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**Mission Beach Clump Point  
Boating Infrastructure  
Project:  
Vegetation Clearing Plan**

MGN Civil


# Document Control Summary

## NRA Environmental Consultants

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Report Summary	
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<b>Abstract</b>	This Vegetation Clearing Plan (VCP) and Rehabilitation Plan have been prepared for MGN Civil for use on the Mission Beach Clump Point Boating Infrastructure Project. The VCP describes the further survey requirements prior to clearing, areas of vegetation to be cleared and methods to be employed. The Rehabilitation Plan sets out objectives and methods of rehabilitation on the site.

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# 1. Introduction

MGN Civil (on behalf of the Department of Transport and Main Roads) are undertaking construction works as part of the Clump Point Boating Infrastructure Project (the Project) at Mission Beach (**Figure 1**). The Project will involve the following works:

- construction of a new detached breakwater
- upgrade of existing breakwater, including removal of existing breakwater return and reclamation of intertidal and subtidal land
- upgrade of northern and southern carparks
- upgrade of boat launching facility, including extension of the existing ramp, new heavy-duty boat ramp, and treatment of inner breakwater to bind armour
- construction of a composting toilet
- installation of solar-powered navigational lighting and public access lighting.

The Project requires vegetation clearing, including the permanent removal of marine plants<sup>1</sup>. Project approval under the Queensland *Planning Act* 2016 was granted by the Queensland Department of State Development, Manufacturing, Infrastructure and Planning (SDMIP) on 5 March 2018 (reference: 1711-2484 SDA). The approval includes 16 conditions of development, of which nine relate to the removal, destruction and damage of marine plants<sup>1</sup>.

Approval for the Project was also granted under the Commonwealth *Great Barrier Reef Marine Park Act* 1975 and the Queensland *Marine Parks Act* 2004 by the Great Barrier Reef Marine Park Authority (GBRMPA). Condition 10(x) of this approval (reference: G18/38869.1) states that “a *Vegetation Clearing Plan which identifies the areas of vegetation that will be retained, lost, impacted and rehabilitated*” must be prepared.

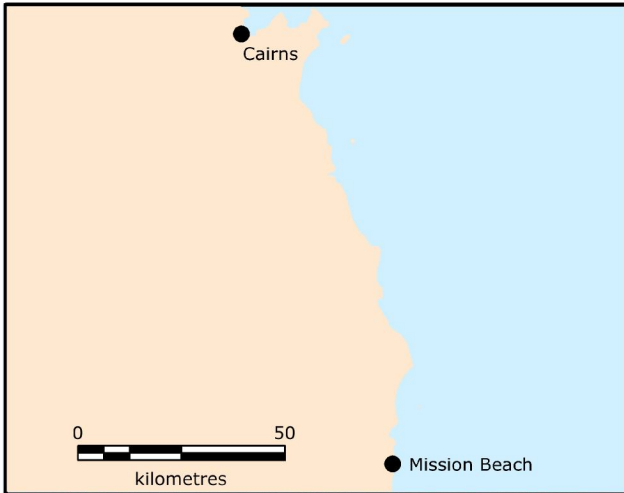
NRA Environmental Consultants (NRA) was commissioned by MGN Civil to prepare a Vegetation Clearing Plan (VCP) and Rehabilitation Plan for the Project. The scope of works (as stated in MGN 2018b) is as follows:

- A VCP must be prepared, clearly identifying:
  - areas of vegetation that will be permanently lost, areas that will be impacted but rehabilitated, and areas that will be retained
  - methodology for clearing, including staging and equipment to be used
  - measures for retaining topsoil and vegetation material for use in mulching.
- A Rehabilitation Plan must be prepared, including:
  - long-term rehabilitation objectives
  - species intended to be used for rehabilitation.

Both the VCP and Rehabilitation Plan are presented in this document as **Section 2** and **Appendix A**, respectively.

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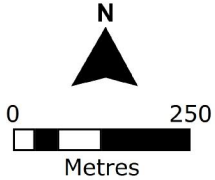
<sup>1</sup> Marine plants as defined under the Queensland *Fisheries Act* 1994.



**Figure 1:** Location of Clump Point Boating Infrastructure

Project: Mission Beach Clump Point Boating Infrastructure Project: Vegetation Clearing Plan

 Project area



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## 2. Vegetation Clearing Plan

### 2.1 Objective

This VCP should be read in conjunction with the *Construction Environmental Management Plan* (MGN 2018b), *Construction Methodology* (MGN 2018a), *Technical Specification MRTS51 Environmental Management* (TMR 2018b) and *Annexure MRTS51.1* (TMR 2018a).

The objective of the VCP (as per MGN 2018b) is to retain vegetation communities outside of the Project footprint, in as natural a condition as practicable, and ensure they do not suffer community collapse.

The performance criteria for this objective include:

- no net loss of vegetation outside of the Project footprint
- no occurrence of new weeds or diseases in adjoining vegetation.

### 2.2 Clearing areas

The following areas of vegetation, presented on **Figure 2**, will be permanently cleared:

- mangrove communities (marine plants protected under the Queensland *Fisheries Act* 1994) within the footprint of the expanded carpark and roadway
- littoral rainforest communities within the footprint of the expanded carpark and roadway
- non-remnant vegetation associated with the toilet block construction (southern carpark).

A portion of the non-remnant vegetation cleared in associated with the toilet block construction will be rehabilitated (**Figure 2**). All other areas of vegetation will be retained.

### 2.3 Prior to vegetation clearing

Prior to vegetation clearing works, the following actions/activities are required.

- A protected plants survey:
  - A survey must be undertaken of the proposed clearing impact area by a suitably qualified botanist in accordance with the Queensland *Nature Conservation Act* 1992 (NC Act) to identify the presence or absence of threatened flora species.
  - If the flora survey does not detect any Endangered, Vulnerable or Near Threatened (EVNT) plants in the clearing impact area or the impacts on EVNT plants can be avoided (*ie* clearing will not take place within 100 m of the EVNT plants), a clearing permit is not required but an exempt clearing notification must be submitted to the Queensland Department of Environment and Science within one year of the survey being undertaken and at least one week prior to the clearing commencing.
  - If EVNT plants are detected within the clearing impact area (*ie* clearing will take place within 100 m of EVNT plants) then a protected plants clearing permit is required. The application for a clearing permit must include the flora survey report, and an impact management report. The State government's assessment period for a clearing permit is up to 40 days.
- A pre-clearance survey for fauna breeding places and roosting places for colonial fauna species.

- Written notice to [notifications@daf.qld.gov.au](mailto:notifications@daf.qld.gov.au), when works that will disturb marine plants are due to start:
  - Notice should be provided 5 - 20 business days prior to commencement of works.
- Establish vegetation clearing boundaries (**Figure 2**) with appropriate signage at regular intervals and visible markings (eg high visibility tape, barricade webbing):
  - Mark the boundary of the approved marine plant component of the development with corner pegs and/or buoys.
  - Ensure that all operators are aware of these boundaries.

## 2.4 During vegetation clearing

### 2.4.1 Timing

Clearing of marine plants must be avoided between November and February to minimise impacts on fisheries resources.

### 2.4.2 Clearing method

Vegetation clearing should be undertaken as follows:

- Employ erosion and sediment control management measures as detailed in the Erosion and Sediment Control Plan (ESCP) (NRA 2019).
- Mangrove trees will be cut at ground level using a chainsaw/mechanical cutters and hand tools, leaving roots in situ to prevent disturbance to PASS (potential acid sulfate soils).
- Clearing of the littoral rainforest will be completed with heavy machinery and assistance from a chain saw operator:
  - Clearing to occur in a manner that avoids tree-fall impacts on native vegetation outside the development footprint.
  - Felled material will be chipped.
- Cleared marine plants and other material used in the development (eg debris, construction material, soil) will be removed from the intertidal zone.
- All vegetation cleared during works must be carried to the northern carpark area and mulched.
- Mulch stockpiles should be:
  - located away from concentrated drainage flows, the drip line of retained trees and, as far as practicable, away from water bodies.
  - maintained weed and pest free.
- Mulch should be removed from site and managed as green waste (eg re-used, if appropriate to do so, or disposed of at an appropriate location).
- No vegetation is to be burned as a form of removal or disposal.

### 2.4.3 Topsoil preservation

Topsoil should be retained as detailed below.

- All topsoil disturbed during construction must be retained in a banded and covered stockpile on-site and used either in rehabilitation works, or disposed of off-site at an appropriate location.
- Topsoil and subsoil should be stockpiled separately.
- Topsoil from the marine environment and topsoil from the terrestrial environment should be stockpiled separately.



- Locate stockpiles away from existing vegetation and as far as practicable, from waterways.
- Install drainage control upslope of the stockpiles to divert water around the material (*eg* diversion drain/bank), and sediment control measures around the base of the stockpiles to capture material mobilised during rainfall events.
- Stockpile material loosely, avoid compaction.
- Topsoil and subsoil stockpile heights should not exceed 2 m.
- Surplus soil reserves to be removed from site and disposed of at a suitable location.

#### **2.4.4 Monitoring**

Monitoring should be undertaken during (and after) vegetation clearing and, at minimum, include:

- weekly site inspections to verify the adherence to the limits of clearing and to identify evidence of weeds, pests, disease and/or unauthorised native vegetation mortality.

### **2.5 After vegetation clearing**






Upon completion of vegetation clearing works:

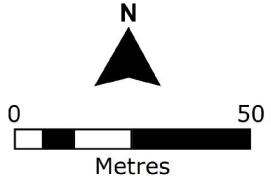
- areas for rehabilitation must be rehabilitated in accordance with the Rehabilitation Plan (**Appendix A**).
- provide written notice to [notifications@daf.qld.gov.au](mailto:notifications@daf.qld.gov.au)
  - Notice should be provided within 15 business days of completion of construction works that disturbed marine plants.



**Figure 2:** Clump Point vegetation clearing and rehabilitation areas

Project: Mission Beach Clump Point Boating Infrastructure Project: Vegetation Clearing Plan

-  Development footprint
- Permanent vegetation removal**
-  Littoral Rainforest
-  Mangroves
-  Non-remnant
- Rehabilitation areas**
-  Turf



Source: © MGM Civil (2018), Google Earth 2019

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### 3. References

MGN 2018a, *Construction Methodology*, Revision B, MGN Civil, December 2018.

MGN 2018b, *Mission Beach Clump Point Boating Infrastructure Project: Construction Environmental Management Plan*. Revision A. MGN Civil, January 2018.

NRA 2019, *Mission Beach Clump Point Boating Infrastructure Project: Erosion and Sediment Control Plan*, report prepared by NRA Environmental Consultants for MGN Civil, January 2019.

TMR 2018a, *Annexure MRTS51.1 (July 2018) Environmental Management, Specific Contract Requirements*, Department of Transport and Main Roads, July 2018.

TMR 2018b, *Technical Specification, Transport and Main Roads Specifications MRTS51 Environmental Management*, Department of Transport and Main Roads, July 2018.

# Appendix A: Rehabilitation Plan

# 1. Rehabilitation Plan

## 1.1 Objective

This Rehabilitation Plan should be read in conjunction with *Technical Specification MRTS16 Landscape and Revegetation works* and *Annexure MRTS16.1* (TMR 2018a, b<sup>1</sup>).

The objectives of the Rehabilitation Plan are to ensure the following after project completion:

- the land is fit for purpose
- it is safe for humans and wildlife
- the land is vegetated with groundcover, which is not a declared weed species and is established
- maintenance requirements beyond the 90 day (minimum) establishment period (TMR 2018b) are no greater than those prior to commencement of works except to control declared weed species, provide irrigation/watering in dry conditions and to mow the turf.

## 1.2 Methods

Rehabilitation should commence when areas become available after clearing and construction (nominally within one month of cessation of works in an area). The following rehabilitation works should take place:

- Areas disturbed in the vicinity of the toilet block (southern carpark) will be rehabilitated in accordance with the landscaping requirements for the project (TMR 2018a, b).
- Areas disturbed by the construction activities, and which will not be landscaped, will be stabilised by cover with infrastructure (eg bitumen/concrete/compacted gravel) or rock protection.
- Tidal land surfaces disturbed during construction must be promptly restored to pre-work profiles.
- Drainage in the works area is to be restored as close to pre-works condition as possible. Where not practicable, drainage is to be designed to avoid waterlogging and death of adjoining vegetation and/or causing accelerated erosion.

### 1.2.1 Turf establishment

Rehabilitation in the vicinity of the toilet block (southern carpark) will involve turf establishment.

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<sup>1</sup> TMR 2018a, *Annexure MRTS16.1 Landscape and Revegetation Works, Specific Contract Requirements*, Department of Transport and Main Roads, July 2017.  
TMR 2018b, *Technical Specification, Transport and Main Roads Specifications MRTS16 Landscape and Revegetation Works*, Department of Transport and Main Roads, July 2017.

## Prior to turf application

The following tasks should be completed prior to turf application:

- Prepare a Soil Management Plan in accordance with TMR (2018b) specifications, which include:
  - calculation of soil volumetrics, including topsoil requirements and limitations
  - soil testing to identify soil characteristics and determine amelioration types and rates
  - appropriate management of soil throughout construction to reduce the risk of erosion or vegetation failure.
- Select a suitable supplier and suitable species for turf establishment:
  - Preferred perennial grass species (FNQROC 2017<sup>2</sup>) include:
    - Green Couch (*Cynodon dactylon*)
    - Broad Leaf Buffalo (*Axonopus compressus*)
    - Blue Couch (*Digitaria didactylia*)
    - if native species are required for turf, then the use of Manila grass (*Zoysia matrella*) is recommended.
  - Turf specifications should be in accordance with TMR 2018b, as follows:
    - have a minimum 30 mm depth of sod
    - be in a healthy condition and show signs of active growth
    - be free from prohibited or restricted biosecurity matter, pests, diseases and matter toxic to plant growth
    - be true to the form of the specified species.
- Plan the timing and management of turf procurement.
- Prior to the commencement of ground preparation operations, the area shall be in a weed-free condition. Weed control methods in accordance with TMR 2018b include:
  - manual application of herbicide from knapsack or similar applicator
  - manual methods, including removal and disposal of weeds.
- Amelioration agents, where specified in the Soil Management Plan, shall be spread over the subsoil surface at the specified rates prior to subsoil operations.
- Subsoil operations shall occur immediately after the application of amelioration agents:
  - Subsoil operations include ripping, cultivating or roughening in accordance with TMR 2018b.
- Topsoil shall be installed within three days of the completion of the subsoil operations.
- Topsoil should be uniformly applied (FNQROC 2017):
  - to provide an average thickness of 50 mm with a minimum compacted thickness of 25 mm at any location
  - graded to even-running contours, so that no ponding or waterlogging occurs across the surface of the grassed area
  - ensure that any topsoil imported to site for use in revegetation is weed and pest free.

## During turf application

During turf application the following tasks should be completed (TMR 2018b):

- Turf shall be installed within two days from the completion of the topsoil operations.

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<sup>2</sup> FNQROC 2017, *FNQROC Development Manual: Specification S8 Landscaping, Version 03/17*, Far North Queensland Regional Organization of Councils 2017.

- Turf shall be delivered within one day of cutting, and installed within two days of cutting.
- Turf shall be installed:
  - on the day turf is delivered to site
  - by spreading fertiliser over the topsoil and raking the surface smooth
  - the prepared surface should be moistened with a solution of water and wetting agent prior to laying turf
  - by laying rolls parallel to the contour, in a staggered brick pattern
  - by watering, within 2 hours of installation, with a solution of water and wetting agent until the topsoil layer is moist. Watering shall be applied in multiple applications to ensure surface erosion does not occur.
- If necessary, erect exclusion fencing to protect the rehabilitation areas from pests, and native animals and to control pedestrian access.

### **After turf application**

For a minimum 90 day establishment period<sup>3</sup> after the application of turf (TMR 2018b):

- Turfed areas should be fertilised, as required, to ensure grass health and achieve rehabilitation objectives.
- Watering must be applied in accordance with minimum watering schedules and rates in sufficient quantities to ensure soil moisture is maintained.
- Turfed areas shall be maintained weed-free.
- An environmental performance report should be prepared on a fortnightly basis (MGN 2018<sup>4</sup>) including details on:
  - rehabilitation activities
  - success of grass species
  - sightings of weeds, disease, pests and/or adjoining native vegetation mortality.

The establishment period shall be completed once the turfed areas have met the following criteria (TMR 2018b, FNQROC 2017):

- an even green colour with a dense continuous sward over the whole area
- no signs of nutrient or water deficiency
- shall be top-dressed and contain no uneven jointing in pedestrian areas
- have a healthy root system that has penetrated into the ground so that the turf cannot be easily lifted
- mowed/slashed at a height of 30 mm in accordance with TMR (2018b) specifications
- free of weeds, stones, sticks and other deleterious material.

A post-works report is to be completed in regard to the viability of turfed areas following turf establishment (MGN 2018).

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<sup>3</sup> The 90 day establishment period, as stated in TMR 2018b, will apply unless a conflicting care and maintenance period is defined in MGN Civil's contract of works.

Contracts consisting only of turf establishment, may omit the 90 day monitoring period that usually follows the establishment period (TMR 2018b).

<sup>4</sup> MGN 2018, *Mission Beach Clump Point Boating Infrastructure Project: Construction Environmental Management Plan*. Revision A. MGN Civil, January 2018.



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