



STORM WATER MANAGEMENT PLAN

Appendix D



PROJECT

**Mission Beach Clump Point,
Boating Infrastructure Project,
Element 1: CN-10244**

**Site Location: Clump Point, Mission
Beach QLD**

**Project Commencement
Date: December 2018
Project Duration: 52 Weeks**

PRINCIPAL CONTRACTOR

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PREPARATION AND AUTHORISATION

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1. INTRODUCTION

1.1. Purpose

This document has been prepared to address the requirements of the Clump Point Construction Environmental Management Plan (CEMP) and has been developed in accordance with the QLD Urban Drainage Manual.

The document provides information on the existing management of stormwater at the site and details actions to be implemented over the construction period. This plan includes:

- Information of the existing site; and
- Measures to control water quality if stormwater is significant and causes discharged off the project site into the marine environment.

This plan does not cover storm water management post construction.

1.2. Objective

The overall objective of stormwater management at the site are:

- To ensure that any stormwater discharges from the site meet appropriate water quality criteria and do not cause significant impacts on amenity, human health or environmental values.

1.3. Locality

Clump Point is a coastal promontory located at the northern extent of the town of Mission Beach. The facility at the point creates a shallow, north-facing coastal embayment known as Boat Bay. The existing infrastructure and facilities at Clump Point consist of the following:

- Two-lane boat ramp;
- Rock breakwater;
- Floating walkway; and
- Car and boat trailer parking facilities.
- The boat ramp and facilities are accessible by Clump Point Road, which joins to Alexander Drive/Porter Promenade.

1.4. Project Construction Overview

The Project consists of the following works:

- Construction of a new detached breakwater; (Construction - part wet and dry season)
- Upgrade of existing breakwater, including removal of existing breakwater return and reclamation of intertidal and subtidal land; (Construction - part wet and dry Season)
- Upgrade of lower carpark; (Construction - dry season)
- 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 - dry season)
- Construction of a composting toilet; and (Construction - dry season)

- Installation of solar-powered navigational lighting and public access lighting (Construction dry season)

1.5. Responsibilities

The implementation responsibilities of this Stormwater Management Plan are summarised in Table 2.

Table 1 -Stormwater Management Plan Implementation Responsibilities.

Company Position	Responsibilities
Project Manager and Construction Manager	<ul style="list-style-type: none"> • Implement the Stormwater Management Plan • Ensure the management plan is being complied with by all personnel and contractors • Participate in compliance audits and inspections • Participate in incident and exceedance investigations
All MGN Staff, and Sub Contractors	<ul style="list-style-type: none"> • Comply with the requirements of the Stormwater Management Plan • Comply with Work Instructions given by Managers • Report all storm water incidents to Construction Manager

2. SITE CHARACTERISTICS

The Clump Point site is located at the Northern End of Mission Beach QLD. The site occupies an area of both native vegetation and existing infrastructure as described in (1.2 Locality) and is relatively flat with a general slope less than 1-2% towards the north eastern corner of the point. The majority of stormwater generated under existing conditions is overland flow as there are no rivers or creeks in the area. Currently the site has a low level of formal drainage infrastructure for stormwater.

The site is susceptible to extremely high rainfall during the wet season (November to April), however most works will be undertaken in the dry season (May – October).

Figure 1 - Site Location



3. EXISTING WATER QUALITY

Table 2 below shows the baseline water quality data in both the bay and open ocean water.

Table 2 – Pre-Construction Baseline Water Quality

Parameter	Boat Bay WQOs*	Open coastal waters WQOs*
<i>Aquatic ecosystem EVs</i>		
Dissolved oxygen	85-105% saturation	95 / 100 / 105% saturation
pH	6.5 / 7.3 / 8.4	8.1 / 8.3 / 8.4
Ammonia nitrogen	<15 µg/L	1 / 3/ 7 µg/L
Oxidised nitrogen	nd	0 / 0 / 1 µg/L
Particulate nitrogen	nd	≤20 µg/L
Organic nitrogen	135 µg/L	nd
Total nitrogen	160 µg/L	76 / 105 / 140 µg/L
Filterable reactive phosphorus	5 µg/L	0 / 2 / 3 µg/L
Particulate phosphorus	nd	≤2.8 µg/L
Total phosphorus	20 µg/L	8 / 14 / 22 µg/L
Chlorophyll-a	2.0 µg/L	<0.45 µg/L
Turbidity	10 NTU	0.6 / 0.9 / 1.8 NTU
Secchi depth	1.0 m	≥10 m
Total suspended solids (TSS)	nd	≤2 mg/L

It is noted that in reports in 2014 and 2016 carried out by BMT WBM turbidity shows great variability and was most influenced by wind driven resuspension of sediment in the near shore environment. Not sediment runoff from land. The studies also suggest that turbidity readings will likely exceed pre construction parameters if samples are conducted on windy days.

4. CONSTRUCTION STORMWATER MANAGEMENT

The construction phase of the project will continue to see sheet flow of storm water as per existing conditions during events that deliver high rainfall as there are no defined creeks or channels.

There are however, additional elements during the construction phase that will increase the risk of poor water quality. Table 3 highlights the increased risk elements that if left unmitigated would allow these pollutants into the marine environment in storm events.

Table 3 - Construction Storm water risks

Increased risk	Potential Source
Litter	Paper, construction packaging, food scraps, off-cuts, etc.
Sediment	Unprotected exposed soils and stockpiles during earthworks and building works.
Hydrocarbons	Fuel and Oil spills, leaks from construction equipment and temporary carpark areas.

To mitigate storm water impacts on litter and hydrocarbons, MGN has developed a Spills and Waste Management Plan and a Refuelling plan that outlines the physical and procedural controls that will be implemented to reduce litter and hydrocarbons being transported into the marine environment.

To mitigate storm water impacts on sediment, MGN has developed an Erosion and Sediment Control plan that outlines the physical and procedural controls that will be put in place to reduce sediment being transported into the marine environment.

Table 4 outlines objectives and actions to manage the transportation of pollutants by Storm water into the marine environment.



Objective (s)	1. To appropriately manage stormwater and water quality during construction activities		
Actions	Requirements	Responsibility	Timing
	<p>Work activities are scheduled around favourable climatic conditions. I.e. Dry season</p> <ul style="list-style-type: none"> • Carpark removal and resealing; • Excavations; and • Concreting • Vegetation clearing 	Construction Manager	Throughout construction works
	All earthworks and site clearing are undertaken in accordance with the Erosion and Sediment Control Plan, Construction Methodology and Vegetation Clearing Plan.	Construction Manager, Project Manager	Throughout construction works
	<p>Erosion and sediment control devices are to be constructed / installed in accordance with the Erosion and Sediment Control Plan.</p> <p>Examples include;</p> <ul style="list-style-type: none"> • stockpile bunding; • waste storage and timely removal; • hydrocarbon bunding 	Project Engineer	Prior to works being undertaken.



	Inspection of sediment fences and erosion and sediment control structures / devices on a weekly basis as well as after any rain event exceeding 25mm in 24hrs	Project Engineer	Prior to works being undertaken.
	Any failure in the stormwater system shall be immediately rectified to prevent uncontrolled discharge from the site	Construction Manager	Throughout construction works
Performance Indicators	No polluted stormwater leaving site	Construction Manager	Throughout construction works
	No visible turbid plumes as a result of the works	Construction Manager	Throughout construction works
	No oil slicks or similar as a result of the works	Construction Manager	Throughout construction works
Monitoring	Water Quality as per Water Monitoring Plan. Pre and post storm event visual inspections of erosion and sediment infrastructure.	Project Engineer	Throughout construction works.
Reporting	Reporting of any waterway sedimentation/ Fuel and chemical spills / contamination to Construction Manager	All staff	Throughout construction works
	If pollutants enter water in the GBRMP, notification to GBRMPA must also be made. For major pollution events Project Manager to phone the 24/7 Pollution Hotline - 1300 130 372	Project Manager	Throughout construction works



Corrective Actions	Review procedure or installation causing loss and rectify immediately	Project Manager	Throughout construction works
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