[redacted]

17 December 2024

Department of Water and Environmental Regulation
Locked Bag 10, Joondalup DC WA 6919
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To Whom it May Concern,

RE – East Busselton - Clearing Permit Application

Please find herein information pertaining to a clearing permit application for a 0.98 hectare (ha) area at East Busselton on behalf of the City of Busselton. The clearing area includes the following land descriptions:

- Lot 5030 On Plan 8815
- Lot 4124 On Diagram 19461
- Lot 4303 On Plan 6309
- Lot 4339 On Plan 6436
- Lot 512 On Deposited Plan 408686
- PIN 11436261
- PIN 11436264
- PIN 11436265
- PIN 12142496
- PIN 12142499

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 East Busselton site has been identified for the dune resilience works due to proximity to residential areas and the inadequate foredune structure.

A flora and vegetation survey (Plantecology 2024) (refer to **Appendix B**) has been undertaken within the broader dune area at East Busselton to determine suitable areas to undertake dune profiling and revegetation to improve the condition of the dunes. It was noted that the subject site does not contain any flora or vegetation of conservation significance (Plantecology 2024).

Works involving soil disturbance have been limited to areas identified as being in a 'Degraded' condition (refer to **Plates 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;
- 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 East Busselton site.

Plate 2: Proposed dune profiling area at East Busselton site.

Avoidance and Mitigation Measures

Ground disturbing works associated with the dune resilience project will be limited to areas identified as being in a '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.

In relation to erosion, the dune will be covered by coir matting and coir logs which are pinned down and also secured at the toe. Presently this will occur by end-March 2025. This will limit wind erosion prior to, and following planting. An example from the Broadwater prior to planting is provided below in **Plate 3.**

Plate 3. Coir matting to prevent wind erosion.

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

Summary

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.

Should you have any queries or require further information, please do not hesitate to contact the me.

Yours sincerely,

[redacted]

APPENDIX A – DUNE CONCEPTS

SHORE COASTAL

COASTLINE AT PRESENT

a DUNE EROSION

b DUNE OVERTOPPING

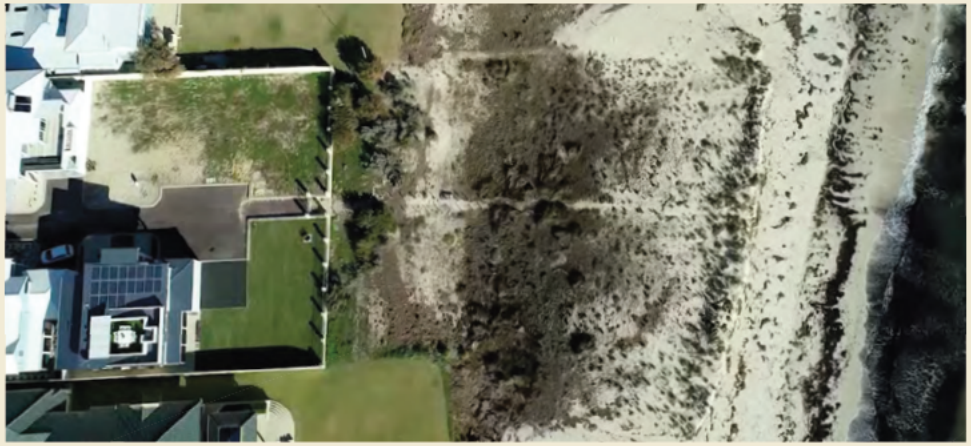
c DUNE COLLAPSE

Drawing 01-01 Coastal Dunes - Modes of Failure

Geographe Bay Coastline

SHORE COASTAL

a Storm Surge Event May 2020



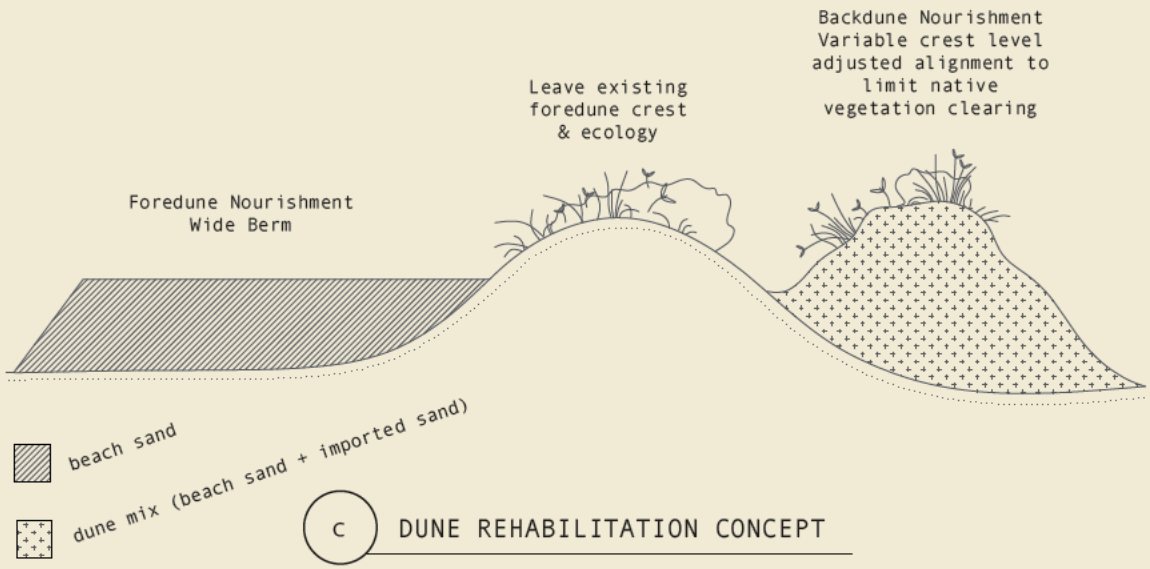
b Dune Collapse

c Margaret St after Rehabilitation

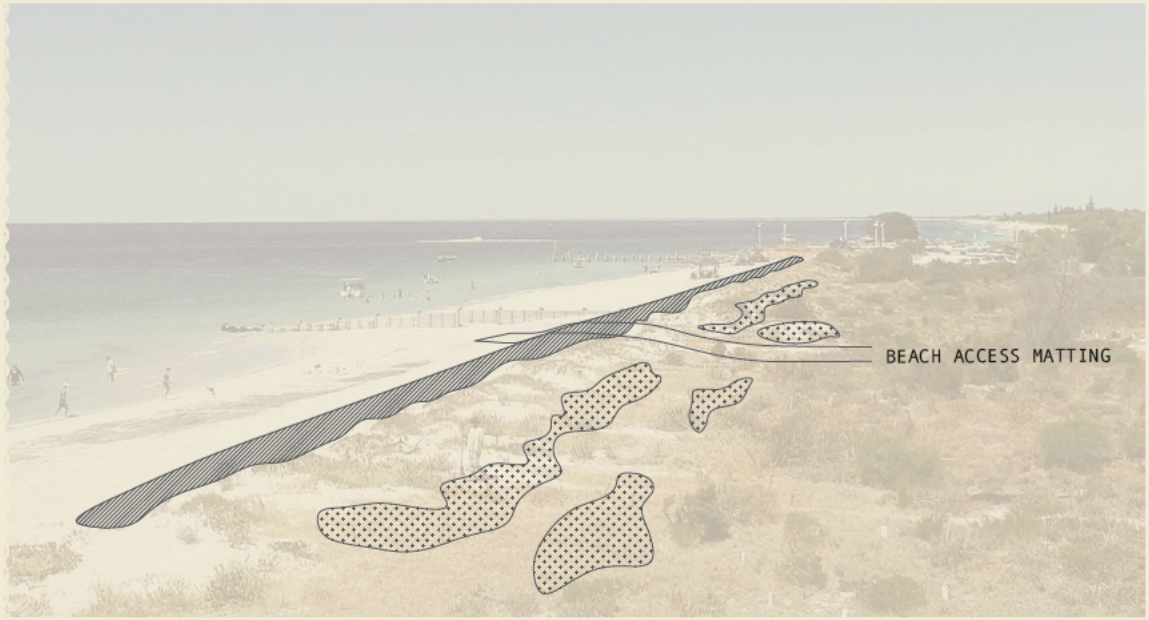
Drawing 01-02 Margaret Street - Completed Coastal Dune Resilience Project

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

APPENDIX B – FLORA SURVEY