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18 October 2024

Department of Water and Environmental Regulation
Locked Bag 10, Joondalup DC WA 6919

info@dwer.wa.gov.au

To Whom it May Concern,

RE – Dolphin Road, West Busselton - Clearing Referral Application

Please find herein information pertaining to a clearing referral application for a 0.68 hectare (ha) area (refer to **Figure 1**) at the Dolphin Road, West Busselton site on behalf of the City of Busselton (CoB). The Dolphin Road, West Busselton site includes the following land descriptions:

- Lot 62/P220436 -DPLH are in the process of creating a Crown Reserve over UCL Lot 62 and issuing a management order to the City of Busselton. The management order is imminent and will be effective from the day the order is made; **and**
- Lot 60/P194383 - s.46 management order on R22624 to CoB for recreation parklands purpose.

Background

The City of Busselton are implementing the Storm Surge Risk Mitigation (SSRM) project which involves Coastal Sand Dune Resilience Works. The project seeks to mitigate the risk of coastal flooding associated with tropical cyclone storm surges to the City of Busselton.

The City of Busselton, in the southwest Western Australia, is characterised by a low lying residential area (typically 2-3m above sea level). The low lying nature of the area deems it highly vulnerable to the impacts of ex-tropical cyclones drifting south on the WA coastline. The north-facing and shallow Geographe Bay accentuates oceanographic impacts of these events, and storm surges in excess of 1 meter occur regularly.

On sandy coastlines, coastal dunes provide an important protective barrier against coastal erosion and inundation by providing a reservoir of sand for waves to erode during storms. The dunes lining the north facing, sandy Geographe Bay coastline are low (1-2m). However, they provide valuable protection for public infrastructure, coastal roads and residential areas along the Bay. Protection provided by the sand dune is dependent on its volume and height. The dune shape is influenced by establishing vegetation, which enhances the deposition of sand and dune growth. Low points within the dune may provide a pathway for flood waters to inundate. Therefore, identifying low points within the dune system to rehabilitate may provide a method to mitigate against coastal inundation.

The scope of the Dune Resilience Works project is to enhance the capacity of the coastal dunes to resist erosion by increasing the volume of degraded low-lying dunes, and profiling their surface to provide more

undulating dune crests and swales. Beach sand for dune rebuilding will be imported to the dunes or relocated from adjacent beaches where ongoing accretion occurs. Selective planting of native species will be undertaken to both increase the resilience of the dune surface to erosion, and to restore or enhance the ecological function of the coastal dune habitat (refer to **Appendix A**).

The Dolphin Road, West Busselton site has been identified for the dune resilience works due to proximity to residential areas and the inadequate foredune structure.

A detailed site visit has been undertaken within the broader dune area at the Dolphin Road site to determine suitable areas to undertake dune profiling and revegetation to improve the condition of the dunes.

Works involving soil disturbance have been limited to areas identified as being in a 'Completely Degraded' to 'Degraded' condition (Keighery 1994) (refer to **Plate 1** and **2**), noting the following:

- Small machinery will be used to establish/profile the dunes;
- Any substantial plants within these Degraded areas will be left in place, with works taking place around them. It is important to retain any large shrubs or trees to reduce erosion and assist with dune stability;
- Degraded vegetation will be left in place to provide an organic substrate for dune planting, and to control weeds; and
- The completed works will enhance the ecological function of the coastal dunes, and their resilience to erosion.

Plate 1: Proposed dune profiling area at the Dolphin Road site.

Plate 2: Proposed dune profiling area at the Dolphin Road site, all mature vegetation will be retained.

For the purposes of this clearing referral application, in accordance with the *Guideline: Native vegetation clearing referrals* (DWER 2021), the following criteria have been assessed:

Criterion 1: The area proposed to be cleared is small relative to the total remaining vegetation

The vegetation complex mapped as occurring within the site is the Quindalup Complex, which has approximately 60.6% of its original 58 780 ha pre-European extent remaining, and 8.38% of its original extent occurs on lands with some level of protection (Government of Western Australia 2017). The national objectives and targets for biodiversity conservation in Australia have a target to prevent clearance of ecological communities with an extent below 30% of their pre- European extent remaining. The vegetation association is mapped as retaining greater than 30% of its pre-European extent, denoting that it is well represented.

While the subject site is identified as being located within the 'intensive land-use zone' located in the south-west of WA, less than 1 ha of vegetation is proposed to be cleared, denoting compliance with this criterion. Furthermore, the area will be completed revegetated.

Criterion 2: There are no known or likely significant environmental values within the area

In consideration of the very high degree of weed incursion and lack of native vegetation the subject site is considered to be in a 'Completely Degraded' to 'Degraded' condition.

The foredune vegetation is predominately comprised of weed species with occasional native foredune species which are common (i.e. *Ficinia nodosa, Spinifex hirsutus and Leucopogon parviflorus*) and do not provide habitat for conservation significant fauna species.

The *Geomorphic Wetlands of the Swan Coastal Plain* dataset indicates that there are no wetlands or watercourses occurring within the subject site.

The subject site is not mapped as being located within a Public Drinking Water Supply Area or a Conservation Area.

The subject site is located within a high risk land/soil degradation area, however, soil disturbance works are very limited and will be comprised of improving the resilience of the dunes (i.e. making them less susceptible to erosion) which will include infill with sand and subsequent revegetation of the dune area.

In consideration of the above, the proposed clearing is compliant with this criterion.

Criterion 3: The state of scientific knowledge of native vegetation within the region is adequate

The foreshore location is not associated with any conservation significant flora or vegetation. The vegetation within the application area is predominantly comprised of a variety of coastal weed species. This denotes compliance with the above criterion.

Criterion 4: Conditions will not be required to manage environmental impacts

The clearing footprint has been specifically designed to target areas in a 'Completely Degraded' to 'Degraded' condition only. Not all vegetation within the nominated clearing footprint will be cleared, as this area provides a worst case scenario. The works will be undertaken with small machinery to limit accidental clearing and upon completion of ground disturbing works, the dunes will be revegetated with native species. No management measures are required to enable the clearing and therefore compliance with this criterion is achievable.

Avoidance and Mitigation Measures

Ground disturbing works associated with the dune resilience project will be limited to areas identified as being in a 'Completely Degraded' to 'Degraded' condition, any medium to large size shrubs within the disturbance footprint will be retained. Furthermore, all ground disturbing works will be undertaken with an environmental consultant onsite to guide the disturbance footprint with a view to avoiding existing native vegetation as far as practicable.

Upon completion of the dune profiling works, the City of Busselton will revegetate the dunes with native species.

Summary

The above assessment of the proposed clearing demonstrates that the clearing may be assessed as a clearing referral. Furthermore, given the degraded condition of the vegetation within the subject site and the history of anthropogenic disturbances, it is anticipated that there will be no residual impacts that will require the implementation of offsets.

I trust this information is sufficient for your purposes. Should you have any queries or require further information, please do not hesitate to contact the undersigned.

FIGURES

PROJECT	Coastal Dune Resilience - Broadwater
DRAWING TITLE	Figure 1 - Clearing Area
CLIENT	City of Busselton

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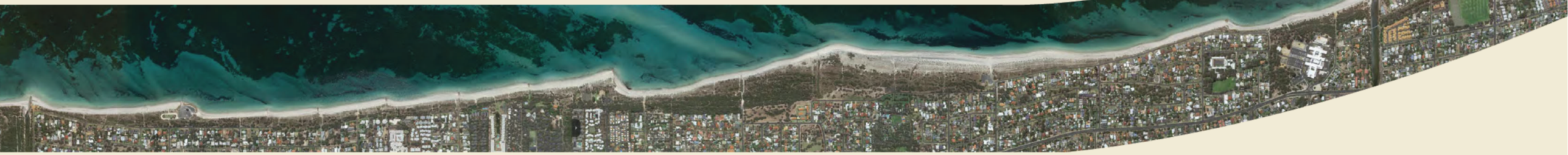
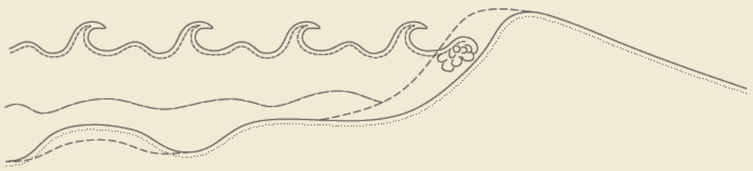
Project Number	2493	Designed	PN
Drawing Number	Figure 1	Drawn	PN
Revision	A	Checked	
Date	18/10/2024	Approved	
Sheet 1 of 1		Local Authority	City of Busselton

APPENDIX A – DUNE CONCEPTS

SHORE COASTAL

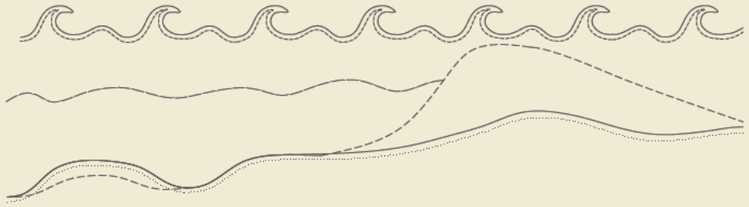
COASTLINE AT PRESENT





a DUNE EROSION

b DUNE OVERTOPPING



c DUNE COLLAPSE

Drawing 01-01 Coastal Dunes - Modes of Failure

Geographe Bay Coastline

SHORE COASTAL

a Storm Surge Event May 2020

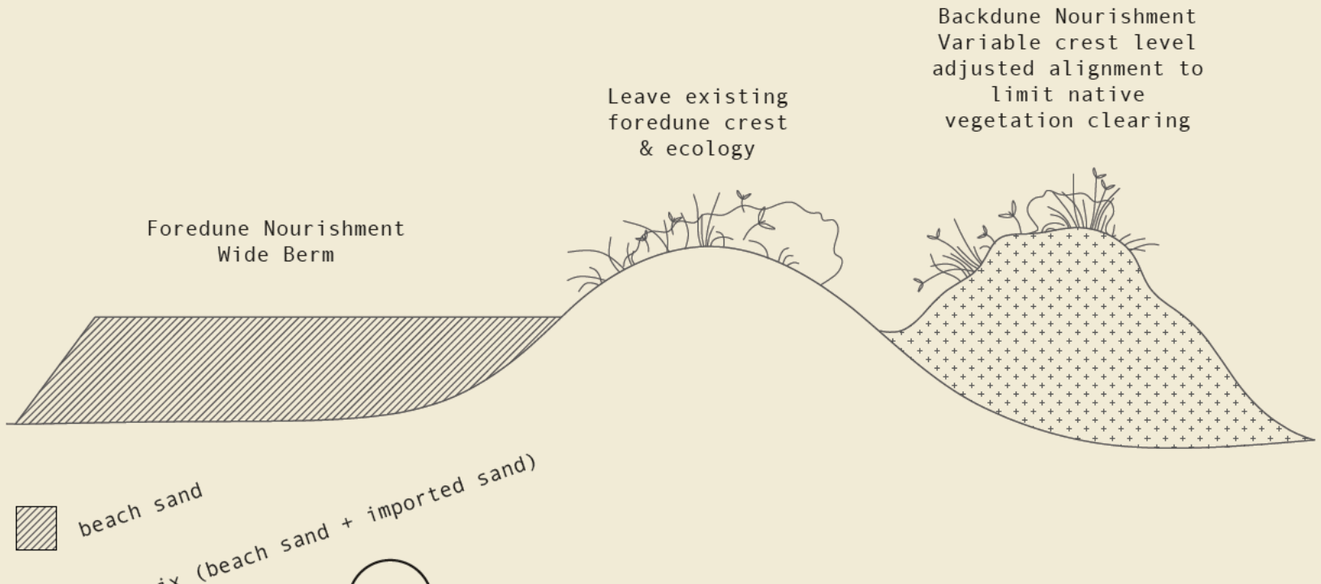
b Dune Collapse

c Margaret St after Rehabilitation

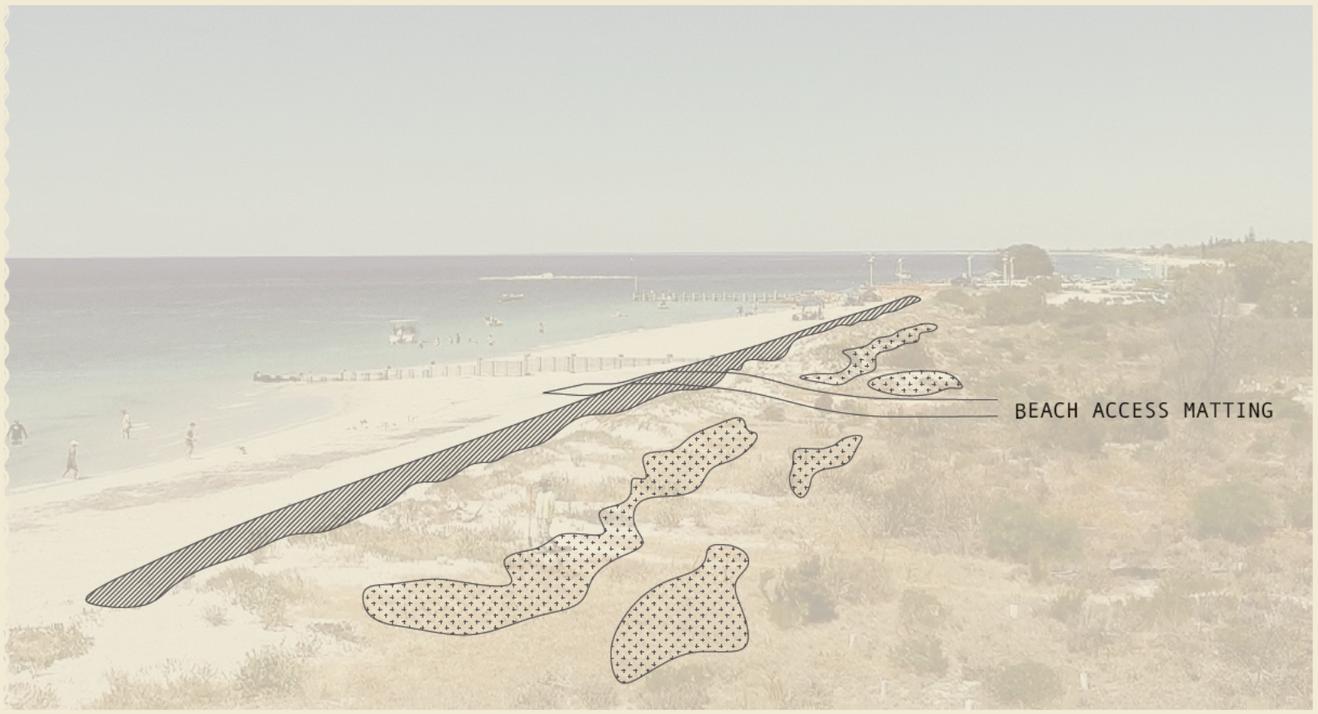
Drawing 01-02 Margaret Street - Completed Coastal Dune Resilience Project

Geographe Bay Coastline

SHORE COASTAL



c DUNE REHABILITATION CONCEPT



b Ecological Assesment

a Problem
- Dune Overtopping
- Vegetation Loss
- Risk of Dune Collapse

Drawing 01-03 West Abbey - Coastal Dune Resilience Project Concept

Geographe Bay Coastline