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PORT MARLBOROUGH NEW  
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**WAIKAWA BAY MARINA  
EXTENSION**

Kaimoana Management Plan

20 December 2017

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## REPORT INFORMATION

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## 1. BACKGROUND

Waikawa Bay is a cultural landscape with a history of Māori use and occupancy, and a tradition of mahinga kai. Waikawa Bay is located in the takiwā (traditional territory) of Te Ātiawa, and the iwi are kaitiaki of this environment.

Port Marlborough is seeking to expand its marina capacity at Waikawa Bay through the development of a new marina facility in the portion of Marina Zone area recently established to the north of the existing marina (hereafter referred to as the “Marina Extension Project”).

Port Marlborough places high value on a constructive relationship with Te Ātiawa, and is therefore engaging with the Te Ātiawa o Te Waka-a-Māui Trust on the Marina Extension Project.

To construct and operate the marina, Port Marlborough requires resource consents from Marlborough District Council. The resource consent process necessitates the potential effects of the project on Te Ātiawa values to be assessed and appropriate means of addressing those effects to be identified. As part of this process, a Cultural Impact Assessment (“CIA”) for the Marina Extension Project was completed in April 2016.<sup>1</sup> The CIA was prepared by an independent consultant who was nominated by, and worked closely with, Te Ātiawa.

The findings of the CIA have influenced project design and are informing the resource consent application assessment of environmental effects. The CIA process resulted in a number of agreed measures to mitigate and manage adverse effects on tangata whenua values; and realise opportunities to deliver cultural and kaitiakitanga outcomes for Te Ātiawa.

One of these is to investigate, prepare and implement a Kaimoana Management Plan (“KMP”)<sup>2</sup>. This is that document.

## 2. PURPOSE OF THE KAIMOANA MANAGEMENT PLAN

The purpose of the KMP is to provide a framework to monitor and manage the actual and potential effects of the Marina Extension Project on kaimoana resources of value to Te Ātiawa. The plan has been prepared in consultation with Te Ātiawa.

In this Plan, *Kaimoana* refers generally to seafood, and includes habitat and customary use, although shellfish is the primary focus.

This KMP is prepared based on the best available knowledge available at the time of writing (December 2017). If additional relevant knowledge becomes available in the future,

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<sup>1</sup> *Cultural Impact Assessment: An assessment of potential effects of a proposed Waikawa Bay marina extension on Te Ātiawa values and interests*, D Jolly, April 2016.

<sup>2</sup> As recorded by *Waikawa Bay Marina Extension: Cultural Impact Assessment (CIA) Outcomes*, D Jolly, October 2017.

the KMP may be collaboratively reviewed and updated by Port Marlborough and Te Ātiawa.

### **3. OVERVIEW OF WAIKAWA BAY MARINA PROJECT**

The proposal is for construction of a high-quality marina facility that would provide around 240 additional vessel berths<sup>3</sup>.

The form of the marina is intended to be as follows, but is contingent on final design decisions and the outcome of the resource consent process.

#### **Reclamation**

A narrow reclamation will occur along the coastline for the full length of the new marina. It will contain an access roadway and parking. Parking areas will be kept to the minimum required to service the marina, to meet obligations for access of adjacent land owners, and to provide public access. Disturbance of land and the seabed will also be kept to the minimum necessary. Sources of reclamation materials are not yet certain, but are likely to be a Marlborough-based quarry for rock; and a local Picton source for other fill.

#### **Breakwaters**

The marina structures will include breakwaters which will form the northern and eastern boundaries of the marina. The breakwaters will be located in significantly deeper water than the existing marina rock breakwaters, thus requiring different construction technology. The new 'partial depth, fixed panel' breakwaters will be solid structures suspended from piles that have been driven into the seabed. Material for the panels is expected to be concrete, or a mixture of concrete and timber. Piles are likely to be a composite of concrete and steel.

The breakwaters will extend around eight metres towards the sea floor, generally leaving a gap of several metres between the breakwater and seafloor which will enable water flow.

The Eastern Breakwater will be at an equivalent height to the existing rock rubble breakwaters of the adjacent marina. The Northern Breakwater will be exposed to higher wave energy, and so will be approximately one metre higher. It will also include a publicly accessible walkway along its full length.

#### **Marina Berths**

Marina berths to be located within the breakwaters are intended to be constructed from floating concrete jetties, consistent in appearance with the jetties in the recently re-furbished Picton Marina Inner Basin (adjacent to the Picton launching ramp). For security reasons, access to jetties will be restricted to berth holders.

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<sup>3</sup> The final number of berths will depend on detailed berth configuration.

## Buildings

An ablution block is planned for inclusion mid-way along the new reclamation. A second smaller toilet block and a dinghy rack are planned for the northern shoreline area. A third ablutions building is planned to be sited at the northern end of the existing western marina reclamation. All wastewater from the ablution blocks will be piped to town infrastructure.

## Northern Shoreline Access

At the northern intersection of the marina with the coastline, a modestly-sized shoreline area is proposed. Key functions of this area will include provision of access (by foot) to the coastline, to enable transit to the marine area and kaimoana beds to the north of the new marina. Te Ātiawa and Port Marlborough are working together on the design of this area, to recognise the relationship of Te Ātiawa with Waikawa Bay. This is intended to include providing a pou and/or seating and interpretation panels. An area for pick-up and drop-off from vehicles will be provided, along with a small amount of parking. The northern breakwater design also includes a walkway that will provide pedestrian access, and which would be a suitable site for rod fishing.

## Construction Management

Construction of the marina will include the following key activities:

- Coastal reclamation, with associated material carting / transport.
- Relocation of coastal shingle material to the northern coastline area, and (possibly) a very small amount of dredging to remove a 'high spot' north of the existing breakwater.
- Driving of piles into the seabed.
- Assembly and installation of breakwater componentry.
- Assembly and installation of jetty componentry to form berths.
- Construction of roading and landscaping.
- Installation of services, including stormwater management.
- Construction of two amenity buildings on the new reclamation and one on the existing reclamation.

Construction will be undertaken in accordance with a pre-determined Construction Management Plan (a draft of which will be provided to Te Ātiawa for comment), and with any conditions of consent imposed by Marlborough District Council.

## 4. KAIMOANA OF WAIKAWA BAY

Kaimoana is a core value for Te Ātiawa in Waikawa Bay, as part of the wider Queen Charlotte Sound/Tōtaranui mahinga kai network. While the abundance of and access to kaimoana in Waikawa Bay has changed over time, the importance and value of the Bay as an ancestral fishing ground remains. Waikawa Bay is described in the Deed of Settlement (2013) as the 'food cupboard' of the iwi:

*“The kaimoana found within Queen Charlotte Sound is of immense significance to Te Ātiawa o Te Waka-a-Māui, and Te Ātiawa o Te Waka-a-Māui have an obligation as kaitiaki to ensure the kaimoana resources are passed on in a better condition for the next generation.”*

*“Waikawa Bay was the food cupboard of Te Ātiawa o Te Waka-a-Māui .... The philosophy of the hapū and whānau was based on the importance of protecting the mahinga kai grounds and the whenua and its resources for all future generations.”*

The coastal area of the northwest Marina Zone is valued by Te Ātiawa as kaimoana habitat and for customary harvesting opportunities. Importantly, this includes historical associations, current use, and future aspirations for the continuance and restoration of mahinga kai traditions.

The broad intertidal and shallow subtidal sand flat area where Waikawa stream flows into Waikawa Bay to the south of the existing marina (approximately 600m south of the proposed marina extension), is also a valued mahinga kai gathering site for Te Ātiawa.

On March 4 2016, Cawthron Institute conducted a marine ecology survey of the shoreline within and to the north of the marina extension area to provide a broad overview of the existing kaimoana resource.<sup>4</sup> The survey was based on six representative sites in both the intertidal and subtidal zones along the north-western shoreline of Waikawa Bay (see Figure 1).

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<sup>4</sup> Cawthron Institute Waikawa Bay Marine Extension: Assessment of Effects on Marine Ecology. Report No. 2851. [draft for consultation]



Figure 1: Kaimoana surveys stations

Key observations from the Cawthron Institute survey in respect of kaimoana along the western shoreline were:

- A characteristically patchy distribution of mussels in the intertidal area, and variability in species composition.
- Where patches of mussels occur in small areas of the mid-intertidal zone they are dominated by small blue mussels (*Mytilus edulis galloprovincialis*), with kopakopa (*Aulacomya atra maoriana*) occasionally observed.
- In the low intertidal zone, blue mussels and kopakopa formed dense patches, and green-lipped mussels (*Perna canaliculus*) were observed at the four northern-most stations.



- There were generally low concentrations of trace metals, organic contaminants and faecal indicator bacteria, and no apparent spatial gradients, in the tissues of mussels collected from the west shore intertidal area (and all levels were within applicable food safety guidelines).
- Kina and sea cucumbers, were common in the subtidal areas. Horse mussels were scarce in the shallow gravel-dominated slopes, but occasional on soft sediment in deeper waters offshore.

## 5. POTENTIAL EFFECTS ON KAIMOANA AS A RESULT OF THE PROJECT

The actual and potential effects of the marina extension project on kaimoana are set out below.

### a. Loss of kaimoana beds due to shoreline reclamation.

Whānau gather kaimoana along the coast in the area of the proposed marina extension. Shoreline reclamation for the extension will result in the loss of intertidal and subtidal reef habitat for kaimoana, and therefore customary harvesting opportunities along this part of the coastline.

### b. Loss of mahinga kai habitat in the area of the marina extension.

The marina extension will result in loss and/or change to mahinga kai habitat generally within the footprint of the marina. Marina structures displace some seafloor habitat and species, and enclosed marina areas may result in changes to marine ecology, as less water movement and circulation, and the presence of artificial structures, create different habitat conditions.

### c. Effects on water quality

The construction of the marina expansion has the potential to generate temporary turbidity plumes. Some resuspension of benthic sediments will also occur during dredging. Very high suspended sediment levels reduce the feeding efficiency of filter feeding organisms, such as mussels, and careful management of these effects is needed.

Marina operations can also result in the discharge of contaminants to water, including stormwater, vessel hull anti-fouling compounds, and run off/drainage from hardstand areas.

Given the importance of water quality to mahinga kai health and abundance, and to the ability of tangata whenua to harvest and safely consume mahinga kai, the maintenance of water quality and targeted water quality monitoring is included in this KMP.

### d. Creation of new habitat (new structures)

The introduction of artificial hard surfaces in the form of piles, concrete wave panels and armour rock facing for the shoreline reclamation will create new hard substrate

intertidal and subtidal habitat which may support a similar community assemblage to the natural reef habitat that will be lost. However, a significant proportion of this introduced habitat will be located within marina breakwaters and is likely to support different and perhaps less complex communities as a result of more sheltered conditions and ongoing disturbance from operational activities.

## 6. MANAGING EFFECTS ON KAIMOANA

The primary purpose of this KMP is to provide a framework to monitor and manage the effects of the Marina Extension Project on kaimoana resources of value to Te Ātiawa.

Port Marlborough and Te Ātiawa have engaged kano ki te kano (face to face) to address the key issues raised in the CIA (see section 5 above), and have agreed to the following mechanisms:

### a. Best practice construction practices (including having iwi oversight as appropriate)

Other than direct disturbance and loss of natural reef habitat, the principal concern in respect of effects on kaimoana is the suspension of fine sediments during construction of the reclamation and minor dredging operations.

Water quality will be protected when these activities are being undertaken using methods consistent with best practice at the time of construction, recognising that best practice methods change over time and may change between now and the construction start for the marina. It is expected this will include use floating sediment booms and silt curtains which have been effectively used for this purpose elsewhere. The best practice construction methods will be detailed in the Construction Management Plan for the project which recognises and provides for the maintenance of water quality as a key value and priority for tangata whenua will be recognised and provided for in this plan. This includes:

- A statement of the cultural associations of Te Ātiawa with Waikawa Bay and the importance of water quality to protecting tangata whenua values;
- Appropriate and effective measures to avoid the discharge of contaminants to water, or to land where contaminants may enter water;
- Provision to contain the effects of construction activities within the immediate construction area, including erosion and sediment control measures during shoreline reclamation and turbidity management during dredging;
- Provision for immediate notification of the Te Ātiawa office in the event of a spill or leak of oil, fuel or other hazardous substance, to water or to land where contaminants may enter water; and
- Provision for Te Ātiawa to periodically monitor or review construction activities, as appropriate, and as agreed to by Port Marlborough and Te Ātiawa

With these measures in place effects are expected to be very localised to the specific area of activity, and temporary in nature.<sup>5</sup> At a distance greater than 100m from the construction activity, the turbidity plumes created by the construction works are not expected to significantly exceed the natural, episodically elevated suspended solids concentrations experienced in Waikawa Bay.

**b. Access – ensure access through reclamation to northern kaimoana beds**

Securing Te Ātiawa access through the marina extension towards the kaimoana beds along the northern coastline was identified by the CIA as being an important outcome for mitigating the effects of the Marina Extension Project on Te Ātiawa.<sup>6</sup> This will be assured via a condition of resource consent.

**c. Recognising the relationship of Te Ātiawa to Waikawa Bay, and the cultural importance of kaimoana.**

Te Ātiawa and PMNZ will continue to work together on the design of the northern shoreline area to recognise the relationship of Te Ātiawa with Waikawa Bay. This may include a pou and/or seating and interpretation panels. A resource consent condition will give Te Ātiawa certainty that project design will include cultural elements, while providing flexibility to explore and develop options.

**d. Waikawa Stream Delta Enhancement**

Te Ātiawa and Marlborough District Council are examining projects to enhance water quality in the Waikawa Stream delta, which is a mahinga kai area of historical significance to Te Ātiawa. Port Marlborough and Te Ātiawa agree that their shared long-term interest in Waikawa Bay provides a platform to work together with other shareholders to address water quality in this area (p.14 of the CIA).

The technical effects assessments for the Marina Extension Project do not expect the sediment plume from construction of the marina extension, or the operation of the marina, to impact on the Waikawa Stream delta.<sup>7</sup> They also conclude that the effects of the Marine Extension Project on sediment transport patterns and coastal processes within Waikawa Bay will be less than minor.<sup>8</sup> However, the resource has been degraded due to past land use in the catchment, and along with the mitigation measures outlined above, enhancement of the area would contribute to offsetting any adverse effects on the kaimoana beds within the footprint of the marina extension area.

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<sup>5</sup> Cawthron Institute Waikawa Bay Marine Extension: Assessment of Effects on Marine Ecology. Report No. 2851. [draft for consultation]. Page ii.

<sup>6</sup> As recorded by *Waikawa Bay Marina Extension: Cultural Impact Assessment (CIA) Outcomes*, D Jolly, October 2017.

<sup>7</sup> Cawthron Institute Waikawa Bay Marine Extension: Assessment of Effects on Marine Ecology. Report No. 2851. [draft for consultation]

<sup>8</sup> Tonkin & Taylor Waikawa Marina Extension Coastal Processes Assessment. Final Draft for Consultation. December 2017. Page 21.

**e. Picton Bays State of the Environment Monitoring**

Some water quality monitoring is already undertaken in Waikawa Bay.<sup>9</sup> However, the Marlborough District Council is examining opportunities for environmental monitoring that will enable a robust scientific assessment of the state and trends of the environmental health of the Picton Bays (Picton Harbour, Waikawa Bay and Shakespeare Bay).

PMNZ will engage with Marlborough District Council with a view to examining how the monitoring data it has, and will, collect in Waikawa Bay associated with the construction and operation of its Waikawa Marina can contribute to, and integrate with, the Council's state of the environment monitoring. Similarly, PMNZ will seek reciprocal access to Council's data for the purposes of providing context to, and helping to interpret, the kaimoana monitoring data collected in accordance with clause (f) below.

**f. Northern Shoreline Kaimoana Monitoring**

PMNZ will engage an appropriately qualified and experienced professional to design and implement, in consultation with Te Ātiawa, a Kaimoana Monitoring Programme.

The objective of the Kaimoana Monitoring Programme is to monitor the health of kaimoana in and adjacent to the marina extension, and any change in distribution, diversity or abundance over time.

The kaimoana monitoring programme will:

- Focus on the abundance and distribution of kopakopa, blue mussels and green-lipped mussels in the intertidal area as primary indicators of kaimoana health.<sup>10</sup>
- Sample blue mussels and analyse tissues for concentrations of indicative trace metals and indicator bacteria (including samples from within the marina extension if they re-establish here).<sup>11</sup>

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<sup>9</sup> This includes Marlborough District Council, from the beginning of November until the end of March, monitoring the recreational water quality at Waikawa Beach on a weekly basis, as well as some consent-associated monitoring.

<sup>10</sup> Mussels are the most prevalent kaimoana species in Waikawa Bay, and focussing on these key species rather than attempting to capture everything will maximise the sensitivity of the monitoring in establishing temporal trends. As filter-feeders, mussels are also excellent indicators of water quality (via bioaccumulation testing).

<sup>11</sup> In the CIA Outcomes Report PMNZ and Te Ātiawa agreed this kaimoana monitoring programme would include regular water quality monitoring and periodic testing of shellfish. This tissue analysis is intended to fulfil both these requirements, based on advice from Cawthron Institute that monitoring the concentrations of contaminants in mussel tissue (principally microbial and trace metals) is probably the best and most efficient way to (indirectly) monitor water quality, as mussels tend to integrate water quality impacts over time. As outlined in clause (d) above, Marlborough District Council's planned state of the environment monitoring is also intended to include regular water quality monitoring in Waikawa Bay, and this will provide data which will be used, as appropriate, to interpret the results of the data collected under this kaimoana management plan.



- Require a survey of one representative site within or immediately adjacent to the proposed marina extension, and two representative sites on the coastline to the north.
- Require a baseline survey to be undertaken prior to construction works commencing to establish a quantitative baseline using a methodology with adequate replication to detect temporal trends.
- Require annual surveys during the period of marina construction, and three yearly surveys thereafter.
- Where practicable, provide the opportunity for representatives of Te Ātiawa to be involved in data collection.

PMNZ will engage an appropriately qualified and experienced professional to conduct each survey, and to compile the results of the baseline survey, and each triannual survey in a report. PMNZ will provide each report to Te Ātiawa in draft form for comment as soon as practical, but not more than 3 months after the survey is completed. A copy of the final report will also be provided to Te Ātiawa.

Each survey report will include an analysis of the health of mussels in the survey area, and each triannual report will also include analysis of any change in distribution, diversity or abundance over time. Should an adverse change be observed, readily available information and monitoring data (including any state of the environment monitoring data collected by Marlborough District Council), will be used identify whether the marina extension is the probable cause of that effect. It is acknowledged that, because of the many independent stressors acting upon kaimoana in Waikawa Bay, it is likely to be very difficult for the interpretation of such monitoring data to unequivocally attribute any observed changes to the marina construction and operation.

The kaimoana monitoring programme (including the required frequency of monitoring) will be reviewed by PMNZ in consultation with Te Ātiawa following the completion of the second triannual survey report.<sup>12</sup>

## 7. RELATIONSHIPS

Te Ātiawa and Port Marlborough share a long-term interest in Waikawa Bay, and both have a responsibility for protecting the health of the Bay. Aligning the interests and aspirations of both parties is fundamental to enabling development in a manner that reflects the value of Waikawa Bay as both a mahinga kai and marina (p.19 of the CIA).

The CIA process enabled Te Ātiawa and Port Marlborough to work together in a collaborative way to address specific effects of the proposed marina extension on tangata

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<sup>12</sup> It is expected that if the proposed marina is having an adverse effect on the health of kaimoana in and adjacent to the marina extension, this will be observed in the first two triannual surveys, and an absence of any observed effect may be a reason for reducing the frequency of monitoring from that point forward.

whenua values and kaimoana. It also provided a pathway for Te Ātiawa to influence how potential effects are managed, and to contribute to project design.

Te Ātiawa and Port Marlborough will continue to engage on matters related to kaimoana during the development and construction of the marina extension. Te Ātiawa and Port Marlborough will also work together towards a wider stakeholder solution to improving water quality and protecting kaimoana in Waikawa Bay. This will include collection and sharing of long term monitoring data on Waikawa Bay water quality and kaimoana, and the Waikawa Stream delta enhancement project addressed in section 6 above.