

PORT OTAGO LIMITED

TE RAUONE BEACH PROJECT

ENVIRONMENTAL MANAGEMENT PLAN

Draft

13 November 2020

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Revision History

Revision Date (Date Issued)	Status	Reviewed (DOC/ORC)	By	Date Reviewed	Changes Adopted
13 November 2020	Draft				

SECTION A: ENVIRONMENTAL MANAGEMENT PLAN OVERVIEW

Introduction

In 2016, a key objective to improve the amenity of Te Rauone Beach was developed in collaboration with the TRBCCC: The objective was to: *Provide a beach amenity with a high tide beach of at least 5 m*. The chosen beach management option to achieve this objective includes the construction of three rock groyne structures extending seaward out from Te Rauone Beach and the importation of sand.

The Assessment of Environmental Effects documents dated December 2019 and the associated technical reports describe the detailed analysis and the background to the Project. It also indicates the nature, scale and extent of the predicted effects.

The construction effects will either be short term and/or localised in terms of the three groyne sites. There will be some effects on coastal and ecological processes in the area of Te Rauone Beach as this is necessary to re-establish the beach for amenity purposes and provide protection against the coastal processes which are currently causing significant erosion. These effects are considered to be localised and will have no more than minor adverse effects on the wide harbour area. Design features have been incorporated to allow some natural movement of sediment. Sedimentation as a result of the construction works will be mitigated through construction practices described above and will only be occurring over a relatively short duration. In addition, monitoring undertaken by survey of seagrass and water depths at Wellers Rock Jetty and beach profiles at the southern end of Te Rauone Beach will also ensure that mitigation is provided as soon as required if there are effects down coast from the Project site.

The resource consents with their conditions, issued by the Otago Regional Council and Dunedin City Council respectively are attached as Appendix 1 and this plan is to be read in conjunction with those conditions. The plan has therefore been formulated to monitor the key environmental effects and establish steps to manage and where possible mitigate any adverse effects that may arise from the intended works.

Irrespective of the level of effects, Port Otago intends to actively manage the Project activities thereby minimising any potential adverse environmental effects.

Outline of the Project

The Project is comprehensively described in the following documents:

- Te Rauone Beach- Rock Groynes and Sand Renourishment Applications and Assessment of Environmental Effects dated December 2019.
- The following Work Plans
 - Construction Management Plan (CMP) (2020-2021)
 - Maintenance and Operation Plan (MOP)
 - Lizard Management Plan (LMP)
 - Traffic Management Plan (2021)

The Project can be divided into the following main components:

- Construction of 3 rock groynes,
- Sand renourishment;
- Long-term maintenance top ups

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SECTION B: ENVIRONMENTAL MANAGEMENT PLAN GENERAL

CONSENT CONDITIONS

As part of this project, Port Otago will be required to comply with consent conditions. This Environmental Management Plan ('EMP') describes the details of the general management approach to be taken during the delivery of this project. Otago Regional Council and Dunedin City Council consent conditions have informed the development of the adaptive management responses contained within this EMP. Both the EMP and consent conditions are integral to the Project. However, it is an essential part of the EMP that consent conditions must be followed. Consent conditions are attached in Appendix 1.

ADAPTIVE MANAGEMENT

Port Otago will implement an adaptive management approach, the basis of which will be an EMP. The adaptive management approach involves monitoring the effects of the project on key resources and implementing a management strategy, in response to the monitored effects that avoids, remedies or mitigates adverse effects that could become more than minor. There will be various types and scales of mitigation responses that can be implemented to address potential adverse effects. The exact type and mix of mitigation options to be utilised will be adapted to suit the circumstances that exist for each site specific issue.

Port Otago will adaptively manage the monitoring and mitigation that will be implemented as part of the Project. This EMP will in some cases identify how environmental 'trigger levels' will be defined and monitored, to ensure any adverse effects are identified, and will establish the mitigation measures to be investigated to minimise any adverse effects.

The primary goals of this EMP is to:

- Describe what actions will be taken in the event of a range of events occurring during construction of the three rock groynes, sand renourishment, and ongoing maintenance of the Project.
- Describe the methodology proposed for construction and sand renourishment components of the Project.
- Provide a detailed Monitoring Plan describing the scale and intensity of monitoring of potential adverse effects on seagrass communities, lizards, and marine mammals/birds, and the management responses to that monitoring.
- Provide a list of key positions and points of contact during the Project.



- Describe how stakeholders will be kept informed during the Project and how any complaints will be managed.

This EMP is currently in its first draft and further consultation on amendments is required. However, given the infancy of the Project, more detail will be added once Contractors are selected to undertake portions of the works, with the Contractors using and developing specific methodologies and programmes for their portion of work based on the Beca design. Even after this stage, changes to the work programme during the Project will mean that the EMP will require updating. Therefore, this EMP document should be thought of as a 'live and dynamic document' that will be reviewed, updated and referred to throughout the life of the Project (as long as the beach management scheme continues). It is the responsibility of the reader to refer to the Revision History Box (located after the Table of Contents) to confirm the most current version.

The environmental monitoring programmes have been developed with a team of independent specialists, and are based on industry professional practice. The approach taken in the EMP is designed to identify and monitor the effects from the Project.

PROJECT STAGING & WORK SCHEDULE

Detailed descriptions of both the groyne construction and sand renourishment works are contained within the construction management plan. These documents describe the work schedule, the type of activity occurring where and when, the volumes and type of material to be dredged for renourishment, and the contractors and equipment to be used for the works. The key elements of the groyne construction and sand renourishment works, described in more detail in the CMP plan are:-

- CMP _ Contractor TBA – From X to X

The CMP plans will be updated as necessary with any changes to plant and equipment used to undertake the scheduled works.

KEY POSITIONS AND POINTS OF CONTACT

Introduction

As the Project develops, a number of key positions will be identified in terms of operating this EMP and for the life of the Project. Those roles, along with contact details for the specific person in that role, will be added into the EMP once known. These people will be first point of contact for the public, or other organisations, in each of the key areas identified.

Port Otago – General Contact

The person with responsibility for the overall project, including community consultation, technical matters and environmental compliance will respond to and manage the environmental aspects of issues during the Project. In doing this he must ensure that all environmental consent conditions



are met and that the environmental requirements of the EMP are adhered to at all times during the Project.

Name Andy Pullar
Postal Address c/- Port Otago Ltd, PO Box 8 , Beach St, Port Chalmers
e-mail: apullar@portotago.co.nz
Phone: 03 472 9798
Cell Phone: 021 2298777

Other Contacts Summary

The following table identifies and summarises the key personnel with various roles.

Person	Company	Role	Phone
Harbour Control Duty Officer (24hrs)	Port Otago		(03) 472 9882
Rebecca McGrouther	Port Otago	Manages <i>Takutai</i> dredging operations.	(021) 627 188
Andy Pullar	Port Otago	Project Manager	(021) 229 8777
TBA	TBA	Contractor Project Manager - TBA	

PROJECT CONSULTATION/COMMUNICATION

Effective communication with the community is essential during the Project. Project consultation is to be maintained through consultation/communication with Department of Conservation (DoC), Te Rūnanga o Ōtākou, Te Rauone Beach Coast Care Committee (TRBCCC), Dunedin City Council and Otago Regional Council.

REPORTING REQUIREMENTS

All technical reports will include a brief summary that is free of technical jargon and is written for a lay person. Reports will be circulated to nominated representatives of the following interested parties:

- Department of Conservation
- Te Rūnanga o Ōtākou
- Te Rauone Beach Coast Care Committee (TRBCCC)
- Dunedin City Council



- Otago Regional Council

POL will meet with the groups named above about any of the reports upon request.

COMPLAINTS PROCEDURE

Port Otago will establish and operate a Community Complaints Procedure during the Te Rauone Beach - Rock Groynes and Sand Renourishment consented activities (The Project).

The Project Manager will be the point of contact between the community (or other public) and Port Otago. They will be responsible for receiving and responding to any complaints during the Project.

Port Otago will operate a 24 hour freephone number for the community to call if they have any concerns or complaints during the Project. The freephone number and complaints procedure will be advised to local residents within the area potentially affected by the Project. Port Otago will maintain a log of all complaints received including the following:

- date.
- time.
- complainant name and contact details (if provided).
- nature of the complaint including the cause and effect if known.
- record of action taken to address or mitigate the complaint.

Port Otago, via the Project Manager, will acknowledge receipt of complaints to the complainant and Otago Regional Council as soon as it is practicable but no later than 5 working days and shall log the action that it intends to take in response to the complaint.

Port Otago will use best endeavours to take action in respect of a complaint, if any action is necessary, within one week of a complaint being received. The response time will depend upon the nature of the complaint, the scale of any investigation required, and the type of mitigation action undertaken. In many circumstances, a response will be quicker than five working days/one week but in some circumstances it may necessarily be slower.

Port Otago, via the Community Relations contact, will communicate with the complainant about actions taken.

Port Otago will document any other longer term actions to be taken as a result of any complaint.

Port Otago will make the Complaints log available to Otago Regional Council and Dunedin City Council on request.

QUALITY ASSURANCE PROCEDURES

Port Otago will require the successful Contractor(s) to have in place a quality assurance system to ensure that the quality of materials and methodology compliance as specified is being achieved during the course of any Contract Works. The quality assurance system will include requirements around:



- Source and material compliance
- Testing procedures to ensure compliance with specifications
- Monitoring to ensure compliance
- Procedures for reporting non-conformances
- Any construction hold or witness points
- Auditing

The quality assurance plans will be provided on request to regulatory authorities.

HEALTH AND SAFETY

The Port Otago will require the performance of all Contract Works to be undertaken safely and in compliance with all applicable legislation, Port Otago's policies and procedures.

The Contractor shall comply with Health and Safety at Work Act 2015 (HSWA), the Accident Compensation Act 2001 and with any amendments that may be made to the Acts and New Zealand law. The Contractor shall appoint a Health and Safety representative or representatives to perform the functions as defined under the HSWA.

The Contractor will also be required to provide a site specific safety plan (SSSP) prior to works starting which will detail the ways and means of ensuring the safety of all contractors employee's, sub-contractors, visitors to site and members of the public. This SSSP will be made available on request.



SECTION C: MONITORING AND ADAPTIVE MANAGEMENT OF TE RAUONE BEACH COASTAL MARINE ENVIRONMENT RELATED ACTIVITIES

This section of the EMP sets out the monitoring and adaptive management actions which will be undertaken by Port Otago prior to, during and following the Te Rauone Beach Rock groyne construction and sand renourishment and subsequent beach top-up works within the Coastal Marine environment below mean high water springs.

CONSTRUCTION MANAGEMENT PLAN

Purpose

To provide details of the Contractor's methodology, procedures, processes and management systems that will apply to ensure delivery of the works in accordance with the Contract and any subsequently issued resource consent conditions.

The CMP will address all work areas including (but not limited to) the following:

- The management team structures
- Construction Method Statement
- Project time management
- Quality control
- Programme for the full scope of work
- Environmental management
- Record management
- Contract reporting

The Contract Management Plan must be further developed and updated and be made available to Port Otago monthly. A copy will be provided to ORC and DCC on request.

MAINTENANCE AND OPERATION PLAN

(Refer to Condition 7 of consent RM19.441)

Purpose

The purpose of the Maintenance and Operation Plan is to monitor, inspect and maintain the groynes, sand renourishment and impacts on migration of sand in the local area post construction.

Allow for real-time community feedback via the TRBCCC Chair on beach and groyne condition.

Monitoring results shall be forwarded to the Consent Authorities, Te Rūnanga o Ōtākou, TRBCCC, and the Department of Conservation.



Responsibilities

The management actions for the MOP will be determined by a suitably qualified expert in accordance with the BECA Detailed Design Report dated 12 March 2020. If no management action is required then a survey is undertaken at the next interval prescribed in the Maintenance and Operation Plan.

The Maintenance and Operation Plan can be broken into the following sections:

BATHYMETRIC SURVEYS

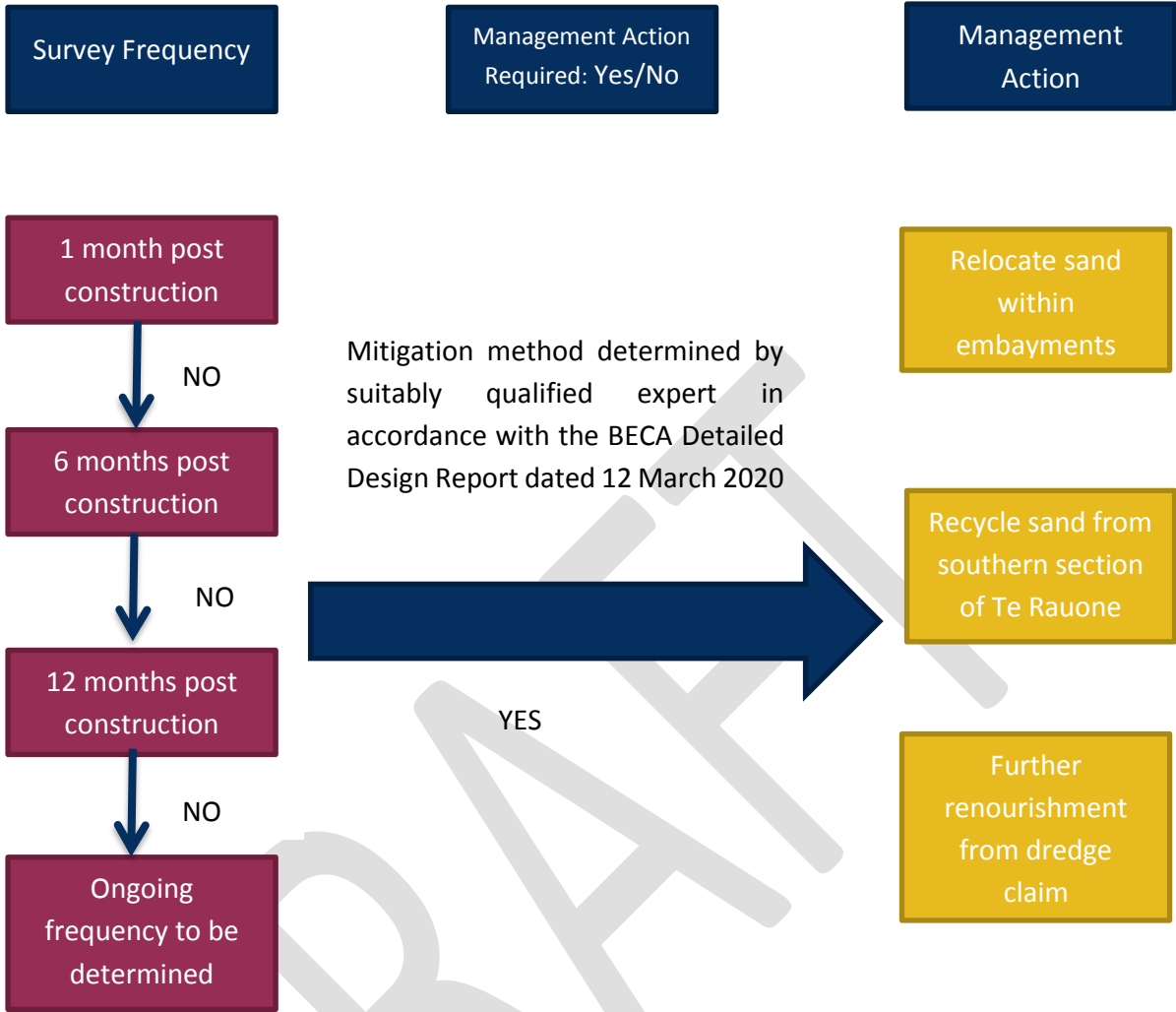
(Refer to Conditions **7a and 8d** of Consent Number RM19.441)

Purpose

To detect and document changes in bathymetry outside the “expected variability”. Expected variability includes both natural fluctuations and those associated with the Te Rauone Beach renourishment project.

After each survey, it will be determined whether or not renourishment is required. The flow chart below shows the survey intervals and the renourishment actions that may be required after each survey.





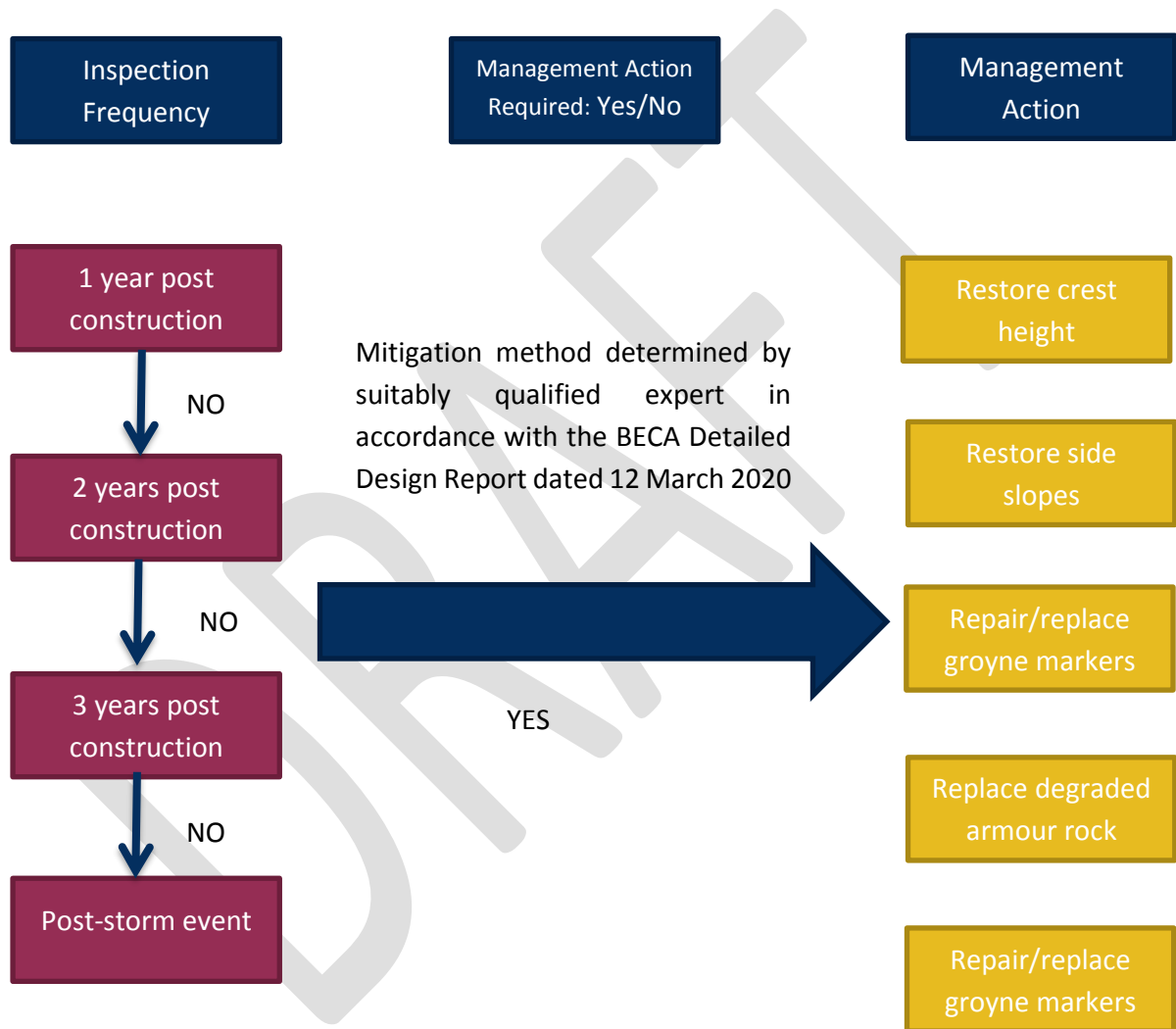
GROYNE INSPECTIONS

Purpose

To monitor, inspect and maintain the groynes post construction

Monitoring

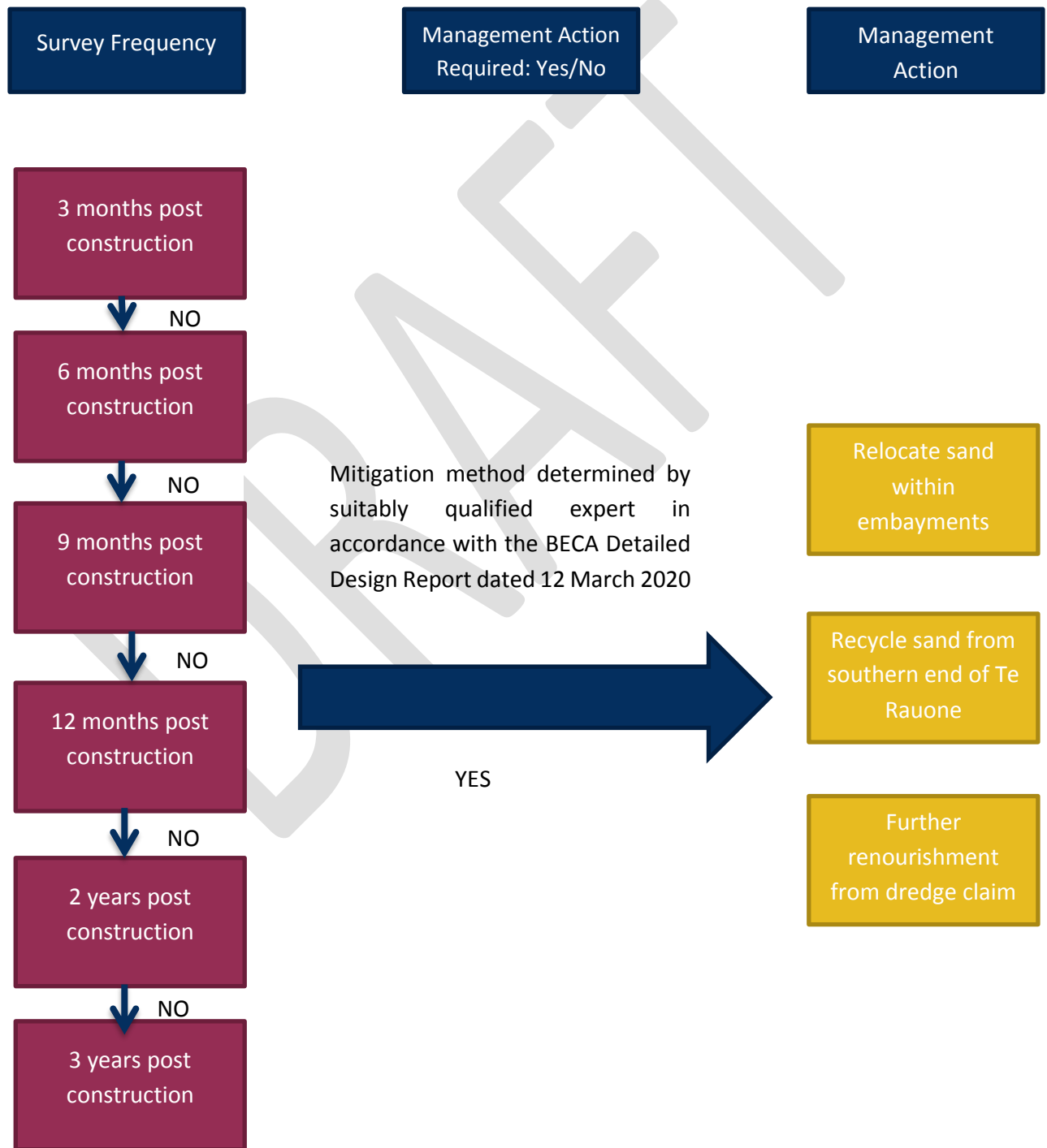
Undertake annual inspections of the rock groynes, markers and signs for the first three years then re-assessed with a view to reducing the frequency, depending on the performance of these items.



BEACH AND NEARSHORE SURVEYS

Purpose

To minimise the effects of the Te Rauone Beach groyne construction and sand renourishment on coastal processes. Surveys from 150m north of the northern groyne to the foreshore just north of the Pakihau Rd/ Harington Point Rd intersection (i.e. approximately 200m south of the southern groyne). The nearshore surveys will extend 50m seaward of the seaward end of the groynes.



SEAGRASS COMMUNITIES

(refer to conditions 18-20 of consent RM19.441)

Purpose

To detect changes in seagrass outside the “expected variability”. Expected variability includes both natural fluctuations, and anticipated changes associated with the Te Rauone Beach groyne and renourishment project.

Monitoring

Monitoring of seagrass communities will be in accordance with the report entitled “*Managing and mitigating impacts to seagrass beds – Te Rauone erosion remediation*” prepared by NIWA, dated October 2020, and performed using aerial drones and satellite imagery to map the extent of seagrass beds south of the construction footprint. Seagrass is a key component of the intertidal zone within Otago Harbour, and healthy beds enhance the habitat available for other important species (e.g., cockles, *Austrovenus stutchburyi*).

Thresholds of minimum seagrass coverage are provided to detect 10%, 30%, and 50% loss of seagrass beds based on region-specific trends. Four separate regions have been identified and shown on Figure 1 below. Guidelines for determining the likelihood of multiple scenarios change relating to construction and other stressors is provided in Table 1 below.

Responsibilities

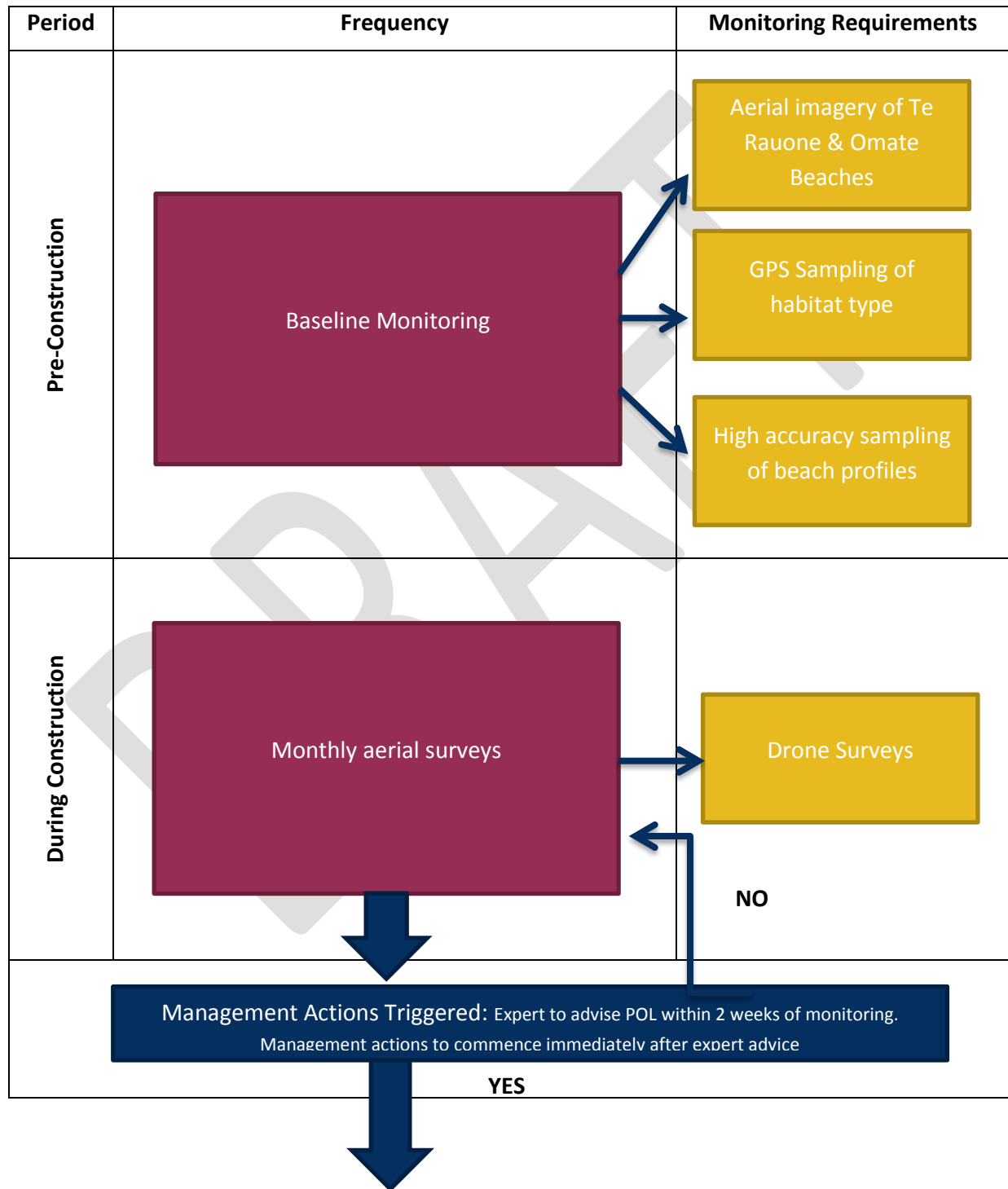
A suitably qualified ecologist in accordance with the report entitled “*Managing and mitigating impacts to seagrass beds – Te Rauone erosion remediation*” prepared by NIWA, dated October 2020 will undertake monitoring and determine mitigation measures.

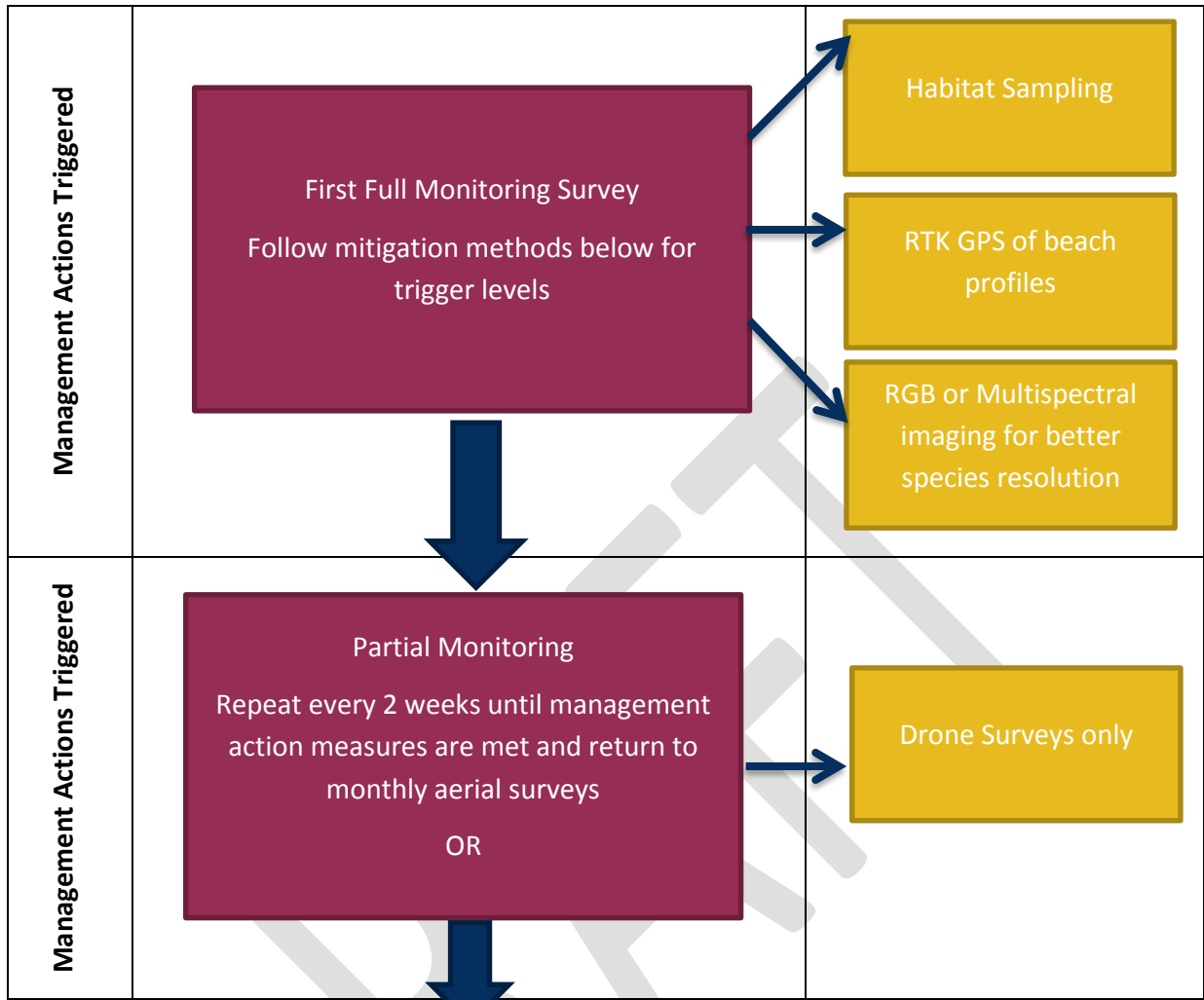
A suitably qualified ecologist is also responsible for informing POL as to when to halt construction and stand down until all clear is given if thresholds have been met. POL in turn will inform the contractor as to when to halt construction and return to work with new control measures in place.

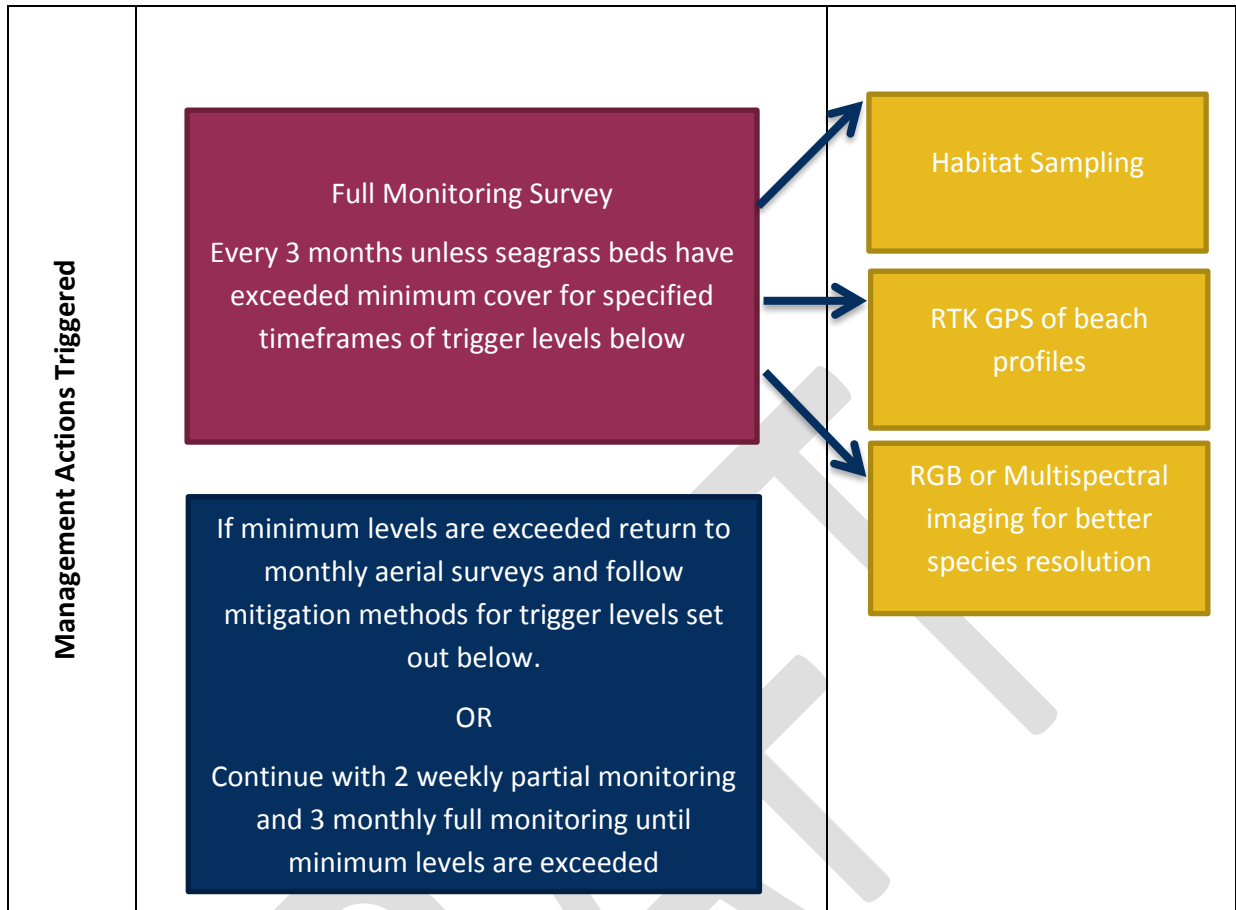


Monitoring and Management Actions

The flow chart below is a diagram of how the monitoring and management action process should flow. For further detail monitoring and management actions refer to the report entitled “*Managing and mitigating impacts to seagrass beds – Te Rauone erosion remediation*” prepared by NIWA, dated October 2020.

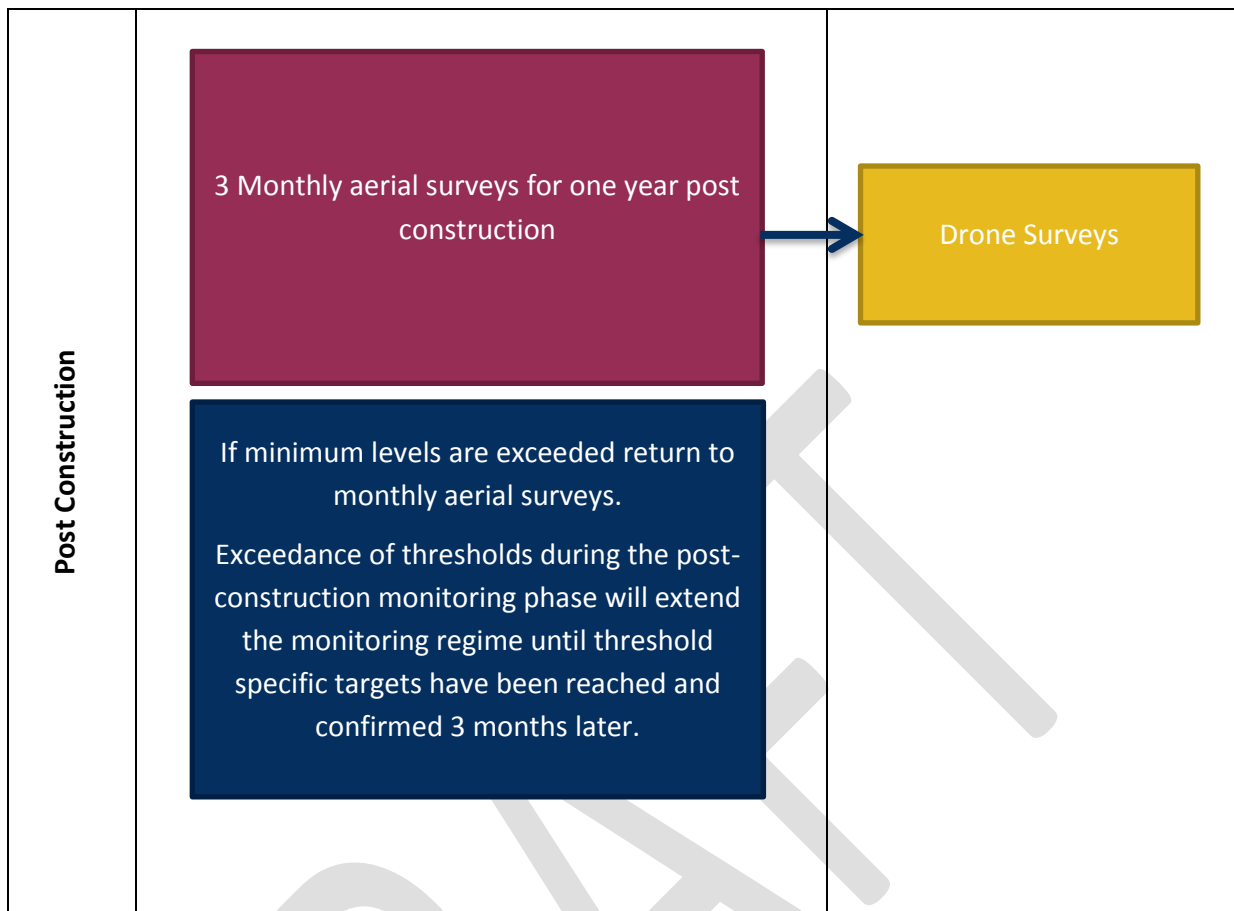






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Trigger Level Mitigation Methods

10% Threshold within Te Rauone, with little or no change at Omate Beach	30% Threshold within Te Rauone, with little or no change at Omate Beach	50% Threshold at any site
Halt replenishment or construction activities	Halt replenishment or construction activities	Halt replenishment or construction activities
Assess timing of replenishment in relation to tidal cycles, rainfall events, and storm surges	Construction of temporary barrier protection of seagrass (eg: stakes and permeable cloth barriers)	Assessment of the likely cause as related to the pattern of seagrass loss across sites
Provide a revised replenishment plan that actively avoids likely or potential events likely to mobilise sediment.	Increase frequency and scope of monitoring	Construction of temporary barrier protection of seagrass (eg: stakes and permeable cloth barriers)



Assess the rate of replenishment. Including a staged approach to increases in replenishment volumes	Construction or replenishment activities to resume only after seagrass beds have exceeded minimum values	Increase frequency and scope of monitoring
Increase frequency and scope of monitoring once new replenishment plan is in place		Habitat restoration activities to be triggered if monitoring reveals continued loss
		Groyne or replenishment activities to resume only after seagrass beds have exceeded minimum values for 3 consecutive months

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NOISE

NOTE – This is in respect to noise within both the Coastal Marine Area and land area above mean high water springs made during the construction and dredging phases

Purpose

To ensure activities comply with the relevant noise standards set out in their respective Resource Consents.

Monitoring

Noise will be emitted during the works period at Te Rauone Beach from the operation of marine and land-based machinery and the movement of vehicles to and from site.

The proposed works are located within proximity to a group of residential properties at the northern and southern ends of the beach. All works will be undertaken in accordance with the New Zealand Standard for construction noise, NZS 6803:1999 Acoustic- Construction Noise and construction will be limited to normal daytime working hours.

Management Action

A complaints register will be kept by Port Otago Limited.



MARINE MAMMALS AND WILDLIFE

(Refer to Condition 16f of Consent Number RM19.441)

Purpose

To avoid harm to marine mammals and wildlife during groyne construction operations, sand renourishment, and subsequent renourishment top ups.

Responsibilities

- Pre-construction
 - The Consent Holder will appoint a suitably qualified marine mammal expert to train the approved contractor on identification and recording of marine mammals and wildlife that may frequent the construction area.
 - As part of this training a pre-determined visual monitoring zone for each groyne will be identified for visual monitoring.
- During Construction
 - The contractor will undertake visual monitoring near the pre-determined visual monitoring zone before, during, and after rock placement, sand renourishment, and subsequent renourishment top ups.
 - The contractor is responsible for halting works on the site and following all requirements set out in the management actions table below.
 - The contractor will complete marine mammal and wildlife sighting forms attached in Appendix 7 as per the management action table below. These forms will be forwarded to the POL Environmental Manager on a quarterly basis.
 - Extreme care will be taken to ensure all construction rubbish and debris is secured until taken offsite for disposal. Safe and careful waste disposal, including storage of fuels and chemicals and location of re-fuelling sites, will form part of the CMP with POL.

Communication of requirements

The marine mammal and wildlife section of this EMP needs to be communicated to every member on the construction team to inform them of their responsibilities and ensure that they have the knowledge and resources to fulfil their responsibilities. Communication of this section of the plan will be done via the following methods:

- Display of this section of the plan in a prominent place on site
- Tool box meetings
- Inductions prior to commencing construction



- Pre-start meetings

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Pre-determined Visual Monitoring Zones



Mock-up of possible pre-determined visual monitoring zones for each groyne during construction. All areas outside of the amber areas are classified as green zone. Note: pre-determined visual monitoring zones will be finalised in conjunction with suitably qualified marine mammal expert prior to finalisation to EMP

Management actions table

If marine mammals are sighted within the pre-determined visual monitoring zone, the mapped area the following actions are to be undertaken.

NOTE: Marine mammal and wildlife sighting forms are attached as part of Appendix 7 of this EMP

Marine mammals within Red zone	Marine mammals within amber zone	Marine mammals within green zone
Construction activities are to stop until the marine mammal has moved out of the red zone	Maintain watch of marine mammal as to whether it moves towards red or green zone	Maintain watch throughout construction process
Contractors must withdraw at least 50m of an approaching Sea Lion or greater distance if possible	If it is observed that the marine mammal or wildlife is in a distressed state contact DOC in the first instance or an appropriate wildlife facility if DOC are not available.	If it is observed that the marine mammal or wildlife is in a distressed state contact DOC in the first instance or an appropriate wildlife facility if DOC are not available.
No vehicles within 50m of the Sea Lion or marine mammal	Complete a marine mammal sighting form.	Complete a marine mammal sighting form.
If required, DoC shall be called for assistance and no attempts shall be made to interact/move/scare any marine mammal/bird from the Project foot print without DoC guidance.		
No works are to be undertaken on Te Rauone Beach from mid-December to early February each year to avoid sea lion breed season.		
Complete a marine mammal sighting form.		



SECTION D: MONITORING AND ADAPTIVE MANAGEMENT OF TE RAUONE BEACH LUC ACTIVITIES

This section of the EMP sets out the monitoring and adaptive management actions that will be undertaken by Port Otago prior to, during and following the construction of the rock groynes and sand renourishment, and subsequent beach top-ups above the mean high water spring mark.

EFFECTS ON PUBLIC ACCESS

(Refer to Conditions 3 and 4 of LUC-2019-658 and consent conditions on Coastal Permits RM19.441.01 and RM19.441.02)

Purpose

To minimise the area and duration of access restrictions to the public whilst ensuring public safety during the construction period and subsequent beach top-ups. To ensure that use and enjoyment of the beach and reserve land is not negatively affected by the construction works any more than is absolutely necessary to ensure public safety.

Monitoring

During the construction period and subsequent beach top-ups, access to the beach and foreshore, site establishment area and site access ways will temporarily be restricted, in order to safeguard the public and the contractor's staff. This will be achieved using temporary site fencing and signage. Signage is also shown on the abovementioned drawing and will be designed to comply with 2GP rules. Exact content and location will be confirmed by contractors prior to construction commencing. This will be included in the CMP.

The CMP will highlight what areas are restricted for the public, and how the contractor will manage this.

Limited stockpiling of rock for groyne construction will occur, as noted above.

Construction work will be undertaken five to six days a week and is estimated to take six to eight months to complete.

Management Action

The temporary accessways are expected to comprise a running course of clean AP65 aggregate (approximately 1500m² area and 300m³ in situ volume) placed over geogrid/geofabric, with minor grading of the sandy backshore at the beach accesses to provide a smooth transition between land and beach (up to 400m² area and 300m³ in situ volume of grading).



Works will be temporary in nature and the effects associated will be also. Earth work areas and stockpiles will be disestablished post construction which will remedy the effects of construction in terms of sediment and erosion and visual effects. There is low potential for release of fines. Clean aggregate will be used for the temporary accessways, which are to be laid on existing ground. The minor grading at the beach accesses is in the existing sandy backshore material, which allows for rapid infiltration of rainwater, limiting runoff.

Disestablishment, including removal of temporary accesses, site offices, plant and any surplus materials and reinstatement of the contractor's site area, will be completed at the end of construction.

During maintenance works (post construction), public access will be restricted to that portion of the site that is subject to the maintenance works, with the construction lay-down area and construction access used for the construction of the groynes expected to be reused for these purposes. A 'rolling' temporary fencing restriction will most likely be applied where restrictions to those portions of the beach undergoing maintenance will be fenced. Fencing will be moved along as maintenance works are progressed.

Public access will be temporarily restricted but only to ensure public safety during the construction period. Regular inspections of fencing will be undertaken during construction. Amenity is still provided through access to the playground area and the majority of the DCC reserve. Lay-down and access areas have been carefully thought out to ensure the least disturbance to public areas and to vegetation and animal habitats.

LIZARD MANAGEMENT

(refer Condition 6 and 7 of LUC-2019-658) (Appendix 3 of EMP)

Purpose

To protect and enhance southern grass skink habitat and populations within and adjacent to the construction site/project footprint.

Management Action

A Lizard Management Plan (LMP) has been developed for the DCC Te Rauone Recreation Reserve that includes the POL project footprint, in collaboration with DCC PARS, and has been submitted to the Department of Conservation (DOC) and Otago Regional Council. The LMP was submitted to DOC in October 2020 to support an accompanying application for a Wildlife Act permit (under the Wildlife Act 1953) to undertake works over the Te Rauone Recreation Reserve, that includes the project footprint. The LMP outlines the actions that will be undertaken to avoid, remedy and mitigate adverse effects generated by the scheme on the resident lizard populations and is included in Appendix 3. Actions include:

- That the Lizard Management Plan was developed by a suitably qualified and experienced herpetologist;
- That the Lizard Management Plan included:



- A description of the lizard values of the footprint and adjacent reserve and the actual and potential effects of the construction on these values;
- Creation of specific lizard habitat of an area commensurate to the area of habitat for lizards likely to occur within the footprint.
- Capture and relocation of lizards;
- Protection of lizards in relation to construction activities and predators;
- Monitoring to determine survival and population establishment/growth.
- The identification of works, 'no-go' zones, ahead of works.

TRAFFIC EFFECTS

(Refer to Conditions 5 of LUC-2019-658).

Purpose

To mitigate the effects of heavy traffic movements on local roads and nearby properties.

Monitoring

A TMP shall be prepared by the Project contractor prior to construction. The TMP shall include, but not be limited to, the following:

- Management of traffic along Harington Point Road adjoining the construction areas;
- Access and parking for contractors; and
- Specification of any additional measures necessary during periods of activities which involve high levels of truck movements and construction vehicles on nearby properties, (including communication and any necessary physical management steps).

Management Action

The TMP is a live document whereby any actions can be rapidly implemented to ensure public safety.



APPENDICES

Appendix 1. Consent Conditions

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Appendix 2. NIWA Seagrass Monitoring Report

Add NIWA report

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Appendix 3. Lizard Management Plan

Add Lizard Management Plan

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Appendix 4 – Construction Management Plan

Add CMP

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APPENDIX 5 – Additional Resource Consents

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APPENDIX 6 – Beca Site establishment plan

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