



LANDSCAPE MANAGEMENT PLAN

Concrush Resource Recovery Facility

FINAL

July 2020



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Concrush Resource Recovery Facility

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Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Concrush Pty Ltd

Project Director: John Merrell
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Document Status

Rev No.	Reviewer		Approved for Issue	
	Name	Date	Name	Date
1	Penelope Williams	25 June 2020	John Merrell	25 June 2020
Final	Lachlan Sweeney	7 July 2020	John Merrell	7 July 2020

Table of Contents

1.0	Introduction	1
1.1	Background	1
1.2	Project Staging	2
1.3	Purpose and Scope	3
1.4	Plan Implementation	4
	1.4.1 Responsibilities	4
1.5	Guidelines and Policies	5
1.6	Consultation and Plan Approval	5
2.0	Landscape Planting Treatments	6
2.1	Planting Design	6
2.2	Planting Specifications	6
	2.2.1 Maintain and Enhance	6
	2.2.2 Soil and mulch	6
	2.2.3 Plant Species	8
	2.2.4 Planting Requirements and Densities	9
3.0	Monitoring and Maintenance Measures	10
4.0	Review and Improvement	11
5.0	References	12

Figures

Figure 2.1	Concept Landscape Management Plan	7
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Tables

Table 1.1	Proposed Project Components	1
Table 1.2	Project Approval Conditions relevant to LMP	3
Table 1.3	Roles and Responsibilities	4
Table 2.1	Indicative species list	8

Appendices

Appendix 1	Consultation	
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1.0 Introduction

1.1 Background

Concrush Pty Ltd (Concrush) is a construction and demolition recycling facility located on part of Lot 2 DP 220347 at 21 Racecourse Road, Teralba, New South Wales (NSW). Concrush was established in 2002 after recognising the need for a construction and demolition recycling facility in the Lake Macquarie region. Concrush is a locally owned and operated business based at Teralba.

The Concrush facility provides cost effective options for recycling of concrete, asphalt, bricks, pavers, roof tiles, wall and floor tiles, rock, sand, plasterboard and green waste for domestic households and commercial industry. These materials are then recycled into specification and non-specification quality products such as: roadbase, drainage aggregates, pipe bedding and haunch, packing fines, decorative aggregates and mulches. These products are used within the civil and construction industries or for commercial, domestic and household applications.

Concrush received State Significant Development Consent (SSD 8753) (the Project Approval) to increase the processing and storage capacity of the existing resource recovery facility on 27 March 2020 under Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act), for which the Minister for Planning is the consent authority.

The Project Approval allows Concrush to increase onsite processing up to 250,000 tonnes per annum (tpa) and store up to 150,000 tonnes onsite. The approved operations will be constructed over two stages to allow for the approved Project elements to come online as required in line with increasing production.

A description of the individual elements of the approved operations including additional plant and equipment are summarised in **Table 1.1**.

Table 1.1 Approved Operation Components

Component	Description
Hardstand areas	Hardstands will be constructed in material processing areas and stockpile areas (will require some site levelling). Hardstands will consist of 200 mm thick recycled roadbase). Internal access roads will have a two coat seal.
Material Processing Areas	Processing areas for the crushers and screens.
Waste and Product Stockpile Areas	Waste and product stockpiles will be established with a stockpile height of up to 10 metres (m). It is anticipated that up to 150,000 t of material will be stored onsite.
Upgrade of existing facilities	The existing weighbridge and office will be upgraded, and the existing lunch room and maintenance shed will be relocated to facilitate the new site layout.
Waste Tracking System	The existing Wasteman software will be used to track the details of all inbound and outbound loads
Production Compound	The relocated lunch room, toilet and maintenance shed will be grouped together to form a compound for production staff.
Retail Area	This area will be restricted to light vehicles and small trucks and will include an area for tipping and an area containing concrete bays of products for sale.
Storage Bays	Concrete storage bays will be constructed using 1 m ³ concrete blocks.
Concrete Walls	A 2 m high concrete wall will be constructed close to the southern Project site boundary using 1 m ³ concrete blocks. The wall will prevent stockpiled material

Component	Description
	encroaching on swale drains and moving offsite. Concrete walls may also be used to delineate other areas of the site.
Green Waste Pasteurisation	An aeration system using four electronically driven and computer controlled fans to push air through movable perforated pipes underneath the pasteurisation piles will be implemented in the green waste area. This system allows more control of oxygen levels in the pasteurisation process compared to the tradition turnover process.
Wheel Wash	A vehicle wheel wash bay will be constructed immediately after the exit weighbridge to reduce tracking of material onto public roads.
Concrete Washout Bay	A wet concrete washout bay will be constructed consisting of a bunded, impermeable area with an isolated catchment. Wet concrete and agitator washout will be captured in the concrete washout bay.
Water Management System	The existing Water Management System (WMS) will be upgraded involving resizing of existing sediment basins, new sediment basins, swale drains and a leachate dam and artificial wetland to treat nutrient runoff. Water tanks and associated poly pipe and pumps will be installed to allow collection and re-use of stormwater for dust suppression.
Trommel Screening Machine	Addition of a Trommel screening machine for sorting of green waste.
Primary Jaw Crusher	The primary jaw crusher will be replaced on a like for like basis as part of future operations.
Perimeter Landscaping - Mounds, Fencing and Lighting	Landscape mounds will be established on the perimeter to limit visibility. 1.8 m high security fencing and security lighting are also to be installed.
Utilities	The existing Ausgrid connection is via a power pole in the north east corner of the site. The power supply will be extended to the south west corner of the site via an underground connection.
Pug mill	A pug mill may be installed in the future to allow fast mixing of materials to produce products such as road base.
Ballast wash facility	A processing area may be dedicated to a ballast wash facility to allow for processing of rail ballast.

1.2 Project Staging

The volume of materials recycled and products sold will increase over a period of time up to the maximum approved production level of 250,000 tpa. To most efficiently meet the increase in demand for recycling of materials and Concrush products, the approved operations will be staged by undertaking some elements of the site upgrade early and implementing other approved operational elements as required when a certain production level is reached. Stages 1 and 2 and the associated approximate production level will be implemented as follows:

Stage 1

The key elements of Stage 1 are:

- Construction of all hardstand areas (processing areas and waste and product stockpiles)
- Creation of the retail area
- Widen site access and install sliding gate
- Re-configuration of existing exit only weighbridge to allow for vehicle exit and entry to facilitate entry to the site

- Construct production compound by relocating maintenance shed and lunch room and toilet
- Augment the existing water management system to incorporate the leachate dam, constructed wetland, additional sediment basins, drainage swales, flood mitigation bund, water storage tanks and sprinkler systems
- Establish wheel wash, landscaping mounds, fencing, power line extension and lighting
- Two coat seal of internal access roads
- Replace primary jaw crusher.

Stage 2

Stage 2 will be implemented when production reaches approximately 200,000 tpa up to the approved limit of 250,000 tpa. The key elements of Stage 2 are:

- Relocation of the existing exit weighbridge, construction of a new entry weighbridge and establishment of the new weighbridge office
- The existing entry weighbridge becomes the retail area weighbridge and the existing weighbridge office becomes the retail area weighbridge office
- Construction of a new exit onto Racecourse Road from retail area for light vehicles (less than 2 t) only
- Establish pug mill
- Establish ballast wash facility
- Establish trommel screening machine for green waste
- Establish aeration system for green waste pasteurisation.

1.3 Purpose and Scope

The purpose of this Landscape Management Plan (LMP) is to detail the species and locations to be planted on-site and to describe the planting, maintenance and monitoring requirements for the landscaping works. This LMP addresses the relevant requirements of the Project Approval. The Project Approval conditions and related Environmental Impact Statement management commitments relevant to this plan are provided in **Table 1.3**.

Table 1.2 Project Approval Conditions relevant to LMP

Condition	Requirement	Section/s Addressed
Part B – Specific Environmental Conditions		
Landscaping		
B57	Prior to the commencement of Stage 1 operation, the Applicant must prepare a Landscape Management Plan (LMP) to manage the revegetation and landscaping works on-site, in consultation with Council. The LMP must form part of an OEMP in accordance with conditions C5. The plan must: (a) detail the species to be planted on-site, incorporating locally native species;	Section 2.2.3

B58	(b) describe the monitoring and maintenance measures to manage landscaping works; and (c) be consistent with the Applicant's Management and Mitigation Measures at Appendix 2.	Section 3.0
	The Applicant must: (a) must implement the most recent version of the LMP; and (b) maintain the landscaping and vegetation on the site in accordance with the approved LMP required by condition B57 for the life of the development.	Section 4.0 Section 1.4
Applicant's Management and Mitigation Measures		
Ecology		
Any landscape planting will consist of native species		Section 2.2.3
Visual		
A landscaped 2 m high earth bund will be established along the eastern boundary (southern half) of the site to complement the existing landscaped earth bund present along the northern half of the eastern site boundary. Landscape plantings will consist of locally endemic species.		Section 2.2.3 and Figure 2.1
Additional areas of landscape plantings will be incorporated into the detailed design. This may include tree planting adjacent to the wetland area in the south western portion of the site and potentially incorporating tree planting into the swale drain design along the southern boundary of the site.		Figure 2.1

1.4 Plan Implementation

1.4.1 Responsibilities

Environmental management at Concrush is the responsibility of all employees with the Concrush Director having overall responsibility for environmental management of the operations. Roles and responsibilities for implementation of this LMP for key personnel at Concrush are outlined in **Table 1.2**.

Table 1.3 Roles and Responsibilities

Role	Responsibilities
Concrush Director (Kevin Thompson)	<ul style="list-style-type: none"> • Provide sufficient resources for the implementation of this plan. • Ensure that the requirements of this plan are implemented • Coordinate the review of this plan in accordance with the requirements of the Project Approval.
Business Manager (Helen Milne)	<ul style="list-style-type: none"> • Oversee the implementation of this plan. • Have working knowledge of this plan. • Ensure that maintenance and monitoring is undertaken in accordance with this plan. • Ensure employees are competent through training and awareness programs. • Provide primary contact for complaints and supply follow-up information to any complainant.

Role	Responsibilities
All employees and contractors	<ul style="list-style-type: none"> • Comply with all requirements in this plan. • Report all potential environmental incidents to the Business Manager immediately. • Operate in a manner that minimises risks of incidents to themselves, fellow workers or the surrounding environment. • Follow any instructions provided by the Business Manager or Yard Manager.

1.5 Guidelines and Policies

The Lake Macquarie City Council (LMCC) *Landscape Design Guidelines* (2017) were referenced during preparation of this plan.

1.6 Consultation and Plan Approval

Consultation has been undertaken with LMCC during preparation of the Concrush LMP. LMCC provided input in terms of issues, content and guidelines to be considered in the preparation of the plan. All matters identified by LMCC have been addressed in this plan. A copy of LMCC's correspondence is provided in **Appendix 1**.

Operation of Stage 1 of the Project will not commence until this LMP has been approved by the Planning Secretary.

2.0 Landscape Planting Treatments

2.1 Planting Design

The LMP has been prepared with the intent to reduce the visual impact of the approved operations. The key areas with views towards the site are Racecourse Road and areas further to the east including Bunderra Estate and Boolaroo. Trees and shrubs will be planted within an extension of the existing landscape bund adjacent to Racecourse Road. Other key areas to incorporate plantings will be the drainage swale along the southern boundary of the site and complementary plantings around the wetland area in the south west of the site.

The areas of the site to incorporate landscape plantings are shown in **Figure 2.1**. It is noted that final extent and exact locations of landscape planting areas will be determined by Concrush taking into account any specific design requirements of the Surface Water Management System (SWMS). The final design of the SWMS may determine parameters such as minimum distance from edge of sediment dams for tree plantings. Locations shown on **Figure 2.1** were determined through consultation with SWMS designers at the time of preparation of this plan.

2.2 Planting Specifications

2.2.1 Maintain and Enhance

The LMP seeks to maintain and enhance the existing landscape plantings within the site, particularly those close to the eastern boundary of the site that provide screening of views from Racecourse Road. The existing landscaped bund will be extended to the south adjacent to Racecourse Road taking into consideration any design requirements of the SWMS. The existing plants will be enhanced with supplementary plantings and mulching where appropriate.

Some established landscape plantings of *Casuarina glauca* (Swamp Oak) within the central parts of the site will be removed as part of the site establishment. Where possible these individual trees will be replanted to another part of the site in accordance with **Figure 2.1**.

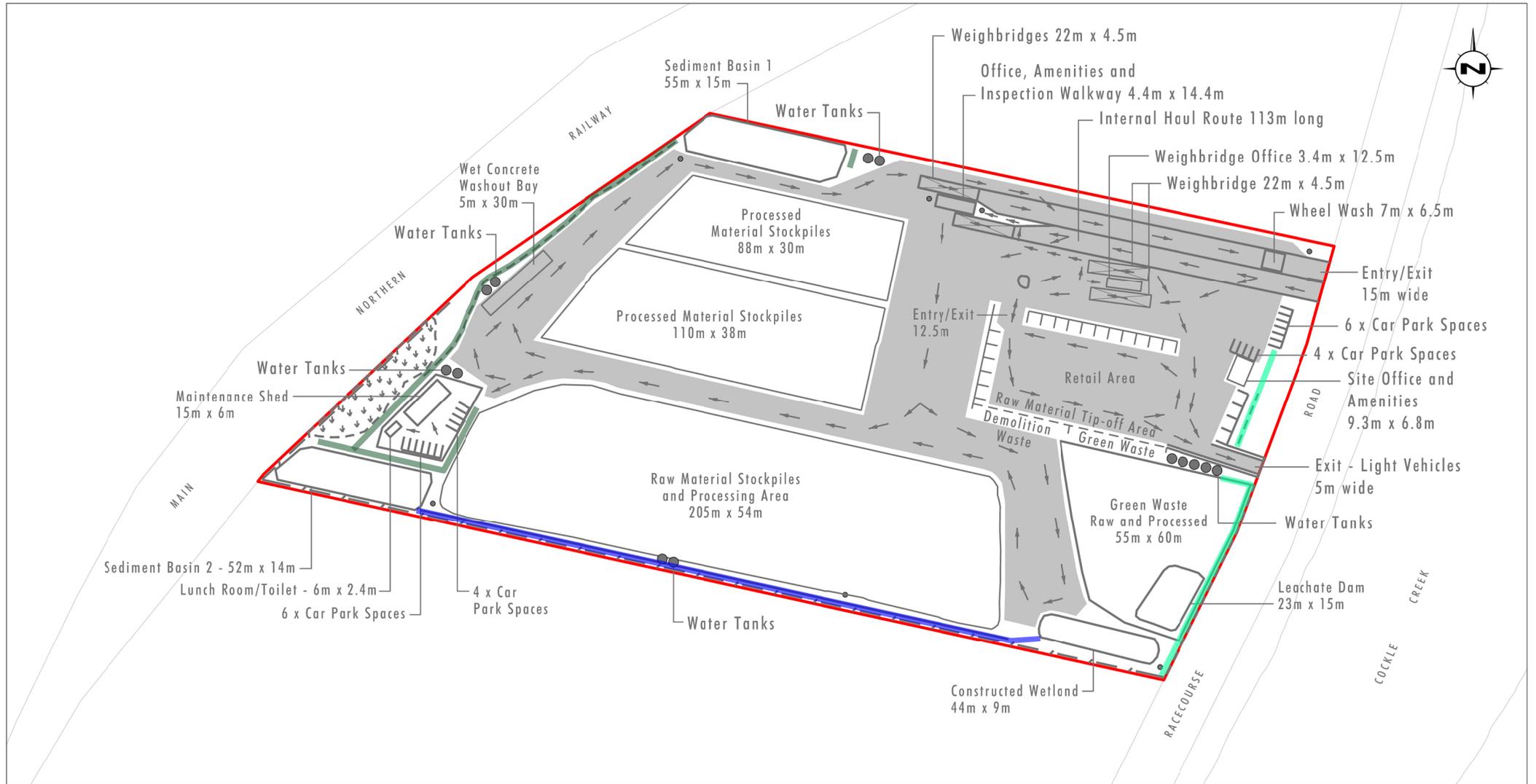
2.2.2 Soil and mulch

Soil in the areas to be planted are to be tested prior to planting to determine chemical and structural suitability for establishing and maintaining plant growth. Alternatively, or where soils are deemed unsuitable, soil is to be imported and placed within areas proposed for landscaping. Imported soils are to be equal to *Australian Standard Soils for landscaping and garden use* (AS 4419-2003) and generally placed at depths of 300 millimetres (mm).

Fertiliser is to be incorporated into the topsoil layer at the manufacturers specified rate.

A chipped timber mulch complying with *Australian Standard Composts, soil conditioners and mulches* (AS 4454-2012) is to be used in areas indicated on **Figure 2.1**. Mulch is not to be used in swale drain planting areas. Mulch is generally applied to a depth of 100 mm and raked to provide an even surface. Mulch is to be clear of plant stems.

Mulch is to be free of weeds, pathogens and other contaminants.



Data Source: Concrush (2019)

Legend

- Project Site
- Stage 2 Conceptual Layout
- General Planting - trees, shrubs, groundcovers
- Landscape Screening - trees, shrubs, groundcovers
- Swale Drain Planting - groundcovers

0 25 50 100m
1:2 000

FIGURE 2.1

Concept Landscape Management Plan

2.2.3 Plant Species

Plants have been selected for three key purposes: screening, establishment and protection of swale drains and general planting. Plant species have been selected based on knowledge of original vegetation communities that would have occupied the site and reference to LMCC's *Landscape Design Guidelines* (2017). An indicative species list is presented in **Table 2.1**. Other species from LMCC's guideline can be selected but must be suitable for the intended planting type.

Table 2.1 Indicative species list

Botanical name	Common name	Form	Planting type
Casuarina glauca	Swamp Oak	Tree	Screening
Angophora floribunda	Rough-barked Apple	Tree	Screening
Eucalyptus robusta	Swamp Mahogany	Tree	Screening
Elaeocarpus reticulatus	Blueberry Ash	Tree	Screening
Acmena smithii	Lilly Pilly	Tree/shrub	Screening
Banksia integrifolia	Coastal Banksia	Tree/shrub	Screening
Banksia serrata	Old Man Banksia	Tree/shrub	Screening
Callistemon citrinus	Red Bottlebrush	Shrub	Screening / General
Melaleuca thymifolia	Thyme Honey Myrtle	Shrub	Screening / General
Banksia robur	Swamp Banksia	Shrub	Screening / General
Callicoma serratifolia	Black Wattle	Shrub	Screening / General
Dodonaea triquetra	Common Hop Bush	Shrub	Screening / General
Hakea salicifolia	Willow-leaved Hakea	Shrub	Screening / General
Grevillea sericea	White Spider Flower	Shrub	General
Cynodon dactylon	Couch	Groundcover	Swale
Digitaria didactylon	Blue Couch	Groundcover	Swale
Viola hederacea	Native violet	Groundcover	Swale
Dianella caerulea	Blue Flax Lily	Groundcover	Swale / general
Dichelachne crinita	Long Haried Plume Grass	Groundcover	Swale / general
Isolepis nodosa	Knobby Clubrush	Groundcover	Swale / general
Themeda australis	Kangaroo Grass	Groundcover	Swale
Imperata cylindrica	Blady Grass	Groundcover	Swale
Scaevola ramosissima	Snake-flower	Groundcover	General

2.2.4 Planting Requirements and Densities

Plants will be established by direct seeding or the planting of tubestock, except where more advanced plantings are desired. Planting is to take place in Autumn or Spring to avoid extremes in weather. Plants will be sourced as follows:

- Groundcovers – seed/turf roll (some swale species), Viro-Tube, Forestry Tube
- Shrubs - Viro-Tube, Forestry Tube or 140mm(2.5L) pots
- Trees - Viro-Tube, Forestry Tube or 140mm(2.5L) pots.

The general principles for plant selection and planting are as follows:

- Only healthy, actively growing plant stock will be used
- Tubestock will be sourced from a reputable nursery and will be free from signs of disease
- Tree guards to be used for tree and shrub species in the screening and general planting areas
- Where applicable plantings will be staggered, mixed and offset to produce a heterogeneous mix of plantings
- Plants are to watered before and after planting.

The following planting densities will be applied to the different planting types:

- Screening:
 - trees at least 3 m spacings
 - shrubs at 1 - 2 m spacings
 - trees and shrubs can be offset in several rows
- General:
 - Shrubs at 1 - 2 m spacings
 - Groundcovers up to 6/m² or as required to reach desired final density
- Swale:
 - direct seeding or turf rolls (Couch / Blue Couch)
 - 4 - 6 plants per metre squared (m²).

3.0 Monitoring and Maintenance Measures

The post establishment monitoring and maintenance period will be a three month period. The following activities are to be undertaken:

- Apply a minimum of 3 complete watering's at fortnightly intervals for the first 6 weeks of plant establishment where natural rainfall for the fortnight is less than 25mm
- Maintain the general appearance and presentation of the landscape works
- Replace failed, dead and/or damaged plants at a maximum of 4 week intervals as necessary throughout the plant maintenance period
- Treat any evident insect and disease problems
- Replace any missing or damaged tree guards.

Maintenance period criteria

At the end of the maintenance period the following criteria must be met:

- Vegetation is established and well formed
- No evidence of pests, disease or nutrient deficiencies or toxicities
- Plants have root systems that have penetrated into the topsoil such that they not able to be lifted out of the original planting hole.

Ongoing Maintenance

As required by the conditions of consent the landscape plantings will be maintained over the life of the development. Ongoing maintenance will be undertaken as required and include where appropriate the following activities:

- Weeding
- Fertilising
- Replacement of damaged or unhealthy plants
- Implementation of pest and disease control as required.

4.0 Review and Improvement

Ongoing monitoring and review on the performance and implementation of this LMP will be undertaken in accordance with the Project Approval which requires review of the plan within 3 months of:

- The submission of an incident report under condition C10 of the Project Approval
- The submission of an Independent Environmental Audit report under Condition C16 of the Project Approval.
- The approval of any modification of the conditions of consent.
- The issue of a direction of the Planning Secretary under condition A2(b) which requires the strategies, plans and programs required under the Project Approval to be reviewed.

Concrush will notify the Planning Secretary in writing of any review of this LMP. If a review leads to any revisions to this LMP, the revised document will be submitted to the Planning Secretary within six weeks of the review. Updated versions of this LMP will be made publicly available on the Concrush website in accordance with Condition C9 of the Project Approval.

Any non-compliance with this LMP will be dealt with in accordance with conditions C11, C12 and C13 of the Project Approval. This includes notification in writing to the Planning Secretary within seven days of becoming aware of the non-compliance, providing details of the non-compliance, reasons for the non-compliance and matters undertaken to address the non-compliance.

5.0 References

Lake Macquarie City Council (2017) *Landscape Design Guidelines*



APPENDIX 1

Consultation

From: [Glen Mathews](#)
To: [Lachlan Sweeney](#)
Subject: RE: TRIM: 20019 - Concrush Landscape Management Plan
Date: Monday, 25 May 2020 3:07:47 PM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)

Hi Lachlan,

I have received the below response from Council's Landscape Planner.

Issues

To establish vegetation that effectively screens the development from Racecourse Road and the east generally, but in particular Bunderra Estate and Boolaroo suburb. Achieved by revegetation of the existing landscape bund and extended its frontage along Racecourse Road. Use of tree, shrub and understorey plantings. Include tree plantings adjacent to the south western wetland area, incorporate tree plantings into the swale along the southern boundary.

Content

Landscape plans that provide construction level landscape documentation to achieve above. Landscape specification, details and establishment and maintenance notes for the long term management of the landscape and viability of the plantings.

Guidelines

Using endemic vegetation taken from the mapped remnant vegetation communities that surround the site. There is corresponding information on Council's website under Planning Controls/Local Planning Controls/Development Guidelines.

Under LMCC/Development Guidelines/Standard Drawings/Planting has typical planting details.

If you have any further questions do not hesitate to ask.

Kind regards,

Glen Mathews

Senior Development Planner



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From: Lachlan Sweeney <lsweeney@umwelt.com.au>

Sent: Monday, 25 May 2020 11:16 AM

To: Glen Mathews <gmathews@lakemac.nsw.gov.au>

Subject: TRIM: 20019 - Concrush Landscape Management Plan

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hi Glen,

Thank you for your time on the phone this morning to discuss the Concrush facility and the preparation of a landscape management plan in accordance with the Department of Planning Industry and Environment consent conditions. Please see attached the Concrush consent and in particular Schedule 2 Part B Condition 57 in relation to the requirement for a landscape management plan and consultation with Lake Macquarie City Council.

If you could please advise of any particular issues, content or guidelines that Council would like to see referenced within the landscape plan that would be much appreciated. If Council would like to discuss the approach to preparing the landscape plan I can be contacted on 0455 883 379.

Thank you.

Lachlan

Lachlan Sweeney
Senior Environmental Scientist
My current work days are Monday to Thursday

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