

Belmont Desalination Plant Construction Landscaping Sub-Plan

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Revisions and Distribution

Revisions

Draft issues of this document are identified as Revision A, B, C, etc. Upon initial issue (generally Contract Award) this will be changed to a sequential number commencing at Revision 0. Revision numbers will continue at Revision 1, 2, etc.

Rev	Date	Prepared By [Name]	[Signature]	Reviewed By [Name]	[Signature]	Approved By [Name]	[Signature]	Remarks
A	20/05/2024	Brendan Rice	BR	Amber Grant	AG	Jason Nisbet	JB	Submission to HWC and ER
B	12/08/2024	B Rice	BR	A Grant J Nisbet	AG JN	S MacNish	SM	Update post modification
0	23/09/2024	B Rice	BR	A Grant J Nisbet	AG JN	S MacNish	SM	Update following HWC and ER comments
1	28/10/2024	B Rice	BR	A Grant J Nisbet	AG JN	S MacNish	SM	Update following DPHI Comments
2	01/11/2024	B Rice	BR	A Grant J Nisbet	AG JN	S MacNish	SM	Update following DPHI Comments round 2

Distribution List

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Glossary/ Abbreviations

Abbreviations	Expanded text
Assessment Documentation	<p>Hunter Water Corporation Belmont Desalination Plant Environmental Impact Statement, prepared by GHD dated 2019</p> <p>Hunter Water Corporation Belmont Desalination Plant Amendment Report and Submissions Report prepared by GHD dated 2020</p> <p>Hunter Water Corporation Belmont Desalination Plant Modification Report Environmental Impact Statement prepared by Jacobs dated 2024</p> <p>Hunter Water Corporation Belmont Desalination Plant Modification Report – Submissions Report prepared by Jacobs dated 2024</p>
CoA	Conditions of Approval
CEMP	Construction Environment Management Plan
DPHI	Department of Planning, Housing and Infrastructure
EIS	Environmental Impact Statement
ER	Environmental Representative
HWC	Hunter Water Corporation
LP	Landscaping Program
REMM	Revised Environmental Management Measures

1. Introduction

1.1. Context

This Landscaping Program (LP) is an appendix of the Construction Environmental Management Plan (CEMP) for the Belmont Desalination Plant Project (The Project).

This LP has been prepared for the Project, to address the requirements of the Minister's Conditions of Approval (CoA), specifically, Condition C21 and C22, the measures listed in the Environmental Impact Statement (EIS) as amended by the Modification Report Submissions Report (known as the Revised Environmental Management Measures (REMMs)), and all applicable legislation.

1.2. Scope of the LP

The scope of this LP is to describe how the proposed landscaping of the site will be monitored during the construction of the Project. Operational monitoring measures do not fall within the scope of the construction phase and therefore are not included in this LP.

This LP has been prepared under and consistent with the CEMP, considering relevant sensitive receivers and construction activities.

Appointed consultants have been engaged to undertake design plans of the rehabilitation / revegetation works for the Project. A copy of this LP will be kept on the premises for the duration of construction.

1.3. Approval, review and modification

This LP will be reviewed by the HWC Environmental Manager (or delegate) and the ER to confirm it is consistent with, and incorporates, all relevant requirements, prior to submission to the Planning Secretary.

Construction of the Project will not commence until the CEMP, including this LP, are endorsed by the ER and approved by the Planning Secretary.

The LP will be implemented for the duration of construction and for any longer period set out in this LP or specified by the Planning Secretary, whichever is the greater. This LP will be reviewed if there are any changes to construction techniques with the potential to affect the landscaping of the site, in consultation with HWC. Minor amendments to this LP will be approved by DPHI as detailed in the CoA.

Any amendments to the LP will be documented in subsequent revisions of this LP. A copy of the updated LP and changes will be distributed to all relevant stakeholders. Site personnel with responsibilities relevant to landscape monitoring will be informed of any amendments to the LP and training provided, where required.

2. Purpose and objectives

The purpose of this LP is to describe how, where and when JH will monitor vegetation planted during construction of the Project including:

- Meet the requirements of the relevant conditions of approval and REMMs for the Project
- Meet any relevant legal and other requirements for the Project.

The LP is based on the assessment documentation for the project.

The key objective of the LP is to ensure that visual and dune degradation impacts are minimised. To aid in achieving this objective all CoA, environmental mitigation measures and licence/permit requirements relevant to landscape management are described, scheduled and assigned responsibility as outlined in:

- Environmental Assessment Documentation
- Infrastructure Approval CoA (SSI 8896)
- Sustainability Strategy
- All relevant legislation and other requirements described in Section 3.1 of this Plan.

3. Environmental Requirements

3.1. Conditions of Approval

The NSW CoA relevant to this LP and their applicability to each stage of the Project are listed in **Table 3-1**. A cross reference is also included to indicate where the condition is addressed in this LP or other project management documents.

Table 3-1: NSW CoA relevant to the preparation of this LP

CoA	Landscape Program CoA	JH Action / Document Reference
C21	<p>Prior to the commencement of construction, a landscaping plan must be submitted to the Planning Secretary for approval. The plan:</p> <ul style="list-style-type: none"> (a) Must include a monitoring program for the revegetation of the dunal system (eastern boundary of the site), southern perimeter, and identify planting opportunities along the northern and western site boundaries; and (b) Should maximise opportunities for visual fragmentation and/or screening of the site from the east and west 	This Plan, specifically Section 4 and Section 5

3.2. Revised Environmental Management Measures

The REMMs relevant to this LP and their applicability to each stage of the Project are listed in **Table 3-2**. A cross reference is also included to indicate where the condition is addressed in this LP or other project management documents.

Table 3-2: REMMs relevant to the preparation of this LP

ID*	Landscape Program REMM	JH Action / Document Reference
TFB20	<p>The construction contractor must engage a suitably qualified bush regenerator with demonstrated experience in native revegetation in coastal areas. The bush regenerator must undertake progressive rehabilitation of the disturbance footprint (including laydown and compound areas) to maximise potential for re-establishment of native vegetation and to minimise the potential for long-term weed issues post-construction. Areas where native vegetation or invasive weeds are removed must be revegetated with species identified in the Native Vegetation Management Plan prepared separately by Hunter Water. The CEMP must detail the bush regeneration contractor to be engaged, stabilisation timeframes and species.</p>	Section 4.1

* These ID codes are for identification only and are not acronyms of any kind.

4. Proposed Revegetation / Rehabilitation

4.1. Management Approach

In accordance with the REMMs, JH will engage a suitably qualified bush regenerator with demonstrated experience in native revegetation in coastal areas. The bush regenerator must undertake progressive rehabilitation of the disturbance footprint (including laydown and compound areas) to maximise potential for re-establishment of native vegetation and to minimise the potential for long-term weed issues post-construction. The bush regeneration contractor will be named following engagement of the contractor. This process has not yet been completed and will be completed prior to construction commencement.

4.2. Beach Dune Restoration

A dune restoration strategy has been developed for the area immediately seaward of the proposed Belmont Desalination Plant by GHD (refer to *Figure 1*). In light of the recent and ongoing dune restoration activities undertaken by HWC and the Belmont Wetlands State Park Trust, further dune restoration activities associated with the development of the Belmont Desalination Plant will be undertaken to supplement the existing and ongoing activities led by HWC.

Dune restoration works will commence within the first three months of construction and continue to be completed throughout construction, with all restoration works to be completed prior to the operation phase.

The scope of work for beach dune restoration (GHD, 2023) is limited to:

- Erosion protection (fencing, other protections) - to be commenced in the first three months of construction.
- Fencing of dune restoration area
- Dune height
- Planting
- Bitou Bush management
- GIS plan and typical section sketch

Dune restoration activities can be expected to improve the ecological value of the dune system and will also provide some reduction in the risk of coastal hazards to the Belmont Desalination Plant including coastal erosion, wave overtopping, coastal inundation, salt spray and windblown sand.

Dune restoration activities to date have been undertaken by HWC in partnership with Belmont Wetlands State Park Trust and Trees in Newcastle. Evidence of dune recovery has been observed in the increased presence of Spinifex and Coastal Wattle. The recovery is a result of the restoration activities implemented to date.

Areas adjacent to the existing Belmont WWTW show more mature growth, particularly within the hind dune where secondary zone species have begun to colonise the dune via self-seeding. Planting will be preferentially undertaken in the secondary and tertiary zone species (Tea Tree, Banksia etc) within bare areas of the hind dunes associated with former access tracks.

Areas to be vegetated in the eastern dune to maximise opportunities for visual fragmentation and screening of the site from the east.

Proposed planting for dune restoration includes:

- Coastal Banksia (*Banksia integrifolia*)
- Coastal Tea Tree (*Leptospermum laevigatum*)
- White Correa (*Correa alba*)
- Mat Grass (*Lomandra longifolia*)
- Beach Spinifex (*Spinifex sericeus*)

Note that Coastal Wattle (*Acacia sophorae*) is not proposed as part of the planting schedule but is expected to self-seed as per establishment within the existing areas of dune restoration.



Figure 1 - Dune restoration strategy

4.3. Proposed Construction Site Landscaping

GHD have prepared a Landscape Plan figure for the Project.

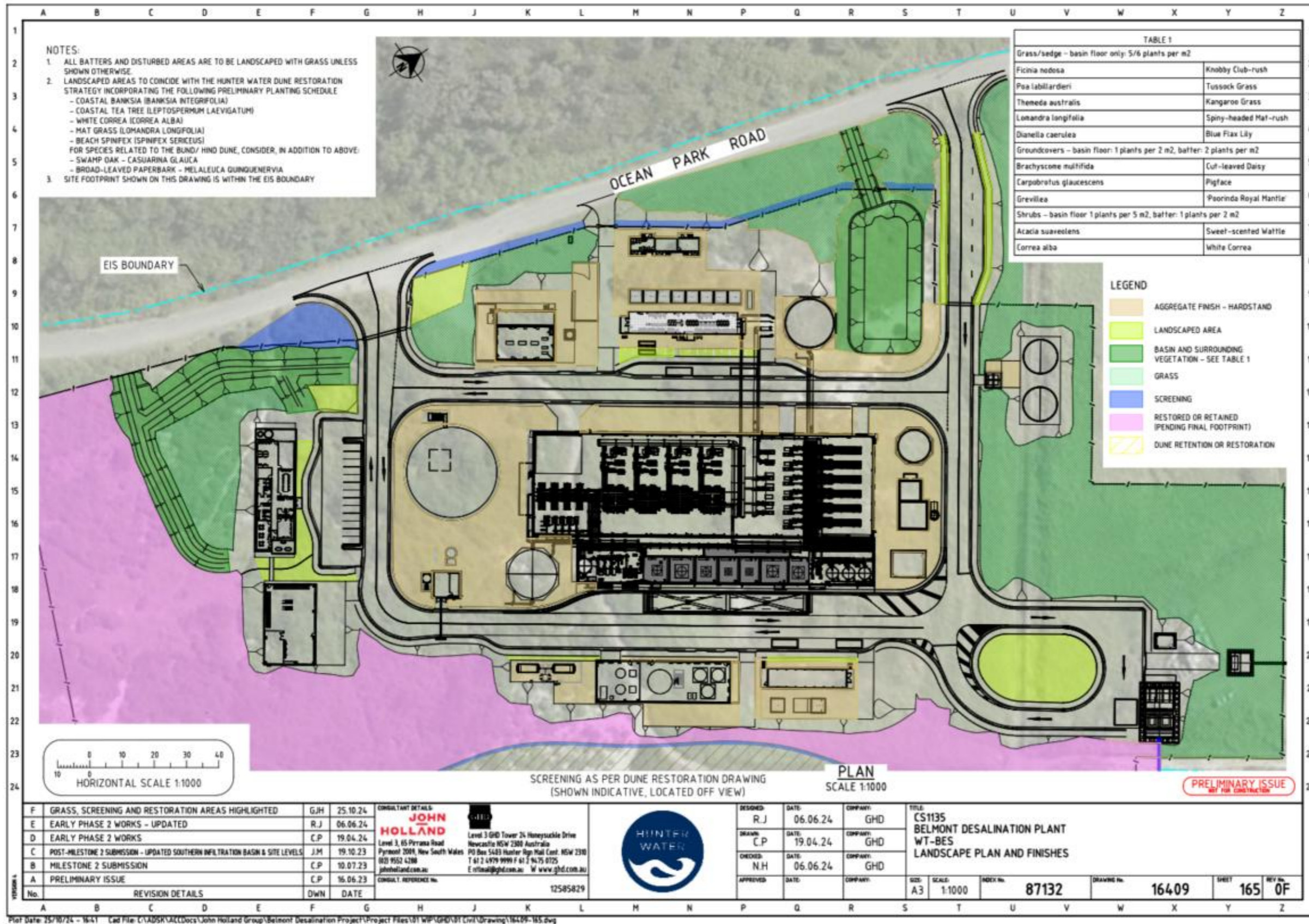


Figure 2

Figure 2 shows the landscaped areas across the site. Areas to be vegetated include the northwestern fence line in order to maximise opportunities for visual fragmentation and screening of the site from the west. The figure provides:

- Proposed finishes across the site, including landscaped areas and vegetation for swale / basin areas;
- Details of species to be planted for Basin / Swale and surrounds vegetation
- Details of species to be planted in other landscape areas

Areas of the Landscaping Plan shown as blank are hardstand / paved areas.

4.3.1. Basin / Swale and surrounds vegetation

Basin / Swale vegetation will be planted per Table 1 of Figure 2 below and includes:

- Discrete species for planting of grass / sedges, groundcovers and shrubs within the basin floor; and
- Density of planting of each species type.

Details are provided in **Table 4-1** below.

Table 4-1: Basin / swale and surrounds species list and densities

Species	Density
Knobby Club-rush (<i>Ficinia nodosa</i>)	5 to 6 plants per m ²
Tussock Grass (<i>Poa labillardieri</i>);	5 to 6 plants per m ²
Kangaroo Grass (<i>Themeda australis</i>)	5 to 6 plants per m ²
Spiny-headed Mat-rush (<i>Lomandra longifolia</i>)	5 to 6 plants per m ²
Blue flax Lily (<i>Dianella caerulea</i>)	5 to 6 plants per m ²
Cut leaved Daisy (<i>Brachyscome multifida</i>)	Floor - 1 plant per 2 m ² Batter - 2 plants per 2 m ²
Pigface (<i>Carpobrotus glaucescens</i>)	Floor - 1 plant per 2 m ² Batter - 2 plants per 2 m ²
Poorinda Royal Mantle (<i>Grevillea</i>)	Floor - 1 plant per 2 m ² Batter - 2 plants per 2 m ²
Sweet-scented Wattle (<i>Acacia suaveolens</i>)	Floor - 1 plant per 5 m ² Batter - 1 plant per 2 m ²
White Correa (<i>Correa alba</i>).	Floor - 1 plant per 5 m ² Batter - 1 plant per 2 m ²

4.3.2. Landscaped areas vegetation

Landscaped areas vegetation will be planted per the notes in Table 1 of Figure 2 below and includes:

- A species list to coincide with the HWC Dune Restoration Strategy incorporating:
 - Coastal Banksia (*Banksia Integrifolia*)
 - Coastal Tea Tree (*Leptospermum laevigatum*)
 - White Correa (*Correa alba*)
 - Mat Grass (*Lomandra longifolia*)
 - Beach Spinifex (*Spinifex sericeus*)

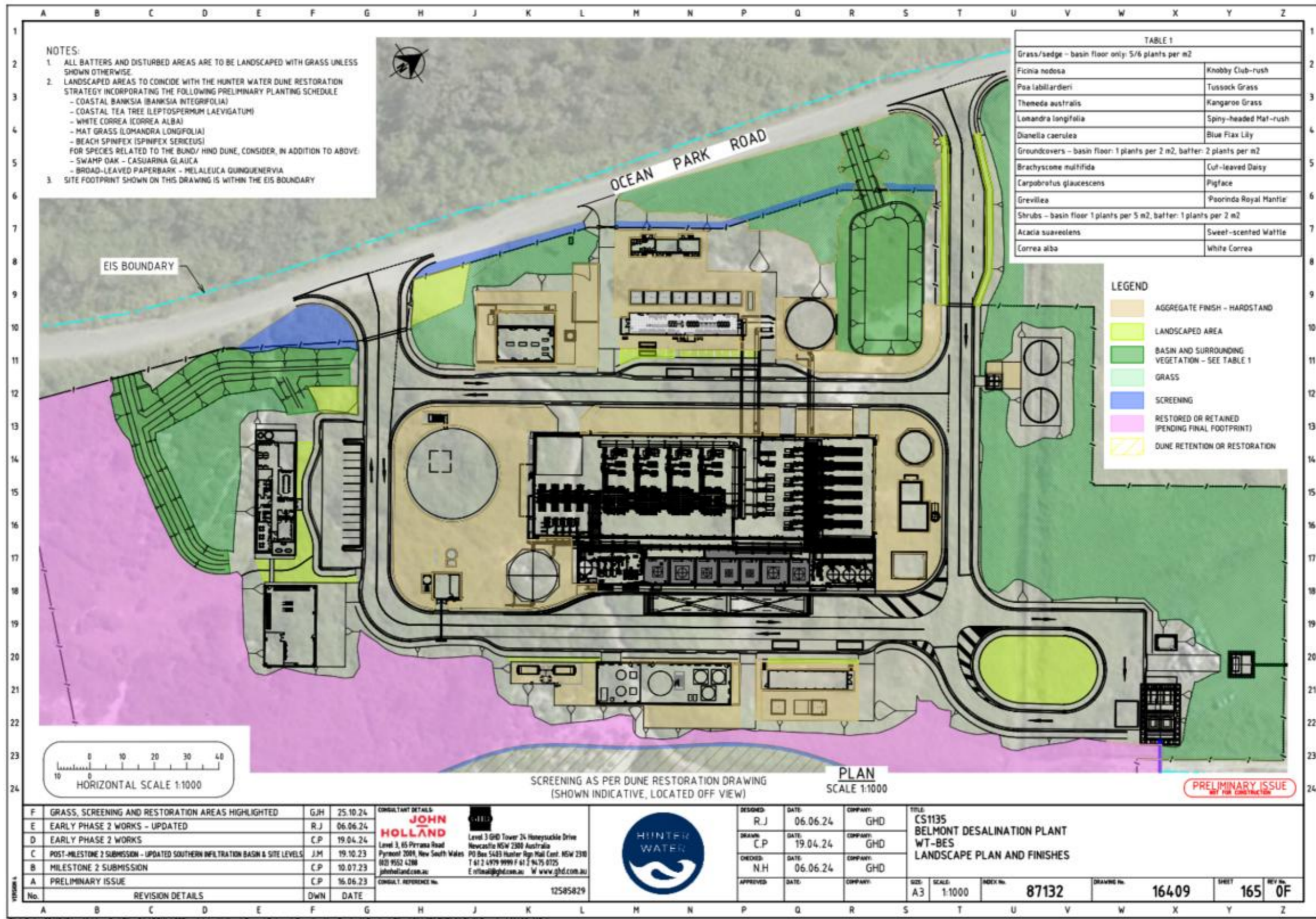


Figure 2 - Landscape plan

5. Monitoring

5.1. Responsibilities

Site personnel or sub-consultants with suitable experience and qualifications will undertake the monitoring outlined in this LP. An overview of aspects and responsibilities is provided in Table 5-1.

Table 5-1: Responsibilities

Aspect	Responsibility
Implementation of Dune Restoration Strategy	<ul style="list-style-type: none"> Project Environment Manager or delegate Appointed Bush Regeneration Consultant
Implementation of Site Landscaping Plan and finishes	<ul style="list-style-type: none"> Project Environment Manager or delegate
Monitoring of revegetation / restoration and landscaping	<ul style="list-style-type: none"> Project Environment Manager or delegate Site foreman

5.2. Monitoring

JH will undertake monitoring activities for landscaped areas for the duration of the construction and commissioning periods.

5.2.1. Dune restoration areas

Following completion of planting activities all new plants shall be watered at least once a week (approximately 5L/m²). Where planting is required to be undertaken during summer months, watering will occur every 2-3 days for the first month. Any plant species which die or are dying and not showing signs of recovery during the construction and commissioning phases shall be replaced with equivalent species and maintained until the completion of commissioning. Re-planting will be undertaken to ensure that the planting densities discussed in Section 4.3.1. Upon the completion of commissioning, the responsibility for maintenance of the landscaped / revegetated areas will become the responsibility of the operational maintenance contractor on behalf of HWC, under operational plans.

Where Bitou Bush is observed within 2 m of any planting works proposed under the dune restoration strategy, Bitou Bush shall be removed and disposed of appropriately.

Where possible, fencing shall be installed to match the existing to close off the dune area (refer to red line in *Figure 1*). Traditional security fencing within the immediate vicinity of the project site is covered under the project construction management plan.

5.2.2. Landscaped areas

Quarterly visual inspection of landscaped areas will be undertaken to assess plant survival rate or dieback rates, weed incursion and any predation. This is in addition to regular weekly environmental inspections that will be undertaken. Weekly environmental inspection will include checking the health of landscaped vegetation and recording results for action on weekly inspection forms. Actions from the inspections will be managed by an action tracking register. Landscaping will also form part of site inspections and audits, as appropriate.

Landscaping areas will be undertaken progressively once works on an area have been completed, until the completion of JH commissioning works.

6. Reporting

In accordance with CoA C22, within three months of the commencement of construction, evidence of the commencement of the works specified in Condition C21 is to be provided to

the Planning Secretary and updates provided on the Proponent's website. This plan will be implemented by JH and landscaping maintained until the end of commissioning.

7. Review and Improvement

7.1. Continuous Improvement

Continuous improvement of this Plan will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives, and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management and performance
- Determine the cause or causes of non-conformances and deficiencies.
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies.
- Verify the effectiveness of the corrective and preventative actions.
- Document any changes in procedures resulting from process improvement.
- Make comparisons with objectives and targets.

The Project Environment Manager (or delegate) is responsible for ensuring stage-specific environmental risks are identified and included in the Project risk register and appropriate mitigation measures implemented throughout the construction (including those contained within this LP), as part of the continuous improvement process. The process for ongoing risk identification and management during construction is outlined in the CEMP.

7.2. LP Updates and Amendments

The processes described in the CEMP may result in the need to update or revise this Plan. This will occur only as needed throughout the duration of construction.

Only the Project Environment Manager (or delegate) has the authority to approve changes to the requirements of this Plan. Minor amendments to the Plan may be approved by the ER in accordance with the CEMP. Amendments not considered minor by the ER need to be approved by the Planning Secretary.

A copy of the updated Plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure