# APPENDIX 9

## DRAFT MANAGEMENT PLANS

**Appendix 9** includes:

- Appendix 9A: Construction Environmental Management Plan (CEMP);
- Appendix 9B: Marine Mammal Management Plan (MMMP);
- Appendix 9C: Avifauna Management Plan (AMP);
- Appendix 9D: Kororā / Little Blue Penguin Management Plan (KMP);
- Appendix 9E: Air Quality Management Plan (AQMP);
- Appendix 9F: Operational Traffic Management Plan (OTMP);
- Appendix 9G: Shipyard Noise Management Plan (NMP); and
- Appendix 9H: Environmental Monitoring Management Plan (EMMP).

# APPENDIX 9A

## DRAFT CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)

Enviser Ref:1533
August 2026

# DRAFT CONSTRUCTION AND ENVIRONMENTAL MANAGEMENT PLAN

Northland Shipyard and Dry Dock
MBIE

# Contents

# 1 Introduction

***This document is a draft version, prepared in support of resource consent applications. In many cases, additional specific details of the construction methodology, timeframes and other details are needed before the CEMP can be completed. This document will be updated and refined following resource consent approval to incorporate specific resource consent conditions. This document will also be updated once the detailed design and construction methodology is determined.***

This construction environmental management plan (CEMP) has been collated by Enviser Limited with technical input and content provided by the following consultants:

- Pattle Delamore Partners (air quality monitoring)
- Marshall Day Acoustics (noise monitoring)
- Cawthron Institute (marine mammals)
- Styles Group (underwater noise effects)
- Coast and Catchment (marine ecology)
- BlueGreen Ecology (avifauna ecology)
- Tonkin + Taylor (coastal processes and hazards)
- MetOcean Solutions (modelling)
- Hawthorn Geddes (stormwater management and treatment)
- Flow Transportation Specialists (transport)
- Clough & Associates (archaeology)

This report has been prepared in accordance with the Environment Court's Code of Conduct for expert witnesses, contained in the Environment Court's Practice Note 2023. The authors of this report agree to comply with the Code of Conduct, and confirm that unless otherwise stated, the issues addressed in this report are within the area of expertise of the authors. No material facts have been omitted that might alter or detract from the opinions expressed in this report.

## 1.1 Background

The Ministry of Business, Innovation and Employment (MBIE) is proposing to develop a shipyard and drydock facility abutting the western side of the existing Northport port facility at Marsden Point, Whangārei Harbour. The project includes a reclamation, vessel haul-out system, and associated wharf structures, dredging, and supporting infrastructure.

Dredging is required to form a swing basin and pocket for a ship lift device, and to facilitate deepening of the western perimeter berthing face.[1] The resulting dredge spoil will be used as fill material to construct the proposed reclamation. Dredge spoil will be pumped to the reclamation site as a slurry and will require dewatering through a series of decant ponds. The decant discharge from reclamation activities will be directed into outlets, located at least 1m below MHWS, on the western or northern face of the new reclamation.[2]

[1] The dredging Environmental Management and Monitoring Plan (EMMP) outlines all required monitoring and management measures associated with dredging works associated with construction of the project.
[2] Reclamation decant water is subject to specific consent conditions, including discharge quality and associated management requirements. This Construction and Environmental Management Plan will detail methods for the monitoring and management of reclamation decant water.

The project will commence in [TBC], with an anticipated duration of 18-22 months to construct the reclamation, depending on equipment used and construction phasing. A further [xx months] is anticipated to construct all landside and supporting infrastructure.

This CEMP outlines all required monitoring and management measures to comply with both the consent conditions and the best practice philosophy adopted by MBIE for the project. The CEMP and the measures proposed are similar to the measures promulgated by Northport for their recently granted consent for the Vision for Growth Project, which incorporates the eastern expansion of the port enabled by reclamation.

## 1.2 Purpose

The purpose of this CEMP is to document the practices required to minimise environmental effects and ensure compliance with performance standards during the construction of the proposed shipyard and drydock facility. This document has been prepared for the construction phase of the project and relates to the activities of reclamation and wharf construction. Dredging will be managed under a separate Environmental Monitoring and Management Plan (see Appendix 9I of the substantive application).

## 1.3 Statutory requirements

Upon consents being granted, **Table 1-1** will identify the relevant consent conditions and where these are addressed in the CEMP.

**Table 1-1: Relevant consent conditions addressed in the CEMP**

| Consent or Authority | Consent Details | Section in CEMP |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

[NB The Table 1-1 will be completed once the relevant consent conditions are available. Each condition will be cross-referenced to the section of this CEMP that addresses the requirement.]

## 1.4 Updating the CEMP

This CEMP is a live and controlled document that will be continuously reviewed and updated throughout the duration of the project. Upon appointment, the selected Contractor will update this management plan to ensure that it aligns with the final construction methodology and appropriately addresses all construction related impacts associated with this project.

The Contractor is responsible for updating the CEMP in conjunction with MBIE as required. **Table 1-2** below presents a document control register to track the changes made to the document.

**Table 1-2: Document control register**

| Date | Page/s Amended | Nature of Change | Approved By |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

# 2 Roles and responsibilities

It is the responsibility of MBIE to ensure that the Contractor understands and can implement the requirements of this CEMP. The Contractor is responsible for training their staff and ensuring that they understand and are able to implement the requirements of the CEMP. **Table 2-1** details the person responsible for potential construction environmental effects and their contact details for this project.

**Table 2-1: Roles and responsibilities register**

| Role | Responsibility | Contact |
|---|---|---|
| Project Manager | | |
| Contractor - lead | | |
| Foreman | | |
| Subcontractor | | |
| MBIE Contact Person | | |
| **Technical Experts** | | |
| Air quality | | |
| Hazardous substances specialists | | |
| Erosion and sediment control expert | | |
| Wildlife expert | | |
| Marine works expert | | |
| Archaeologist | | |
| Noise expert | | |
| Marine biosecurity expert | | |

# 3 Site description

## 3.1 Location

The Northland Shipyard and Drydock Facility is to be located immediately to the west of the existing Northport facility, constructed on reclaimed land of approximately 9.7 ha. Northport is a deep-water commercial port located at Marsden Point in Northland. The port is located at the entrance to the Whangārei Harbour, between the Marsden Point Channel Infrastructure facility to the east, and One Tree Point to the west (**Figure 1**).


**Figure 1:** *Site location with reclamation footprint in blue (source: Google Earth)*

The project includes a reclamation, vessel haul-out system, and associated wharf structures, dredging, and supporting infrastructure, as shown in **Figures 2 and 3**.

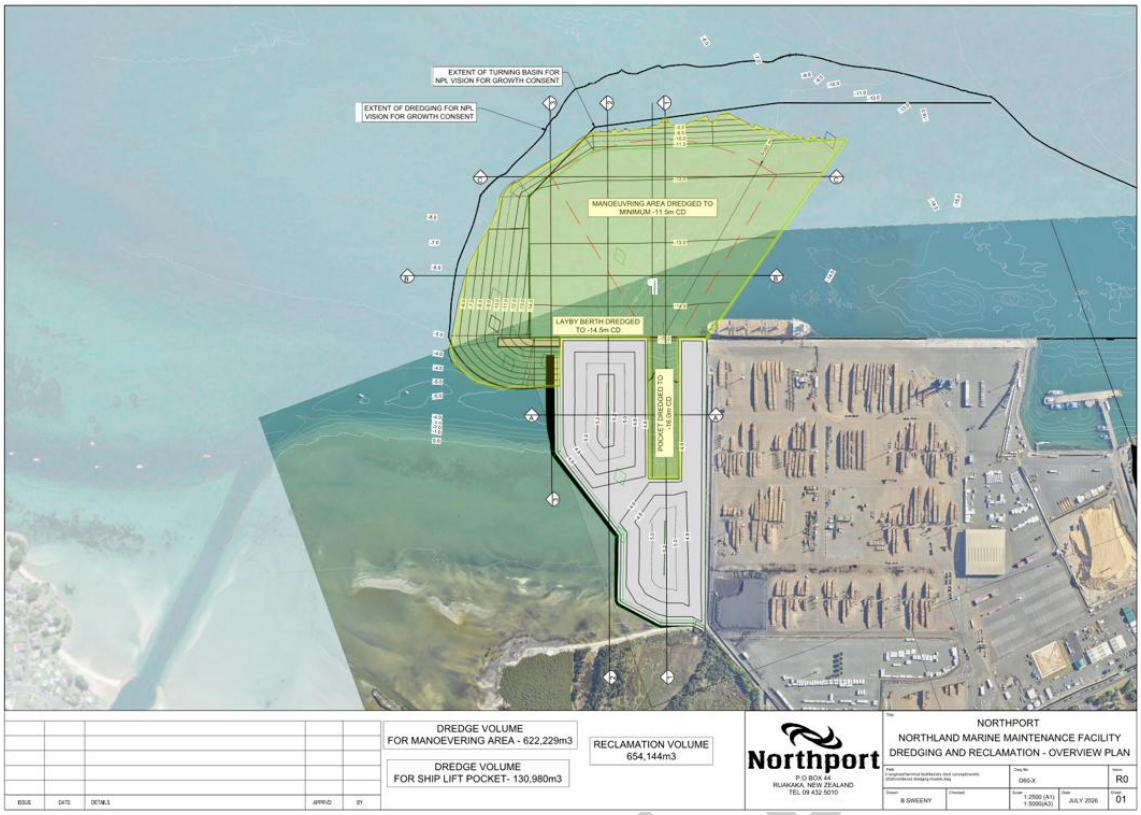



**Figure 2:** *Dredge(yellow) and reclamation areas(grey) (Source: Appendix 6 of the Substantive Application: Concept Design and Construction Report, BECA 2026).*

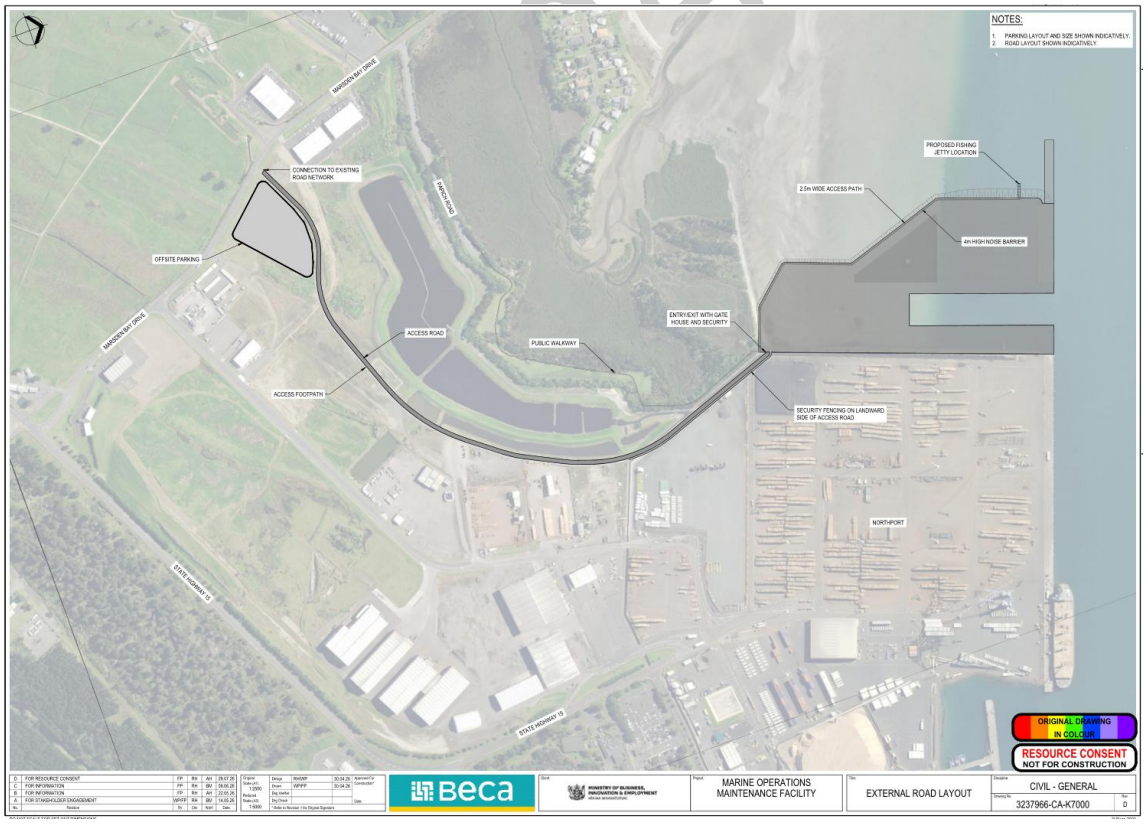



***Figure 3****: Location of proposed road and carpark from Marsden Bay Drive (Source: Appendix 6 of the Substantive Application: Concept Design and Construction Report, BECA 2026).*

## 3.2 Sediments

Inter-tidal sediments in the mid and outer harbour are predominantly sandy, with sediments becoming muddier in the upper harbour. Inter-tidal sediments around the site are predominantly sand, except for the area immediately west of the proposed reclamation, which is a muddy sand.

Sub-tidal sediments are predominantly fine to medium sands with small amounts of silts and clays. Areas of shell hash exist in the sub-tidal areas, particularly within the deeper channels.

## 3.3 Waves

The immediate vicinity of the site is sheltered from oceanic swells but does experience wind-driven chop during periods of sustained high winds, particularly from the north-west through to the north-east, where longer fetch distances exist.

## 3.4 Tides/Currents

The site sits within the outer harbour and entrance zone of Whangārei Harbour – a physically complex zone subject to strong currents. Tidal velocities in the project area have been modelled and are expected to be in the order of 0.6-1 m/s.

## 3.5 Wind

The predominant wind direction is from the west and south-west sectors, but strong easterly conditions can also occur. Average wind speed is approximately 5 m/s, the stronger winds (>10 m/s) typically come from the Northeast.

## 3.6 Ecological Habitats

The inter-tidal and sub-tidal ecological habitats surrounding the project area were surveyed to inform an Assessment of Marine Ecological Effects[3] and are summarised in the following sections.

Whangārei Harbour's ecological habitats vary between the depth contours and physical environments. The outer harbour and entrance zone where the project is positioned contains diverse physical habitats, extensive areas of biogenic habitat (including extensive shell gravel beds, seaweed meadows, seagrass beds, sponges, horse mussels, scallops, and significant beds of other shellfish).

### 3.6.1 Inter-tidal

Extensive seagrass beds are present on the inter-tidal flats between One Tree Point and the site, and seagrass beds are present within, and near, the proposed reclamation area.

Finer scale inter-tidal sampling around Northport and the project site has shown that benthic macrofaunal diversity is high.

Cockles are widespread in Whangārei Harbour and are particularly abundant around the outer harbour (Marsden Bay, McLeod Bay, Snake Bank and MacDonald Bank).

Pipi are present at several sites in the mid to outer harbour. Pipi were previously commercially harvested from Marsden and Mair Banks just outside of the harbour entrance, but commercial harvesting has been prohibited since 2011 and 2014, respectively, due to low biomass levels.

[3] Coast & Catchment Environmental Consultants (2026). *Northland Shipyard and Dry Dock Project Assessment of Marine Ecological Effects.*

### 3.6.2 Sub-Tidal

Sub-tidal sampling indicated that infaunal and epifaunal macroinvertebrate diversity is very high around the site, with areas of dense shell, macroalgae meadows, and diverse communities of encrusting organisms. Those habitats are likely to provide shelter, refuge, and food for a large variety of invertebrates and fishes.

## 3.7 Biological Environment

### 3.7.1 Fisheries

A large variety of fishes utilise Whangārei Harbour, reflecting the range of habitats present. Leatherjackets, red moki, spotty, sweep, triplefins, kingfish, jack mackerel, two-spot demoiselle, and goatfish are commonly observed around Northport's rock revetments.[4]

Snapper, kahawai, trevally, and kingfish are all popular recreational fish species and are present in the vicinity of Northport's facilities and the proposed shipyard.

Some commercial set netting occurs in the harbour. Flatfish (e.g. flounder) and mullet are targeted in the upper harbour and larger species like snapper, kahawai, trevally, and shark are caught in gill and set nets in the outer harbour.

### 3.7.2 Marine mammals

A diverse range of marine mammal species live or pass through the North Island's upper and central east-coast waters, with sighting data collected over the last several decades recording sightings of at least 27 cetacean (whales, dolphins and porpoises) and two pinniped (seals and sea lions) species along the north-eastern coastline[5].

According to the assessment of potential construction effects on marine mammals, the following species are identified as being present (albeit in a transitory manner) within the harbour and potentially influenced by the proposed construction activities:

- Bottlenose dolphin (*Tursiops truncatus*)
- Common dolphin (*Delphinus delphis*)
- Killer whale/orca (*Orcinus orca*)
- Bryde's whale (*Balaenoptera edeni bryde*)
- New Zealand fur seal (*Arctocephalus forsteri*)
- Leopard seal (*Hydrurga leptonyx*)
- Southern right whale (*Eubalaena australis*)
- Humpback whale (*Megaptera novaeangliae*)

The marine mammals most sighted near or within Whangārei Harbour are bottlenose and common dolphins, orca, and Bryde's whales, with sightings occurring mainly during spring and early summer. Other species of interest include New Zealand fur seals, leopard seals, and southern right and humpback whales, which are all seasonal visitors to the wider Bream Bay area.

[4] Coast & Catchment Environmental Consultants (2026). *Northland Shipyard and Dry Dock Project Assessment of Marine Ecological Effects.*

[5] Clement D (2026). *Shipyard and drydock facility at Marsden Point, Whangārei Harbour: potential construction effects on marine mammals. Prepared for MBIE. Cawthron Report No. 4261.*

A marine mammal management plan (MMMP) has been prepared. The MMMP describes the management actions and monitoring that will be employed during the proposed works to minimise effects on marine mammals.

### 3.7.3 Avifauna

Coastal avifauna surveys conducted from One Tree Point to the Channel Infrastructure jetty recorded a total of 19 species utilising the area, including five species classified as Threatened and nine classified as At Risk.[6]

Mitigation measures are required for the dredging operation, including minimising night lighting and ensuring that any lighting used is shielded and directed downward. The CEMP will include a section on avifauna describing the management actions and monitoring that will be employed during the proposed reclamation works to minimise effects on avifauna, including Kororā (Little Penguin) and Tōrea pango (Variable oystercatcher). These measures may also be relevant for dredging operations where slurry pipelines cross the shoreline or existing batter slopes.

## 3.8 Cultural Environment/Mahinga Kai

This section will be completed following further engagement with hapū and iwi. The completed section will summarise relevant cultural values, mahinga kai considerations, agreed engagement protocols, and any construction-stage measures required to avoid, remedy, or mitigate effects on those values.

Engagement with iwi and hapu is ongoing and is expected to continue throughout and after the construction works.

## 3.9 Recreational values

Recreational activities occur on the beaches in Marsden Bay and on the water adjacent to the site and the wider harbour. The beach to the west of the reclamation is accessible from the track at the end of Papich Road, as is the popular fishing jetty located on Northport's Western Revetment.

On-water recreational activities in (or adjacent to) the dredging area include fishing, sailing, kayaking and diving/snorkelling on the rocky northern shore within or near the marine reserve. High numbers of recreational craft use the harbour which can result in relatively high numbers of recreational traffic transiting the project area, particularly on weekends.

## 3.10 Archaeological Environment

No specific marine archaeological sites have been identified in, or adjacent to the dredge area. Notwithstanding this, accidental discovery protocol conditions are proposed in the event that subsurface archaeological evidence is unearthed during construction.

## 3.11 Navigation and Navigational Aids

Access to Northport and the project site is navigable via a buoyed and lit channel, five nautical miles long leading from the Fairway Buoy to Marsden Point. The approach to Marsden Point has a shallowest depth of 14.7 m at chart datum between the Fairway Buoy and No. 1 buoy.

[6] Blue Green Ecology (2026). *Northland Shipyard and Dry Dock: FINAL DRAFT Coastal Avifauna Assessment. Report prepared for MBIE..*

All vessel movements, pilotage and towage are coordinated through Whangārei Harbour Radio on VHF channel 16/11.

## 3.12 Transport

State Highway 1 (SH1) is the primary network access to One Tree Point, Marsden Point and Ruakākā area. It runs in a north-south direction, single lane in each direction. There is no parking permitted on either side, and no footpaths. The speed limit is 100 km/h.

Port Marsden highway (SH15) connects to SH1 and is the primary access to Northport, One Tree Point and Ruakākā. It is single lane in each direction, with no parking permitted on either side, and no footpaths. The speed limit is 100 km/h. There is a rail corridor designation adjacent to SH15 to support the future development of the Marsden Point Rail Link.

Marsden Bay Drive is a Primary Collector Road and will be the primary access to the proposed facility. At the moment it provides access to industrial land, Marsden Cove Marina commercial and residential uses, and the One Tree Point residential area. It has a speed limit of 60 km/h. There is no parking permitted on either side of the road, nor are there any footpaths.

There is no public transport serving the site. The area is primarily accessed by private vehicle and freight transport.

# 4 Project description

The Northland Shipyard and Drydock facility includes reclamation, vessel haul-out system, and associated wharf structures, dredging and supporting infrastructure. Key components of the project include:

- Reclamation of approximately 9.7ha
- A 'cutout' to the reclamation where a vessel haul out system is to be located, being a floating drydock or potentially shiplift or other lifting mechanism
- Construction of a piled wharf structure to accommodate vessels either temporarily (before/after haul out), or for extended periods where works not requiring haul out can be undertaken
- Dredging stage one: capital and maintenance dredging associated with construction and ongoing operation of the marine maintenance operations facility, including a berth pocket and a vessel turning basin to provide for safe navigation (see Figure 4)
- Dredging stage two: capital dredging to ensure sufficient volume of dredge spoil is available to construct both the NDD and Northport's Vision for Growth development (see Figure 5)
- Fixed plant and buildings to accommodate marine maintenance activities and materials
- Sufficient working and laydown areas for marine maintenance operations, including the ability to transfer vessels to the hardstand
- Access to and around the marine maintenance operations facility, including a landside area for staff carparking
- Public access around the edge of the reclamation to a public fishing platform.

MBIE is seeking approvals to construct the facility and ongoing operations. This CEMP addresses construction effects associated with all the project aspects described above **excluding** the capital and associated maintenance dredging. The CEMP does not include longer-term environmental management during operation of the facility. These excluded aspects will be addressed in the following documents:

- Dredging Management Plan (DMP), and
- Environmental Monitoring and Management Plan (EMMP)
- Marine Mammal Management Plan (MMMP)
- Operational Management Plan (OMP)

These documents will control the operation of the dredging equipment and the management of water quality during dredging operations and environmental controls during operations A draft EMMP has been prepared to accompany the Fast-track application (Appendix 9B of the substantive application).

The DMP requires knowledge of the specific dredge equipment and will therefore be prepared once the dredging contractor has been appointed.

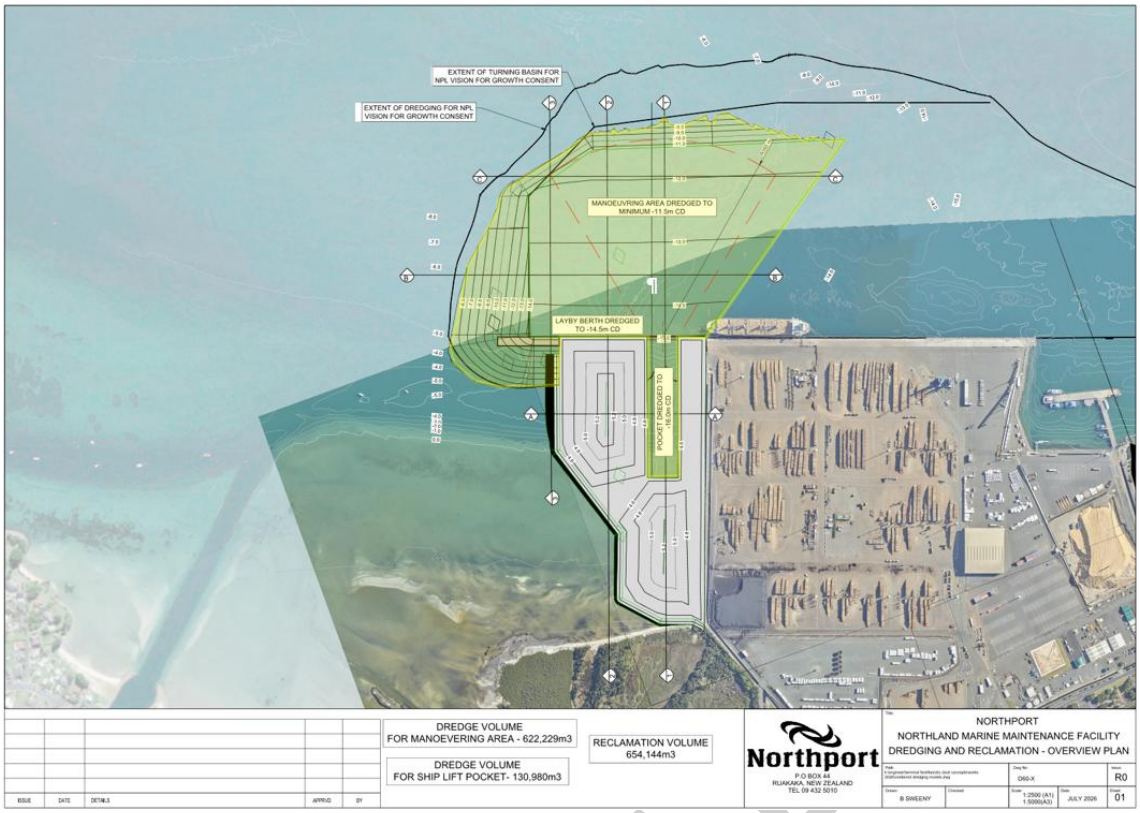



***Figure 4a:*** *Reclamation and stage one dredge area (source: Appendix 11 of the substantive application: Concept Design and Construction Report, BECA, 2026).*

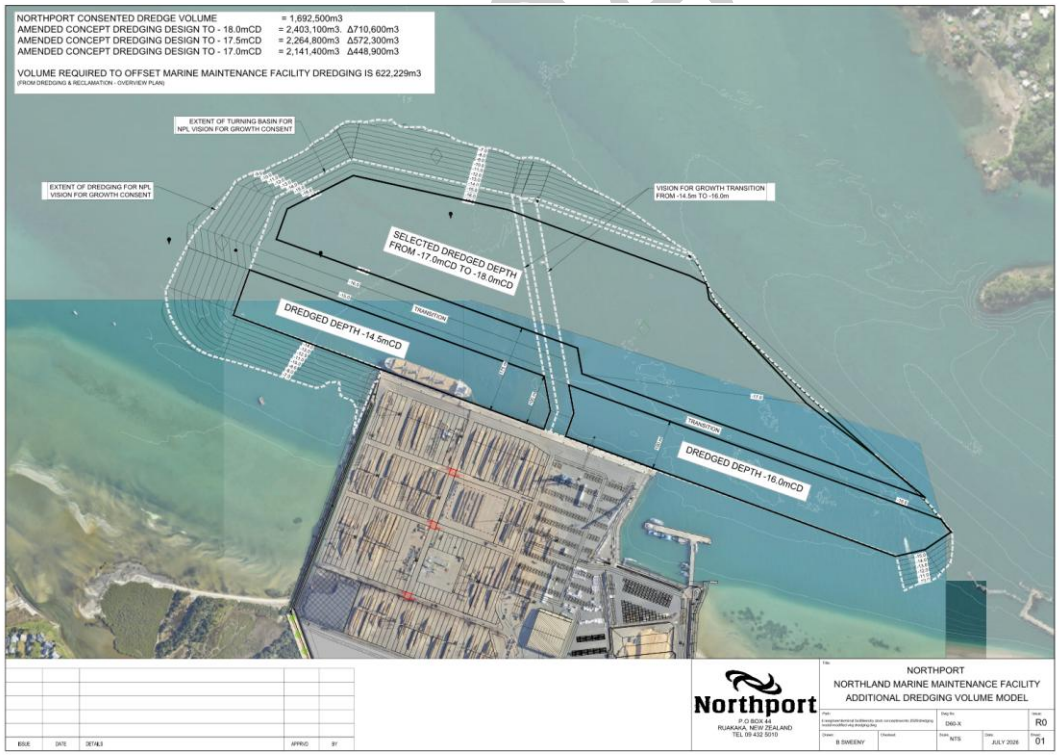



***Figure 4b:*** *Stage two dredge area (source: Appendix 11 of the substantive application: Concept Design and Construction Report, BECA, 2026).*

## 4.1 Requirements to deepen/extend swing basin

To enable vessel access to the proposed shipyard and drydock facility, an extension to the existing Northport swing basin is required. The dredging to extend the swing basin serves two primary functions – it will ensure vessels can navigate safely to and from the facility, and the dredge spoil provides a source of fill for the reclamation footprint for this project and ensure sufficient dredge spoil is available for Northport's consented development.

## 4.2 Location and extent of dredging

Stage one dredging for the proposed swing basin extension involves dredging an area to a variable depth of 14.5m below chart datum (CD) at the berth face, raising to 11.5 m below CD at the northern edge (see **Figure 4a** above). This will involve dredging approximately 0.75 million cubic metres ($m^3$) of sediment. The volumes for the stage one dredging are:

- Swing basin: 622,229 cubic metres
- Berth pocket: 130,980 cubic metres

Stage two dredging (**Figure 4b**) involves dredging to a greater depth of 18 m below CD in the northern half of the swing basin area. The approximate dredge volume will be 710,600 cubic metres.

## 4.3 Dredging equipment and execution

Three potential dredging methods are anticipated: two methods to dredge the bulk volume in the swing basin and another to dredge complex areas (i.e. close to the berth, batter slope finishing etc) and construction-related dredging. The swing basin dredging will likely be undertaken by either a cutter suction dredger (CSD) or a trailer-hopper suction dredger (TSHD) or both. All other dredging will likely be undertaken using a backhoe dredge (BHD), but a CSD may undertake some bulk dredging in the drydock berth.

Dredge spoil (silty sands) will be used for the bulk reclamation fill. These materials will be pumped ashore as a slurry, comprising approximately 30% solids and 70% water. The slurry will be pumped from the dredge, through a series of pipes and booster pumps, and ultimately discharged into the reclamation area where the solids will settle out. The resulting silty sands will be distributed across the site using earthworks machinery.

The placement of dredge spoil will be done in a manner where the water (and entrained sediment) is contained and treated before discharge to the harbour. To achieve this, the dredge spoil must be pumped into a contained area that is not open to the harbour. This may be achieved by bunds/cut off walls, sediment curtains, or a combination of the two.

At the commencement of the operation, bunds may need to be constructed from imported material. As the reclamation progresses, these bunds may be created out of the dredge won sediments.

To ensure the discharge water quality is appropriate, a series of internal paddocks will be needed to settle out the finer-grained materials prior to discharge. The spoil will be pumped into the first pond, the sediment settled, and the water decanted off the top into the next pond. This process is continued with a consequential reduction in the concentration of suspended solids in the decanted water at each step. Once the water reaches the desired quality it is discharged to the harbour. The CEMP includes measures to manage the quality of the decant discharge water and construction phase stormwater from the reclamation construction.

## 4.4 Reclamation

To be confirmed following FT Application decision and (if granted) contractor appointment

## 4.5 Fixed plant and buildings

To be confirmed following FT Application decision and (if granted) contractor appointment

## 4.6 Hardstand and laydown areas

To be confirmed following FT Application decision and (if granted) contractor appointment

## 4.7 Stormwater and wastewater installations

To be confirmed following FT Application decision and (if granted) contractor appointment

## 4.8 Transport infrastructure

To be confirmed following FT Application decision and (if granted) contractor appointment

## 4.9 Public access

Public access will be maintained to Marsden Bay from Papich Road, where it is safe to do so. However, the nature of the construction and large equipment needed, will mean public access will likely be closed for some periods. Final details to be confirmed following FT Application decision and (if granted) contractor appointment.

## 4.10 Timeframes

The project is expected to commence as soon as possible following consent decisions (if granted), detailed design, contractor procurement and mobilisation of equipment.

Timeframes to be confirmed following FT Application decision and (if granted) contractor appointment.

# 5 Environmental risk assessment

Before any risks can be managed or controlled it is necessary to know the nature, likelihood, and impact of those risks. Risk management involves the identification, assessment, control, monitoring, and reporting of risks for the project. The risk assessment tools used in this assessment are shown in **Appendix A**. **Table 5-1** below identifies the key risks and associated risk rating for the project, separated into the two primary stages of development:

1. Construction of the reclamation.
2. Construction of the vessel haul-out system, associated wharf structures and supporting infrastructure.

As the project progresses and the risks are reassessed, it may be appropriate to separate out the construction of the vessel haul-out system from the wharf construction and other supporting infrastructure, and assess risks separately.

The risk rating for each environmental effect was generated using the risk assessment tool described in **Appendix A**. Each environmental effect was assessed based on the likelihood of occurrence and the potential impact. Where technical assessment reports were available e.g. noise, marine mammals and dust, the risk classification provided in the technical reports was used.

In each section, the highest risk identified was selected as the overarching risk classification for that activity.

**Table 5-1: Project specific environmental risks**

| **Environmental effect** | **Risk Rating: Reclamation Construction** | **Risk Rating: Construction of vessel haul-out system and associated wharf structure, other supporting infrastructure** |
|---|---|---|
| Air Quality | LOW | LOW |
| Hazardous substances | LOW - HIGH (depending on work stage) | LOW - HIGH (depending on work stage) |
| Erosion and sediment generation (land) | MEDIUM | MEDIUM |
| Wildlife | LOW – MEDIUM (depending on work stage) | LOW – VERY HIGH (depending on work stage) |
| Marine works | MEDIUM – HIGH (depending on work stage) | MEDIUM – HIGH (depending on work stage) |
| Archaeology | LOW | LOW |
| Noise and vibration | LOW | LOW |
| Marine biosecurity | LOW | LOW |

The specific environmental risks are discussed in more detail in the following sections. Technical reports in support of the environmental risk assessment will be included in a separate Technical Report document package which accompanies this CEMP.

# 6 Air Quality/Dust

## 6.1 Environmental risk assessment

There will be several activities associated with the construction of the reclamation and supporting infrastructure that may adversely affect air quality at and adjacent to the site through the generation of dust. Pattle Delamore Partners have prepared a draft operational Air Quality Management Plan[7], but the management of dust during construction activities is addressed in this construction management plan and is based on the recommendations in the PDP Air Quality Assessment Report[8]. Sources of nuisance dust during reclamation and construction of the facility and access road and carpark includes any activities that will disturb, expose and/or stockpile soil, aggregates and construction materials which contain fine material in a state which could generate dust. Noting that the bulk of the reclamation earthworks are undertaken using wet dredge spoil.

The nearest identified receptors are shown in **Figure 5** below which shows receptors sensitive to the facility as well as receptors sensitive to the proposed carpark and access road.


**Figure 5:** *Nearby receptors (Source: PDP Air Quality Assessment Report, June 2026).*

The environmental risk assessment for air quality at the site is judged as **Low**. The risks are described in further detail in **Tables 6-1 and 6-2**.

**Table 6-1: Environmental risk assessment for Air Quality (reclamation construction)**

| Work Stage | Risk Rating |
|---|---|
| Dredge spoil infill and dewatering/decanting | Low |
| End tipping into sea to form bund for reclamation | Low |
| On land earthworks and bulk filling | Low |

[7] Pattle Delamore Partners, Northland Shipyard and dry dock facility – Draft Air Quality Management Plan, June 2026 (Appendix 9G of the Substantive Application).
[8] Pattle Delamore Partners, Air Quality Impact Assessment – Development and Operation of Shipyard and Drydock facility at Marsden Point, Whangarei Harbour, June 2026 (Appendix 22 of the Substantive Application)

| | |
|---|---|
| On-site stockpiling and processing of material | Low |
| Reclamation surface | Low |
| Trimming & shaping seawall and revetment | Low |
| Truck and other machinery movements | Low |

**Table 6-2: Environmental risk assessment for Air Quality (wharf/ancillary construction)**

| Work Stage | Risk Rating |
|---|---|
| Decking and other infrastructure construction | Low |
| General earthworks and bulk fill (with dry dredge spoil or imported material) | Low |
| Revetment (move, repair, replace) | Low |
| Truck and other equipment movements | Low |
| Wharf piling | Low |
| Stormwater infrastructure construction | Low |
| Transport infrastructure (roading and carpark) | Low |

## 6.2 Performance standards

The performance standards for dust management come from:

- The Resource Management Act 1991
- National environmental standards for air quality (NESAQ, updated 2014)
- Regional and district plans
- Resource consents

There is little risk of dust migrating from the construction activities to residential receptors based on the geographic separation of the Site from surrounding residential areas (i.e. One Tree Point). The greatest risk to residential receptors will be during construction of the transport infrastructure, including construction of the carpark and road upgrade from Marsden Bay Drive.

Therefore, the receiving environment has been identified primarily as port operations, beach users, users of the Blacksmiths Creek walkway, and commercial activities located along Marsden Bay Drive near the Site.

## 6.3 Control measures

Due to the nature of the construction activities, measures are required to manage the risk of dust generation throughout the construction of the reclamation and supporting infrastructure. This is typically managed by limiting exposed surfaces and managing dusty operations, particularly during windy conditions.

**Tables 6-3** and **6-4** set out the dust risk and main matters of control for each of the activities associated with the construction work. As many of the control measures rely on dampening down surfaces, the Contractor shall have water carts (or other suitable means of applying dust suppressant), available at all times. Further matters of control are given as part of the Inspection Checklists in **Appendix B**.

**Table 6-3: Control methods for DUST (reclamation construction)**

| Work Stage | Risk Rating | Control Measures |
|---|---|---|
| Dredge spoil infill and dewatering/decanting | Low | N/A – in water or wet material |
| End tipping into sea to form bund for reclamation | Low | • Limit loading in windy conditions<br>• Keep the material damp<br>• Keep drop heights of dry material to a minimum (<3m) |
| On land earthworks and bulk filling | Low | • Limit loading/unloading in windy conditions<br>• Minimise drop heights to prevent dust generation<br>• Wet as needed |
| On-site stockpiling and processing of material | Low | • Locate stockpiles as far away as practicable from identified sensitive receptors<br>• Orientate stockpiles along the predominant wind direction to maximise wind sheltering.<br>• Maintain the height of stockpiles to <5m, but ideally <3m<br>• Limit the drop height to <3m when constructing stockpiles.<br>• Bucket compact the surface of stockpiles<br>• Wet as needed to control dust generation<br>• If wetting is not successful to control dust, cover the stockpiles with a geotextile or polythene.<br>• Install wind breaks around longer term stockpiles (or stockpile locations) and stabilise the stockpiles (grass, covering etc) if they are to be undisturbed for a period of greater than three months. |
| Reclamation surface | Low | • Wet areas as needed. Not expected to be a highly dusty operation as material will be wet<br>• Stabilise surfaces, particularly marine sediments, that are at the finished level or will not be worked for an extended period. |
| Trimming & shaping seawall and revetment | Low | Wet areas as needed. Not expected to be dusty operation as material will be wet |
| Truck and other machinery movements | Low | • Minimise speed and travel distances of construction traffic around the site (20 km/hr)<br>• Stabilise internal roads and use stabilised construction entrances<br>• Keep unsealed roads damp in windy conditions |

**Table 6-4: Control methods for DUST (wharf/ancillary construction)**

| Work Stage | Risk Rating | Control Measures |
|---|---|---|
| Decking and other infrastructure construction | Low | Apply water if needed during cutting/breaking to dampen surface |
| General earthworks and bulk fill | Low | • Maintain surfaces of active earthworks in a damp condition<br>• Stabilise surfaces, particularly marine sediments, that are at the finished level or will not be worked for an extended period. |
| Revetment (move, repair, replace) | Low | Maintain surface moisture content on the revetment to limit potential for dust generation |
| Truck and other equipment movements | Low | • Minimise speed and travel distances of construction traffic around the site<br>• Keep unsealed roads damp in windy conditions |
| Wharf piling | Low | N/A – in water |
| Transport infrastructure – road upgrades and carpark | | • Apply water if needed during earthworks<br>• Stabilise surfaces as soon as possible |

## 6.4 Monitoring and reporting

Dust monitoring and reporting measures will allow the Contractor to mitigate the **Low** risk of dust from the proposed activities on people, both on and off site. Monitoring measures and reporting are set out in the following sections.

### 6.4.1 Meteorological forecasts

Meteorological forecasts should be sourced from the contractor's preferred platform. Realtime weather data will be available for the site from Northport's meteorological monitoring stations (or a site specific station may be set up). The Contractor will be responsible for checking forecasts and site data for strong winds (>5 m/s) and rainfall to plan appropriate activities and dust management responses.

The Contractor must communicate the likely weather conditions to site staff at the daily morning briefing, in particular predicted rainfall and wind conditions for the day.

### 6.4.2 Dust monitoring

The site and activities will be regularly monitored and logged using the Daily Dust Log form included in **Appendix B**. These inspections shall include:

- Check and log weather forecast daily including assessment of wind speed and rainfall in order to adjust dust mitigation methods as required
- Carry out twice daily visual inspection of site activities, dust controls, vehicle movements, dust deposition and site conditions and record in a daily dust log
- Carry out a weekly inspection of watering systems to ensure equipment is maintained and functioning effectively

- Carry out daily (or if conditions change) inspections of stockpiles, surface dampness and dust generating activities
- Keep an accurate log of all dust complaints from the public. A complaint form is included in **Appendix C**.
- Regular checking of the TSP readings from the installed real-time monitoring stations

The Contractor shall inspect the site more often if conditions change (i.e. increased wind speeds or during prolonged spells of dry weather) and as new activities are commenced (i.e. new stockpiles are made)

### 6.4.3 Wind triggers

The following wind trigger values have been set up to inform the Contractor when high winds are occurring and the appropriate response:

- Trigger 1: Winds from any direction greater than 5 m/s at ground level require staff to review the on-site activities and mitigation measures in place
- Trigger 2: If dust is observed to be travelling offsite, and windspeeds (from any direction) are greater than 10 m/s at ground level, all dust generating activities within 400 m of a sensitive receptor shall cease until either:
    - winds drop below 5 m/s based on a 10-minute average, or
    - additional mitigation measures are implemented and the dust is controlled

### 6.4.4 Instrument monitoring

To enable real-time monitoring of dust conditions and rapid response to elevated dust levels, three Total Suspended Particulate (TSP) monitoring stations are to be set up on the site. Two shall be on the downwind site boundary in predominant winds and the third on the upwind boundary. All monitoring stations shall be telemetered and configured to send text and email alerts when TSP levels exceed the trigger levels.

The trigger levels and associated responses are set out in Table 6.5.

**Table 6-5 TSP trigger levels and responses (PDP, 2026)**

| Tier | 1-hour Average TSP Concentration (µg/m³) | Level type | Response |
|---|---|---|---|
| Tier 1: | 150 | Warning | Check wind direction visually and on phone from on-site sensor. Identify likely source of trigger and apply mitigation to found source if on-site. |
| Tier 2: | 200 | Action | In addition to T1 action – reduce works that are causing particulate discharges and increase mitigation measures. |
| Tier 3 | 250 | Cessation | Cease all particulate discharging works and continue dust control measures. |

### 6.4.5 Reporting

The Contractor must maintain a record of completed dust management inspection logs as well as any incident or complaint investigations (noting that complaints may come to MBIE directly). The real-time TSP monitoring data shall be kept and any trigger exceedances reported weekly.

These records shall be completed and provided to the MBIE Project Manager at least once a week. If a dust complaint is received, the Project Manager shall inform the Contractor of the details of the complaint as soon as practical.

In the event of a dust complaint, the following should be noted:

- Time, date and location of the complaint (if known)
- Description of the dust complaint (to the extent known)
- Wind direction and strength and weather conditions at the time
- As soon as possible (within 1 hour, where practicable), visit the area from where the complaint originated to ascertain if dust is still a problem
- Document the TSP monitoring data at the time of the complaint
- Details of the site inspection following the complaint and dust management and control measures being undertaken at the time of the complaint as well as any changes made to these as a result of the complaint
- Contact the complainant to explain any problems found and remedial actions taken

## 6.5 Contingency

The following contingency measures are to be implemented in the event the primary mitigation measures fail or are unsuccessful in managing dust in certain circumstances. Note, these measures will only be implemented if normal control measures are not successful in managing dust (**Tables 6-6**):

**Table 6-6: Contingency measures for dust management**

| Additional risks | Actions to consider |
|---|---|
| Breakdown or failure of water suppression systems | • Cease activities that may cause dust<br>• Restore water system where possible<br>• Source an additional supply if the original system cannot be restored |
| Dust impacts occurring after hours | A 24-hour contact is to be made available to respond to complaints and implement response measures as necessary |
| Large number of dust complaints (>10) | Review this chapter and mitigation measures on site, evaluate TSP monitoring data and activities on site to determine if improved/different mitigation measures are needed. |
| No water available for dust suppression during prolonged dry periods | • All dust generating activities will be ceased until an alternative supply can be obtained<br>• Consider seawater as an alternative supply |
| Excessive[9] vehicle emissions | Ensure vehicles moving on site have undergone regular maintenance so that vehicle emissions are kept to a minimum |

[9] Any emissions that exceed the limits outlined in the Land Transport Rule: Vehicle Exhaust Emissions Amendment Act 2009, Rule 33001/2.

# 7 Hazardous substances

Hazardous substances are likely to be stored and used on-site throughout construction. The Contractor must document the hazardous substances that may be stored, used or transported on-site during the construction period and outline the controls for their transport, storage and use to minimise environmental risk. This information will be detailed in Section 7 before this CEMP is finalised.

The hazardous materials used in the process are fuels, lubricant oils, hydraulic oils, paints and solvents. Note that any use of hazardous substances on, or adjacent to water means the risk is judged as **HIGH (Tables 7-1 and 7-2)**. On land operations are generally judged to be low risk for most activities, aside from the bulk storage and refuelling activities.

## 7.1 Environmental risk assessment

The hazardous substances that may be used on-site are to be confirmed and could include:

- Fuels
- Lubricant oils
- Hydraulic oils
- Paints and solvents

**Table 7-1: Environmental risk assessment for HAZARDOUS SUBSTANCES (reclamation construction)**

| Work Stage | Risk Rating |
|---|---|
| Dredge spoil infill and dewatering/decanting | High |
| End tipping into sea to form bund for reclamation | High |
| On land earthworks and bulk filling | Low |
| On-site stockpiling and processing of material | Low |
| Reclamation surface | Low |
| Trimming & shaping seawall and revetment | High |
| Truck and other machinery movements | Low |
| Vehicle/plant refuelling | High |

**Table 7-2: Environmental risk assessment for HAZARDOUS SUBSTANCES (wharf/ancillary construction)**

| Work Stage | Risk Rating |
|---|---|
| Decking and other infrastructure construction | High |
| General earthworks and bulk fill | Low |
| Revetment (move, repair, replace) | High |
| Truck and other equipment movements | Low |
| Wharf piling | High |
| Transport infrastructure | Low |
| Vehicle/plant refuelling | High |

## 7.2 Performance standards

The performance standards are dependent on the type of substance or material, but all storage and use of hazardous substances must comply with the relevant regulations and the performance standards in those regulations. This includes the HSNO Act, resource consents, and health and safety regulations. The details of this section shall be filled out by the Contractor once the type and volume of hazardous substances to be used and stored on site are known. This must be completed before construction commences.

## 7.3 Control measures

The controls relate to the type of substance used as substances may be used across several stages of work activities.

7.3.1 Before arriving at site

- Establish a hazard substance store and receipt of all permits and documentation needed for that storage
- Source spill response equipment
- Locate at least 1 fire extinguisher and appropriate spill kit at each hazard substance store
- Provide of a cage for any storage of gas cylinders
- Prepare an Emergency Response Plan which includes a Spill Response Plan
- Designate refuelling areas for mobile plant. **This area must be bunded and either surfaced with an impermeable material (i.e. asphalt/concrete) or have a liner overlain by soil which can be removed and disposed of at the end of works**
- Engage a suitably qualified hazardous substances handler or specialist who is responsible for the hazardous substances stores and for ensuring compliance with the CEMP and relevant hazardous substances legislation.
- Develop a process to review new hazardous substances brought to site which are not included in the list of specific substances mentioned in **Table 7-3**
- Develop a process to monitor compliance with the requirements of the CEMP

7.3.2 During site works

- Store all hazardous substances in an appropriate storage facility, either a self bunded/sealed container or within a bunded area
- Provide copies of safety data sheets at all Hazardous Substance stores and include a site map (**Appendix D**)
- Ensure hazardous atmosphere zones and location test certificates are identified and met, and copies of all location test certificates held on-site
- Install appropriate signage
- Ensure all practicable measures are undertaken to prevent oil and fuel leaks from vehicles and machinery
- Ensure all machinery undergoes pre-start checks, particularly checks of hydraulic hose elements and connections, which are the most common spill event on construction sites.
- Ensure all vehicles and work areas have a spill kit appropriate to hazardous substances and volume being used (including for any hoses or equipment that could leak)
- Ensure all refuelling of equipment on land or over water is supervised throughout the whole activity and spill containment equipment is immediately available
- Ensure all refuelling equipment has cut-off valves and the delivery side is attended at all times

- Ensure marine spill containment equipment is available as all activity is on or near water

7.3.3 Regulatory requirements (regional and district plan)

- Fuel must not be stored and machinery must not be refuelled in any location where fuel may enter water, including:
    - o On, over, or in the bed of a surface waterbody or the coastal marine area
    - o Within 10 metres of a surface waterbody or coastal water
- There shall be no storage of fuel within 30 metres of a General Coastal Zone (or the CMA)

7.3.4 Specific controls relating to portable refuelling containers

- No container to be located within 20 m of a water body
- The aggregate quantity of specified hazardous substances stored on a site in a portable container shall not exceed 2000 litres
- A container shall be located in an area or structure that will contain a leak or spill of the substance and will allow the spilled substance to be collected
- Equipment that is suitable to absorb any leak or spill of the substance shall be located with the container at all times along with instructions on how to use the spill kit
- A portable container shall not remain on a site for a continuous period of more than 90 days

**Table 7-3: Hazardous substance specific controls (TBC)**

| Work Stage | Risk Rating | Control Measures |
|---|---|---|
| Cements, concrete admixtures, fillers, grouts, mortars, plasters, putties, roading products, concrete etching agents | | |
| Fuel | | |
| Lubricant oils | | |
| Hydraulic oils | | |
| Paints and solvents | | |

7.3.5 Waste management

All hazardous substances no longer required during the construction phase shall be:

- Removed and stored at another suitable storage facility for hazardous substances; or
- Removed by a licensed operator and treated so that it is no longer a hazardous substance
- Packaging that contained a hazardous substance shall be disposed of in an appropriate manner, taking into account the nature and type of packaging. If any residue of the hazardous substance has to be removed, or treated so it is non-hazardous, the package may be reused or recycled.

## 7.4 Monitoring and reporting

- The Contractor shall maintain a Hazardous Substances Inventory and ensure it is kept up to date and made available on request to MBIE, Northland Regional Council and WorkSafe staff
- Copies of safety data sheets shall be established around all Hazardous Substance stores and shall be included on a site map and should be clearly marked on-site

## 7.5 Contingency

A Spill Response Plan (as described in Section 7.3.1) shall be prepared by the Contractor and put in place for the duration of construction. This can be appended to the CEMP when prepared.

# 8 Erosion and sediment control

This section discusses the erosion and sediment risks and controls associated with land-based construction works only. Works completed within the marine environment e.g., reclamation construction, revetment construction, wharf construction, and associated decant discharges are discussed in detail in **Section 9.**

## 8.1 Environmental risk assessment

Erosion and sediment control measures during construction of the reclamation and wharf construction is required for:

- Stormwater runoff and discharge
- Erosion of the leading face of the reclamation and/or bund due to wave action

### 8.1.1 Stormwater runoff and discharge

During rainfall events, runoff from unstablised ground can entrain sediment (silts and clays) that, when discharged to the marine environment, can have adverse effects. Contaminants can also be adsorbed to the sediments, resulting in further potential effects.

### 8.1.2 Erosion of the leading face of the reclamation and/or bund due to waves

Rough sea and swell conditions can cause large, localised erosion events of reclamation edge through waves and current action, including wave run-up onto the reclamation. There is a particularly high risk when the reclamation material is exposed prior to placement of rip-rap protection.

Wave induced erosion of the reclamation face can generate sediment plumes as fine material is eroded by wave action and transported by currents. The occurrence, concentration and extent of sediment plumes is dependent on several factors, with the most important being the content of the fill, the presence of erosion protection and the wave energy.

In addition, during high energy events, waves may run up onto the reclamation and erode the top surface of the reclamation as the water recedes.

Given the nature of the fill material (sands and silty sands) and wave environment, there is a potential for wave induced erosion and plumes to occur. However, given the sheltered nature of the site, large wave events in the harbour are infrequent, and reclamation erosion events and plumes are not expected to be significant. Given the sensitivity of the marine environment, for the purposes of this project the risks are considered **MEDIUM** and mitigation measures are required.

**Table 8-1** below indicates the potential risk of erosion and sediment for each of the types of work associated with land-based activities. Risk is dependent on the scale and type of activity. Control measures are suggested for each activity type and are discussed in Section 8.3. The environmental risk assessment of erosion and sediment during land-based activities is judged as **MEDIUM**. The risks are described in further detail in **Table 8-1**.

**Table 8-1: Environmental risk assessment for EROSION & SEDIMENT CONTROL (land-based activities)**

| Work Stage | Risk Rating |
|---|---|
| On land earthworks and bulk filling | Medium |
| On-site stockpiling and processing of material | Medium |
| Trimming & shaping seawall and revetment | Medium |
| Truck and other machinery movements | Medium |

## 8.2 Performance standards

The water quality requirement for discharges from the Site to the Harbour is set out in the Regional Coastal Plan. These closely replicate section 107 of the RMA.

The exact performance standards will be set either in resource consent conditions or from the permitted activity standard (13.3.13 General Performance Standards)[10] .

In general, the performance standards require:

Discharges to water shall, after reasonable mixing, comply with the relevant receiving water quality standards and shall not contain any contaminants which could cause:

(i) the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials
(ii) any conspicuous change in the colour or visual clarity of the receiving waters
(iii) any emission of objectionable odour
(iv) accumulation of debris on the foreshore or seabed underlying or adjacent to the discharge point
(v) any significant adverse effects on aquatic life or public health

These performance standards are relevant at the edge of the mixing zone around the point of discharge.

## 8.3 Control measures

Avoidance, treatment and control measures are all ways sediment and erosion risk can be managed. A summary of controls is shown in **Table 8-2**.

**Table 8-2: Control methods for EROSION & SEDIMENTATION (land-based activities)**

| Work Stage | Risk Rating | Control Measures |
|---|---|---|
| On land earthworks and bulk filling | | Described in Section 8.3.1 |
| On-site stockpiling and processing of material | | • Divert surface water runoff away from stockpiles<br>• Cover, compact or roll for rainfall or high wind events<br>• Keep 50 m away from the water's edge where practical<br>• Surround with silt fences or bunding if required |
| Erosion of reclamation edge and surface | | • Monitor weather forecasts to be informed of upcoming wind/wave events so protections can be put in place before weather event occurs |

[10] Northland Regional Council, Regional Coastal Plan for Northland

| Work Stage | Risk Rating | Control Measures |
|---|---|---|
| | | • Ensure exposed reclamation edges are protected with rip-rap (or other means) as quickly as possible.<br>• Minimise the open work front to reduce the risk of erosion |
| Truck and other machinery movements | | • Stabilised road<br>• Entry/exit point designed to prevent sediment tracking offsite<br>• Wheel wash if required<br>• Grade/crossfall roadways to shed water and prevent pugging and saturated roadways<br>• Use of soakage pits if required to prevent surface ponding<br>• Perimeter controls to prevent water running onto the roadway<br>• Sediment control devices (i.e. silt fences) where needed |

### 8.3.1 Sediment controls

The following outlines the different types of controls that can be implemented as avoidance, minimisation or treatment measures. These controls have not been included in **Table 8-2** as they are best described in text rather than tabular form.

**Perimeter diversion measures**

Interception of 'clean' water upgradient of the site is important for:

- Reducing the stormwater runoff volume
- Reducing the potential for contaminants offsite to enter the construction area

Catch/diversion drains shall be installed on the upgradient perimeter of the site to prevent clean water running onto the site. The drains should discharge to the operational stormwater treatment system.

Diversion channels may be required to be stabilised with geotextile if they exhibit signs of erosion.

**Site grading**

The site should be graded to ensure runoff is directed to collection channels/drains and away from stockpiles, roads and the active work areas. The channels/drains within the site should be spaced to minimise runoff becoming concentrated and causing erosion. The channels/drains are also useful to separate the large catchment area of the site into smaller manageable catchments.

**Stabilisation of roads and site entrance**

Stabilisation of roads will be undertaken using a suitable granular material, followed by watering and compaction to minimise erosion potential and tracking offsite. Watering minimises dust risk, but do not oversaturate and cause runoff.

Site entrance and exit points may require a more engineered solution to manage sediment tracking offsite, for example a cattle-stop style grated entrance or a wheel wash. A simple stabilised entrance

comprising a larger, high porosity material (i.e. railway ballast) may be suitable for lower trafficked access points.

**Sediment fences or control devices**

Sediment fences and silt control devices are necessary to prevent sediment discharging from the site to the marine environment. These are only required adjacent to areas where there is a potential for sediment laden water to discharge from the site. Silt fences are expected to be needed along the seaward edge of the site, or on other boundaries where the site grades to external land.

Silt fences can be used across channels, but only in areas where there are areas of very low flow. In higher flow channels, check dams or other measures should be used to trap sediment.

Prior to discharge to the marine environment, all runoff requires some form of treatment. This can either be via the implementation of sediment control devices, such as decant basins, infiltration-based basins, permeable bunds and silt fences or by directing runoff to existing stormwater treatment infrastructure. Discharging to the existing treatment infrastructure is not a preferred option.

#### 8.3.2 Erosion and sediment control plans

The specific controls, their location and design will be established by the Contractor once details of the construction methodology are finalised. At this point the Contractor will prepare drawings showing the proposed location and design of the measures. This CEMP will be updated as required and will include the maintenance measures specific to those controls.

#### 8.3.3 Decommissioning of controls

Removal of erosion and sediment controls will only occur once the exposed surfaces are stabilised or permanent stormwater management measures are in place. Stabilised means the site is vegetated or has a surface layer of compacted granular material or an impermeable surface (such as concrete or asphalt).

## 8.4 Monitoring and reporting

Monitoring and reporting requirements depend on the types of works being undertaken – as shown in **Table 8-3** below.

#### 8.4.1 Monitoring compliance with performance standards

Monitoring is required to evaluate the effectiveness of the control measures. Due to the highly dynamic environment, quantitative monitoring is not always possible; consequently, monitoring will comprise both qualitative and quantitative measures.

Suggested monitoring measures are:

- Daily visual inspection and photographs of the working face, during active work in the marine area, to ascertain the presence and extent of discernible plumes. A sediment plume inspection record is provided in **Appendix B**.
- Sampling of construction phase stormwater discharge at the point of discharge, at least twice per year, when discharge is occurring. Samples should be tested for Total Suspended Solids and compared against the performance standards.

### 8.4.2 Maintenance and inspections

Maintenance, inspections and monitoring are required to ensure the control measures are in good working order and are performing as expected. The nature of the maintenance and the frequency of inspections/monitoring are dependent on both the type of control and the environmental conditions. **Table 8-3** details the inspection and monitoring requirements for the different work phases.

**Table 8-3 Inspection and monitoring requirements**

| Work phase | Frequency | Monitoring actions |
|---|---|---|
| Revetment trimming or rip-rap repair | Daily | Visual inspections from an elevated position to assess sediment plumes and stability of seaward edges. Modify techniques if plumes are larger than anticipated. |
| General earthworks | Weekly | Visual inspection of sediment control devices and features, maintain as required.<br>Inspect all elements after a rainfall event >10mm, remove accumulated sediment where it may impact performance of features. Repair elements as needed. |
| After stabilisation and installation of final stormwater system | • Monthly<br>• After rainfall event greater than 20mm/24hr | Check all stormwater control features and ensure no uncontrolled discharges are occurring. |

In addition, the following is required:

- Once a month the Project Manager shall accompany the Contractor during the weekly site inspection to undertake an audit and ensure compliance with the CEMP and identify where/if any improvements are required
- A regular meeting will be held on site by the Contractor to discuss the results of the weekly inspection and monthly audit
- A stormwater inspection plan is to be created and implemented. This shall detail the specific maintenance and monitoring for the Contractor proposed control methods.[11]

### 8.4.3 Reporting

The Contractor will provide the MBIE Project Manager with their completed inspection and monitoring checklists on a weekly basis.

## 8.5 Contingency

Where inspections identify areas of non-compliance or possible improvement, the Contractor will be advised either verbally or in writing by either the MBIE Project Manager or if applicable, via a Notice to Contractor prepared by the Project Engineer. Improvements to the control methods will then be implemented.

[11] Details of the stormwater management monitoring and maintenance requirements are contained in Appendix 21 of the Substantive Application prepared by Hawthorne Geddes (see Appendix D)

# 9 Marine works

For the purposes of this CEMP, marine works are works primarily undertaken in or over the marine environment. This does not include land-based works on the reclamation; these are discussed in Section 8.

Dredging operations are subject to separate controls set out in the Dredging Management Plan (DMP) and Environmental Monitoring and Management Plan (EMMP).

## 9.1 Environmental risk assessment

The primary environmental risk that this section seeks to control is discharge of contaminants (sediment, chemical contaminants and debris) into the CMA.

Marine works can result in a disturbance of seabed sediments or the direct discharge of contaminants to the marine environment. The types of marine works needed for this project may include:

- Demolition/removal of fishing wharf and existing revetments (along western boundary of Northport facility)
- Reclamation construction using pumped marine sediments
- Decant of water from reclamation works
- Construction dredging (to shape reclamation edge) using a backhoe
- Placement of erosion protection (geotextiles, rip rap etc)
- Piling
- Wharf construction

Mitigation and control measures during construction of the reclamation land/bunds is required for:

- Sediment plumes from demolition, construction excavation/dredging and placement of erosion protection in the marine environment
- Sediment plumes from the reclamation and decanting of water (tidal inflow or dewatering from dredge spoil).
- Management of debris from demolition and construction works
- Management of concrete and concrete wash water during construction

### 9.1.1 Sediment plumes from demolition, excavation/dredging and placement of erosion protection

All of these activities have the potential to disturb the existing seabed sediments and cause sediment plumes which can migrate away from the site. These sediment plumes can impact the marine environment. The scale and duration of sediment plumes will depend on the activity, the location of the activity, the nature of the sediments and tidal conditions. Due to the sensitivity of the surrounding marine environment and the likely scale of activities, the risks are considered **MEDIUM to HIGH.** Control measures to mitigate these risks are required.

### 9.1.2 Reclamation construction using dredge spoil and associated dewatering/decanting

Dredge spoil (silty sands) will be used for the bulk reclamation fill. These materials will be pumped ashore as a slurry, approximately 30% solids and 70% water. The slurry will be pumped from the dredger, through a series of pipes and booster pumps, and ultimately discharged into the reclamation area where the solids will settle out. The resulting sandy silts will be distributed across the site using earthworks machinery.

The placement of dredge spoil must be done in a manner where the water (and entrained sediment) is contained and treated before discharge to the harbour. To achieve this, the dredge spoil must be pumped into a contained area that is not open to the harbour. This may be achieved by bunds/cutoff walls, a sediment curtain or a combination of the two.

At the commencement of the operation, bunds may need to be constructed from imported material. As the reclamation progresses, these bunds may be created out of the dredge-won sediments, which may need stabilising.

To ensure the discharge water quality is appropriate, a series of internal paddocks will be needed to settle out the finer-grained materials prior to discharge. The spoil would be pumped into the first pond, the sediment settles, and the water is decanted off the top into the next pond. This process is continued with a consequential reduction in the concentration of suspended solids in the decanted water at each step. Once the water reaches the desired quality it is discharged to the surrounding coastal water.

Overall, the risks posed by the reclamation and decant discharge activities are considered **HIGH**. Control measures are needed.

### 9.1.3 Debris management

Construction and demolition activities have the potential to release debris into the marine environment as well as sediment plumes. Both can impact the marine environment. The risks posed by these activities are judged to be **LOW** due to the small scale of the wharf demolition, the materials used in the revetment and the nature of the work. Control measures are needed for these activities.

### 9.1.4 Concrete and concrete washwater

Concrete and concrete washwater are strongly alkaline. Whilst seawater is an effective buffer, the discharge of concrete or concrete washwater can have adverse effects in the marine environment if discharged at high volumes or in areas where mixing is poor or aquatic ecosystem values are high. The site is subject to relatively high tidal flow volumes, which will generally provide adequate mixing, however the risk is still judged at **MEDIUM** as a large discharge could result in effects and control measures are needed.

**Tables 9-1** and **9-2** below indicate the potential risk of erosion and sedimentation for each of the types of work associated with the reclamation and wharf construction. Risk is dependent on the size of the project and type of activity. Control measures are suggested for each activity type are discussed in Section 9.3. The environmental risk assessment of reclamation construction is judged as **HIGH**. The risk assessment during wharf construction is judged as **MEDIUM**. The risks are described in further detail in **Tables 9-1 and 9-2**.

**Table 9-1: Environmental risk assessment for MARINE WORKS (reclamation construction)**

| Work Stage | Risk Rating |
|---|---|
| Construction dredging | HIGH |
| Decant discharge | HIGH |
| Placement of dewatered fill materials | HIGH |
| Pumping ashore of dredge spoil and dewatering of fill | HIGH |
| Removal and placement of erosion protection | MEDIUM |

**Table 9-2: Environmental risk assessment for MARINE WORKS (wharf/ancillary construction and demolition)**

| Work Stage | Risk Rating |
|---|---|
| Concrete work | MEDIUM |
| Demolition of revetments | MEDIUM |
| Demolition of wharves and structures | LOW |
| Wharf deck and other structures | LOW |
| Wharf piling (excluding underwater noise) | LOW |

## 9.2 Performance standards

The overriding principles of the marine works are to:

- Minimise disturbance of sediment and generation of sediment plumes
- Contain sediment as far as practicable to the work area
- Prevent the loss of debris to the marine environment
- Avoid or minimise the loss of contaminants to the marine environment

The specific performance standards are yet to be confirmed but at minimum will be required for **decant discharge**.

As described in Section 8.2, the water quality requirements for discharges from the Site to the Harbour are set out in the Regional Coastal Plan. These closely replicate section 107 of the RMA.

The exact performance standards will be set either in resource consent conditions or from the permitted activity standard (13.3.13 General Performance Standards) which require:

Discharges to water shall, after reasonable mixing, comply with the relevant receiving water quality standards and shall not contain any contaminants which could cause:

(i) the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials
(ii) any conspicuous change in the colour or visual clarity of the receiving waters
(iii) any emission of objectionable odour
(iv) accumulation of debris on the foreshore or seabed underlying or adjacent to the discharge point
(v) any significant adverse effects on aquatic life or public health

These performance standards are relevant at the point of discharge.

## 9.3 Control measures

Avoidance, treatment and control measures are all ways marine works can be managed. A summary of controls is shown in **Tables 9-3 and 9-4**.

**Table 9-3: Control methods for MARINE WORKS (reclamation construction)**

| Work Stage | Risk Rating | Control Measures |
|---|---|---|
| Construction dredging | High | • Monitor weather forecasts to be informed of upcoming wind/wave events so protections can be put in place before weather event occurs<br>• Complete the work in sections and place erosion protection as quickly as possible on the completed section<br>• Minimise the open work front to reduce the risk of erosion<br>• Laden excavator buckets should only be swung above water to reduce sediment plumes. Underwater bucket movements should be limited to vertical movements only |
| Decant discharge | High | • All decant discharges must be treated before discharge<br>• The treatment system must have sufficient capacity to treat the incoming volumes and achieve the performance standard. The system should have spare capacity built in to cater for unforeseen circumstances and storm events<br>• The bunds and paddocks shall be appropriately engineered to ensure they do not fail and release untreated water into the marine environment<br>• Decanting must be undertaken from as close as practical to the water surface, so the cleanest water is pumped out.<br>• The decant discharge shall be via dedicated outlets, located at least 1m below MHWS, on the western and northern edges of the reclamation. |
| Placement of dewatered fill materials | High | • Placement must be within a controlled (bunded or silt fenced) area that is protected from currents and wave action. No placement of unstabilised fill within an uncontained area.<br>• Only place material that have sufficiently dewatered, so sediment plumes are minimised during placement<br>• Minimise the active working front |
| Pumping ashore of dredge spoil and dewatering of fill | High | • Ensure all equipment is well maintained to prevent breakages and leaks<br>• Inspect connections (pipes/pumps etc) regularly (at least twice daily) to detect any leaks<br>• Ensure the onshore facilities have capacity for the pumping rates and volumes that the dredge will generate<br>• Ensure the discharge end of the pipeline is controlled to prevent movement and has the appropriate output velocity to prevent spillage |

| Work Stage | Risk Rating | Control Measures |
|---|---|---|
| Removal and placement of erosion protection | Medium | • Monitor weather forecasts to be informed of upcoming wind/wave events so protections can be put in place before weather event occurs<br>• Use a grab bucket (or clamshell) where possible to minimise the removal of underlying sediment<br>• Complete the work in sections and place erosion protection as quickly as possible on the completed section<br>• Minimise the open work front to reduce the risk of erosion<br>• Laden excavator buckets should only be swung above water to reduce sediment plumes. Underwater bucket movements should be limited to vertical movements only |

**Table 9-4: Control methods for MARINE WORKS (wharf/ancillary construction and demolition)**

| Work Stage | Risk Rating | Control Measures |
|---|---|---|
| Concrete work | Medium | • Controls must be in place to minimise the discharge of concrete wash water into the marine environment<br>• Minimise the use of flowable grout below MHWS<br>• Where boxing is placed below MHWS, ensure it is well sealed to reduce the loss of concrete/water into the marine environment<br>• Use methods that do not require large amounts of water application during curing<br>• Collect and dispose of concrete wash water and waste wet concrete appropriately |
| Demolition of wharf/revetment | Medium | • Monitor weather forecasts to be informed of upcoming wind/wave events so protections can be put in place before weather event occurs<br>• Complete the work in sections and replace erosion protection as quickly as possible on the completed section<br>• Minimise the open work front to reduce the risk of erosion<br>• Laden excavator buckets should only be swung above water to reduce sediment plumes. Underwater bucket movements should be limited to vertical movements only<br>• Promptly remove excavated materials and place where runoff does not discharge to the marine environment<br>• Consider tides when working – low tide preferable for minimal risk of disturbance from wave action |

| Work Stage | Risk Rating | Control Measures |
|---|---|---|
| | | • Sediment curtains (or debris booms) around area if needed<br>• Place erosions protection on exposed areas as soon as practicable<br>• To minimise debris loss to the CMA, the wharf structure shall be deconstructed into workable pieces for removal, rather than broken up using jaws or other demolition methods.<br>• Use GPS assisted equipment to ensure accurate placement of rocks and reduce the amount of handling of rocks |
| Wharf deck and other structures | | • Use debris booms to trap any construction material which may fall into the harbour<br>• Store construction materials away from the water's edge as far as practical, secure against wind<br>• Consider the use of nets below the working areas to capture debris |
| Wharf piling | | • Monitor weather forecasts to be informed of upcoming wind/wave events so protections can be put in place before weather event occurs<br>• Ensure all equipment is well maintained to prevent breakages and leaks<br>• Inspect connections (pipes/pumps etc) regularly (at least twice daily) to detect any leaks<br>• Use debris booms to trap any construction material which may fall into the harbour<br>• Inspect connections between booms regularly (at least twice daily) to detect any breaches |

### 9.3.1 Controls

The following gives advice on the different types of controls that can be implemented as avoidance, minimisation or treatment measures.

**Settlement paddocks**

The sediment settling paddocks will require specific engineering design to achieve the performance standards. The design shall be based on the:

- expected pumping rate from the dredge,
- volume of slurry per dredge discharge
- number of dredge discharges per day
- the particle size distribution of the sediment and anticipated settling velocities
- the required water quality at the point of discharge

**Bunded areas**

A key control in the construction methodology is the placement of dewatered dredge spoil into bunded areas. These bunds must be advanced ahead of the reclamation face and designed to prevent sediment discharging through the bunds. This will require specific engineering design and likely necessitate the use of geofabrics.

**Sediment curtains**

Sediment curtains may be deployed in isolated instances for reclamation construction to manage unexpected sediment plumes. Wide scale use of sediment curtains is not considered necessary given the likely extent of plumes from the proposed works, the natural variable turbidity regime and the effectiveness of such a device. Sediment curtains were used successfully at Northport during Berth 3 construction.

The fill material is unlikely to have floatable components and there will be control over the nature of the material arriving. This means the Contractor can schedule the most appropriate material for the stage of construction. For example, the Contractor will use rock fill for the bund and exposed working faces, reserving the fill with finer grained material for enclosed areas or bulk filling above the water line.

#### 9.3.2 Erosion and sediment control plans

The specific controls, their location and design will be established by the Contractor once details of the construction methodology are finalised. At this point the Contractor will prepare drawings showing the proposed location and design of the measures. This CEMP will be updated to suit and will include the maintenance measures specific to those controls.

#### 9.3.3 Decommissioning of controls

Any marine based controls shall only cease once the works which require the controls cease.

## 9.4 Monitoring and reporting

Inspection and monitoring requirements depend on the types of works being undertaken – as shown in **Table 9-5** below.

#### 9.4.1 Monitoring compliance with performance standards

In order to evaluate the effectiveness of the control measures, monitoring is required. Due to the highly dynamic environment, quantitative monitoring is not always possible, consequently the monitoring will comprise both qualitative and quantitative measures.

Suggested monitoring measures are:

- Daily visual inspection and photographs of the working face, during active work in the marine area, to ascertain the presence and extent of discernible plumes
- Establishment of an TSS/NTU relationship to facilitate rapid, on-site, monitoring of the decant discharge quality. This relationship shall be established within the first week of operations by:
    - Collecting samples from the decant discharge for TSS analysis at a laboratory
    - Contemporaneous monitoring of the turbidity of the discharge (using a handheld turbidity meter) in NTU/FTU.
    - Repeating the coincident monitoring/sampling at least 6 times

    - Analyse the data and establish the TSS/NTU relationship which shall be used for future monitoring
- Monitoring (for turbidity) of the decant discharge at the outlet (or as close as practically possible) to determine if the performance standards are being met. In addition, samples of the decant discharge shall be collected at least once per month (and concurrently with turbidity monitoring) and sent to a laboratory. The samples shall be tested for Total Suspended Solids and compared against the performance standards and the established TSS/NTU relationship to confirm it is still relevant.
- If the performance standard is not being met (based on an hourly average), the following must occur:
    - The consent holder must immediately cease the discharge and implement any management practices required to reduce the TSS concentration of the decanted discharge, after which the discharge may recommence;
    - Within one (1) hour of resuming the discharge, the consent holder must measure the outlet discharge turbidity in NTU/FTU to reassess for compliance with the performance standard; and
    - If compliance is not achieved, further management measures must be implemented to reduce the TSS concentration of the decanted discharge
- Installation of a device, (electronic flow measurement, V-notch weir or similar) within the decant discharge system which allows flow to be measured during discharge. Flow measurements shall be recorded daily during discharge and compared against the performance standards.

### 9.4.2 Maintenance and inspections

Maintenance, inspections, and monitoring are required to ensure the control measures are in good working order and are performing as expected. The nature of the maintenance and the frequency of inspections/monitoring are dependent on both the type of control and the environmental conditions.

**Table 9-5** details the inspection and monitoring requirements for the different work phases.

**Table 9-5: General Inspection and monitoring requirements**

| Work phase | Frequency | Monitoring actions |
|---|---|---|
| Decant dewatering during dredge infill | Daily | Visually inspect the turbidity of the waters surrounding the discharge point |
| | Once within the first 6 weeks | Establish the TSS/NTU relationship |
| | Weekly | Monitoring the turbidity of the decant discharge to determine compliance with performance standards |
| | Monthly | Sample the decant discharge and dispatch for TSS analysis at a laboratory.<br>Coincident turbidity measurements to confirm ongoing reliability of TSS/NTU relationship |
| Reclamation construction | Daily | • Inspect all control measures (bunds, decant paddocks and associated pipework, silt fences etc to confirm these measures are operational, maintained and are not being overtopped, breached or a leaking |

| Work phase | Frequency | Monitoring actions |
|---|---|---|
| | | • Walkover on reclamation to identify any areas of slumping or erosion (reclamation surfaces, bunds and containment paddocks) |
| Pumping ashore dredge spoil | Daily | • Inspect all pipework, pumps and connections to ensure they are in good order and no leaks are occurring<br>• Monitor the rate of pumping and the rate of dewatering to ensure the on-reclamation system is not being overwhelmed |

In addition, the following is required:

- Once a month the MBIE Project Manager shall accompany the Contractor during the weekly site inspection to undertake an audit and ensure compliance with the CEMP and identify where/if any improvements are required
- A regular meeting will be held on site by the Contractor to discuss the results of the weekly inspection and monthly audit.

#### 9.4.3 Reporting

The Contractor will provide the MBIE Project Manager with their completed inspection and monitoring checklists on a weekly basis.

## 9.5 Contingency

Where inspections identify areas of non-compliance or possible improvement the Contractor will be advised either verbally or in writing by either the MBIE Project Manager or if applicable, via a Notice to Contractor prepared by the Project Engineer. Improvements to the control methods will then be implemented.

# 10 Wildlife

This section discusses the risk to wildlife (avifauna and marine mammals) from construction activities associated with the reclamation and wharf building works, including dredging. Draft management plans for marine mammals, avifauna and Kororā have been prepared by relevant experts and are appended to the Substantive application, therefore the management measures which need to be implemented to minimise risks to those species are not contained in this CEMP but in those separate management plans.

## 10.1 Environmental risk assessment

### 10.1.1 Avifauna

The mobile nature of most avifauna species means that the potential for injuries and/or mortalities associated with construction activities are likely to be confined to birds that may be nesting or with young chicks, as well as the permanent loss of habitat and food supply or foraging. The risks to avifauna from construction activities are described and assessed in the Avifauna Assessment Report.

The assessment found that risks to avifauna during construction activities is judged as **LOW**, except for northern NZ dotterel where a **MEDIUM** level of effect has been determined because there is a local population that potentially uses the existing reclamation for nesting. The cumulative effects on northern NZ dotterel and Kororā has been assessed as **MEDIUM**. See tables 10-1 and 10-2 for a summary of the risks to avifauna.

An avifauna management plan (AMP) and Kororā Management Plan (KMP) have been prepared as separate documents. These set out the management actions and monitoring that will be employed during construction activities[12][13]. The actions in these plans are not duplicated in this chapter of the CEMP.

### 10.1.2 Marine mammals

There is potential for the construction activities, particularly underwater noise from pile driving and dredging, to have effects on the marine mammal species that live or pass through the north-eastern coastal waters of the North Island. The species most likely to be present in the vicinity of the project area are bottlenose and common dolphins, orca and Bryde's whales. Other species of interest include New Zealand fur seals, leopard seals, and southern right and humpback whales which are seasonal visitors to the wider Bream Bay area.

The potential effects on marine mammals have been assessed[14] and physical hearing injuries and/or habitat avoidance (due to the associated increase in underwater noise production from pile-driving and dredging activities) were identified as potential direct effects. Vessel strike and possible entanglement were identified as potential indirect effects of the reclamation works.

The likelihood of these effects occurring during construction has been assessed as **MEDIUM** to HIGH, and the potential consequences (i.e. injury or death of a marine mammal) are considered **VERY HIGH**

[12] Avifauna Management Plan, Prepared by BlueGreen Ecology Ltd, June 2026 (Appendix 9D of the Substantive Application)
[13] Kororā Management Plan, Prepared by BlueGreen Ecology Ltd, June 2026 (Appendix 9D of the Substantive Application)
[14] Shipyard and drydock facility at Marsden Point, Whangarei Harbour: Potential construction effects on marine mammals, Cawthron, June 2026 (Appendix 17 of the Substantive Application)

for some species without mitigation or additional management actions. See tables 10-1 and 10-2 for a summary of the risks to marine mammals.

A marine mammal management plan (MMMP) has been prepared and describes the management monitoring to be employed during construction activities to minimise effects on marine mammal species. The actions in the MMMP not duplicated in this chapter of the CEMP[15].

**Table 10-1: Environmental risk assessment for WILDLIFE (reclamation construction)**

| Work Stage | Avifauna Risk Rating | Marine Mammal Risk Rating |
|---|---|---|
| Dredge spoil infill and dewatering/decanting | LOW | LOW |
| End tipping into sea to form bund for reclamation | MEDIUM | MEDIUM |
| On land earthworks and bulk filling | LOW | LOW |
| On-site stockpiling and processing of material | LOW | LOW |
| Reclamation surface | LOW | LOW |
| Trimming & shaping seawall and revetment | MEDIUM | MEDIUM |
| Truck and other machinery movements | LOW | LOW |

**Table 10-2: Environmental risk assessment for WILDLIFE (wharf/ancillary construction)**

| Work Stage | Avifauna Risk Rating | Marine Mammal Risk Rating |
|---|---|---|
| Wharf and revetment demolition | MEDIUM | MEDIUM |
| Decking and other infrastructure construction | LOW | LOW |
| General earthworks and bulk fill | LOW | LOW |
| Revetment (move, repair, replace) | MEDIUM | MEDIUM |
| Truck and other equipment movements | LOW | LOW |
| Wharf piling | LOW | VERY HIGH |

The following sections (10.2 – 10.6) relate to avifauna management only. All marine mammal related aspects of the project are described fully in the Marine Mammal Management Plan included in the Technical Report folder which accompanies this CEMP.

## 10.2 Performance standards

See the following separate management plans:

- Avifauna Management Plan – Section 2
- Korora Management Plan – Section 3
- Marine Mammal Management Plan – Section 5

## 10.3 Control measures

Because some construction activities have a moderate to significant risk of adversely affecting NZ Dotterel, Kororā and marine mammals, additional controls are required as set out in the separate management plans. See the separate management plans for the protocols to be implemented:

- Avifauna Management Plan – Section 2

[15] Marine Mammal Management Plan, prepared by Enviser Ltd, August 2026 (Appendix 9X of the Substantive Application).

- Kororā Management Plan – Section 3
- Marine Mammal Management Plan – Section 5

## 10.4 Monitoring

Because some construction activities have a moderate to significant risk of adversely affecting NZ Dotterel, Kororā and marine mammals, additional monitoring is required as set out in the separate management plans. See the separate management plans for the protocols to be implemented:

- Avifauna Management Plan – Section 2
- Kororā Management Plan – Section 3
- Marine Mammal Management Plan – Section 5

## 10.5 Reporting

The Contractor will provide the MBIE Project Manager with their completed inspection & monitoring checklists on a weekly basis.

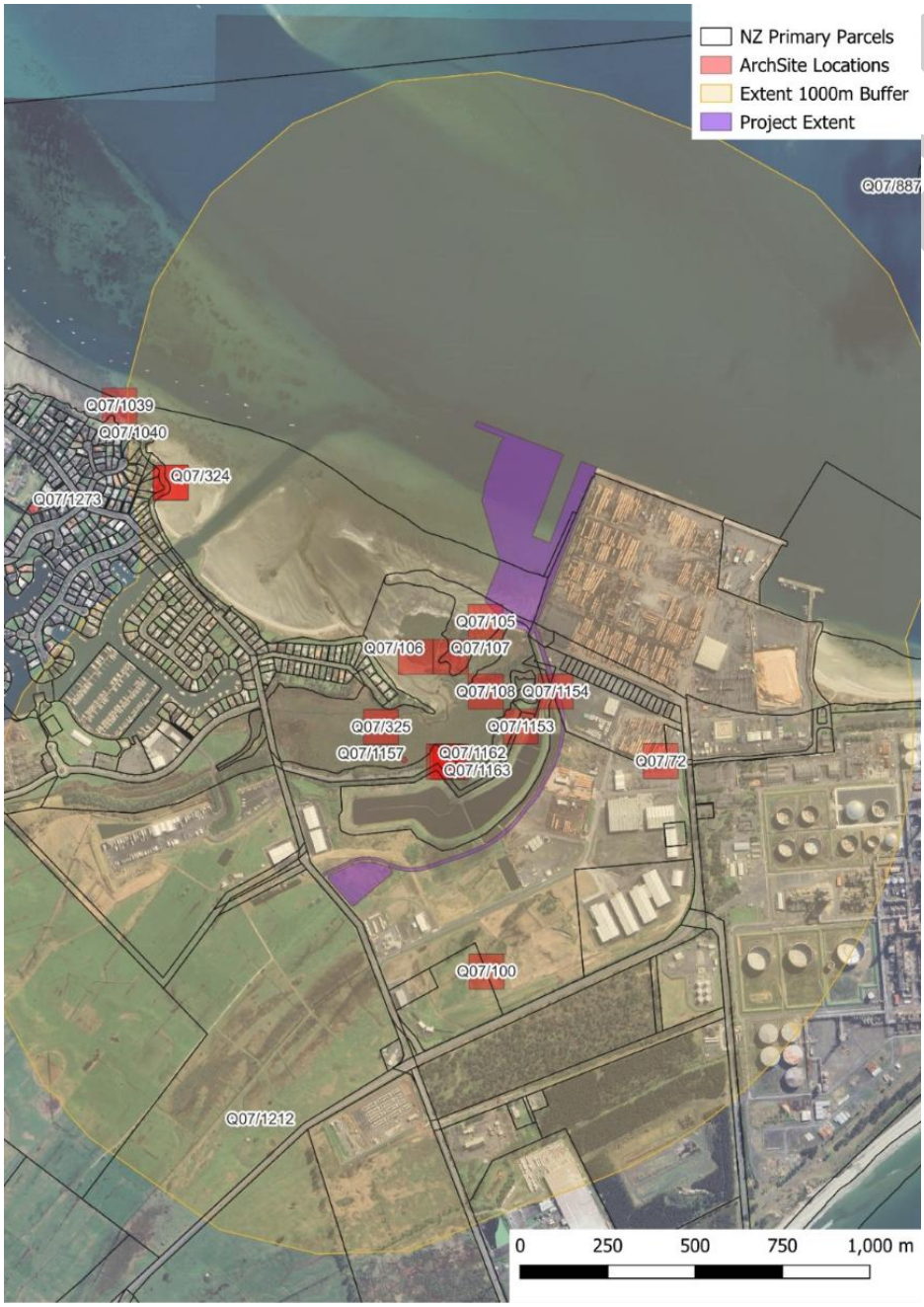
## 10.6 Contingency

Where inspections identify areas of non-compliance or possible improvement the Contractor will be advised either verbally or in writing by either the MBIE Project Manager or if applicable, via a Notice to Contractor prepared by the Project Engineer. Improvements to the control methods will then be implemented.

# 11 Archaeology

## 11.1 Environmental risk assessment

An archaeological assessment has been undertaken by Clough Associates which identified that no archaeological sites are recorded within the footprint of the Site.[16] There are thirteen archaeological sites recorded within 1 km of the proposed facility. Site Q07/1154 appears to overlap the project footprint, but the location is well documented and lies outside the project area. The sites are shown in **Figure 6**.




[16] Shipyard and Drydock Facility, Marsden Point, Whangarei Harbour: Archaeological Assessment, June 2026 (Appendix 20 of the Substantive Application)

***Figure 6:*** *Plan showing project extent and recorded archaeological sites within 1000m buffer of Site (shaded yellow). (Source: Clough and Associates, 2026)*

There are no known marine archaeological artefacts in the reclamation project area. In addition, the nature of the activities, aside from dredging, means it is unlikely that there will be much disturbance of the seabed as the reclaimed material will cover the seabed as opposed to exposing potentially buried materials. The potential risk for discoveries of historical significance is considered **LOW** as shown in **Tables 11-1** and **11-2**.

**Table 11-1: Environmental risk assessment for ARCHAEOLOGY (reclamation construction)**

| Work Stage | Risk Rating |
|---|---|
| Dredge spoil infill and dewatering/decanting | LOW |
| End tipping into sea to form bund for reclamation | LOW |
| On land earthworks and bulk filling | LOW |
| On-site stockpiling and processing of material | LOW |
| Reclamation surface | LOW |
| Trimming & shaping seawall and revetment | LOW |
| Truck and other machinery movements | LOW |

**Table 11-2: Environmental risk assessment for ARCHAEOLOGY (wharf/ancillary construction)**

| Work Stage | Risk Rating |
|---|---|
| Decking and other infrastructure construction | LOW |
| General earthworks and bulk fill | LOW |
| Revetment (remove, repair, replace) | LOW |
| Truck and other equipment movements | LOW |
| Wharf piling | LOW |

## 11.2 Performance standards

All work undertaken must comply with the authority requirements under the Heritage New Zealand Pouhere Taonga Act 2014. All construction works and equipment will be operated, maintained, supervised, monitored and controlled at all times so that the low risk of potential impact on archaeological sites is minimised.

## 11.3 Control measures

As this project has a low risk of disturbing archaeological remains, there are no additional controls, monitoring or reporting requirements, apart from the risk assessment detailed in this CEMP.

## 11.4 Monitoring and reporting

Monitoring will be undertaken through continuous observation and awareness by site construction team during works.

Reporting will be completed as per the Project Management Plan, Contract or Consent requirements.

## 11.5 Contingency

The Accidental Discovery Protocol (ADP) (**Appendix E**) applies across the project. In the event of any discovery of a suspected archaeological site the actions included as part of this must be followed by the Contractor.

The accidental discovery protocol will be adhered to being:

- If subsurface archaeological evidence should be unearthed during construction (e.g. intact shell midden, hangi, storage pits relating to Māori occupation, or cobbled floors, brick or stone foundation, and rubbish pits relating to 19th century European occupation), work should cease in the immediate vicinity of the remains and Heritage NZ and the Council should be notified.
- If modification of an archaeological site does become necessary, an Authority must be applied for under Section 44(a) of the HNZPTA and granted prior to any further work being carried out that will affect the site. (Note that this is a legal requirement).
- In the event of koiwi tangata (human remains) being uncovered, work should cease immediately in the vicinity of the remains and the tangata whenua, Heritage NZ, NZ Police and Council should be contacted so that appropriate arrangements can be made.

# 12 Noise

There will be noise generating activities associated with construction activities at the shipyard and drydock facility. Marshall Day Acoustics have assessed the effects of construction noise on the environment[17] nd their report sets out information about the sources of airborne noise and how it should be managed during construction.

Underwater noise mitigation and management measures are set out in the Marine Mammal Management Plan described in Section 10[18]. Vibration is predicted to be imperceptible at the large setback distance from the works to receivers, so has not been addressed further in this section.

The closest receivers in both Reotahi and Marsden Bay are more than 800 m from the main works area, **Figure 7**. Construction will typically be carried out during daytime hours although some night works are expected (e.g. dredging and concrete pours). Loud activities such as piling will be limited to daytime hours and construction noise levels are predicted to comply with relevant limits. The predicted maximum noise levels for significant types of work are shown in **Table 12-1**.


**Figure 7:** *Map of works area and closest receivers (Source: Marshall Day Acoustics, 2026 Appendix 23 of Substantive Application).*

[17] Marshall Day Acoustics, MBIE Shipyard Project: Assessment of Noise Effects, July 2026 (Appendix 23 of the Substantive Application)
Marshall Day Acoustics, MBIE Shipyard Project: (Operational) Dry Dock Noise Management Plan, July 2026 (Appendix 9L of the Substantive Application)
[18] Styles Group, MBIE Shipyard project: Underwater Noise Assessment, July 2026 (Appendix 18 of the Substantive Application)

## 12.1 Environmental risk assessment

The predicted maximum noise levels for piling and reclamation construction is given in **Table 12-1**. In general, piling will be the loudest construction activity during the day. Large concrete pours often commence before dawn, and dredging activities can operation 24 hours per day. Dredging is predicted to be the loudest and longest duration activity at nighttime. Most other general construction activities are expected to be indistinguishable from normal port activities during the day and night. The isolation of the site means the risk for all types of work (as shown in **Tables 12-2** and **12-3**) is **LOW** except for piling which is always a **MEDIUM** risk activity, and this will be managed by ensuring that it does not occur at nighttime.

**Table 12-1: Predicted maximum noise levels at nearest receptors for significant types of work**

| Activity | Maximum sound power level (dB $L_{WA}$) |
|---|---|
| Pile driving | 48 – 66 dB LAeq from piling at the closest dwelling, complying with the daytime limit of 70 dB LAeq |
| Dredging | 47 – 49 dB LAeq from dredging at 800 m. Depending on the proximity, and timing of dredging, there is potential to infringe the 45 dB LAeq night-time limit in downwind conditions |
| General construction activities (trucks/bulldozers/excavators) | Indistinguishable from general port and industrial noise |

**Table 12-2: Environmental risk assessment for NOISE (reclamation construction)**

| Work Stage | Risk Rating |
|---|---|
| Dredging, dredge spoil infill and dewatering/decanting | MEDIUM |
| End tipping into sea to form bund for reclamation | LOW |
| On land earthworks and bulk filling | LOW |
| On-site stockpiling and processing of material | LOW |
| Reclamation surface | LOW |
| Trimming & shaping seawall and revetment | LOW |
| Truck and other machinery movements | LOW |

**Table 12-3: Environmental risk assessment for NOISE (wharf/ancillary construction)**

| Work Stage | Risk Rating |
|---|---|
| Decking and other infrastructure construction | LOW |
| General earthworks and bulk fill | LOW |
| Revetment (move, repair, replace) | LOW |
| Truck and other equipment movements | LOW |
| Wharf piling | MEDIUM |
| Road and carpark | LOW |

## 12.2 Performance standards

**Table 12-4** sets out the construction noise limits which apply to the project. Note that these limits apply at the boundary of receptor property.

**Table 12-4: Guideline construction noise limits**

| Building type | Days | Times | Noise limit | |
|---|---|---|---|---|
| | | | $L_{Aeq(91)}$ | $L_{AF(max)}$ |
| Residential | Weekdays | 0630-0730 | 55 dB | 75 dB |
| | | 0730-1800 | 70 dB | 85 dB |
| | | 1800-2000 | 65 dB | 80 dB |
| | | 2000-0630 | 45 dB | 75 dB |
| | Saturdays | 0730-1800 | 70 dB | 85 dB |
| | | 1800-0630 | 45 dB | 75 dB |
| | Sundays and public holidays | 0730-1800 | 45 dB | 85 dB |
| | | 1800-0630 | 45 dB | 75 dB |

## 12.3 Control measures

All construction work is expected to comply with the construction noise levels, meaning the reclamation and wharf rebuild activities (except for piling) are able to be undertaken day or night, seven days a week provided that (as predicted by the noise assessment) the works meet the following noise limits:

- Daytime Mon – Sat 07:30 – 18:00 – 70 dB $L_{Aeq}$ and 85 dB $L_{Amax}$
- Daytime Sunday 07:30 – 18:00 – 45 dBA $L_{Aeq}$
- Nighttime Monday – Sunday 18:00 – 7:30 – 45 dBA

Piling works are not proposed to be undertaken night and consequently will be undertaken during daytime hours when works can be undertaken within the construction noise level limits. Consequently, piling works can occur:

- Daytime Mon – Sat 07:30 – 18:00 – 70 dB $L_{Aeq}$ and 85 dB $L_{Amax}$

If actual site measurements indicate different noise levels, the hours of work could be altered (either shortened or extended).

Dredging, in certain circumstances (nighttime, wind blowing towards Marsden and Reotahi communities), may breach the nighttime construction limits. To ensure this does not occur, dredging close to these communities will be prioritised between 6.30am and 8pm, Monday to Friday, and between 7.30 and 6pm on weekends. Alternatively, if nighttime dredging is needed in proximity to these communities, it should be scheduled to avoid downwind conditions (to Marsden and Reotahi communities) and noise monitoring undertaken to demonstrate compliance.

### 12.3.1 Administrative controls

#### *12.3.1.1* Training

All staff will participate in an induction training session before starting work on the construction, with attention given to the following matters:

- Activities with the potential to generate high levels noise
- Mitigation and management measures

- Sensitive receivers and any agreements made through engagement
- Monitoring requirements

As the construction progresses, any updates of noise matters will be addressed during regular site meetings and/or 'toolbox' training sessions.

#### *12.3.1.2* Equipment Selection

When selecting construction equipment:

- Use quieter construction methodologies where practicable (e.g. bored piling instead of drop hammer piling)
- Use electric motors rather than diesel engines where practicable
- Use rubber tracked equipment rather than steel tracked equipment where practicable
- Use equipment that is suitably sized for the task
- Maintain equipment well to minimise rattles, squeaks etc
- Fit engines with exhaust silencers and engine covers where practicable
- Avoid tonal reversing or warning alarms (beepers). Alternatives include broadband alarms (squawkers/quackers), flashing lights, proximity sensors, reversing cameras and spotters

### 12.3.2 Engineering controls

The following engineering measures (**Table 12-5**) will be put in place for the duration of the project:

**Table 12-5: Control methods for NOISE (reclamation and wharf/ancillary construction and demolition)**

| Work Stage | Risk Rating | Control Measures |
|---|---|---|
| Piling | | • Always implement the MMMP<br>• Only pile during daylight hours and Monday – Saturday.<br>• Avoid piling on Sundays and public holidays<br>• Prioritise piling methods that minimise noise and vibration (e.g. augured, screw or press-in piles rather than drop-hammer, impact hammer or vibratory methods)<br>• For bore piling, avoid shaking the auger to remove spoil where practicable. Shaking the kelly bit connection creates very loud banging that often results in noise complaints. If spoil does not fall off the auger easily, use tools to scrape the auger clean if necessary. If shaking is required due to Health and Safety constraints, ensure bushes are well maintained to minimise steel on steel contact.<br>• For impact piling methods, use a non-metallic (i.e. wooden or plastic) dolly or cushion cap between the hammer and the driving helmet |
| All other activities | | • Avoid unnecessary noise. This means managing the site to ensure:<br>o No unnecessary use of horns<br>o No rough handling of material and equipment<br>o No banging or shaking excavator buckets |

| Work Stage | Risk Rating | Control Measures |
|---|---|---|
| | | o No unnecessary steel on steel contact (e.g. during the loading of scaffolding on trucks)<br>o No high engine revs. This includes choosing the right sized equipment and turning engines off when idle.<br>• Mitigate track squeal from tracked equipment, such as excavators. This may include tensioning and watering or lubricating the tracks regularly<br>• Locate stationary equipment (e.g. generators) away from noise sensitive receivers and/or screen them behind site buildings and material stores<br>• Orient mobile machinery to maximise the distance between the engine exhaust and the nearest sensitive building façade (e.g. excavators) |

## 12.4 Monitoring and reporting

12.4.1 Monitoring

Construction noise will be monitored:

- In response to a reasonable noise complaint
- At 1m from the building façade facing the construction site, or a proxy position adjusted for distance
- By a suitably qualified and experienced specialist (e.g. Member of the Acoustical Society of New Zealand) in accordance with the requirements of New Zealand Standard NZS 6803: 1999 "Acoustics - Construction Noise"
- For an appropriate duration, reported with the measured level (e.g. 65 dB LAeq (30min))

The results will be used to update the CEMP, if appropriate.

12.4.2 Reporting

The Contractor shall maintain a record of completed noise monitoring logs as well as any incident or complaint investigations. These records shall be completed and provided to the MBIE Project Manager at least once a week.

Complaints will be acknowledged immediately where practicable and responded to as soon as practicable. If a more detailed response is needed, it will be provided within a timeframe agreed with the complainant.

For each complaint, an investigation will be undertaken as soon as practicable using the following steps:

- Acknowledge receipt of the concern or complaint and record:
    - o The name, address and contact details of the complainant (unless they elect not to provide)
    - o Time and date the complaint was received and who received it

- Time and date of the activity that caused the complaint (estimated where not known)
- The complainant's description of the activity and its resulting effects
- Any relief sought by the complainant (e.g. scheduling of the activity)

- Identify the relevant activity and review the activity log to verify the complaint (or otherwise)
- Review data from monitoring (if available) to identify the time in question and, if possible, verify exceedance
- Review the predicted noise levels to determine if the activity was identified. Consider attended monitoring to verify the underlying reference level assumptions
- Review the mitigation and management measures in place to ensure the BPO has been applied (Section **Error! Reference source not found.**). Review the relief sought by the complainant. Adopt further mitigation and management measures as appropriate.
- Review the potential residual effects if predicted to continue to exceed the relevant performance standards
- Report the findings and recommendations to the Project Manager, implement changes and update this CNMP as appropriate

Report the outcomes of the investigation to the complainant, identifying where the relief sought by the complainant has been adopted or the reason(s) otherwise.

All construction noise complaints will be recorded in a complaints file that is available to affected parties and Council on request.

## 12.5 Contingency

Complaints must be managed using the complaints process. During works there must always be a delegated person available to discuss noise issues with the MBIE Project Manager and take immediate action as required. The Contractor shall detail the delegated person before commencing construction activities.

# 13 Marine biosecurity

It is likely a number of the machinery used in the construction of the reclamation and wharfs will be from overseas contractors. A Construction Biosecurity Management Plan (CBMP) will be prepared before construction commences. The purpose of the CBMP is to manage the risk that marine construction vessels, barges, dredging plant, marine plant, temporary structures and equipment introduce or transfer Marine Pests or other viable marine biological material. The CBMP must be prepared by a Marine Biosecurity Specialist and must include:

- Roles and responsibilities for implementing construction biosecurity requirements;
- Procedures for screening items that will be submerged in, or come into contact with, the CMA;
- The information to be considered during screening, including origin, recent operating or deployment history, time since cleaning or antifouling maintenance, periods spent idle in water, visible biofouling or sediment, retained water and previous use in an area affected by a Marine Pest;
- Criteria for determining when inspection, cleaning, drying, treatment, further information or exclusion is required before mobilisation or use;
- procedures for managing biofouling, retained water, sediment, sludge and other biological residues;
- controls applying to dredging plant and equipment;
- procedures applying to equipment previously used in an area affected by exotic caulerpa or another Marine Pest;
- procedures for inspecting and, where required, cleaning or treating temporary structures and equipment before transfer to another coastal location;
- biosecurity hold points, the criteria for their release, and the matters that may be determined by a Competent Authorised Person or must be determined by a Marine Biosecurity Specialist;
- procedures for responding to suspected Marine Pests, disease signs, containment failures and accidental releases, including notification pathways for the Council and MPI where relevant;
- monitoring, training, record-keeping and reporting requirements; and
- procedures for reviewing and amending the CBMP.

One of the key biosecurity risks is the importation of invasive species on project vessels that are mobilised to the site from Whangarei Harbour. To manage this risk, the following procedures are required:

Any construction vessel, barge, item of marine plant, temporary structure or item of equipment that is mobilised from outside Whangarei Harbour, must not be mobilised to, or used within, the Project marine construction area unless:

- The required screening has been completed;
- Information necessary to assess the biosecurity status of the item is provided and complete;
- All visible macrofouling, sediment, seaweed fragments or other potentially viable biological material has been removed from the vessel and documented evidence provided; and
- Any other identified biosecurity risk has been resolved.

# 14 Communication

## 14.1 Within the project team

Reporting between the Contractor and MBIE will occur at a specified frequency as determined during project planning and inserted into **Table 14-1**.

**Table 14-1: Reporting requirements to the MBIE Project Manager**

| Frequency | Requirements |
|---|---|
| **Monthly** | |
| Weekly | |
| As required | |

## 14.2 Complaints procedure

The following procedure shall be followed for all complaints:

- All complaints should be immediately directed to the person listed in the Section 2 or the MBIE Project Manager.
- It is important that any interaction with the complainant is polite and does not belittle their concern.
- As soon as the complaint is received it will be recorded on the project complaints register (**Appendix C**). Note there are specific requirements for what is to be recorded for any dust complaints in the Dust Management Chapter of this CEMP.
- An initial response will be made and recorded. Depending on the nature of the complaint the initial response could be to immediately cease the type of work pending investigation, replace an item of equipment, apply additional control (e.g. water sprayer for dust), or reinstate a damaged control device. However, in some cases it might not be practicable to provide immediate relief. MBIE and the complainant will be informed of actions taken
- Where the initial response does not address the complaint, the MBIE Project Manager will be informed and will undertake (either themselves or delegated to the Contractor) further investigation, corrective action and follow-up monitoring as appropriate. The complainant will be advised of the outcome of this process
- All actions will be recorded on the project complaints register and the complaint will then be closed

## 14.3 Documentation

All paper/electronic files relating to the CEMP will be kept in the Site Office. This will include:

- The CEMP and associated documentation (e.g. Safety Data Sheets for hazardous substances; type of work-specific noise schedules etc.);
- Consultation and complaints registers
- Monitoring data
- Signed induction records which show that people inducted onto site understand what is required of them under the CEMP

# 15 Updating the CEMP

To maintain relevance, the CEMP must be reviewed when any changes to the methodology are made and updated accordingly. Any changes must be made in accordance with the relevant conditions outlined in resource consent XXX.

This CEMP must be amended if:

- The scope of your works or methodology is going to change
- The mitigation measures are not working sufficiently
- Responsible parties change
- The season or time of day in which the works need to take place changes;
- The area of works increases or changes
- You have identified improvements to the process or mitigation measures;
- The duration of your works changes

Anything else changes that alters the effectiveness of your CEMP to manage the negative environmental effects of your works.

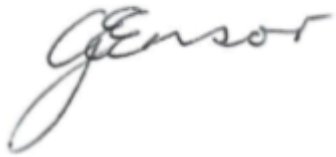
Changes to the CEMP can be logged in **Table 1-2** located in Section 1.

# 16 Applicability

Enviser Limited has prepared this report for the Ministry of Business, Innovation and Employment in accordance with the agreed scope for use in the Fast Track process. No other party may rely on this report, or any conclusions or opinions within it outside of the Fast Track process. The Panel appointed to consider the project application, and other parties involved in the process, may rely on this report for the purpose of the Fast-track Approvals Act 2024.

The opinions and conclusions within this report are based on the information that was viewed during preparation of the report.

Prepared for Enviser by:



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CPEng, CMEngNZ, IntPE

# 17 Appendices

# Appendix A – Risk assessment tools

**Table A-1: Risk assessment matrix**

| | | Impact | | | | |
|---|---|---|---|---|---|---|
| | | **Insignificant** | **Minor** | **Moderate** | **Major** | **Extreme** |
| **Likelihood** | **Almost Certain** | Medium | High | High | Very High | Very High |
| | **Likely** | Medium | Medium | High | Very High | Very High |
| | **Possible** | Low | Medium | High | High | Very High |
| | **Unlikely** | Low | Low | Medium | High | High |
| | **Very Unlikely** | N/A | Low | Medium | Medium | High |

**Table A-2: Risk impact definitions**

| Element | Insignificant | Minor | Moderate | Major | Extreme |
|---|---|---|---|---|---|
| **Environmental** | | Moderate effects on biological or physical environment but little or quickly remedied impact to ecosystem.<br>Short term reversible damage | Serious environmental effects such as displacement of species and partial impairment of ecosystem.<br>Reversible but widespread medium-term impact/damage. | Significant impact on highly valued species or habitats.<br>Reversible, but long-term damage. Some impact not reversible | Long term destruction of highly significant ecosystem or very significant effects on endangered species or habitat.<br>Irreversible damage. |
| **Legislative** | | Minor non-compliance with no legal / regulatory requirements. | Non-compliance with legal / regulatory requirements, or cessation of works. | Non-compliance with enforcement action, possible prosecution. | Prosecution. |
| **Financial** | Operational cost overrun up to $2% | Operational cost overrun of between $2% and $5% | Operational cost overrun of between $5% and $25% | Operational cost overrun of between $25% and $50% | Operational cost overrun greater than $50%. |

| Element | Insignificant | Minor | Moderate | Major | Extreme |
|---|---|---|---|---|---|
| **Reputational / Image** | No or negligible (one-off) media coverage or comment. | Minor short term media coverage with negative correlation and small/local audience | Negative media coverage with broader audience (regional and/or some national coverage) and involving more than one media agent. Short term focus (<5days). | Negative national media coverage with extended coverage (>5days) involving multiple news and media agents. | Sustained negative national and/or international media coverage, with focus investigative segments, re-occurring coverage and involving multiple news and media agents. |
| **Customers** | Negligible or isolated impact to customer(s) with no impact to normal levels of complaints | Impact to small groups of customers with some notable trend/similarity in complaints. | Community group impact with formal/justifiable complaints lodged or complaints in relation to public health. | A number of community groups affected (e.g. with some protest action) | Widespread impact to city population. |

**Table A-3: Risk likelihood definitions**

| Rating | Probability | Description |
|---|---|---|
| **Almost Certain** | > 90% | Virtually guaranteed to occur |
| **Likely** | > 70% | Will probably occur in most circumstances |
| **Possible** | > 40% | Common occurrence |
| **Unlikely** | > 10% | Could occur at some stage |
| **Very Unlikely** | < 10% | Some history of occurrence |

# Appendix B –Inspection Checklists & Logs

## B-1: Dust Log

***Daily Dust Inspection Log***

Date: _____ Time: _____

Inspection by: _____

Current weather conditions (e.g., sunny, cloudy, rainy):_____

Wind speed and direction (e.g., light, moderate, strong):_____

Weather forecast for next 24 hours (e.g., rainy, windy):_____

Area(s) inspected: _____

| Scope of Inspection | Circle Relevant Item | Comments |
|---|---|---|
| Is there visible dust from site work activities, stockpiles, earthworks areas or haul roads? | Y N N/A | |
| Are unsealed surfaces dry and need spraying with water cart? | Y N N/A | |
| Are any exposed earthworks visibly dry and need water spray? | Y N N/A | |
| Stockpiles covered/stabilised where needed? | Y N N/A | |
| Are there any signs of dust going off site as a result of site activities?<br><br>[Inspect land adjacent to the site exits and adjoining roads for the presence of dust deposits.] | Y N N/A | |
| If wind speeds are strong or forecast to be strong (over 5 m/s) are additional inspections, activity restrictions and mitigation measures being put in place? (e.g., increase water application, restrictions on dusty activities) | Y N N/A | |
| Are watering systems (e.g., water carts, wheel wash) operating effectively to minimise dust? | Y N N/A | |
| Are trucks carrying loose (uncovered) material entering or leaving the site? | Y N N/A | |

| Scope of Inspection | Circle Relevant Item | Comments |
|---|---|---|
| How frequently has water sprinkling/spraying been used today (i.e., number of water carts, time, area watered) | | |
| Note and dust control equipment malfunctions (and remedial actions taken as appropriate) | | |
| Any unusual on-site activities today? | | |
| Complaints received / community feedback | | |

**B-2: Sediment plume inspection sheet**

| Sediment Plume Monitoring | |
|---|---|
| **Project name:** | |
| **Inspector:** | |
| **Date:** | |
| **Time:** | |
| **Monitoring period:** | Record start/end time |
| **Weather at time of inspection:** | E.g. clear, cloudy, rain, high winds, other |
| **Type of inspection:** | E.g. scheduled, post-storm |
| **Construction activities prior to monitoring event:** | |
| **Monitoring standard** | **Comments** |
| The exact performance standards will be set either in resource consent conditions or from the permitted activity standard (13.3.13 General Performance Standards) | |
| **Photographs:** | Include plume extents and features of note. |

# Appendix C – Complaint form and register

## D-1: Dust Complaint form

### PART B: Complainant Location Assessment

Date: Time: Assessors Name:

Person spoken to at complaint location: Reason for investigation: COMPLAINT/PROACTIVE

Complaint details (include impacts/effects experienced by complainant:

**INITIAL IMPRESSIONS:**

Type of dust

Time of the intial impression:

Any visible dust deposits: Y/N Plume width (if known):

**VISIBLE DUST DEPOSITS**

Describe approximate quantites and extent

When was surface last cleaned? Frequency of cleaning:

Describe the appearance of the deposits:

| | | | |
|---|---|---|---|
| Colour | | Any odour | |
| Shape | | Water soluble | |
| Size | | Other | |
| Crystalline or powdery | | | |
| Hard, soft | | | |

**Weather Data (see over)**

| |
|---|
| Wind direction: |
| Wind velocity: |
| Cloud cover: |
| Temperature: |
| Rainfall in past 24 hrs: |

Photos Taken: Y/N Samples taken Y/N

Diagram/description of where photos were taken.

Diagram/description of where samples were taken:

Sample collection: Use a small paintbrush (clean) to sweep samples of the dust onto a sheet of paper and then into a clean plastic bag. At least half a teaspoonful will be required for analysis. Lesser amounts may be colected on strips of clear cellotape, which should then be stuck onto sheets of clear plastic to preserve the samples. Label all samples and record date, time, location, etc on a separate sheet of paper if required.

***Based on your assessment on this occasion, which of the following applies:***

- ☐ I did not find any dust
- ☐ I did find dust and consider it would not be objectionable at any location for any duration or frequency
- ☐ I did find dust and consider it would be objectionable if it became continuous
- ☐ I did find dust and consider it would be objectionable if it occurred on a regular or frequent basis
- ☐ I did detect dust and consider it to be objectionable even in periods of short duration.

**FINAL CHECKLIST**

- ☐ Upwind assessment completed. Record details below. If not, detail reason: _____
- ☐ Aerial photo/sketch showing location of assessment and upwind assessment attached
- ☐ Are there potential witness statements to obtain YES/NO

**REMARKS**

## PART C: Off-site dust and 360° assessment

Assess the dust upwind of the suspected source and if possible conduct a 360° sweep around the source assessing the odour at different points

**OTHER POTENTIAL SOURCES** **Time:** _____

Check for road works, ploughing, construction activities, burn-offs, unsealed roads, unsealed sites

**Site 1:**

Wind direction: Wind strength: Wind stability: GPS Loc:
Visible dust: Desciption of dust
Comment:

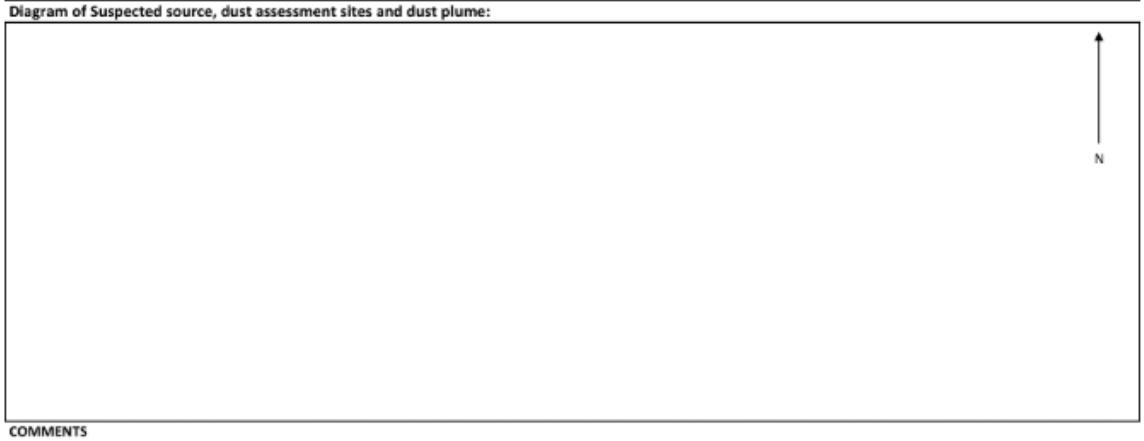
**Site 2:**

Wind direction: Wind strength: Wind stability: GPS Loc:
Visible dust: Desciption of dust:
Comment:

**Site 3:**

Wind direction: Wind strength: Wind stability: GPS Loc:
Visible dust: Description of dust:
Comment:

**Diagram of Suspected source, dust assessment sites and dust plume:**




**COMMENTS**

## PART D: Source On-site Investigation

If source of dust identified, visit site, identify yourself and show warrant. Explain the findings of your investigation to staff.

Date: Time: Source Identified:

Staff spoken to:: Position:

Staff contact phone number:

Current site operations:

Reason/explanation given for dust

Other Comments

Site Sketch (If Required)


SIGNED BY ASSESSOR _____ DATE: _____

## PART E: Dust Reference Sheet

**Definitions**

**Objectionable** The term objectionable is the term used in consent conditions and is an ingredient of any subsequent enforcement action. It is a subjective term and is open to interpretation. There is guidance from case law which defines objectionable as: unpleasant or offensive or repugnant; open to objection or undesirable or disapproved of; noxious or dangerous. A test will be applied by the court that the term objectionable will be as it applies to "the minds of a significant cross section of reasonable people in the community". The assessor must bear this test in mind when completing their assessment.

**Frequency** How often an individual is exposed to dust nuisance events

**Intensity** As indicated by dust quantity/concentration and the degree of nuisance

**Duration** The length of the particular dust event

**Character** How objectionable the dust is, having regard to the nature of the dust

**Land Beaufort Wind Scale**

| B. No. | Description | How to Recognise |
|---|---|---|
| 0 | Calm | Smoke rises straight up |
| 1 | Light Air | Smoke drifts |
| 2 | Light Breeze | Wind felt on face; leaves rustle |
| 3 | Gentle Breeze | Flags flap; twigs move all the time |
| 4 | Moderate Breeze | Papers blow; small branches move |
| 5 | Fresh Breeze | Small trees sway |
| 6 | Strong Breeze | Large branches move, wind whistles |
| 7 | Near Gale | Whole trees sway |

**Measuring Temperature**

Use descriptions below or obtain local meterological data, especially temperature from websites such as www.metservice.govt.nz

| |
|---|
| Cold |
| Cool |
| Mild |
| Warm |
| Hot |

**Measuring Cloud Cover**

| Okta No. | Description |
|---|---|
| 0 | Clear Sky |
| 1 | Sunny |
| 2 | Mostly sunny |
| 3 | |
| 4 | Half the sky is covered in cloud |
| 5 | |
| 6 | Mostly cloudy |
| 7 | Considerable cloudiness |
| 8 | Overcast |
| F | Fog / Mist |

During the day the sun is always shining, so the amount of sunshine reaching the ground depends on the amount and duration of any cloud cover. The amount of cloud cover is usually given in units called oktas. Each okta represents one eighth of the sky covered by cloud.

**D-1: Complaint register**

To be completed by the Contractor

# Appendix D – Safety Data Sheets

To be completed by Contractor

# Appendix E - Accidental Discovery Protocol

To be added in consultation with Project Archaeologist