

# APPENDIX ELEVEN

## ECOLOGY ASSESSMENT - COASTAL



**To:** Shelly Bay Taikuru Limited

**Date:** 9 September 2021

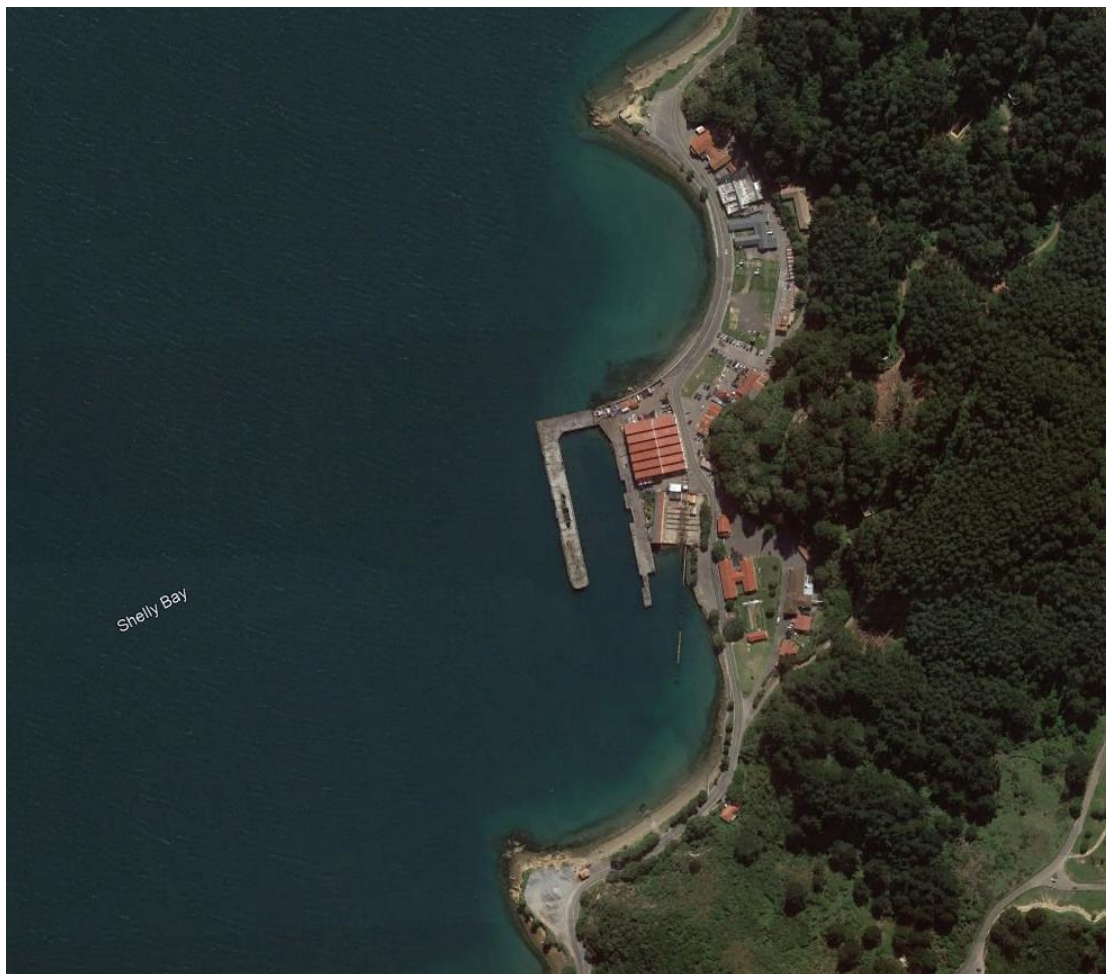
**Attention:** [REDACTED]  
[REDACTED] Limited

**Subject:** Ecological Assessment – Shelly Bay stormwater and construction water

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## Background Information

Shelly Bay Taikuru Limited propose a residential / commercial hub at Shelly Bay, Wellington (Figure 1). As part of the information gathered to inform the resource consents Bioresearches has carried out sites visits and has assessed the values and habitats of the coastal marine area (CMA) of Shelly Bay. The Coastal Ecology report is in progress. This memorandum summarises the ecological environment and values of the coastal environment and discusses the potential ecological effects associated with the discharge of water to the CMA. The discharge of water to the CMA occurs during both construction and operation i.e. construction water and the unlikely discharge of sediment during construction, and the discharge of stormwater from the proposed developed area to the CMA.



**Figure 1. Shelly Bay coastal area**

## Shelly Bay Ecological Environment

The coastal environment of Shelly Bay has been modified, comprised of a series of seawalls, historic reclamation and wharfs. The coastal edge is mainly roadway and hard stand areas with an occasional to rare patch of coastal vegetation, comprised of a mix of pōhutukawa (*Metrosideros excelsa*), native shrubs (shining karamu, *Coprosma lucida*; flax, *Phormium tenax*) and exotic groundcovers (buck's-horn plantain, *Plantago coronopus*; kikuyu grass, *Pennisetum clandestinum*).

Within the CMA the natural environment is a high energy hard shore habitat, with rocky outcrops and mobile cobble beaches, and the seawalls provide a variety of hard substrates, i.e. smooth concrete, rough concrete and boulders, for intertidal and shallow subtidal marine flora and fauna. There were no soft shore habitats or soft deposition areas in the intertidal and shallow subtidal areas, although clean sand was observed at depth under the wharf in the southern embayment.

The fauna was comprised of common rocky shore crustaceans and shellfish dominated by barnacles, (*Chamaesipho columna*, *Epopella plicata*); gastropod molluscs (*Diloma aethiops*, cats eye, *Lunella smaragda*, oyster borer, *Haustorium scobina*) and limpets (*Cellana radians*, *C. ornata* and *C. denticulata*). Blue mussels (*Mytilus edulis*) and green-lipped mussels (*Perna canaliculus*) occurred rarely as isolated individuals or in rare small patches. There were no large resources of shellfish of an attractive edible size.

Additional hard shore species were recorded but all were common rocky shore intertidal species and no 'threatened' or 'at risk' fauna were observed (Freeman *et al.*, 2014)<sup>1</sup>.

The flora was comprised of brown algae (*Carpophyllum maschalocarpum*, *Carpophyllum flexuosum*), corallina turf and paint, and occasional red filamentous algae. The brown algae formed bands of dense forests in the subtidal areas within the northern embayment.

## Construction Water

Earthworks will be required for the construction of the Shelly Bay Taikuru Development.

Earthworks have the potential to have adverse effects on the ecology of the coastal marine area through the discharge and settlement of terrigenous material. Land derived sediment can smother flora and fauna, cause abrasion and damage to soft tissues (gills, tentacles) and reduce water quality and clarity adversely affecting feeding and breeding.

An Earthworks Construction Management Plan (ECMP) has been prepared in accordance with the Masterplan Resource Consent for the Shelly Bay Taikuru Development, with additional details included to satisfy Greater Wellington Regional Council (GWRC) requirements<sup>2</sup>. This ECMP provides measures to minimise the discharge of sediment and minimise potential adverse effects of the environment. These measures include the principles of erosion and sediment control, with a combination of recommended

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<sup>1</sup> Debbie Freeman, Kareen Schnabel, Bruce Marshall, Dennis Gordon, Stephen Wing, Di Tracey and Rod Hitchmough 2014. Conservation status of New Zealand marine invertebrates, 2013. New Zealand Threat Classification Series 9. 20 p.

<sup>2</sup> Envelope Engineering (2021a) Earthworks and Construction Management Plan. Shelly Bay Taikuru. Prepared for Shelly Bay Taikuru Limited, Project 1098-01 September 2021. 22pp.

methodologies including (but not limited to), silt fences, topsoil bunds, decanting earth bunds, sediment control ponds, filter socks, stabilised entrances, contour drains and stormwater flow management. Specifically silt fences will be constructed along the western boundary, adjacent to the coastal edge and the site will be stabilised as soon as practicable with grass seed/hydroseeding and/or metal aggregate.

During construction, the potential for increased erosion and sedimentation from the works into the CMA environments, can be avoided and/or minimised by utilising strict sediment control procedures, as addressed in the ECMP, working to best practice guidance as required by Greater Wellington Regional Council.

The coastal receiving environment at Shelly Bay is a high energy environment, with flora and fauna adapted to strong physical effects of wave action, temperature and water fluctuations, and abrasion and mobilisation of fine material. The shallow subtidal and intertidal flora and fauna recorded are common in hard shore habitats, with no Threatened or 'at risk' organisms recorded during the field surveys.

Provided the ECMP methodologies are well managed, regularly inspected for compliance and adjusted for predicted major rain events, these measures will mitigate potential adverse effects for increased erosion and sedimentation from the works into the coastal environment. Any potential sediment deposition will be minor, mobilised and dispersed quickly, avoiding potential adverse effects of smothering and reducing adverse effects on water quality to very short term and temporary.

## Stormwater

An operational effect of the development is the potential effects of stormwater from the development on the CMA. Stormwater from the site will be managed with Water Sensitive Urban Design measures, including rain gardens and tree pits for treatment of the water, prior to discharge to the CMA. The stormwater design and discharge report for the site (Envelope Engineering, 2021)<sup>3</sup> also addresses the treatment of the stormwater prior to discharge to the CMA and measures taken, such as constraints on roof materials, to avoid potential sources of adverse effects on water quality.

As the stormwater from the site is either uncontaminated or treated (rain gardens, tree pits, filtration through gravel), and the receiving environment is a high energy rocky coastline where dilution and natural breakdown is maximised, the potential for adverse effects on the water quality of the CMA as assessed as negligible.

Yours sincerely  
BIORESEARCHES

[Redacted signature]

[Redacted name] | Marine & Freshwater Biologist  
**Bioresearches, a subsidiary of Babbage Consultants Limited**

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<sup>3</sup> Envelope Engineering (2021b). Shelly Bay Stormwater Design. Stormwater Discharge Report. Report prepared for Shelly Bay Taikuru Limited. Project 1098-01, September 2021. 66pp.