that recognised navigational routes are respected as an important constraint.
- 5.1.3 In addition to existing traffic flows, consideration should be given to any increased traffic resulting from marine farms within the AMAs themselves. This will have an effect both in the

area of the AMA, and the routes between the AMA and docking, mooring or offloading points. The effect of working vessels around AMAs should be considered when determining their effective hindrance to passing traffic, particularly when adjacent to recognised navigational route.

- 5.1.4 In addition to respecting existing anchorages, it is important to identify and preserve places of refuge. These may vary with weather conditions (in particular, for a range of wind directions). Such refuges and recognised navigational routes may not be immediately adjacent; therefore, provision needs to be made to allow vessels to transit between a recognised navigational route and a suitable place of refuge.
- 5.1.5 With regard to possible oil-spill effects on aquaculture, the ability for an oil spill response to effectively prevent the spread of oil is influenced by wind, sea and current conditions and direction. Therefore, the positioning of AMAs should take into account the likely locations where spills are of greater risk in relation to prevailing conditions. AMAs should not be located in areas vulnerable to the prevailing conditions should spills occur from these higher-risk locations.

5.2 Positional factors

- 5.2.1 AMAs shall not unduly impede access to any bay, recommended or recognised anchorages or mooring areas, and shall not unduly impede navigation within the bay.
- 5.2.2 AMAs shall be kept clear of recognised navigational routes, navigational bottlenecks and port approaches. In addition to Maritime New Zealand, regional councils are recommended to seek input into their AMA development from their regional and local harbourmasters and port companies with regard to vessel routes and anchorages. Regional Councils should take input from other local stakeholders, such as boating clubs, coastguard and commercial and recreational fisheries interests, to determine, as far as practicable, the usage of waters in their jurisdiction. Maritime New Zealand is willing to assist regional councils to identify the recognised navigational routes within their jurisdictions on a case-by-case basis, and to provide specific advice on safe separation distances. However, Maritime New Zealand should not be relied upon to be the sole authority on present and future uses of navigable water.
- 5.2.3 The separation distance, or safety buffer, between an AMA and a recognised navigational route will need to take into account such considerations as the size and type of vessels using the route, manoeuvring area, the layout of the area such as bay, channel or open water, likely divergence from a set course and prevailing currents and wind.
- 5.2.4 Certain areas, such as within enclosed bays adjacent to recognised navigational route, may be safe positions for AMAs, whilst an area some distance from a recognised navigational route in open water may be considered a hazard. Thus the safe separation distance is best judged by consultation with Maritime New Zealand directly.
- 5.2.5 As minimum figures, offshore marine farms shall not be located within 1000 metres of any recognised navigational route and inshore marine farms shall not be located within 500 metres of any recognised navigational route.
- 5.2.6 A checklist covering the main points above is provided in appendix 2.
- 5.2.7 When designing AMAs, regional councils are advised to consider the access issues for pleasure and other small craft traffic between and around the AMAs.
- 5.2.8 Except in the cases of inter-tidal type aquaculture, there shall be a clear access way of at least 50 metres between mean low water and the inshore boundary of any AMA to permit small craft to navigate along the shoreline.

- 5.2.9 As far as possible, AMAs are to be simple shapes that can be readily identified and marked on charts. Permits for marine farms within AMAs shall be assigned considering that the AMA is filled in clearly identifiable blocks.
- 5.2.10 There shall be a clear access way of at least 200 metres between any AMA and jetties and other points of regular use by watercraft
- 5.2.11 AMAs shall not be located within 200 metres across any headland and 200 metres into bays adjacent to the headland. This will ensure safe navigation around headlands. For “existing farms” within 200 metres of headland (i.e. inshore farms), special lighting requirements are mentioned in secn 6.2.7.

6.0 MARKING AND LIGHTING

Risk: Incorrect, inaccurate or unreliable marking and lighting poses a serious navigational hazard to other marine users. The risk applies to both the initial positioning and quality of the marks and lights used, and the continued efficiency of the equipment thereafter.

6.1 General requirements

- 6.1.1 Section 200 (2) of the MTA states:
A person (including a local authority) who operates a port, cargo terminal, marina, jetty, marine farm, or other maritime facility must provide navigational aids for the facility and is responsible for them.
- 6.1.2 “Recommendation for the Marking of Fish Farms” as set down by International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) is as follows:

“That when a fish farm is considered to represent a danger to shipping it should be marked using the IALA Maritime Buoyage System; special marks, lateral or cardinal marks, or a combination thereof.

- i. If special marks are used, the perimeter of the fish farm should be marked, but depending on the size, extent and location of a particular farm, it may be sufficient to mark only part of the perimeter or the centre.*
- ii. If vessels need to move through a fish farm, a channel must be marked with lateral marks.*
- iii. If the prevailing situation warrants, cardinal marking alone may be used to steer shipping away from the fish farm.*
- iv. To improve the visibility of the lights, the synchronisation of the various characters of the lights may be considered.”*

(For the above recommendation, usage of the term “fish farm”, in this section, may be interpreted as AMA/marine farm/group of farms, as appropriate. For usage of lateral marks, please refer section 6.3.7 also).

- 6.1.3 All marine farms or group of marine farms, as appropriate, lights, buoys and radar reflectors are to be fit for purpose. They should be obtained from manufacturers who fabricate navigation aids to IALA standards.
- 6.1.4 All navigation marks and radar reflectors required by these guidelines must be constructed to remain substantially upright and withstand and remain effectively operational in all sea conditions reasonably anticipated at the site.
- 6.1.5 Good housekeeping and maintenance is essential by the marine farmer. The presence of stray or loose lines floating on the surface is not permitted.

- 6.1.6 AtoNs for marine farms or group of marine farms, as appropriate, shall be maintained in a reliable condition by the permit holder. Regular or prolonged outages of AtoNs are not acceptable. The use of good quality solar powered lights as AtoNs is encouraged.
- 6.1.7 The maximum distance between floats on surface longlines must not exceed 25 metres.
- 6.1.8 Subsurface farms must display 'marker' surface floats along the boundaries of the farm to indicate the presence of the farm.
- 6.1.9 Classification: In cases of doubt Maritime New Zealand or the regional council will decide whether a marine farm is to be regarded as inshore or offshore.

6.2 Inshore marine farm

A marine farm is inshore if it is sited within 200 metres from mean low water.

- 6.2.1 Orange coloured floats, of at least the same dimension as the other backbone floats, are to be placed at each end of every longline or line of floats; and
 - (i) They must be no more than 50% submerged.
 - (ii) They must be maintained in such a condition that the orange colour is readily visible over the surface exposed to the air.
- 6.2.2 Light buoys shall be located at the corners of marine farms to indicate a clear navigational passage. In most cases this will require four light buoys. However the harbourmaster may determine that more or fewer are required.
- 6.2.3 The light referred to in the above paragraph must be yellow, set to group flash 5 times every 20 seconds, be visible for at least 1 nautical mile and be at a height of at least 1 metre above sea level.
- 6.2.4 For inshore farms the inner corners may need to be lit to define the access-way where the public are likely to need to get close to the shore e.g. to moorings, jetties or anchorages. Either Special Mark or Lateral Mark characteristics can be used, as appropriate.
- 6.2.5 For inshore farms, the in-shore corners may be marked at each end of a string of farms, where this helps to define the extent of the structures. Care should be taken that the in-shore lights do not cause more confusion.
- 6.2.6 If "additional passive markings" are also required by harbourmaster (e.g. radar reflector, reflective tape etc.), they should conform to technical specifications mention in section 6.5.4
- 6.2.7 Where the inshore farm is close to a headland and is facing the direction of travel of vessels, the in-shore corners must be marked. This will help to guide vessels to taking either the inner or outer route.

6.3 Offshore marine farm

A marine farm is offshore if it is sited in coastal waters beyond 200 metres from mean low water.

- 6.3.1 Orange coloured floats, of at least the same dimension as the other backbone floats, are to be placed at each end of every longline or line of floats; and
 - (i) They must be no more than 50% submerged.
 - (ii) They must be maintained in such a condition that the orange colour is readily visible over the surface exposed to the air.

- 6.3.2 As an alternative option to 6.3.1 above, the orange floats, of at least the same dimension as the other backbone floats, may be placed on the outside of the marine farm, spaced at regular 50 metre intervals around the whole perimeter, and within 30 metres of it.
- 6.3.3 The corners of any site containing any offshore marine farm shall be marked using special marks that have the following characteristics:
- (i) The light must be yellow and flash 5 times every 20 seconds.
 - (ii) The light must be at least 2 metres above water level.
 - (iii) Have intensity as specified in the technical specifications at the end of this section, so as to be visible at a minimum range of 2 nautical miles.
 - (iv) For the purpose of navigation and safety, harbourmasters may require radar reflectors to be fitted on these special marks. Such reflectors (active, passive or top-mark) to be detectable at minimum 2 nautical miles in all sea conditions reasonably anticipated at the site.
- 6.3.4 Where the corner marks are spaced more than half a nautical mile apart on any marine farm or block of marine farms, they must be supplemented with additional special marks showing light at night, placed along the perimeter of the site so that the distance between any marks (corner or perimeter) is no greater than 1/2 nautical mile. The light on special (perimeter) marks must have the following characteristic:
- (i) The light must be yellow and flash 5 times every 20 seconds.
 - (ii) The light must be at least 1 metre above water level.
 - (iii) Have intensity as specified in the technical specifications at the end of this section so as to be visible at a minimum range of 1 nautical mile.
- 6.3.5 For the purpose of navigation and safety, harbourmasters may require Cardinal marks to be used in addition to special marks mentioned in 6.3.3. They shall be placed outside the intended site to ensure that the directions they provide to mariners is most appropriate to provide for safe navigation near the site. Should harbourmaster decide a cardinal mark is to be positioned at a corner of the site, then it should replace the special mark required for that corner. All cardinal marks' requirement and positioning is to be approved by Maritime New Zealand.
- 6.3.6 Unless otherwise agreed by Maritime New Zealand, the light and mark must be in accordance with IALA standards for cardinal marks.
- (i) The light must be at least 3 metres above water level.
 - (ii) Have intensity as specified in the technical specifications at the end of this section, so as to be visible at a minimum range of 4 nautical miles.
 - (iii) An active or passive radar reflector must be positioned and be at least 2.0 metres above water level. Alternatively, consideration should be given for the cardinal mark top-mark to be of suitable size & type to act as radar reflector. Such top-mark to be at least 2.0 metres above water level.
 - (iv) Radar reflectors / top-mark referred to in section 6.3.6 (iii) must be detectable at minimum of 4 nautical miles in all sea conditions reasonably anticipated at the site.
- 6.3.7 Where a recognised navigational route exists between a marked site for aquaculture and another obstruction, or between two AMAs, then red and green lateral marks may be used to identify that channel and may replace any special or cardinal marks required adjacent to that recognised navigational route. The harbourmaster may decide if lateral marks are to be used or not, giving due regard to navigation and safety.
- 6.3.8 There may be some areas that are located within deep bays and are sheltered. In such areas, the harbourmaster may consider an offshore marine farm as inshore marine farm after giving due regard to traffic density and type of users. Subsequently, if the intervening factors demand, then the harbourmaster may change the category of above farm from inshore to offshore.

6.4 Specific advice to regional councils for multiple or grouped marine farm developments

- 6.4.1 The guideline parameters set out in this part have been developed specifically to address the lighting and marking issues for aquaculture in the form of groups of farms or developments.
- 6.4.2 The concept of providing a clearly marked safe navigational passage is important. If recreational or other small craft can safely transit through marine farms, then efforts should be made to treat the group of farms as one entity and mark it so that the safe passage is clear and mariner can proceed safely from light to light.
- 6.4.3 Whilst the IALA standards may be appropriate for offshore farms in open waters, or for single or isolated farms in a large bay, they are often inappropriate for intensive ribbon development in enclosed bays and along the coast. If each farm were to be marked and lit independently then the situation may become confusing, particularly to mariners inexperienced around such farms.
- 6.4.4 For Aids to Navigation it is advisable that the regional council retains the power to change, add or remove aids to navigation where necessary within AMAs. The aim should be for the marking and lighting to be an aid to navigation, not a hindrance. It should improve safety by being clear, simple, unambiguous and must be practical & cost effective.
- 6.4.5 The use of passive markings such as radar reflectors and reflective tape at the corners of every block or farm is strongly recommended. If these passive markings are in addition to the minimum requirements detailed above, the specifications detailed at the end of this section may be used.
- 6.4.6 Synchronisation of the perimeter lights for groups of marine farms and ribbon type development within enclosed bays and along the coast will improve clarity for the mariner.

6.5 Technical details

6.5.1 Beacon Character

The character of the special marks detailed in these guidelines shall be yellow F1 (5) 20 sec. The minimum flash length shall be 0.5 sec.

Where cardinal marks are used on a marine farm or a group of marine farms, then the following characteristics shall apply:

North Cardinal: White Very quick (VQ) or (Q) flash.

East Cardinal: White VQ(3) every 5 sec or Q(3) every 10 sec.

South Cardinal: White VQ(6) + long flash every 10 sec or Q(6) + long flash every 15 sec.

West Cardinal: White VQ(9) every 10 sec or Q(9) every 15 sec.

6.5.2 Range

Manufacturer's information should be checked to ensure their beacon complies with the following intensity figures.

Range of visibility (nominal range) of light in nautical miles	Peak intensity in candelas Fl (5) 20sec, No background lighting
1	1.5
2	8.4
3	25.8
4	62.34

Note: Atmospheric transmissivity value of 0.74 and a flash length of 0.5 sec were used to calculate the peak intensity required.

The visible range listed in the table above has no allowance for glare from background lighting. Excessive background lighting, from street lights, neon signs, houses etc frequently makes an

aid to navigation light less effective and in some cases it becomes completely lost in the general background clutter. In these cases, on harbourmaster's requirement and subsequent Maritime New Zealand approval, the luminous intensity will have to be increased to make the light conspicuous to the mariner.

6.5.3 Vertical Divergence

It is recommended that manufacturer's beacon information is checked for the appropriate vertical divergence particularly when the beacon is fitted to a buoy that may heel. A common figure used is 8° at 50% of the peak intensity.

6.5.4 Radar Reflectors and additional Passive markings

For an offshore marine farm requiring Cardinal Mark(s), a radar reflector, active or passive, must be positioned at least 2 metres above water level and detectable by radar for a minimum of 4 nautical miles in all sea conditions reasonably anticipated at the site.

For an offshore farm requiring special marks with radar reflectors, such radar reflectors must be detectable at 2 nautical miles in all sea conditions reasonably anticipated at the site. Such radar reflector should be at least 1 metre above the water level.

For "additional passive markings" radar reflectors, above the minimum requirements, following is recommended: Such radar reflectors should be set at least 60 cm above the waterline, and should be visible on radar at a range of 500m in good conditions. Reflective tape should be set above this, and should be at least 5 cm in diameter and extend around the circumference of the tube and comply with "New Zealand's System of Buoys and Beacons". The tape should be visible by torchlight at a distance of at least 50m in normal conditions. The poles or stanchions should be 50 – 100 cm high, of robust construction (6 cm diameter aluminium is robust and a good radar reflector in its own right), and should remain substantially upright and withstand and remain effectively operational in all sea conditions reasonably anticipated at the site.

7.0 SAFETY MANAGEMENT

Risk: Poorly designed, constructed and maintained farms are more likely to pose a hazard to navigational safety.

7.1 Management plans and safety management systems

7.1.1 Maritime New Zealand urges regional councils to consider the lifetime safety management of the marine farms that they consent to. The lifetime of a marine farm structure begins at the moment of commissioning and from then it will be exposed to periods of severe weather, storm conditions and a highly corrosive saltwater environment.

7.1.2 Consideration needs to be given to all aspects of the potential operation of the marine farm to ensure its integrity. These involve the design and mooring of the farms and associated equipment (e.g. pontoons/barges), as well as on-going maintenance requirements.

7.1.3 It is suggested that applications should contain a management plan that includes, but is not limited to, the following:

- (i) A design plan for the layout and structure of the farm.
- (ii) A maintenance plan suitable for the moorings, navigational lighting and associated equipment, together with a record system of all maintenance that is available to the regional council to check at any time.
- (iii) A mooring design plan that will be satisfactory for the size of the structure, and the position intended with regard to water depth, tides & currents, sea & swell conditions and seabed composition. Proof of fit for purpose should rest with the applicant.
- (iv) AtoNs plan (required for final consent).

7.2 Design and construction

- 7.2.1 Regional councils should be satisfied that the mooring methods, designs, materials and maintenance are satisfactory. In particular for large farms, or those in exposed areas, the design may need to be approved by a qualified engineer, though this may not be necessary in the case of a good record for similar farms in the same location.
- 7.2.2 Maritime New Zealand considers it important for regional councils to clarify the scope of the AMAs by positively stating in their coastal plans that the defined AMAs are the seabed footprint of the marine farming activity as well as the sea-surface footprint. Any ambiguity in this area could result in moorings impinging on navigational safety in water adjacent to the AMA boundaries.
- 7.2.3 In the case of marine farms where the whole structure is submerged at depth, it should be noted that the depth may vary with time as the shellfish grow or are harvested. Care should be taken that all the aids to navigation specified in the AtoNs plan are visible at all times and stages of the farming operation.
- 7.2.4 The method and design of moorings should be considered carefully during the application process in relation to the type of farming that is being undertaken, the design of the associated structure, and in relation to local environmental influences such as water depth, tides and currents, sea and swell conditions, and seabed composition. The moorings should be suitable for the purpose and should maintain the correct position of the farm during all stages of the growing and harvesting operation.

7.3 Maintenance

- 7.3.1 Maritime New Zealand supports the concept of placing conditions upon the approval of a marine farm application to oblige the operator to maintain the facility and associated equipment to a safe standard. A suitable system would allow for the preservation of navigational safety in all scenarios and ultimately allow the regional council to undertake maintenance or removal of a marine farm, and charge the costs back to the owner of the farm. *(See use of bonds or other financial security, under the control and monitoring section 8)*
- 7.3.2 It is recommended that the maintenance plan includes inspection of key mooring components. Where the position or size warrants, the inspection may be required to be by an independent, suitably qualified surveyor at periodic intervals.
- 7.3.3 Consideration of the following factors will help to determine the survey requirements and inspection periods:
- (i) Size of structure.
 - (ii) Position of structure with respect to water depth, tides & currents, sea & swell conditions and seabed composition.
 - (iii) Position of structure with respect to the proximity of navigational routes.
 - (iv) Design and manufacturing standards of the structure.
- 7.3.4 A requirement for the permit holder to keep maintenance records is considered important. Maintenance records kept by the permit holder should include at least:
- (i) Records of the checks on aids to navigation.
 - (ii) Records of checks on structural integrity, mooring lines, anchoring systems etc, together with any maintenance carried out.
 - (iii) Records of surveys and underwater checks.
 - (iv) Records of checks on the position of the farm.

7.3.5 These records should be available for audit by the regional council if required, to show the marine farm's structural integrity and that the AtoN are being maintained⁴.

8.0 CONTROL AND COMPLIANCE

Risk: Marine farms not correctly maintained and monitored have an increased potential to become a navigational hazard.

8.0.1 Maritime New Zealand recommends that regional councils maintain ongoing control of marine farms in their areas. These controls fall into three areas of concern:

- (i) That the marine farm remains within the permitted area and does not move or extend its boundaries beyond the permitted area.
- (ii) That the maintenance of the farm structure(s) moorings and associated equipment is kept up to a satisfactory level.
- (iii) That aids to navigation and their ongoing maintenance are kept to a satisfactory standard.

8.0.2 It is suggested that a system is put in place that ensures ongoing compliance by means of inspections and audits. If the regional council does not have the physical resources to carry out compliance checks they may consider contracting out these checks to a competent person(s), who is independent from any marine farming operations.

8.0.3 Maritime New Zealand recommends that conditions be attached to any consent to allow for the following:

- (i) To require compliance from the permit holder in respect of their maintenance schedule, or inadequate lighting.
- (ii) To terminate a permit in the event of serious non-compliance.
- (iii) To require the permit holder to remove the marine farm at the end of its life.

8.0.4 Maritime New Zealand supports the principle of requiring applicants to arrange financial security at the outset to cover possible decommissioning costs should the farm go out of business, or at the end of its economic life require dismantling by the regional council. This financial security may be in the form of bond, insurance (market or mutual) or any other kind acceptable to resource consent authority. Consideration should be given to the possibility of inflation-related increases in the cost of decommissioning over the protracted period of a permit, and for the possibility that more than one farm may need to be decommissioned at any particular time should a recession in aquaculture occur.

8.0.5 Maritime New Zealand recommends that the financial security mentioned in 8.0.4 be available for the following uses:

Removal of the structure in the event of abandonment or bankruptcy by the permit holder.
Any costs arising for the regional council or other party in the event of emergency repairs or rescue of part of the structure on behalf of the permit holder in the event of it breaking loose or otherwise causing a hazard to navigation.

8.0.6 However the controls and funding are achieved, Maritime New Zealand urges regional councils to put in place suitable measures and resources to ensure that the criteria, which the applicant has met in order to gain approval for their application, are preserved for the whole life of the marine farm.

⁴ See the 'Guidelines for Providing Aids to Navigation in New Zealand'. Audit checklists are included.

APPENDIX 1 – DEFINITIONS

Aid to Navigation (AtoN) is defined by IALA as a device or system external to vessels that is designed and operated to enhance the safe and efficient navigation of vessels and/or vessel traffic. The Maritime Transport Act 1994 uses the term 'Navigational aid' with the same meaning, however in this document the international term 'Aids to Navigation' or AtoN is used unless quoting the Act directly.

Aquaculture Management Area (AMA)

- (a) means a coastal marine area described as an aquaculture management area and included in a regional coastal plan or proposed regional coastal plan in accordance with section 165C; and
- (b) includes—
 - (i) an interim aquaculture management area that becomes an aquaculture management area under section 44 of the Aquaculture Reform (Repeals and Transitional Provisions) Act 2004; and
 - (ii) part of an aquaculture management area

Aquaculture activities—

- (a) means the breeding, hatching, cultivating, rearing, or ongrowing of fish, aquatic life, or seaweed for harvest if the breeding, hatching, cultivating, rearing, or ongrowing involves the occupation of a coastal marine area; and
- (b) includes the taking of harvestable spat if the taking involves the occupation of a coastal marine area; but
- (c) does not include an activity specified in paragraph (a) if the fish, aquatic life, or seaweed—
 - (i) are not in the exclusive and continuous possession or control of the person undertaking the activity; or
 - (ii) cannot be distinguished or kept separate from naturally occurring fish, aquatic life, or sea

Coastal waters means coastal waters as defined in the Resource Management Act and that are not enclosed waters. As per RMA, *coastal water* means seawater within the outer limits of the territorial sea and includes:

- (a) seawater with a substantial fresh water component; and
- (b) seawater in estuaries, fiords, inlets, harbours, or embayments

Enclosed waters include all internal waters and waters inside enclosed water limits as defined in Maritime Rule Part 20.

Fish includes—

- (a) All species of finfish of the Classes Agnatha, Chondrichthyes, and Osteichthyes at all stages of their life history.
- (b) All shellfish (including all species of the phylum Echinodermata and phylum Mollusca and all species of the Class Crustacea) at all stages of their life history.
- (c) All species of animal life (except birds) which, at any time of the life history of the species, must inhabit water.

Headland means a promontory of land that extends from the baseline of a landmass and either:

- (a) juts out into the water on its own;
- (b) is in association with another promontory that forms a bay;
- (c) is a promontory of land that projects into the water.

IALA means the International Association of Marine Aids to Navigation and Lighthouse Authorities.

Marine farm means all that part of the area that is being or has been developed into a farm for the farming of living resources of the sea; and includes all structures, whether floating or submerged, associated equipment, rafts used in the area in connection with the farm, and all boundary markings.

Permit holder means the holder of a coastal permit relating to a marine farm or aquaculture activity.

Recognised anchorage means an anchorage which is referred to in cruising guides, pilot books and similar publications as being suitable shelter for small/larger craft in adverse weather.

Recommended anchorage means an anchorage marked on a nautical chart.

Recognised navigational route is a safe sea passage and commonly used by vessels navigating within that area. The recognised navigational route may be one used by commercial vessels to & from ports, and may also include pleasure craft routes which are normally used to navigate between popular destinations.

APPENDIX 2: CHECKLIST FOR COUNCIL AUTHORITIES

AMA Application Navigational Safety Issues

Ref. No.	
Applicant:	
Location:	
Planner:	
Date:	

AMA considerations

Positioning distances

1. 50 metres clearance between mean low water and the inshore boundary? (Except inter-tidal.)
2. 200 metres clearance to jetties and other points of regular use?
3. 200 metres clearance to any headlands?
4. 200 metres clearance to any water ski lanes or areas?
5. Sufficient clearance to any recognised navigational route?

Locations

1. Weather currents and tides?
2. Clear of narrow channels, navigational bottlenecks and port approaches?
3. Not impeding access to bays, or impeding navigation within the bay?
4. Anchorages, moorings?
5. Fishing?
6. Type, number and proximity of recreational users?
7. Access to dwellings and other foreshore?
8. Safe havens?
9. Working traffic, access to shore?
10. Access for small craft between and around AMAs to coastline?
11. AMA in blocks or simple shapes?
12. Consulted with local stakeholders?
13. Consulted with Maritime New Zealand?

CONCLUSIONS AND RECOMMENDATIONS

FURTHER INFORMATION REQUIRED.