Landscape Management Plan – Stage B Network

Googong Township Integrated Water Cycle Project

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Document Status

Version	Purpose of Document	Orig	Review	Review Date
Rev A	Draft for GTPL review	KB	NG	9/07/2014
Rev B	Draft issued for QCC review	KF	NG	21/08/2014
Rev 0	Final	KF	KB	10/10/14

Approval for Issue

Name	Signature	Date
Rob Salisbury		10/10/14

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1.0 Introduction

1.1 Background

Googong Township Proprietary Limited (GTPL) – a partnership between CIC Australia and Mirvac, is responsible for the development of the new Googong Township that will be located in the Canberra region, around seven kilometres south of Queanbeyan in NSW. The new Googong Township will be home to about 16,000 people and developed over the next 25 years. The township is designed around an integrated water cycle (IWC), with a dedicated water recycling plant (WRP) that will reduce the consumption of potable water in the community by around 60 per cent and recycle the township's water for non-potable use.

The *Googong Township Water Cycle Project Environmental Assessment* (November, 2010) (EA) was prepared under (the now repealed) Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) to assess the impacts of construction and operation of infrastructure for the potable water, recycled water and sewage system required to service the township.

Concept Approval for the ultimate development (Stage 1 and Stage 2) and a Project Approval for Stage 1 of the Googong Township IWC Project were granted by the NSW Planning Assessment Commission, under delegation from the Minister for Planning and Infrastructure on 24 November 2011, and subject to conditions.

Condition of Approval (CoA) B16 of the Project Approval requires the preparation and implementation of a Landscape Management Plan/s (LMP) for the management of visual amenity issues arising from the IWC Project works.

1.2 Purpose of the Landscape Management Plan

This LMP has been developed to meet the requirements of CoA B16 of the Project Approval. It covers the Stage B Network that includes Sewage Pumping Station 2 (SPS2), rising main that connects SPS2 to the Water Recycling Plant and and associated infrastructure. Stage B Network is located in Neighbourhood 1B.

This LMP and landscape drawings have been prepared to provide a design that will provide rehabilitation of the works area impacted by the construction of Stage B Network. Consideration for longer term landscaping will be undertaken by GTPL as part of the Neighbourhood 1B planning.

1.3 Consultation

CoA B16 also states that the LMP must be prepared in consultation with Queanbeyan City Council (QCC). A copy of this LMP will be provided to QCC for their review and GTPL will update the LMP to incorporate feedback.

1.4 Implementation of the Landscape Management Plan

The Stage B Network LMP will be implemented by a suitably experienced and qualified landscape management contractor. GTPL and its contractors will be responsible for complying with the LMP requirements during the construction and associated defects maintenance / plant establishment period.

Ultimate responsibility for landscaping and weed maintenance for the Stage B/Neighbourhood 1B area will then be handed over to QCC as the township progresses and assets are handed over.

2.0 Visual mitigation and landscaping requirements

2.1 Project elements and potential visual impacts

This section addresses CoA B16 (a): identification of the project elements, which may impact on the visual amenity impacts to sensitive receiver locations, including residents of the Googong Township urban development area.

Elements identified within the Stage B Network project area that may impact the visual amenity to the neighbouring Googong residents are vertical infrastructure elements exceeding 2-3 metres in height, and includes the ventilation stack (approximately nine metres in height) and pole lighting (approximately six meters in height).

2.2 Visual mitigation measures

This section addressed CoA B16 (b): measures to minimise and/or avoid visual amenity impacts to sensitive receiver locations.

2.2.1 Landscape design

Landscape architects Spacelab have prepared the landscape drawings (and design report) for the WRP, which are included at Appendix 1.**Error! Reference source not found.** A temporary access road (minimum width 3.5 m) will be constructed from Aprasia Ave (proposed road) to the SPS2 site to provide access to the site prior to the completion of Aprasia Ave. The road will be finished with a single coat seal initially, and subject to future neighbourhood planning. The main element to the landscape design involves native seed mix planting for temporary works.

2.2.1.1 Temporary grass cover

Given that the detailed design for the temporary access road is still underway and is not available to include on the landscape drawings, a conservative approach for temporary grass cover has been adopted. It is proposed that all disturbed areas will be treated with a Native Grass Seed mix in the interim prior to neighbourhood landscaping treatment being established. The low growing seed mix will stabilise the areas disturbed by the road works and naturalise well into the existing landscape, with minimal maintenance requirements. Table 1 details the proposed native seed mix for the temporary grass cover.

Table 1 Proposed native grass mix for temporary works

Plant species	% of grass seed mix
Oxley Wallaby Grass *Austrodanthonia genticulata*	30%
Windmill Grass *Chloris truncata*	10 %
Silky Blue Grass *Dichanthium sericeum*	60%

Notes: Sowing rate of 35 kg/ha directly onto existing tilled soil, in summer (September – February).
Cover crop: Japanese Millet 20 kg/ha.

2.2.1.2 Plantings for future works

Projected native species to create three storeys of vegetation for future works should be considered when final designs are completed. They may be derived from the following endemic planting palette outlined in Table 2.

Table 2 Project native species for future works

Tree canopy Box Wood species	Mid storey native shrubs	Ground cover native grasses
White Box *Eucalyptus albens*	Willow-leafed Wattle *Acacia iteaphylla*	Fine leaf lomandra *Lomandra longifolia 'Tanika'*
Yellow Box *Eucalyptus melliodora*	Weeping Boree *Acacia vestita*	Coast Tussock Grass *Poa poiformis*
Red Box *Eucalyptus polyanthemos*	Royal Grevillea *Grevillea victoriae*	Kangaroo Grass *Themeda australis 'Tangara'*
Scribbly Gum *Eucalyptus rossii*	Willow leaved Hakea *Hakea salicifolia*	

2.2.2 Built elements and proposed treatments/finishes

The surfaces of vertical infrastructure elements will be treated with a sympathetic colour scheme to blend with the local environs to minimise visual impact. The ventilation stack will be typically painted a dull grey/green. Refer Section 2.2.3 for treatment of lighting poles.

Due to the future lower elevation on the eastern side of SPS2, a retaining wall will be required to prevent erosion and excess run-off during rain events. Gabion baskets are proposed for this purpose, as they act to reduce the velocity of stormwater run-off by allowing water infiltration, and are a more visually appealing than other retaining wall options.

2.2.3 Lighting

Detailed design for lighting has yet to be completed but, if required, is likely to comprise pole-mounted lights approximately six metres in height. These lights would be switched on *only* when operators need to attend the site at night for emergencies or for essential out-of-hours maintenance.

The lights would be positioned to provide lighting for critical locations around the SPS2 site and would be manually controlled, vandal-proof and easily maintained using a proprietary articulated light pole configuration. Lighting would be orientated towards SPS2, away from sensitive receivers.

The light poles will consist of VicPole proprietry poles in Dulux charcoal 32999 with silver transition. Product specification for proposed lighting is included in this report at Appendix B, including a figure showing an example of the pole and colour.

2.2.4 Program and timing

This section details the timing and progressive implementation of the visual mitigation works as required by CoA B16 (c).

Lights and the vent shaft will be installed towards the end of the construction program for Stage B Network. Temporary grass planting will be installed during the rehabilitation works. This is likely to take place in early to mid 2015.

2.2.5 Monitoring and maintenance

This section provides information on the procedures and methods to monitor and maintain landscaped or rehabilitated areas as required by CoA B16 (d).

Consideration for longer term landscaping will be undertaken by GTPL as part of the neighbourhood planning. Ultimate responsibility for landscaping and weed maintenance for Stage B Network/Neighbourhood 1B will be handed over to QCC as the township progresses and assets are handed over.

2.2.5.1 Trenches

Trenches will be progressively backfilled during construction prior to grass seeding as per Section 2.2 of this plan. There will be a Plant Establishment Period (PEP) during which time, the grass seeded areas will need to be managed to ensure achievement of the required outcome for a dense, weed resistant cover of endemic native grass species with a low incidence of weeds. This will be the responsibility of GTPL and landscape contractor until permanent landscaping is undertaken.

2.2.5.2 Plants and grass

GTPL and the landscape contractor will be responsible for management of the works to facilitate native grass establishment within the seeded areas, to achieve a native plant cover of 100%, with minimal weed cover of less than 10% for seasonal / temporary weeds.

2.2.5.3 Weeds

For perennial weeds that present a long-term threat to the integrity of the native grass population, e.g. Blackberry, Serrated Tussock and Sweet Briar, GTPL and the landscape contractor will carefully monitor the progression of these weeds, and keep them to very minor numbers, with the objective of achieving eradication. Weed management will continue until permanent landscaping works are undertaken.

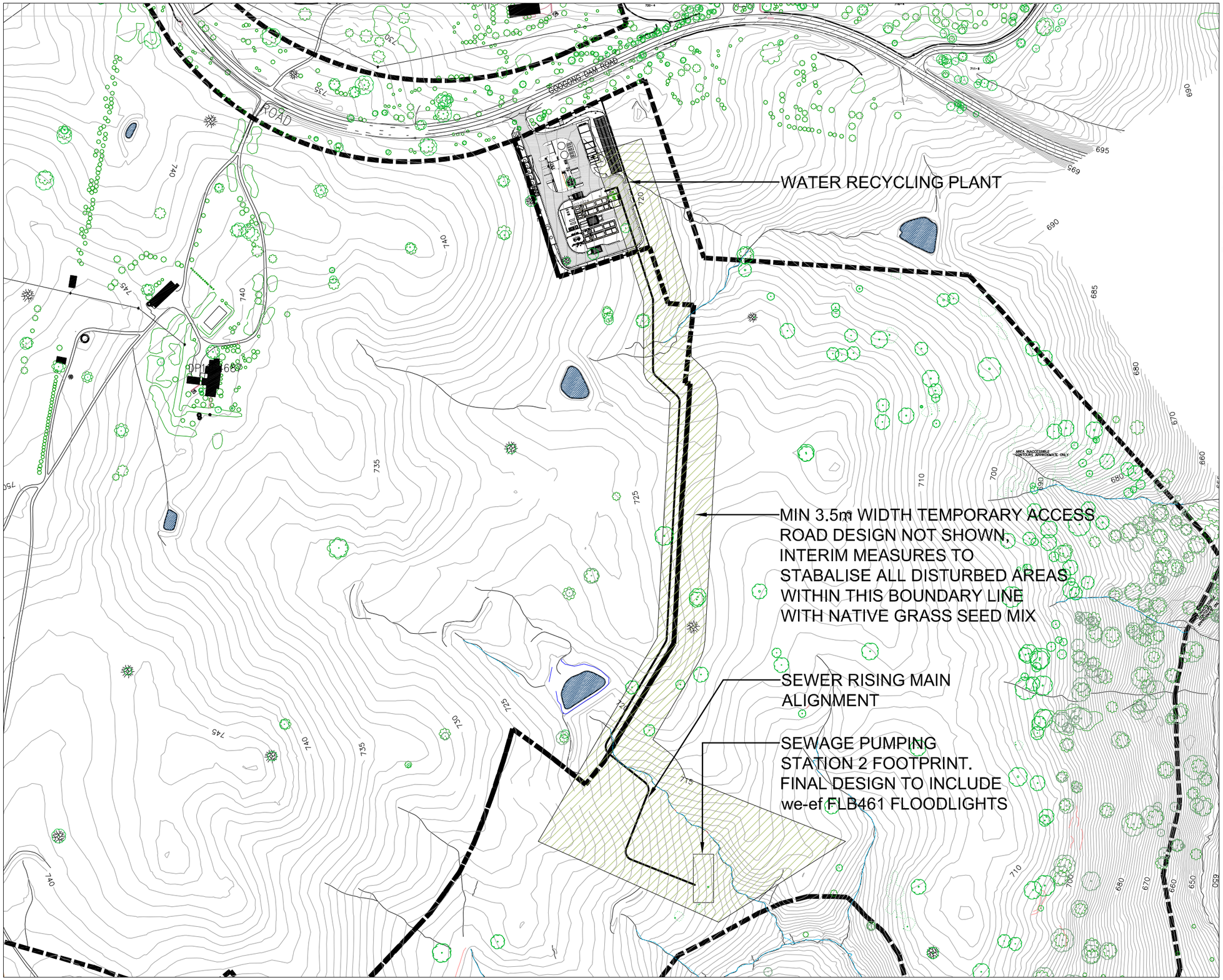
3.0 Design standards

All works have been designed in accordance with the relevant Australian standards and local requirements set out by:

- Queanbeyan City Council Design standards.
- Googong Township Design Guidelines.

Appendix 1

Landscape design drawings



LEGEND

NEIGHBOURHOOD BOUNDARY LINES

EXISTING SURVEYED TREES

PROPOSED SURFACES

NATIVE GRASS SEED MIX TO ALL DISTURBED AREAS WITHIN THIS BOUNDARY LINE

LOW GROWING, LOW MAINTENANCE NATIVE GRASS SEED SPECIFICATION

OXLEY WALLABY GRASS	*AUSTRODANTHONIA GENTICULATA*	30%
WINDMILL GRASS	*CHLORIS TRUNCATA*	30%
SILKY BLUE GRASS	*DICHANTHIUM SERICEUM*	60%

SOWING RATE OF 35 Kg/Ha DIRECTLY ONTO EXISTING TILLED SOIL IN SUMMER (SEPTEMBER - FEBRUARY)

* OPTIONAL COVER CROP JAPANESE MILLET 20Kg/Ha

SURVEY CONTOURS 1m INTERVALS

Notes:

- All weed species to be removed from site. Woody weeds** must not be mulched and spread on site or stock piled.
- Any grassed areas exceeding a grade of 1:4 require planting.

ISSUE	REASON FOR ISSUE	DATE	DESIGN	DRAWN	CHECKED	APPROVED FOR ISSUE
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Warning unless there is an authorised JEA signature in the approved for Issue column, this drawing is not approved for issue.

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CONSULTANTS: SPACELAB CREATING TIMELESS PLACES

CLIENTS: GOOGONG

TITLE: LANDSCAPE MANAGEMENT PLAN

PROJECT: GOOGONG TOWNSHIP INTEGRATED WATER CYCLE PROJECT STAGE B NETWORK

DRAWING: LANDSCAPE MANAGEMENT PLAN SHEET 1

SCALE @ A1: 1:2000 | SCALE @ A3: 1:4000

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Appendix 2

Example lighting

Plate 1 We-ef flood light installation to be included in future detail design for Sewage Pumping Station 2.

Example of lighting pole type – VocPole and Dulux charcoal colour 32999.