Googong Nh1B: Statement of Environmental Effects

Development Application for subdivision and subdivision works for Neighbourhood 1B at Googong

Client:
Googong Township Pty Ltd

Date:
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Acronyms

AEC	Area of Environmental Concern
AHIP	Aboriginal Heritage Impact Permit
APZ	Asset Protection Zone
DA	Development Application
DCP	Development Control Plan
EP&A Act	Environmental Planning and Assessment Act 1979
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPBC	Environment Protection and Biodiversity Conservation Act 1999
GFIMS	Googong Foreshores Interface Management Strategy
GTPL	Googong Township Pty Ltd
Ha	Hectares
LOSS	Landscape and Open Space Strategy (prepared by AECOM)
LPA	Local Planning Agreement
Nh1A	Neighbourhood 1A
Nh1B	Neighbourhood 1B
NSP	Neighbourhood Structure Plan
PBP	Planning for Bushfire Protection (2006)
PTWL	Pink-tailed Worm-lizard (*Aprasia parapulchella*)
PTWL-PMP	Pink-tailed Work-lizard Protection Management Plan
QCC	Queanbeyan City Council
QLEP	Queanbeyan Local Environmental Plan 2012
SEPP 55	State Environmental Planning Policy No. 55 (Remediation of Land)
SPA	State Planning Agreement
SPS2	Sewer pump station 2
VPA	Voluntary Planning Agreement
WSUD	Water Sensitive Urban Design

1 Introduction

1.1 General

Googong Township Pty Ltd (GTPL) is seeking development approval under Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act) to subdivide land and carry out subdivision works at Googong township to create Neighbourhood 1B.

This Statement of Environmental Effects (SEE) has been prepared to accompany the development application (DA) to Queanbeyan City Council. It provides an assessment of the proposal against section 79C of the EP&A Act.

The proposal affects land at the eastern edge of Googong township being Lot 100 in DP 1180099, Lot 5 in DP 1179941 and Lot 1 in DP 1183929.

In summary, the proposal seeks approval for:

» Staged Torrens Title subdivision to create 592 residential lots, a number of public reserves, one superlot for future residential subdivision and large residue lots within Neighbourhood 1B;

» All subdivision works within Neighbourhood 1B to prepare the land for future residential development comprising site preparation and grading, stormwater and drainage works, road construction, tree removal and utilities augmentation; and

» All landscaping works to create and embellish two (2) new local parks, as well as open space along the Montgomery's Creek corridor.

Dwelling construction will be subject to future development applications.

With a **Capital Investment Value** of **$47 million**, the proposal constitutes regional development and will be determined by the Southern Joint Regional Planning Panel.

The applicant is **Googong Township Pty Ltd (GTPL)** – a Joint Venture Partnership between Mirvac and CIC Australia.

The proposal is **Integrated Development** under Section 91, Division 5, Part 4 of the EP&A Act as approval is required under the following Acts:

» National Parks and Wildlife Act 1974;

» Rural Fires Act 1997;

» Fisheries Management Act 1994; and

» Water Management Act 2000.

1.2 Background

Neighbourhood 1B – Neighbourhood Structure Plan

Neighbourhood 1B is the eastern extension to Neighbourhood 1A, which was the first phase of development at Googong. In accordance with structure planning processes set out in Googong development control plan (DCP), a neighbourhood structure plan (NSP) for Neighbourhood 1B has been developed and is proposed for inclusion into the DCP.

The NSP for Neighbourhood 1B broadly sets out the development pattern including:

» Developable and non-developable areas based on environmental constraints, topography, sites of cultural importance and vistas and views;

» Transport network including hierarchy of roads and associated walking bicycle tracks;

» Open space network and connections; and

» Utilities to service the site, including water, stormwater, sewer, energy (natural gas, electricity and or solar power) and information technology cabling.

An amendment to Googong DCP to introduce the Neighbourhood 1B NSP is being exhibited by Queanbeyan City Council from 3 October to 3 November 2014.

Development approvals

Neighbourhood 1B is the next logical phase in the development of Googong. Approval has been granted to earlier phases of work at Googong, with construction of Neighbourhood 1A now well underway.

The main previous development approvals that relate to Googong are summarised below.

Part 3A approval for water infrastructure – Googong has been designed as one of the first purpose-built, large-scale water-efficient communities in Australia. It has been designed around an integrated water cycle (IWC) system, which includes a dedicated wastewater treatment and recycling plant. The wastewater treatment and recycling plant is located to the north of Neighbourhood 1B. It was approved on 24 November 2011 (File No: 10/04970; Application No. MP 08_0236).

A sewer pump station (SPS2) located in Neighbourhood 1B was also approved under the Part 3A application, and is due for completion by mid-2015.

Part 5 applications – the following Part 5 applications have been approved:

» Edward Land Parkway extension;

» An upgrade of Old Cooma Road;

» Trunk gas works which was located in a shared services trench with communication in association with the Old Cooma Road and Edward Land Parkway upgrade;

» Communications trunk works in the abovementioned services trench; and

» An easement and alignment for power by Essential Energy.

Part 4 applications – a number of Part 4 applications have been submitted and approved for development at Googong, including approval for subdivision works and dwelling construction in Neighbourhood 1A, a display village and infrastructure works.

It is noted that a Section 96 Application was submitted on 25th September 2014 for minor lot boundary changes at the southern end of Neighbourhood 1A (largely in stage 6).

Working with neighbouring landowners

GTPL is currently working with owners of the adjacent land, known as the Bunyip site, to create a structure plan as an addition to the southern extension to Neighbourhood 1A. The structure plan is intended to be presented to Council for approval prior to subsequent applications for development of the Bunyip site.

Pre-DA meeting

A Development Co-ordination and Review (DCR) meeting was held on Thursday 2 October 2014 at Queanbeyan City Council to discuss the proposed development. Each of the issues raised at the meeting is addressed in this SEE.

A summary of the matters addressed is provided below:

Table 1 Summary of matters raised in DCR meeting

Issue	Noted/ Addressed	Comment / Section addressed in this SEE
Development will be Integrated Development	✓	Refer to Section 4.2.1
Development will be classified as Regional Development to be determined by the Southern Joint Regional Planning Panel	✓	Refer to Section 4.2.8
SEE to address relevant SEPPs	✓	Refer to Section 4.2.8
SEE to address relevant LEP provisions	✓	Refer to Section 4.3.1
SEE to address relevant Googong DCP provisions (including addressing any non-compliances with road widths)	✓	Refer to Section 4.3.2 and Appendix A
Googong DCP Amendment (to embed Neighbourhood 1B Structure Plan into DCP) is currently on exhibition – this is to be noted in SEE and SEE assessed against exhibited Googong DCP	✓	Refer to Section 4.3.2 and Appendix A
Lots within the Odour Buffer are not to be final lots	✓	Lots within temporary odour buffer are shown as indicative lots, and proposed as a superlot in this application
SEE to address emergency access	✓	Refer to Section 4.2.4
SEE to address bus arrangements	✓	Refer to Section 4.2.8
SEE to confirm SIS not required/address OEH matters	✓	Refer to Section 4.2 where relevant Acts are addressed
Compliance with the VPA will be required	✓	Refer to Section 5.1.4
A number of administrative matters were raised, including DA lodgement procedures	Noted	Noted

1.3 Supporting documents

Some information contained in this SEE is derived from technical studies and drawings for approval prepared by the project team to support the development application.

The project team is described in Table 2 and includes:

Table 2 Project team and disciplines

Project member	Role and discipline
Brown Consulting	Civil Engineer Stormwater management Infrastructure servicing
LANDdata Surveys	Surveyor
AECOM	Landscape Architect
SpaceLab	Urban Designer
Eco Logical Australia	Bushfire
TTM Consulting (Vic)	Traffic Engineer
Douglas Partners	Geotechnical Engineer
Navin Officer Heritage Consultants	Aboriginal and Cultural Heritage
Biosis	Biodiversity
Environmental Strategies	Contamination/Site Auditor
Geotechnique	Contamination

A full list of technical reports/documents is provided in **Appendix B** and drawings/plans for approval in **Appendix C**.

2 Description of site location and characteristics

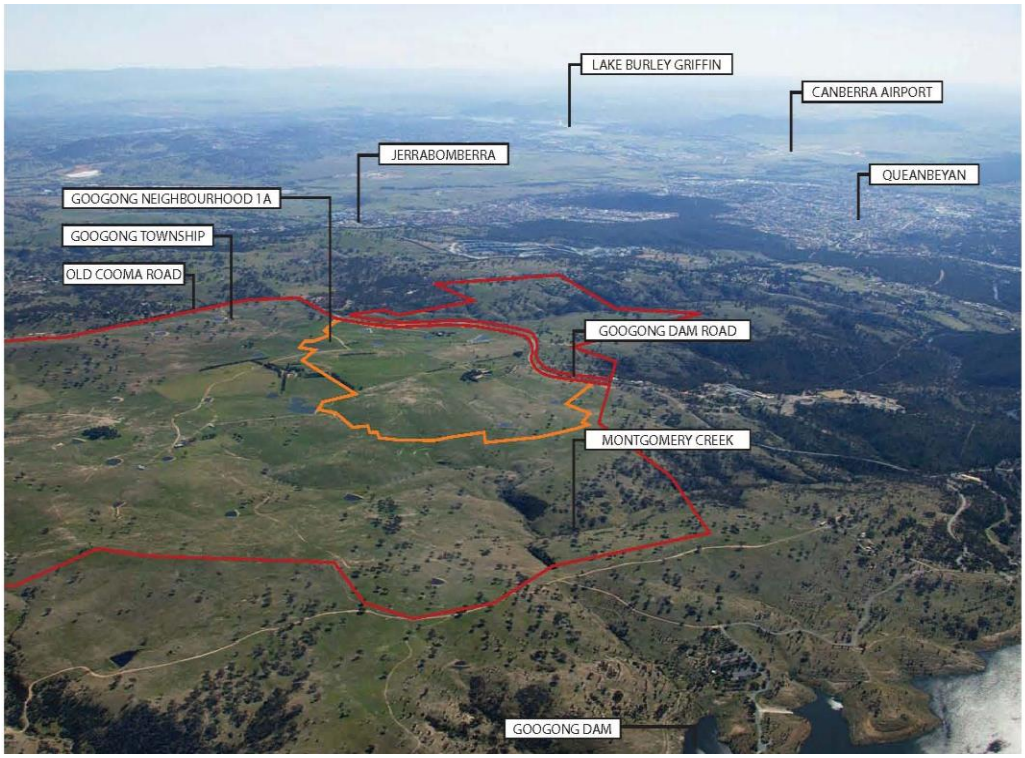
This section of the SEE describes the subject site and its position with respect to Googong township and its surrounds.

2.1 Description of Googong township and the Googong master plan

Googong township is located about eight kilometres south of the Queanbeyan CBD and comprises approximately 790 hectares of land currently zoned for urban development (refer to Figure 1). The proximity of the site to Canberra and Queanbeyan makes Googong well placed to support future growth for the region.

The area within which Googong is located is characterised by a variety of land-uses including nature reserves, low-intensity forestry, rural residential, cattle and sheep grazing and recreation. Googong Dam is east of the site and an operating quarry is located north west of the site on the west side of Old Cooma Road.

Figure 1 Location of Googong township



Source: SpaceLab

The Googong master plan (Figure 2) is embedded in the Googong DCP and broadly sets out the ultimate development outcomes for Googong. The master plan has been designed to facilitate at least 5,550 homes across Googong, accommodating a population of approximately 15,700 people as well as providing business opportunities, significant open space and community facilities.

In order to reflect the values of the existing landscape, 166 hectares – representing 21% of the total area – is being set aside for open space not only delivering lifestyle amenity for residents but also protecting important habitats. All development seeks to protect landscape features, threatened species' habitats and the catchment of the adjacent Googong Dam.

The following objectives underpin the vision and delivery of Googong township:

» **Traditional Neighbourhood Design** that promotes five walkable neighbourhoods surrounding central parklands, 'Googong Common', and each having a discernible centre;

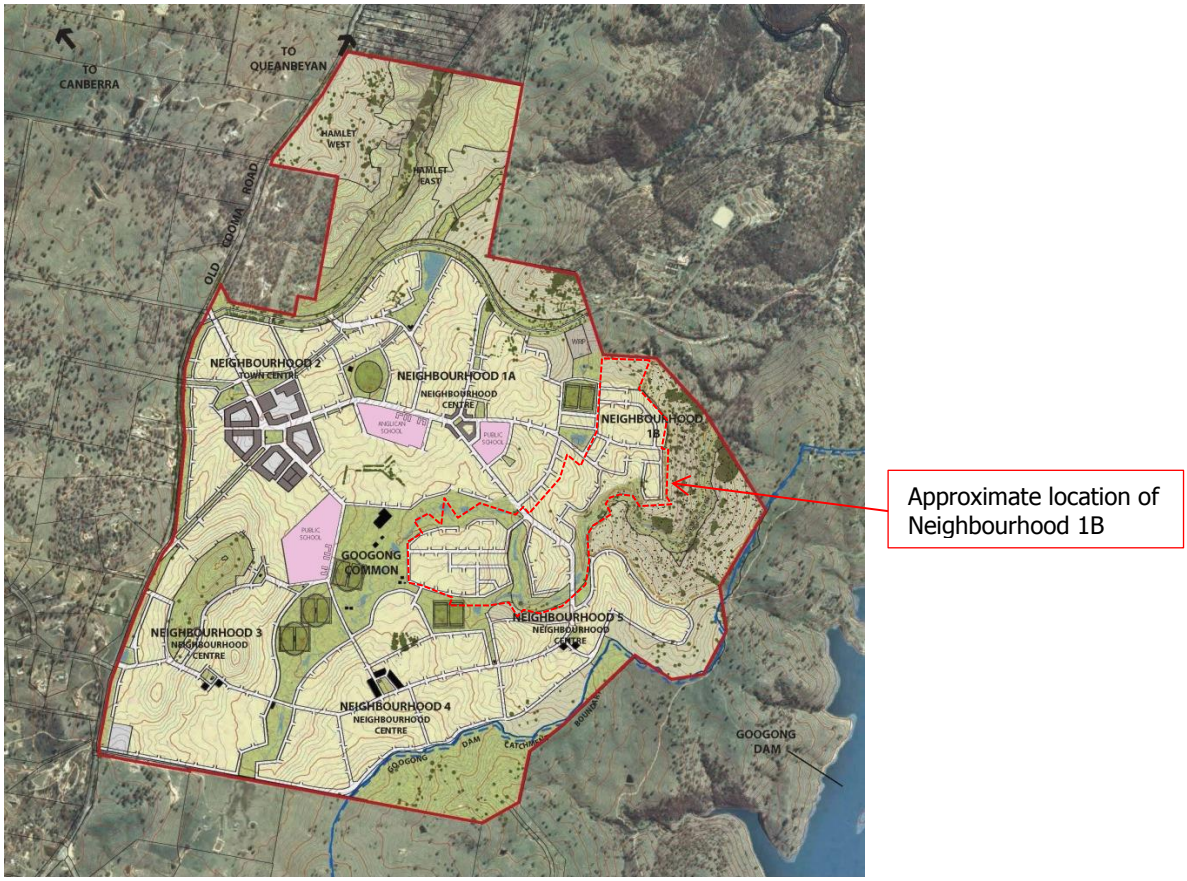
» A full range of **services** to residents and potential localised employment opportunities;

» Easy access to passive and active **open space and recreation opportunities** close to where people live;

» Increased **sustainability** of housing with significant reductions compared to standard BASIX requirements on both water an energy consumption; and

» New neighbourhoods delivered with **soft and hard infrastructure** in a co-ordinated manner to optimise urban outcomes.

Figure 2 Googong master plan



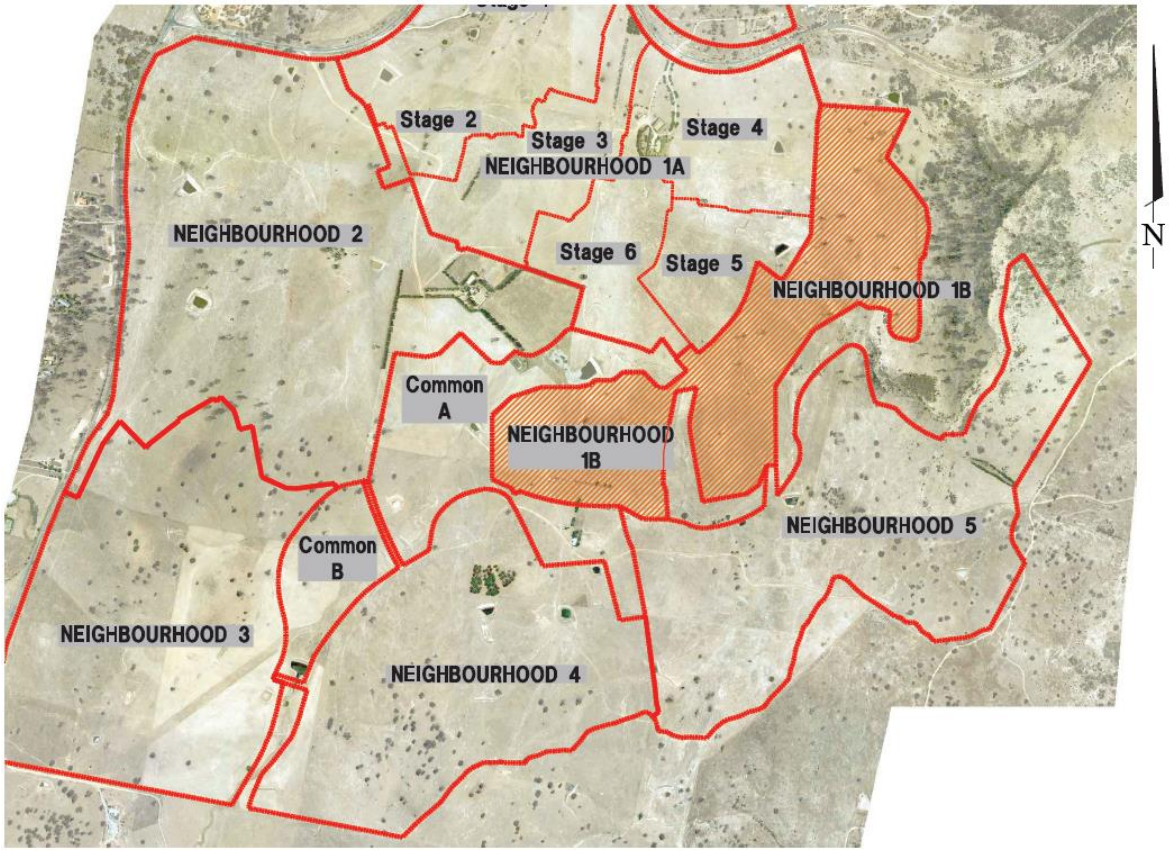
Source: AECOM

2.2 Description of Googong neighbourhoods

Googong is being developed as a series of neighbourhoods, 5 in total, each of which will be governed by a broader NSW (refer to Figure 3 for an illustration of the location of neighbourhoods within Googong).

Each NSP will translate the master plan to a level of detail that shows the general location of developable areas, areas of open space and road layouts for each neighbourhood.

Figure 3 Neighbourhoods in Googong



Source: SpaceLab

Neighbourhood 1B is the subject of this development application. It is the south-eastern extension of Neighbourhood 1A. To the south of Neighbourhood 1B will be Neighbourhood 5, which will be accessed by an extension to the main thoroughfare (Gorman Drive) into Neighbourhood 5 via a crossing over Montgomery's Creek.

The proposed NSP for Neighbourhood 1B is shown in Figure 4 (subject to approval by Council). It illustrates that Neighbourhood 1B consists of two main parcels of developable area;

» A north eastern parcel incorporating Neighbourhood 1B North and Central, which represents the eastern most land in Googong; and

» An 'island' site known as Neighbourhood 1B South.

These developable parcels have been

The variation in the topography and the separation of developable areas by creek lines creates the opportunity to work with the differences to create distinct "character precincts" being Nh1B Central, South and North.

Figure 4 Googong Nh1B neighbourhood structure plan (NSP)

Source: AECOM

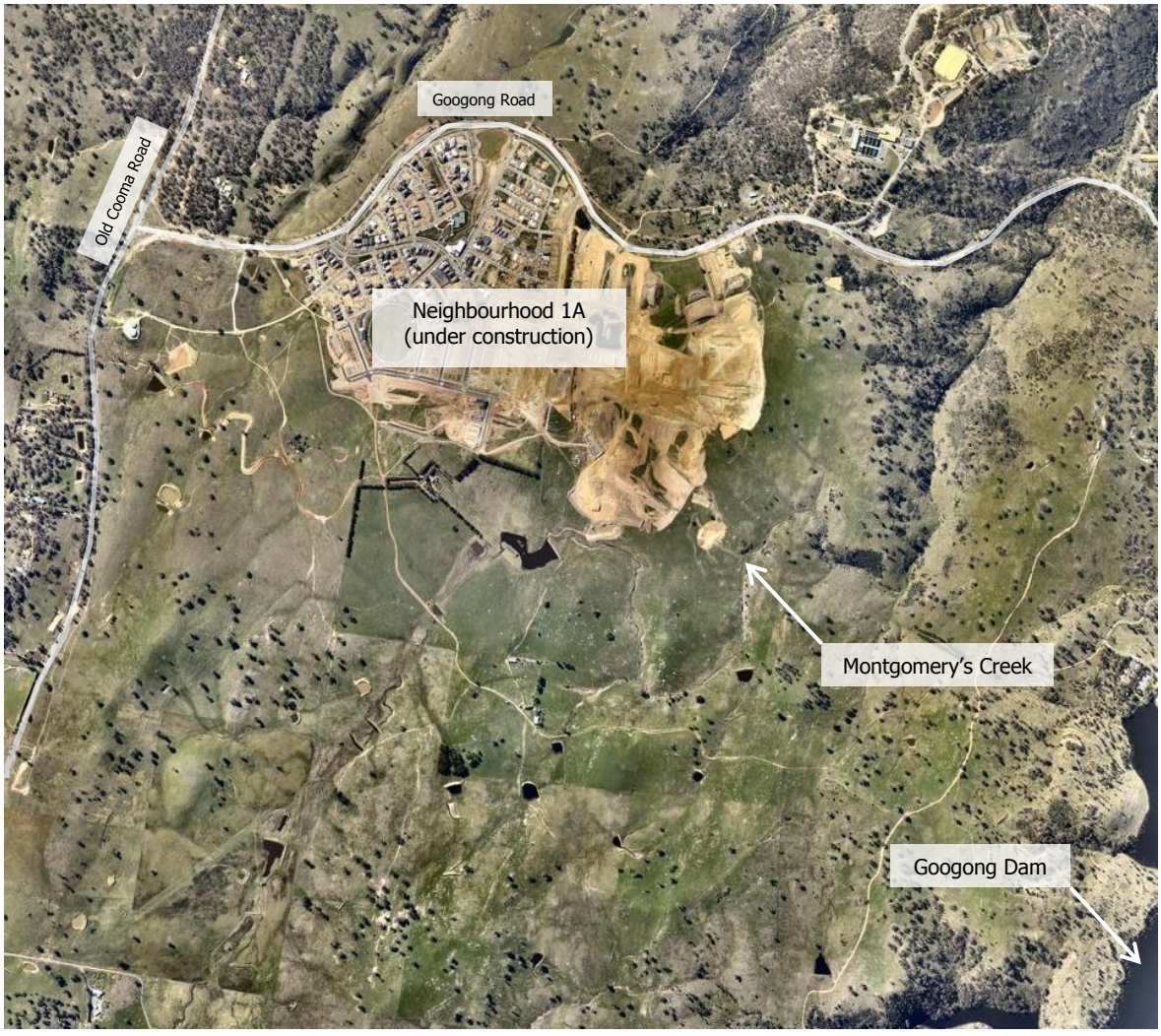
2.3 Description of Neighbourhood 1B

As described above, Neighbourhood 1B is located to the south-east of Neighbourhood 1A. It has a total area of approximately 75 hectares and is generally bounded by Googong Road to the north, Googong Dam foreshores to the east and Montgomery's Creek to the south (Figure 5).

The land is characteristic of sheep grazing land in the region, being primarily cleared with scattered trees and small woodland remnants. It comprises a plateau with several undulating hills and steeply sloping valleys which fall to Montgomery Creek.

The dominant landscape features include a central ridgeline within the site, eastern interface with scattered woodland descending into the Pink-tailed Worm-lizard Conservation Area (to the east), and the interfaces with the cleared and grassy areas of Montgomery Creek to the south.

Figure 5 Neighbourhood 1B site location



Source: Nearmaps (2014)

2.3.1 Legal description of Neighbourhood 1B

Googong Township Pty Ltd (GTPL) is the landowner of the lots that make up Neighbourhood 1B. The GTPL landholdings that form Neighbourhood 1B are described below and illustrated in Figure 6:

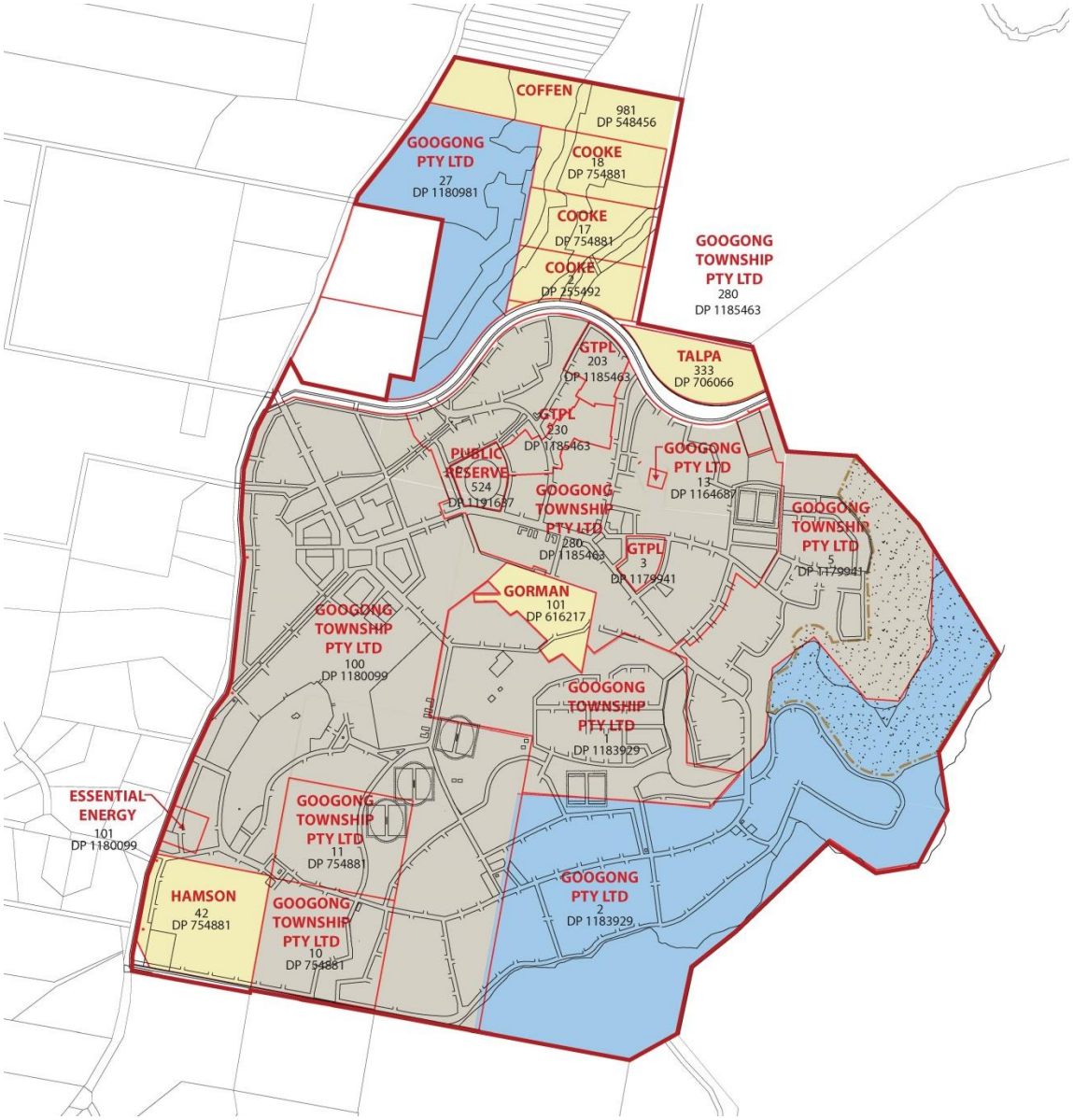
» Lot 100 in DP 1180099;

» Lot 5 in DP 1179941; and

» Lot 1 in DP 1183929.

Prior to the initial stage of residential subdivision proposed in this DA, it is proposed to consolidate Lot 5 DP 1179941 and Lot 1 DP1183929. This will be subject to a separate application.

Figure 6 Land ownership plan



Source: AECOM

2.3.2 Characteristics of Neighbourhood 1B

A site analysis of Neighbourhood 1B has been carried out by SpaceLab and Brown Consulting to determine the key environmental and topographical constraints and opportunities of the land. This work was carried out at the neighbourhood structure planning stage to inform the development of the NSP, and has since been refined during the preparation of this DA.

Key characteristics of the site, as relevant to this SEE, are summarised below (Refer to the Planning and Urban Design Report prepared by SpaceLab (Appendix B02) for relevant maps and further details).

Slope

The majority of the Neighbourhood 1B consists of moderate to flat grades. Slopes on the plateau are characterised by gradients of 0-10% and are therefore readily available for development. Generally these areas are located in the western side of Neighbourhood 1B, adjoining Neighbourhood 1A.

Areas with more intensive slopes, with gradients of 10-20%, occur generally in the eastern side of Neighbourhood 1B. These areas may also be developed but require more detailed design, and some cut and fill at subdivision and home construction stage.

Land on the far eastern side of Neighbourhood 1B has significant land fall gradients of 15-20% and above, formed by the incised sections of Montgomery Creek. These areas are largely undevelopable due to these steep slopes and the resulting lack of gravity-fed sewerage serviceability. Many of the sloping areas are also affected by the Pink-tailed Worm-lizard Conservation Area and Googong foreshores interface, and therefore undevelopable due to their environmental and biodiversity qualities.

Elevation

The highest point within Neighbourhood 1B is to the south, while the lowest point is to the far east of Neighbourhood 1B. The low points of the site indicate the general direction of surface water flow to the Queanbeyan River.

Neighbourhood 1B will be the lowest Neighbourhood by elevation proposed at Googong. The elevation of the land ranges from 703m AHD in the north to 749m AHD to the south.

Creek and drainage lines

The major drainage line within the Neighbourhood 1B stormwater catchment is Montgomery's Creek. Montgomery's Creek has been classified as a 2nd order stream by AECOM. No identified drainage systems are present within the proposed development areas.

The drainage paths in the Montgomery Creek catchment consist of grassy swales, and undulating grass landscapes draining into a number of farm dams and Montgomery Creek. Within this catchment there are limited lengths of stream bed and bank formations.

The proposed development will be located on both sides of Montgomery Creek and will require cross connections over the creek corridor.

Aboriginal and cultural sites

Navin Officer Heritage Consultants Pty Ltd (NOHC) has carried out several heritage investigations on the whole of the Googong township, as well as Neighbourhood 1B and its surrounds. These investigations were carried out to support the preparation of the Neighbourhood 1B NSP. They reveal several Aboriginal and European sites in Neighbourhood 1B (refer to Figure 7).

It is noted that the area of land surveyed/assessed as part of the heritage investigations incorporates land that is the subject of this DA, as well as surrounding lands (primarily lands further west of the Neighbourhood 1B site boundary).

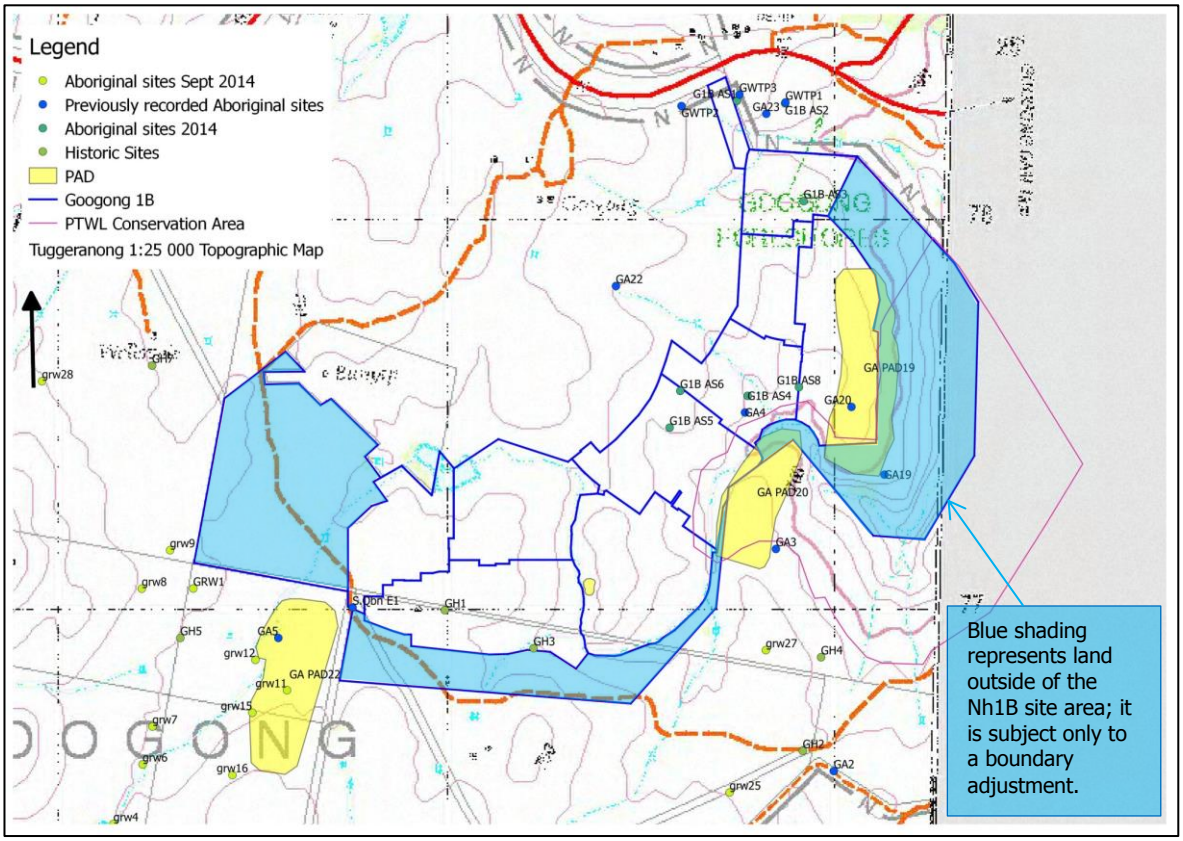
Table 3 lists those recorded site located within the Neighbourhood 1B site area which is the subject of the proposed development. Figure 7 shows the location of the sites within the context of Neighbourhood 1B.

Table 3 Aboriginal and European heritage sites in Neighbourhood 1B

Site no.	Description	Significance
European heritage		
GH1	Shearing shed, quarters and associated buildings	Low
GH3	European midden	Low
Aboriginal heritage		
G1B AS1	Artefact scatter	Low
G1B AS3	Isolated artefact	Low
G1B AS4	Isolated artefact	Low
G1B AS5	Isolated artefact	Low
G1B AS6	Isolated artefact	Low
G1B AS8	Isolated artefact	Low
G1B PAD	Sub-surface artefact scatter	Low
GA 4	Isolated artefact	Low
GA 19	Isolated artefact	Low
GA 20	Isolated artefact	Low
GA PAD19	Surface artefacts and subsurface artefact scatter	Low
GA PAD20	Surface artefacts and subsurface artefact scatter	Low to medium
GA Scarred tree	Probable scarred tree	High cultural significance
S.QbnE1	Artefact scatter	Low

Section 4.2.3 of this SEE addresses the impact of the proposal on these items, and outlines the necessary permits that have been obtained or are currently being obtained to carry out salvage/collection.

Figure 7 Location of sites (Aboriginal and European) within and around Neighbourhood 1B



Source: Navin Officer Heritage Consultants Pty Ltd

Note: the land shaded in blue is only part of this application insofar as it is subjected to a proposed boundary adjustment. It is not otherwise affected by any proposed development as part of the Neighbourhood 1B application.

Ecology and biodiversity

The site is partially cleared for farm land use and has general steep sections with several ridges.

Trees

A tree survey of Neighbourhood 1B was carried out by arborists Jim Laity and Steve Thomas (SpaceLab) on 5, 7 and 11 September 2013, and 27 January 2014. The survey identified a number of trees that are below significant tree classification status at the site.

A site tour on 13 November 2013 identified that trees of significant quality are largely located beyond the area of Neighbourhood 1B which will be subject to civil work/development, predominantly to the east of Neighbourhood 1B in the Googong foreshores and Pink-tail Worm-lizard Conservation Area.

One tree of "remarkable" quality was identified within that area of Neighbourhood 1B subject to civil work/development, which is in the centre of Neighbourhood 1B South. The remainder of the trees on site are classified as having low to medium significance, and one tree of value within the central part of Neighbourhood 1B.

The tree assessment recommends that the significant tree located in Neighbourhood 1B South be retained and incorporated into a park.

Section 4.3.1 of this SEE outlines how the proposed development addresses tree retention.

PTWL Conservation Area

Neighbourhood 1B is adjacent to an area of known Pink-tailed Worm-lizard (*Aprasia parapulchella*) (PTWL) habitat to the east of the site. The PTWL is listed as 'vulnerable' under the Environment Protection and Biodiversity Conservation Act 1999. It is a reptile that can grow to 14cm, lives underground, and is characterised by a pinkish/reddish-brown tail.

PTWL's are most commonly found sheltering under small rocks (15–60 cm basal area) shallowly embedded in the soil (2–5 cm). In terms of vegetation, the PTWL occurs in primary and secondary grassland, grassy woodland and woodland communities.

Biosis Research Pty Ltd (Biosis) has prepared a Pink-tailed Worm-lizard Protection and Management Plan (PTWL-PMP) related to the development of the Googong township[1]. The PTWL-PMP (Version 5) maps the extent of, and sets out management actions for, the PTWL conservation area. It was prepared in accordance with a condition of the Commonwealth Department of Sustainability, Environment, Water, Population and Communities' (now Commonwealth Department of the Environment) approval of the Googong township.

Management actions required by the PTWL-PMP include:

» Ensuring development is outside of the PTWL conservation area;

» Boundary fencing of the PTWL conservation area (constructed prior to any works within 50 metres of the PTWL habitat area commencing, with the exception of works related to the SPS2 site);

» Weed removal, monitoring and management and establishment of native grasses;

» Importation of habitat rocks from outside of the PTWL conservation area, which shall be scattered within the PTWL conservation area;

» Translocation of PTWL to within the conservation area; and

» Monitoring of PTWL abundance and distribution.

The developable area of Neighbourhood 1B is entirely outside of the PTWL conservation area.

Googong foreshores

Googong township, and Neighbourhood 1B specifically, directly adjoins Googong foreshores along its eastern boundary. The area identified as Googong foreshores encompasses Googong Dam, a short section of the Queanbeyan River below the dam and its tributaries which form a linear tapering reservoir, land either side of the reservoir, and further south, land either side of the Queanbeyan River and Burra Creek.

The primary purpose of the Googong reservoir and surrounding Googong foreshores area is the provision of high quality raw water for the supply of potable water to the Australian Capital Territory and Queanbeyan. Other important values of the area include natural and cultural heritage, recreation, education and research.

Protection of the Googong foreshores has been paramount to the planning process of Googong township. The protection measures include:

» Zoning a 50 metres strip of land running along the entire eastern boundary of Googong township as E2 Environmental Conservation, and extending this zone to areas within the Googong township that fall within the Googong reservoir catchment; and

[1] Biosis Research (2012), *Googong Township – Pink-tailed Worm-lizard Protection and Management Plan,* Unpublished management plan prepared for Googong Township Pty Ltd.

» Identifying a 150 metre wide Googong Foreshore Buffer Area along the eastern boundary of Googong township, and extending this area where the catchment boundary encroaches further into Googong township.

These statutory measures prescribe development controls that limit the extent of urban development. The controls ensure that no inappropriate development occurs within the Googong reservoir catchment, and that any development within 150m of the catchment boundary must meet environmental protection consent criteria before development consent can be granted. These controls are addressed in Section 4.3.1 of this SEE.

In addition to these statutory measures, a Googong Foreshores Interface Management Strategy (GFIMS)[2] was prepared by Biosis. The GFIMS was prepared in accordance with a condition of the Commonwealth Department of Sustainability, Environment, Water, Population and Communities' (now Commonwealth Department of the Environment) approval of the Googong township.

The GFIMS details:

» The establishment and restoration works that will be implemented within the GFIMS area; and

» The protection and maintenance measures to be implemented for the GFIMS area, including:

  – An edge road separating urban development and the foreshore area;

  – A 1.8m high chain mesh fence along the GFIMS area boundary (and the western edge of the PTWL conservation area);

  – Identification of 'management areas' within the GFIMS area; and

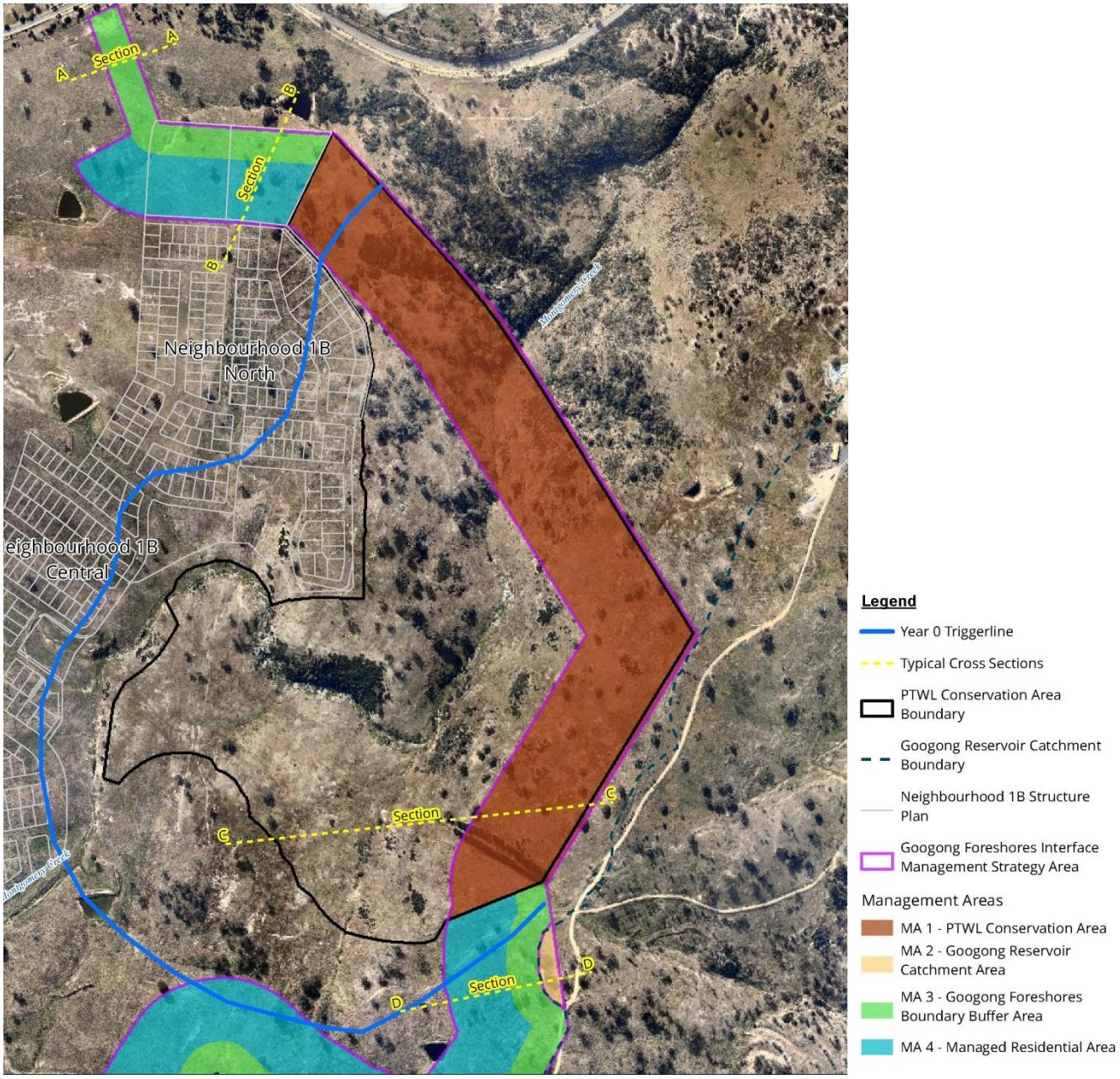
  – Landscaping with only native species.

The northernmost part of Neighbourhood 1B that is outside of the PTWL conservation area, but within the GFIMS area, is subject to certain management measures. The management arrangement for these lots, and how this proposal adhered to the management requirements, is addressed in Section 4.3.1 of this SEE.

Figure 8 illustrates the PTWL conservation area boundary GFIMS management areas (refer to high resolution version of this plan in Appendix B11).

[2] Biosis (2013), *Googong Foreshores Interface Management Strategy*, prepared for Googong Township Pty Ltd.

Figure 8 GFIMS and PTWL Conservation Area



Source: Biosis

3 Description of proposed development

This section of the SEE describes the proposed development for which approval is sought, being subdivision and subdivision works.

3.1 Subdivision

The proposed subdivision is to create a total of 592 residential lots, 1 super lot for future residential subdivision, a number of public reserves and large residue lots as part of the extension of Googong into Neighbourhood 1B.

It is proposed to subdivide the land in nine (9) stages. Within each stage of subdivision, a number of residential lots will be created together with public reserves, public roads, etc, as well as a large residue lot for future subdivision. The residue lot will then be subject to a further subdivision in the subsequent stage, which will itself contain a residue lot for further subdivision in the following stage.

A composite plan (Figure 9) is included in this SEE to show the overall lot layout of the proposed development, along with the stage boundaries which coincide with the outer limits of each proposed Deposited Plan.

Drawings for approval, prepared by LANDdata Surveys, are:

» 03074.DA4_BOUNDARY_ADJUSTMENT

» 03074.DA4_COMPOSITE_PLAN

» 03074.DA4_Stage1_DA_PLAN

» 03074.DA4_Stage2_DA_PLAN

» 03074.DA4_Stage3_DA_PLAN

» 03074.DA4_Stage4_DA_PLAN

» 03074.DA4_Stage5_DA_PLAN

» 03074.DA4_Stage6_DA_PLAN

» 03074.DA4_Stage7_DA_PLAN

» 03074.DA4_Stage8_DA_PLAN

» 03074.DA4_Stage9_DA_PLAN.

Appendix C2 contains each of the subdivision plans for stages 1 through 9 for approval.

Table 4 describes the proposed subdivision within each stage. Throughout the subdivision process each of the notifications will be released where required, to ensure that any newly created residential titles are free from unnecessary encumbrances.

It is noted that prior to the initial stage of subdivision, a consolidation of Lot 5 DP 1179941 and Lot 1 DP 1183929 will occur. Thereafter, it will be proposed to carry out a boundary adjustment in order to create two lots:

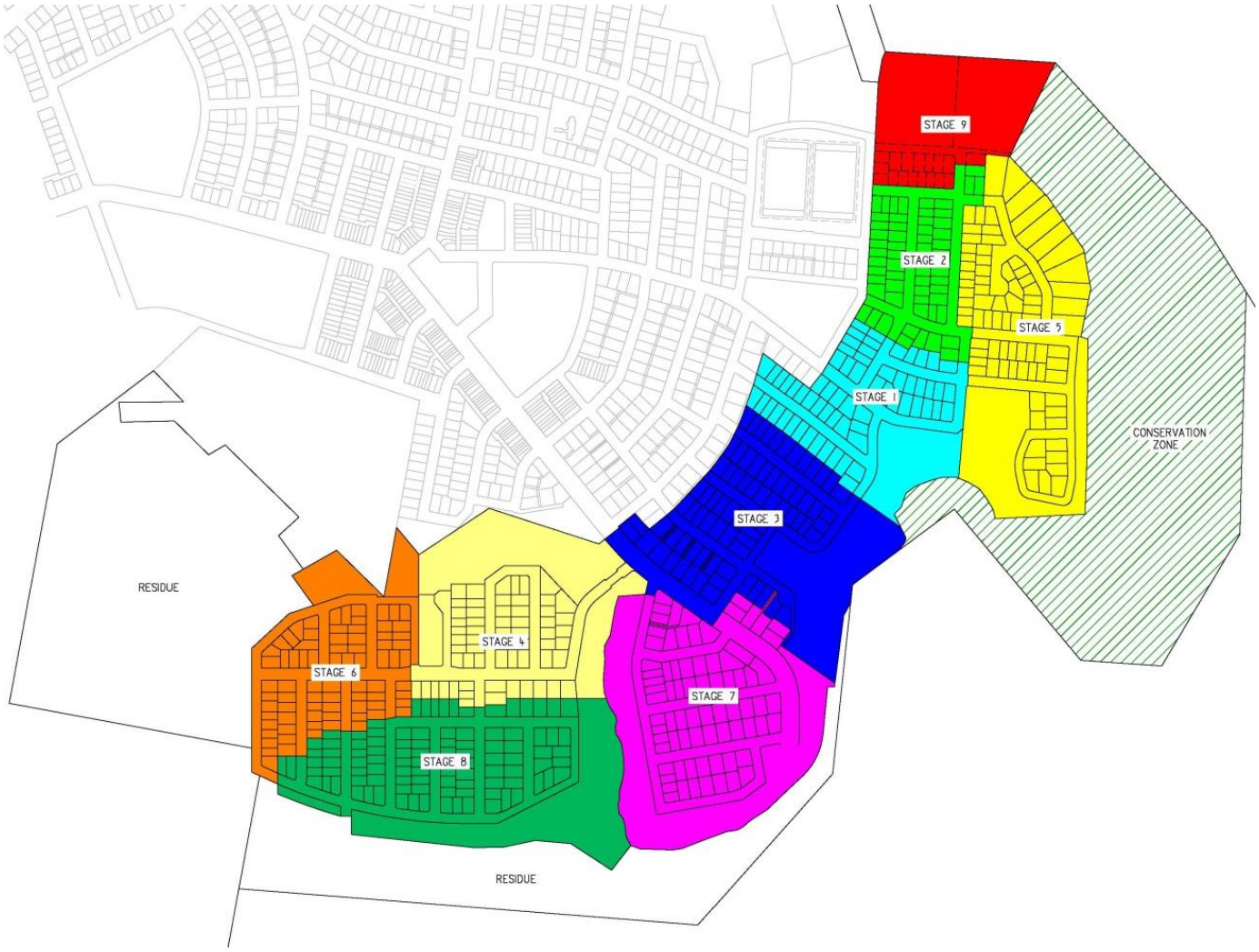
» A single superlot in which the 9 stages of residential subdivision will occur; and

» A separate superlot to the east which is dedicated as public reserve.

Refer to Boundary Adjustment Plan (03074.DA4_BOUNDARY_ADJUSTMENT).

The consolidation of Lot 5 DP 1179941 and Lot 1 DP 1183929 is not proposed as part of this application. However, the boundary adjustment is proposed as part of this application.

Figure 9 Composite plan illustrating overarching subdivision and staging



Source: LANDdata

Note: Refer to Appendix C02 for high resolution version of this plan.

Table 4 Proposed subdivision staging

Subdivision stage	Proposed lots and indented use
Nh1B Stage 1	63 residential lots A public reserve Various public roads 2 large residue lots to be utilised for future subdivision
Nh1B Stage 2	59 residential lots Various public roads 1 large residue lot to be utilised for future subdivision
Nh1B Stage 3	75 residential lots A public reserve Various public roads 1 large residue lot to be utilised for future subdivision
Nh1B Stage 4	60 residential lots 3 public reserves Various public roads 1 large residue lot to be utilised for future subdivision
Nh1B Stage 5	82 residential lots* A public reserve Various public roads 1 large residue lot to be utilised for future subdivision ** Lots 500-510 being created along the north-eastern extent of NH1B Stage 5 show potential dwelling construction areas to demonstrate the ability of these lots to support a residential dwelling.*
Nh1B Stage 6	77 residential lots Various public roads A number of public reserves 1 large residue lot to be utilised for future subdivision
Nh1B Stage 7	76 residential lots Various public roads A public reserve 1 large residue lots to be utilised for future subdivision
Nh1B Stage 8	100 residential lots* Various public roads 2 public reserves 1 large residue lot to be utilised for future subdivision ** A number of residential lots within stage 8 are proposed on land which is currently affected by a Restriction on Use of Land related to a heritage site previously identified in the area. As discussed further in this report, the necessary reporting and applications are currently being prepared to obtain an Aboriginal Heritage Impact Permit (AHIP) to collect and salvage any heritage items in this area. Once the AHIP has been obtained and items collected, an*

Subdivision stage	Proposed lots and indented use
	application will be made to Queanbeyan Council for the release of this Restriction on Use of Land. This application is intended to be made prior to subdivision, therefore the Nh1B Stage 8 Deposited Plan does not show the Restriction on Use of Land.
Nh1B Stage 9	1 large superlot for future subdivision* Various public roads ** The superlot encompasses that land in Neighbourhood 1B which is currently affected by a buffer area around the Water Recycling Plant. As such, an indicative future lot layout is shown, however the subdivision will occur only following the resolution of issues relating to the buffer zone. There are 19 indicative future residential lots within the superlot, including two large (>15,000m2) lots in the R5 zone.*

3.1.1 Residential lot mix and yield

The subdivision will create a variety of residential lot types and sizes as set out in Table 5 and the Lot Mix and Staging Plan prepared by SpaceLab (Figure 10). All the residential lots will be freehold lots under the Torrens Title system.

It is noted that the lot yield in Table 4 includes the 19 indicative residential lots which are proposed for future subdivision within the superlot to be created in subdivision Stage 9. As such, the yield is 592 lots plus 19 future indicative lots, providing a total yield of 611 in the ultimate development scenario.

Table 5 Distribution of lot types

Lot type	Dwelling type	Lot size (m^2)	Lot dimension	Number of lots proposed in Neighbourhood 1B
C1	Small courtyard	338	13.5 x 25	49
C2	Medium courtyard	400	16 x 25	43
C3	Large courtyard	450	18 x 25	40
T0	Small traditional	420	14 x 30	92
T1	Small traditional	480	16 x 30	107
T2	Medium traditional	540	18 x 30	79
T3	Large traditional	600	20 x 30	105
E1	Estate home	700	20 x 35	83
E2	Estate home	1,500 – 2,300	25/30 x 50/60	11
F1	Rural lot	15,000+	150+ x 120+	2
Total				611

Figure 10 Distribution of lot types

STAGE SUMMARY											
Dwelling Type	Lot Type	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	Stage 7	Stage 8	Stage 9	Total
Small Courtyard	C1	0	7	0	7	5	13	2	13	2	49
Medium Courtyard	C2	0	4	0	3	9	8	4	10	5	43
Large Courtyard	C3	1	6	1	14	4	7	2	5	1	40
Small Traditional	T0	14	16	7	6	12	11	7	16	3	92
Small Traditional	T1	11	11	7	8	13	26	7	22	1	107
Medium Traditional	T2	13	6	19	6	6	6	9	11	3	79
Large Traditional	T3	17	7	23	9	7	6	13	21	2	105
Estate Home	E1	7	2	18	7	15	0	32	2	0	83
Estate Home	E2	0	0	0	0	11	0	0	0	0	11
Rural Lot	F1	0	0	0	0	0	0	0	0	2	2
TOTAL PER STAGE		63	59	75	60	82	77	76	100	19	611

Source: SpaceLab

3.2 Subdivision works

3.2.1 Street network

The proposal includes the construction of all internal streets in Neighbourhood 1B. The street network design (Figure 11) provides for an interconnected arrangement that can cater for the movement needs of all street users. As shown in Brown Consulting's drawings C3183 – D008+ STREET HIERARCHY PLAN, the street types proposed are as follows:

- **AV1** (Gorman Drive) is a local arterial road that will ultimately connect to Neighbourhood 4;
- **ST2** (Aprasia Avenue) is an extension of Aprasia Avenue in Neighbourhood 1A, which provides a wider street reserve of 21.1 metres to accommodate sewer infrastructure to connect to the sewer pump station (SPS2) in Neighbourhood 1B;
- **ST3** is the most common street type used in Neighbourhood 1B which has a number of variations:
  - **ST3** and **ST3A** are used in typical residential streets;
  - **ST3-V1** is used as the central east-west corridor in Neighbourhood 1B South with a wider reserve to allow for varied landscape theme;
  - **ST3-V2** is used at the crossing of Montgomery's Creek into Neighbourhood 1B South;
- **Drive 1** is used for streets that abut open space on one side, where parking demands may be higher than a standard residential area due to park visitors;
- **Drive 2** is used for streets that are 'one sided' where residential development is only proposed on one side; and
- **Firetrail** is used at the interface of larger residential lots and the PTWL area as well as a bushfire management requirement.

The street and associated traffic management facilities will ensure adequate, safe and convenient use by future residents and visitors. The majority of street cross sections generally meet or exceed the typical design requirements of Googong DCP and Googong Development Design Specification (Queanbeyan City Council, Version 1, June 2011). An exception is the carriageway width on ST3 and Drive 1, which is typically 7.5m wide as has been adopted in Neighbourhood 1A rather than 8.0m wide as specified in the Googong DCP. ST2 has a wider verge of 6.6m rather than 5.0m on the north side to accommodate the rising mains from SPS2. Further assessment of the proposed street network against the Googong DCP is contained in Annexure A of this SEE.

Drawings for approval, prepared by Brown Consulting, are:

- C3183 – D008+ STREET HIERARCHY PLAN
- C3183 – D011 TYPICAL CROSS SECTIONS – AV1 & ST2-V1
- C3183 – D012 TYPICAL CROSS SECTIONS – ST3 & ST3A
- C3183 – D013 TYPICAL CROSS SECTIONS – ST3-V1 & ST3-V2
- C3183 – D014 TYPICAL CROSS SECTIONS – DR1 & DR2
- C3183 – D015 TYPICAL CROSS SECTIONS – DR2-V1 & LA-7
- C3183 – D021 TYPICAL DETAILS SHEET 1 OF 3
- C3183 – D022 TYPICAL DETAILS SHEET 2
- C3183 – D023 TYPICAL DETAILS SHEET 3

» C3183 – D030+ ROAD AND PATH NETWORK PLAN

» C3183 – D031+ BUS ROUTE NETWORK PLAN

» C3183 – D032+ DRIVEWAY LOCATION PLAN.

Figure 11 Proposed street network

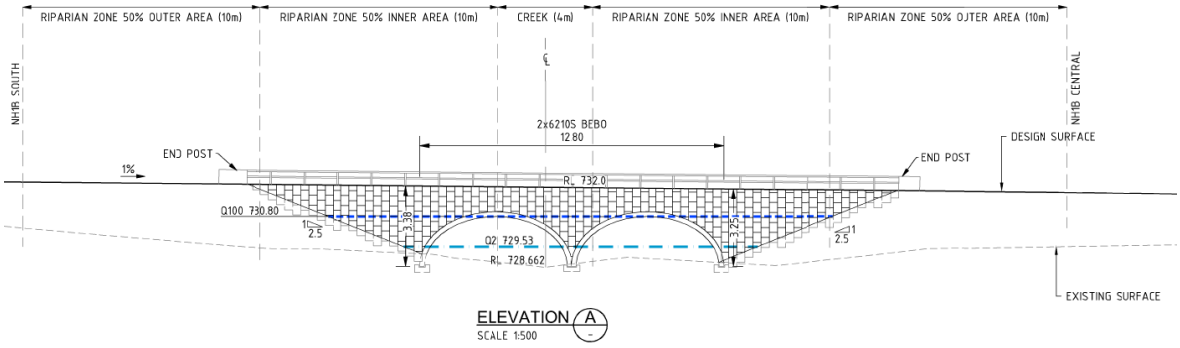
LEGEND

FOR TYPICAL SECTIONS		STREET TYPE	STREET RESERVE	VERGE	CARRIAGEWAY WIDTH	VERGE	
	STREET TYPE AV1						
REFER C13183-D011		AV1	30.0 -	7.0 -	16.0 * -	7.0	(* 5.0 PAVEMENT-6.0 MEDIAN -5.0 PAVEMENT)
	STREET TYPE TWO						
REFER C13183-D011		ST2 -V1	21.1 -	6.6 -	9.5 -	5.0	APRASIA AV TO ACCOMMODATE SPS2 RISING MAIN (6.6 ON NORTH SIDE)
	STREET TYPE THREE						
REFER C13183-D012		ST3	17.5 -	5.0 -	7.5 -	5.0	
REFER C13183-D012		ST3A	17.5-	5.0 -	6.0 -	6.5	NARROWING AT INTERSECTIONS
REFER C13183-D013		ST3-V1	19.5 -	6.0 -	7.5 -	6.0*	NH1B SOUTH (* VERGE OPEN SPACE SIDE 5.0m)
REFER C13183-D013		ST3-V2	12.5 -	2.5 -	7.5 -	2.5	MONTGOMERY CREEK CAUSEWAY
	DRIVE TWO						
REFER C13183-D014		DR2	13.0 -	2.0 -	6.0 -	5.0	(2.0 ON OPEN SPACE SIDE)
REFER C13183-D014		DR2-V1	16.0 -	5.0 -	6.0 -	5.0	
REFER C13183-D015		DR2-V2	12.5 -	1.5 -	6.0 -	5.0	
	SHARED ACCESS						
REFER C13183-D015		SA	6.0-	1.35-	3.3-	1.35	
		FIRE TRAIL					
		NEIGHBOURHOOD BOUNDARY					

Source: Brown Consulting

The causeway over Montgomery's Creek (street type ST3-V1) is detailed in drawing C13183 – D271+ MONTGOMERY'S CREEK CAUSEWAY, prepared by Brown Consulting (Figure 12). ST3-V1 has a street reserve of 13.5m with a 7.5m carriageway and two 3.0m verges. Pedestrian handrails will be provided to allow safe pedestrian crossing. Twin 6m long by 2m high 'Bebo' arches are proposed to span Montgomery's Creek. Bebo arches have been chosen to minimise the extent of work in the riparian corridor.

Figure 12 Montgomery's Creek crossing



Source: Brown Consulting

All street will be provided with a cross fall of 3% and roads adjoining public open space or vegetated swales are provided with one way cross fall and flush/permeable kerb to allow drainage of roadway stormwater flows into the vegetated space in accordance with WSUD principles.

All street gradients comply with Googong Development Design Specification and are typically less than 10%. Gradients vary from 0.6% up to a maximum 11.5% to match the existing topography.

There are seven types of kerbs proposed for neighbourhood 1B. The kerb types proposed are mountable kerb, kerb and gutter, flush kerb, permeable kerb, barrier kerb & gutter, modified layback kerb and kerb type K4A. These kerb types are in accordance with QCC standard designs.

Temporary turnarounds will be provided where required at dead end streets until future stages are constructed.

Street pedestrian and cyclist network

A network of pedestrian and cyclist pathways have been designed to integrate with the wider street network in Neighbourhood 1B and to allow safe and efficient pedestrian, bicycle and vehicular movement throughout Neighbourhood 1B.

As shown in drawing C13183 – D030+ ROAD AND PATH NETWORK PLAN prepared by Brown Consulting, the predominant pathway type is a 1.5m path on one side of the streets in Neighbourhood 1B. A 2.0m wide path is provided along Aprasia Avenue and part of Leon Street as a continuation of the approved pathway network in Neighbourhood 1A, and provide access to a local park in Neighbourhood 1B.

Paths in open space are described in the open space network and landscaping section of this SEE (Refer to Section 3.2.2).

Driveways

A driveway location plan has been prepared by Brown Consulting to illustrate the proposed location of driveways to certain lots (Refer to C13183 – D032+ DRIVEWAY LOCATION PLAN).

As shown in the driveway location plan, battleaxe access from the rear has been proposed to lots fronting Gorman Drive, as Gorman Drive has been determined by Queanbeyan City Council to be

access denied. As these are larger lots (18m+ frontages and 35m deep), garages to the north as in the proposed arrangement will not create overshadowing. Further details will be provided at Development Application stage for the dwellings.

Driveways will be designed at DA stage for the individual dwelling, in accordance with the Googong Development Design Specification (section D13).

Indicative future road network

A conceptual for a future road crossing from Neighbourhood 1B south to Neighbourhood 5 has been prepared by Brown Consulting (Refer to drawing C13183 – D272+ MONTGOMERY'S CREEK BRIDGE CONCEPT LONGITUDINAL SECTION).

Although not proposed for approval as part of this DA, the concept has been provided to demonstrate a possible design for a future road crossing over Montgomery's Creek into Neighbourhood 4. A future bridge elevation and position takes account of the proposed road grading and longitudinal profile of Gorman Drive for works in Neighbourhood 1B. A minimum clearance of 2.5m is specified under the bridge for pedestrians and cyclists.

Intersection upgrade

Analysis of the impact of Neighbourhood 1B, at completion, on the operation of the intersection of Old Cooma Road and Googong Road (also known as Googong Dam Road) been carried out by TTM Consulting. SIDRA analysis reveals that with additional traffic from Neighbourhood 1B, the intersection will operate adequately. Notwithstanding, it has been agreed with GTPL and Roads and Maritime Services to carry out the intersection upgrade works sooner, prior to the release of the 604th lot at Googong, and subject to a three stage review process . This agreement it described in a letter from RMS attached to the Traffic Impact Assessment (Appendix B08).

3.2.2 Open space network and landscaping

The proposal includes the construction of a network of open spaces, landscaped streetscapes, and formal and informal parks throughout Neighbourhood 1B (Refer to Figure 13).

The design of the open space network is guided by the Landscape and Open Space Strategy (LOSS) for the whole of the Googong township. Open space and landscaping requirements set out in the LOSS are part of a package of deliverables of the Planning Agreements between GTPL and Queanbeyan City Council.

The open space and landscaping commitments for Neighbourhood 1B contained in the LOSS are:

» Open space provision associated with part of Googong Common; and

» Open space and environmental conservation works associated with the E2 Environmental Conservation Zone.

Outside of the Montgomery's Creek corridor, no other open space areas within Neighbourhood 1B are required under the LOSS.

However, the design of Neighbourhood 1B incorporates some open space facilities to serve the proposed residential areas at the edge of the Montgomery's creek corridor, namely two new parks. These additional open space areas provide opportunities for play and respite for residents.

Figure 13 Open space and landscape master plan

■■■■	NH1B Boundary
1	Existing creek dam - Increased in size
2	Riparian corridor (Montgomery Creek) Refer 'Riparian Corridor' notes.
3	Amenity planting
4	Significant existing trees to be retainted
5	2.5m wide shared path
6	2m wide key path
7	1.5m wide path
8	1m walking track
9	Screen planting to PTWL Conservation fence
A	Basin A - Bioretention basin
B	Basin B - Bioretention basin
C	Basin C - Bioretention & Wetland
E	Basin E - Bioretention basin
F	Basin F - Bioretention basin
G	Basin G - Bioretention basin
H	Basin 8 - Bioretention basin
P	Local playground

Source: AECOM

Key elements of the open space network and landscaping proposal for Neighbourhood 1B are described below. Refer to the Landscape and Open Space Elements report prepared by AECOM and the following drawings for approval:

» L00 COVER SHEET

» L01 LANDSCAPE MASTERPLAN

» L02 LOCAL PARK LANDSCAPE PLAN

» L03 PLANT SPECIES LISTS

» L04 LANDSCAPE CHARACTER

» L05 STREETSCAPE CONCEPT

» L06 STREETSCAPE TREE SPECIES

» L07 STREETSCAPE GROUNDCOVER SPECIES

» L08 STREET HIERARCHY DIAGRAM

» L09 STREET SECTIONS 1 OF 4

» L10 STREET SECTIONS 2 OF 4

» L11 STREET SECTIONS 3 OF 4

» L12 STREET SECTIONS 4 OF 4.

Montgomery's Creek corridor

The proposal includes the retention and revegetation of the Montgomery's Creek corridor.

That part of the corridor zoned E2 Environmental Conservation, known as Lower Montgomery's Creek, will undergo bush management to allow for the natural regeneration of species and replanting of species where minor earthworks are proposed. This part of the corridor contains rocky outcrops, waterfalls and pools along the creekline which add to the landscape character.

The fringes of the riparian corridor will form areas for passive recreation and create a buffer between the riparian corridor and residential development. These areas will be planted using native grasses and low ground covers with scattered tree planting, in accordance with the endemic landscape.

In some parts, the Neighbourhood 1B proposal seeks a minor encroachment into the outer 50% of the 40m wide riparian corridor (Refer to C13183 – D260+ RIPARIAN CORRIDOR OFFSET KEY PLAN prepared by Brown Consulting). Generally the encroachment is necessary to accommodate small sections of road and batter, as well as crossings over Montgomery's Creek. The total combined area of encroachment is 1,647m^2, of which the vast majority is the area of the creek crossing (1,335m^2).

Equivalent compensatory offsets areas totalling 1,647m^2 are proposed in accordance with the NSW Office of Water Guidelines for riparian corridors on waterfront land (July 2012). Bushland regeneration/replanting is proposed within the offset areas.

Pedestrian and cyclist pathways will be provided along the Montgomery's Creek corridor, within the outer 50% of the core riparian zone. These pathways will vary in width from 2.5m paths where grades allow for a share path, down to a 1.5m wide footpath where the valley becomes more steep. In areas where a concrete footpath is not appropriate due to the topography or natural environment, a 1m wide track is provided which minimises the impact on existing landform and environment.

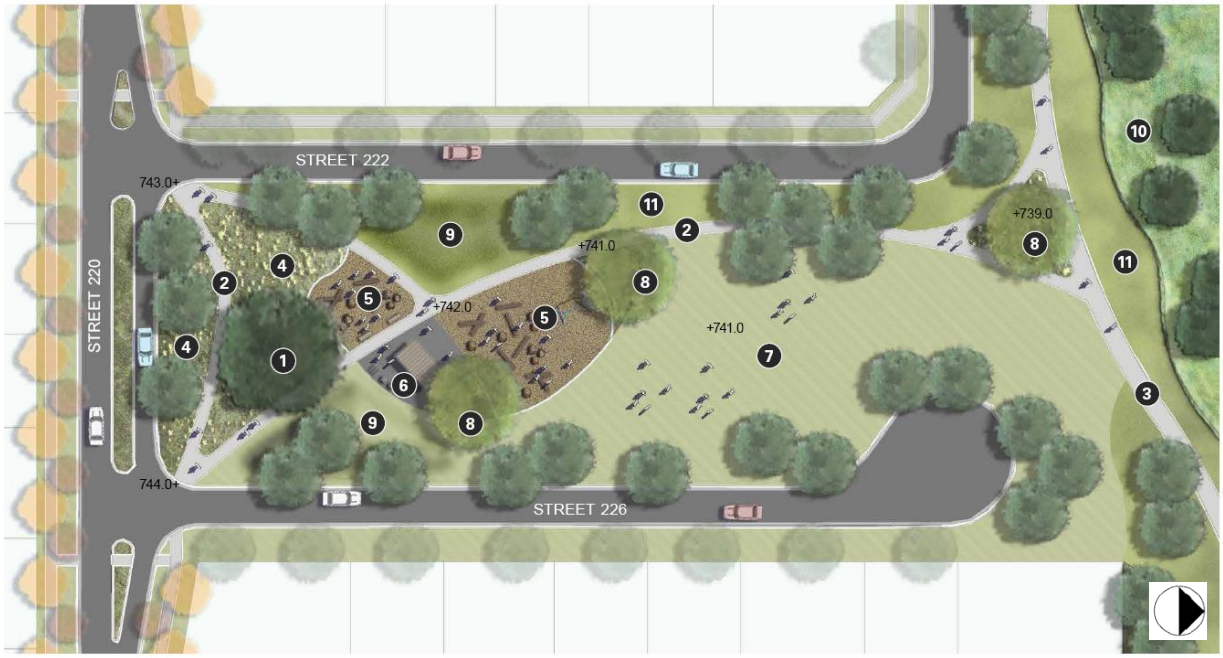
Park 1: Montgomery's Rise Park

The proposal includes the construction of a local park in Neighbourhood 1B South (known as Montgomery's Rise). The park has an approximate area of 4,345m^2 and is proposed Lot 460 (Public Reserve) in subdivision stage 4. It is known as Montgomery's Risk Park owing to its location on the northern side of Montgomery's Rise. It connects at its northern end to the Montgomery's Creek corridor.

This park will be provided with a kick-about lawn framed by clusters of evergreen trees allowing for informal play and active recreation. This lawn continues south to integrate with the more active southern end of the park. At the southern end, an existing significant tree stands on a high point, and forms the focal point for the local playground. The playground includes a diversity of formal and informal equipment for a variety of age groups up to 12 years (balance beams, rock boulders and seating with mulch softfall), and will be surfaced with bark mulch. The playground will also be provided with a picnic shelter and associated amenities including bicycle stands, water bubbler and litter bins.

The playground's location towards the centre of the park provide direct connection to both the Montgomery Creek corridor and the surrounding residential areas of Neighbourhood 1B South via a 1.5m wide concrete path network.

Figure 14 Landscape plan – Montgomery's Rise Park



Source: AECOM

Note: Refer to Appendix C3 for high resolution version of this plan.

Park 2: Northern Montgomery's Creek corridor park (associated with SPS2)

A second park, incorporating a playground and associated informal open space, is proposed adjacent to SPS2 on the ridgeline between two basins (F and G), to the north of the Montgomery Creek corridor. This park is located within proposed lot 163 in subdivision Stage 1, which has a total area of 1.504Ha (including the park, basins and SPS2 site).

The playground will be provided with a variety of equipment pieces for children up to 12 years of age, and will be surfaced with bark mulch soft fall. The playground is connected to the surrounding residential community by a 2.5m wide share path. This links to the key path on Aprasia Avenue that connects in with the Neighbourhood 1A village centre and associated community facilities. A 1.5m wide concrete path connects the playground to the path network within the creek corridor, winding past Basin F and continuing for the length of Googong Common.

A timber viewing deck and shade structure is positioned adjacent the playground to provide picnic amenities and allow opportunity to take in views across and down the Montgomery's Creek corridor.

The park is constrained by significant slopes leading down to the creek corridor and adjacent basins. Due to these slopes the informal open space for passive recreation of lawn, dryland grasses and scattered trees is largely confined to the areas adjacent the street verge.

Figure 15 Landscape plan - Park 2

Source: AECOM

Note: Refer to Appendix C3 for high resolution version of this plan.

Refer to Figure 16 for details of character and materials of the two proposed parks.

Figure 16 Landscape character imagery

Source: AECOM

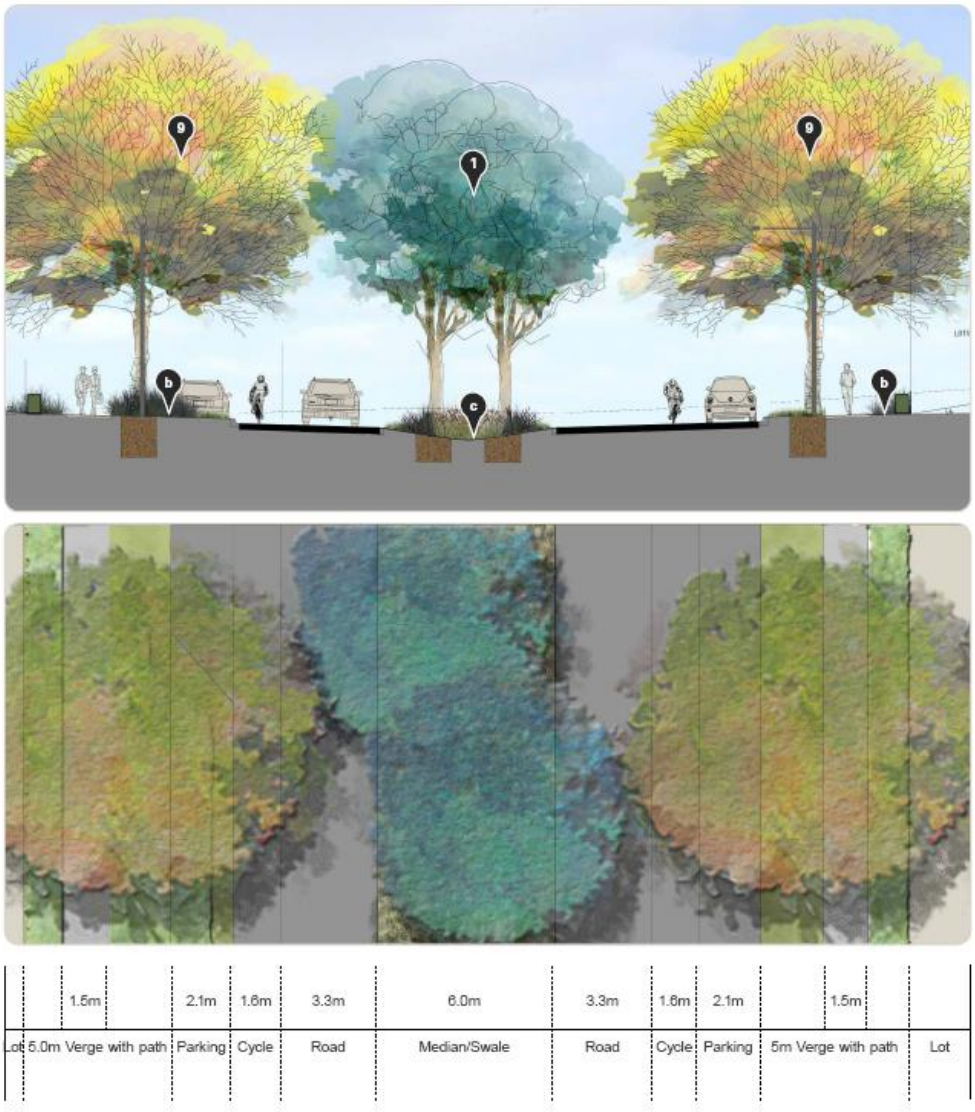
Streetscapes and street trees

A landscaping design for Neighbourhood 1B's streetscapes is proposed (refer to Landscape Plans prepared by AECOM in Appendix C3). Streetscape elements, such as plantings (trees, dryland grasses and understory plants), lighting and structures, will provide physical comfort and definition to the street network, as well as create safe routes for users.

The proposed street tree arrangement for Neighbourhood 1B comprises a combination of native and exotic plantings. Vegetation has been selected to maintain a low impact on the environment and natural resources, by selecting plant material that is endemic to the region or exotic plants that will complement the desired character or other aesthetic or functional needs (e.g. solar access). Plant species have also been selected to survive and revive after periods of drought, cold and high winds. Careful selection of materials ensures that maintenance for all species is very low to no maintenance, with a specific requirement for active watering to be low.

The planting arrangement for Gorman Drive includes planting within the street median combined with Water Sensitive Urban Design features (Refer to Figure 17).

Figure 17 Gorman Drive planting arrangement (suburban)



Source: AECOM

3.2.3 Stormwater management and drainage

Bioretention and wetland/pond systems will be used to treat stormwater, in combination with other elements such as swales and gross pollutant traps.

The proposed stormwater management arrangements for Neighbourhood 1B are designed to treat stormwater to best practice standards, ensuring gross pollutants and litter, sediments, nutrients, micro-organisms and the like are removed (as much as practicable) before re-entering the pipe and ultimately creek system. Stormwater measures proposed for Neighbourhood 1B are also designed to accommodate water storage to the required depths.

There are a total of 6 basins proposed within Neighbourhood 1B, each associated with the Montgomery Creek corridor which are a combination of bioretention and wetland areas. The detention systems have been integrated within open space areas, providing ecological and hydrologic function that will create high quality environments and habitat that will improve biodiversity.

Refer to the following drawings prepared by Brown Consulting:

» C3183 – D161+ DRAINAGE CATCHMENT PLAN

» C3183 – D163+ DRAINAGE CONCEPT DATA

» C3183 – D164+ DRAINAGE CONCEPT MASTER PLAN

» C13183 – D240+ WSUD POND PLAN SHEET 1 OF 2

» C13183 – D241+ WSUD POND PLAN SHEET 2

» C13183 – D242+ WSUD POND DETAIL SHEET 1 OF 2

» C13183 – D243+ WSUD POND DETAILS SHEET 2.

The key stormwater management elements include:

» **Gross pollutant traps** – Installation of eight (8) gross pollutant traps upstream, prior to discharge into a basin, to capture litter, debris, coarse sediment, oils and greases.

» **Swales** – A series of swales along Gorman Drive, planted with grasslands and more robust/sturdy plants where appropriate, that will initially treat flows before conveyed through the pipe network towards Basin E. The swales will help facilitate nutrient removal and conveyance of stormwater, and reduce nitrogen and phosphorous levels in receiving stormwaters.

» **Bioretention/filtration basins (basins A, B, E, F, G) –** Bioretention basins will consist of shallow areas over most of their surface area to incorporate macrophytes for nutrient uptake. The basins have been designed on the basis of a 0.5m deep filter medium with a maximum water quality detention (WQD) depth of ponding of 0.5m and a 24-72 hour drawdown.

» **Basin C** – Basin C at the south east corner of Neighbourhood 1B integrates a wetland and pond/detention basin, to activate the potential for reducing pollutants along within the long-term treatment strategy of stormwater. Basin C will have multiple functions within the development in addition to water quality, including: (a) stormwater detention, (b) recreational function for residents, (c) environmental qualities, and (d) significant amenity value. It has a total storage of 7,5000m^3 and depth of 1.9m. It has been designed to meet the multiple design criteria and functional targets in terms of stormwater detention, peak flow attenuation, flooding behaviour and provision of adequate community and recreational facilities.

» **Stormwater pipes** – Construction of a pipe system that integrates with the road drainage system to direct flow, and discharge into, the bioretention basins/wetlands.

Planting of the basins and surrounds with trees, native groundcovers and ephemeral species along with carefully located footpaths will ensure that these areas also contribute positively to the visual amenity of the proposed open space.

Culvert and future bridge system

The proposed culvert and bridge system (described in the Street Network section of this SEE) have been designed to provide adequate freeboard during a 100 year ARI design storm event.

Refer to Stormwater Management and Drainage Analysis report prepared by Brown Consulting (Appendix B05).

3.2.4 Utilities

The proposal includes the provision of all utilities to all proposed lots in Neighbourhood 1B.

The utilities to each proposed lot will generally be provided in the verge, with the exception of some back of lot services for sewer and stormwater for lots in the north eastern portion of Neighbourhood 1B. Gas, power and communications will be accommodated in a shared trench arrangement.

Refer to Civil Engineering and Utilities Design Report prepared by Brown Consulting for further details (Appendix B06).

Water supply (potable and recycled)

The proposal includes a potable and recycled water supply to each lot in Neighbourhood 1B in accordance with the Googong Township Potable Water and Recycled Water Master Plans, prepared by Brown Consulting.

It is proposed to supply some lots in Neighbourhood 1B through an extension of the existing potable and recycled water infrastructure in Neighbourhood 1A, which consists of the Googong bulk supply pump station, delivery mains (IWC), interim reservoirs including booster pump stations and the reticulation network.

Ultimately, the full Neighbourhood 1B development will rely on the following infrastructure:

» A ground level reservoir (for intermediate areas);

» Pressure reducing valves (for low areas).

To service some lots in Neighbourhood 1B, two (2) pressure reducing valves are required; one on the south side of Gorman Drive near the crossing into Neighbourhood 1B South and a second north of Aprasia Avenue within Aprasia Park. Construction of the ultimate ground level reservoir, including the connecting IWC mains, and the pressure reducing valves will be subject to a future separate DA.

Water mains are proposed to be PVC-M (potable) and PVC-O (recycled) in accordance with the Googong Development Design Specification.

The recycled water network is designed to service the fire hydrants.

Refer to Googong Neighbourhood 1B Water Supply Report, and the following drawings for approval prepared by Brown Consulting:

» C13183 – D201+ POTABLE WATER SUPPLY CONCEPT MASTER PLAN

» C13183 – D202+ POTABLE WATER SUPPLY CONCEPT DATA

» C13183 – D211+ RECYCLE WATER SUPPLY CONCEPT MASTER PLAN

» C13183 – D212+ RECYCLE WATER SUPPLY CONCEPT DATA.

Sewer

The proposed sewer reticulation to service Neighbourhood 1B is shown in drawing C13183 – D182+ and D183+ SEWER CONCEPT MASTER PLAN prepared by Brown Consulting.

A series of sewer pipes to connect to a new pump station (SPS2) located in Neighbourhood 1B are proposed. The majority are located in the street verge. A mid-block sewer line is proposed to service 12 larger lots at the north eastern edge of Neighbourhood 1B. Sewer pipes for the development are proposed to be PVC (SN8).

No portion of the sewer system is below the groundwater table.

Refer to drawings for approval, prepared by Brown Consulting:

» C13183 – D180+ GOOGONG TOWNSHIP SEWER CONCEPT CATCHMENT PLAN

» C13183 – D181+ GOOGONG TOWNSHIP SEWER CONCEPT CATCHMENT DATA

» C13183 – D182+ SEWER CONCEPT MASTER PLAN SHEET 1 OF 2

» C13183 – D183+ SEWER CONCEPT MASTER PLAN SHEET 2.

Gas

The proposal includes an extension of the natural gas network from Neighbourhood 1A into Neighbourhood 1B. The gas main to Googong from Queanbeyan will operate at a maximum operating pressure (MAOP) of 1,050kPa and the medium pressure (plastic) reticulation throughout the development will operate at an MAOP of 210kPa.

A four-way shared trench will be utilised to supply gas, power, street lighting and telecommunications (Refer to C13183 – D231+ to C13183 D234+ UTILITIES CONCEPT MASTER PLAN prepared by Brown Consulting).

Telecommunications

NBNco will be designing and delivering the telecommunications network for Googong. Each lot within the development will be supplied with a service connection. The telecommunications network will be extended from the network constructed in Neighbourhood 1A.

The telecommunications infrastructure will form part of the combined four-way shared utilities trench (Refer to C13183 – D231+ to C13183 D234+ UTILITIES CONCEPT MASTER PLAN prepared by Brown Consulting).

Power supply

The proposal involves the provision of underground power lines within the four-way shared trench to service Neighbourhood 1B (Refer to C13183 – D231+ to C13183 D234+ UTILITIES CONCEPT MASTER PLAN prepared by Brown Consulting).

Power supply and street lighting will be designed by GHD to standards and certification by Essential Energy, following the same principles as Neighbourhood 1A. An existing 11kv power cable is located across the south west corner of Neighbourhood 1B South. This power line forms part of the network that services the district, and will need to be incorporated in the subdivision to maintain the integrity of the network.

Street lighting will comply with Category V4, P3 and P4 classification.

The proposed street lights are a 9m high column for Category V4 installations with a 150W metal halide lamp and a 7.5m high column for Category Px installations with either a 70W metal halide or a 42W compact fluorescent lamp to obtain a white light.

It is understood to be Essential Energy's formal policy for all new urban subdivisions to have underground reticulation, and as such the proposal complies.

The Brown Consulting drawings for utilities for approval are:

» C31383 – D231+ UTILITIES CONCEPT MASTER PLAN – SHEET 1 OF 4

» C31383 – D232+ UTILITIES CONCEPT MASTER PLAN – SHEET 2

» C31383 – D233+ UTILITIES CONCEPT MASTER PLAN – SHEET 3

» C31383 – D234+ UTILITIES CONCEPT MASTER PLAN – SHEET 4.

3.2.5 Site preparation, earthworks and construction

Site establishment and access

A construction management plan has been prepared by Brown Consulting to illustrate the general arrangements for the construction period.

Key elements for construction, site establishment and access are:

» All weather access for construction is proposed from a single access off Googong Road, as this is a strategic point required for constructions, is a short distance to the construction compound area and is considered suitable from a road safety perspective;

» A site compound area for civil contractors is proposed at the northern end of Neighbourhood 1B, however it may require relocation during construction to suit the changing needs and requirements (details to be provided in Construction Certificate drawings);

» Removal of a temporary basin;

» Removal of an existing fence; and

» Construction of a 1.8m chainmesh fence to the perimeter of the site.

Refer to C13183 – D004+ CONSTRUCTION MANAGEMENT PLAN prepared by Brown Consulting in Appendix C4.

Soil, water and vegetation management

A soil, water and vegetation management plan has been prepared by Brown Consulting to illustrate the general arrangements for the protection of environmental features during construction. A detailed erosion and sediment control plan will be prepared for the Construction Certification.

Key elements of the soil, water and vegetation management plan for Neighbourhood 1B include:

» Silt fence;

» Dust suppression;

» Recycling of water;

» Sediment control ponds (location is to be confirmed in Construction Certificate drawings, however no pods shall be constructed on proposed or future residential blocks); and

» Schedule of regular inspections and maintenance.

Refer to C13183 – D225+ to C13183 – D226+ SOIL, WATER AND VEGETATION MANAGEMENT PLAN prepared by Brown Consulting in Appendix C4.

Earthworks

The proposal includes earthworks/site grading to achieve suitable grades for development (i.e. typically 1 in 6).

The site grading plans show a balance of cut and fill across the site and some re-grading to eliminate inter allotment or back-of-lot drainage. These designs will be further developed for the Construction Certificate drawings.

The Brown Consulting drawings for approval are:

» C13183 – D035+ SITE GRADING KEY PLAN

» C13183 – D036+ SITE GRADING SHEET 1 OF 4

» C13183 – D037+ SITE GRADING SHEET 2

» C13183 – D038+ SITE GRADING SHEET 3

» C13183 – D039+ SITE GRADING SHEET 4

» C3183 – D041 TYPICAL SECTIONS SHEET 1 OF 3

» C3183 – D042 TYPICAL SECTIONS SHEET 2

» C3183 – D043 TYPICAL SECTIONS SHEET 3.

Tree Removal

The majority of existing trees in the Neighbourhood 1B site will be retained in the Montgomery's Creek corridor and environmental conservation lands to the east of the site. The proposal includes the removal of some trees from the Neighbourhood 1B site area, as shown in the tree removal and retention plans prepared by SpaceLab (Refer to Appendix C5).

4 Legislative context

This section of the SEE sets out the statutory controls relevant to the proposed development and outlines how the proposal complies with the controls.

4.1 Commonwealth legislation

4.1.1 Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) requires the approval of the Commonwealth Government for actions that may have a significant impact on Commonwealth Land or matters of national environmental significance, including threatened species or ecological communities listed in the EPBC Act and migratory species listed in the EPBC Act.

The EPBC Act approval (ref EPBC 2011/5829, see Appendix B10) is the overarching Commonwealth Government approval of Googong township, including all constituent neighbourhoods and the Part 3A approved Integrated Water Cycle (IWC) infrastructure. The EPBC Act approval primarily addresses the impacts of Googong township on the Googong Foreshore and on matters of national environmental significance, namely the PTWL and its habitat.

The approval contains two conditions of direct relevance to the management of the environment in Neighbourhood 1B. They are:

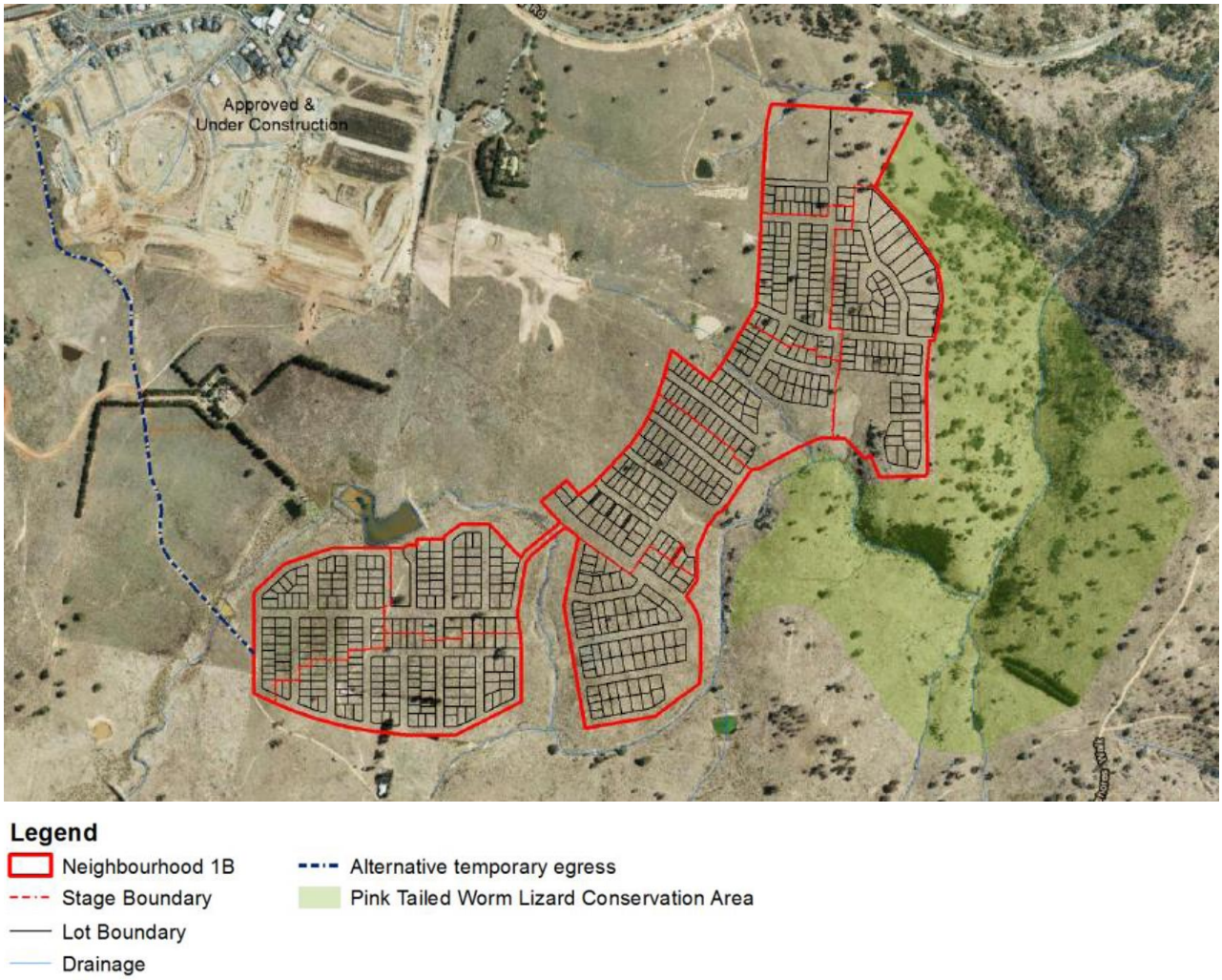
» Condition 1 requires the development of a Pink-tailed Worm-lizard Protection and Management Plan (PTWL-PMP) to govern the dedication and ongoing management of the approximately 52ha of PTWL conservation area. The PTWL-PMP was developed by Biosis in 2011. The current version (Version 5) was prepared to incorporate the realignment of the PTWL conservation area boundary to accommodate Neighbourhood 1B, based on further detailed design of Neighbourhood 1B. The realignment increased the net PTWL conservation area by 2.0073ha and created a more manageable and logical area of high quality PTWL habitat.

» Condition 2 requires the development and implementation of a Googong Foreshores Interface Management Strategy (GFIMS) to direct the management of development in close proximity to Googong foreshores and prevent impacts to the Googong water supply. The GFIMS was developed by Biosis in 2012. The current version (Version 3) was prepared as an update to reflect the changes to the PTWL conservation area.

The proposed development satisfies the requirements of the EPBC Act approval (ref EPBC 2011/5829) and the associated PTWL-PMP and GFIMS. Figure 18 illustrates the developable area of Neighborhood 1B is outside of the PTWL conservation area.

The northernmost part of Neighbourhood 1B is located within the GFIMS area. This land includes that part of Neighbourhood 1B affected by an odour buffer which is not currently proposed for residential subdivision, rather proposed as part of a superlot for future development.

Figure 18 Location of PTWL conservation area relative to Neighbourhood 1B



Source: Eco Logical Australia

An indicative subdivision plan prepared for this land shows only two (2) larger rural residential lots located at the northernmost portion of Neighbourhood 1B in the area affected by the GFIMS (refer to Figure 8). These lots are partly affected by two management areas identified in the GFIMS known as MA4 – Managed Residential Area and MA3 – Googong Foreshores Buffer Area.

Whilst the creation of the two lots is not proposed at this stage, the future subdivision of these lots will satisfy the management requirements of the GFIMS, which are summarised in Table 6.

Table 6 GFIMS areas affecting land in Neighbourhood 1B

Management Area	Name	Location	Management Requirements of GFIMS
MA3	Googong Foreshores Boundary Buffer Area	Comprises all E2 Environmental Conservation zoned land not otherwise located within the PTWL Conservation	To be managed by land owner in accordance with the zone objectives for E2 land to provide a buffer to Googong Foreshores. Management actions include: » Establishment and fencing of

Management Area	Name	Location	Management Requirements of GFIMS
		Area (MA1) or the Googong Reservoir Catchment Area (MA2) Refer to green zone in Figure 8.	boundary; » Weed removal, monitoring and management; » Planting of only indigenous plant species; and » Management of biomass.
MA4	Managed Residential Area	Comprises all R1 General Residential and R5 Large Lot Residential zoned land occurring within the GFIMS area. Refer to blue zone in Figure 8.	To be managed by land owner for residential purposes in accordance with Clause 6.5 'Development near Googong Dam foreshores' of QLEP, being with an appropriate management regime relating to bush fire control, vegetation clearing, access provision, fencing controls, recreational uses, feral animal and weed control, management of grazing, keeping of animals and landscaping with indigenous species. Management actions include: » Establishment and fencing of boundary; » Weed removal, monitoring and management; » Planting of only indigenous plant species; and » Management of biomass.

It is envisaged that appropriate conditions can be placed on the title of affected lots through a Section 88B Instrument to ensure the management requirements are maintained.

In addition to the management requirements, GFIMS requires the provision of edge roads along the majority of the eastern edge of Googong township. It allows for an exception to the edge road requirements, being:

» Allows for the provision of a fire trail along part of the periphery, rather than a sealed road, as provided for in Neighbourhood 1B at the north-eastern edge; and

» Allows for an exception to the edge road requirements for the northernmost lots in Neighbourhood 1B, which are proposed to be subdivided in the future to lots > 15,000m^2. In this location, the large lots can be managed without an edge road or fire trail due to the size of the lot.

The proposed street network provides for the necessary sealed edge road and fire trail.

4.2 State legislation

4.2.1 Environmental Planning and Assessment Act 1979

The Environmental Planning and Assessment Act 1979 (EP&A Act) is the prevailing state legislation for planning in NSW. Part 4 of the EP&A Act provides controls for the carrying out of development that requires development consent. Key sections of relevance to this SEE are addressed below.

Section 79C sets out those matters that a consent authority is to take into consideration in determining a development application. Section 5 of this SEE contains an assessment of the proposed development against Section 79C of the EP&A Act.

Section 79BA contains certain provisions for bush fire prone land. It states:

> *(1) Development consent cannot be granted for the carrying out of development for any purpose (other than a subdivision of land that could lawfully be used for residential or rural residential purposes or development for a special fire protection purpose) on bush fire prone land unless the consent authority:*
>
> *(a) is satisfied that the development conforms to the specifications and requirements of the document entitled Planning for Bush Fire Protection, ISBN 0 9751033 2 6, prepared by the NSW Rural Fire Service in co-operation with the Department of Planning (or, if another document is prescribed by the regulations for the purposes of this paragraph, that document) that are relevant to the development (the relevant specifications and requirements), or*
>
> *(b) has been provided with a certificate by a person who is recognised by the NSW Rural Fire Service as a qualified consultant in bush fire risk assessment stating that the development conforms to the relevant specifications and requirements.*

A Bushfire Assessment has been prepared to assess the proposed development (Refer to Appendix B07). Section 4.2.4 of this SEE details how the bushfire requirements for the proposed development have been satisfied.

Division 5 contains special procedures for Integrated Development. Part 4 of Division 5 (clause 91) states that Integrated Development is development (not being State significant development or complying development) that, in order for it to be carried out, requires development consent and one or more of the approvals outlined in Table 7.

The proposal is Integrated Development as approval is required under the following Acts:

» National Parks and Wildlife Act 1974;

» Rural Fires Act 1997;

» Fisheries Management Act 1994; and

» Water Management Act 2000.

Each of the relevant sections of these Acts is addressed below.

Table 7 Application of integrated development approval requirements (EP&A Act 1979 Clause 91)

Act	Provision	Approval	Applies
Fisheries Management Act	s 144	aquaculture permit	×
	s 201	permit to carry out dredging or reclamation work	×

Act	Provision	Approval	Applies
1994	s 205	permit to cut, remove, damage or destroy marine vegetation on public water land or an aquaculture lease, or on the foreshore of any such land or lease	✗
	s 219	permit to: (a) set a net, netting or other material, or (b) construct or alter a dam, floodgate, causeway or weir, or (c) otherwise create an obstruction, across or within a bay, inlet, river or creek, or across or around a flat	✓
Heritage Act 1977	s 58	approval in respect of the doing or carrying out of an act, matter or thing referred to in s 57 (1)	✗
Mine Subsidence Compensation Act 1961	s 15	approval to alter or erect improvements within a mine subsidence district or to subdivide land therein	✗
Mining Act 1992	ss 63, 64	grant of mining lease	✗
National Parks and Wildlife Act 1974	s 90	grant of Aboriginal heritage impact permit	✓
Petroleum (Onshore) Act 1991	s 9	grant of production lease	✗
Protection of the Environment Operations Act 1997	ss 43 (a), 47 and 55	environment protection licence to authorise carrying out of scheduled development work at any premises	✗
	ss 43 (b), 48 and 55	environment protection licence to authorise carrying out of scheduled activities at any premises (excluding any activity described as a "waste activity" but including any activity described as a "waste facility")	✗
	ss 43 (d), 55 and 122	environment protection licences to control carrying out of non-scheduled activities for the purposes of regulating water pollution resulting from the activity	✗
Roads Act 1993	s 138	consent to: (a) erect a structure or carry out a work in, on or over a public road, or (b) dig up or disturb the surface of a public road, or (c) remove or interfere with a structure, work or tree on a public road, or (d) pump water into a public road from any land adjoining the road, or (e) connect a road (whether public or private) to a classified road	✗

Act	Provision	Approval	Applies
Rural Fires Act 1997	s 100B	authorisation under section 100B in respect of bush fire safety of subdivision of land that could lawfully be used for residential or rural residential purposes or development of land for special fire protection purposes	✓
Water Management Act 2000	ss 89, 90, 91	water use approval, water management work approval or activity approval under Part 3 of Chapter 3	✓

4.2.2 Fisheries Management Act 1994

Section 219 requires a permit to construct or alter a dam, floodgate, causeway or weir across or within a bay, inlet, river or creek, or across or around a flat.

As described in Section 3.2.1 of this SEE, a crossing over Montgomery's Creek is proposed to provide access to Neighbourhood 1B South. The creek crossing is in the form of a 'Bebo' arch road crossing (Figure 12). The crossing will maintain a flow area of 16.3m^2 with a 1.0m freeboard.

Section 219 states:

219 Passage of fish not to be blocked

(1) A person who:

(a) sets a net, netting or other material, or

(b) constructs or alters a dam, floodgate, causeway or weir, or

(c) otherwise creates an obstruction,

across or within a bay, inlet, river or creek, or across or around a flat, so that:

(d) fish will or could be blocked or left stranded, or

(e) immature fish will or could be destroyed, or

(f) the free passage of fish will or could be obstructed,

is guilty of an offence.

Maximum penalty: In the case of a corporation, 2,000 penalty units or, in any other case, 1,000 penalty units.

…

(5) This section does not apply to or in respect of the following:

(a) any activity that is otherwise permitted by or under this Act or any other Act,

(b) any activity that is done in accordance with a permit issued by the Minister under this Part,

(c) any activity or waters of a kind exempted from the operation of this section by the regulations.

This proposal seeks approval from the NSW Department of Primary Industries (Fisheries) for a permit to construct the crossing over Montgomery's Creek. The DA will be referred to the Department. For further details about the proposed creek crossing, refer to the Stormwater Management and Drainage Analysis report prepared by Brown Consulting (Appendix B05).

4.2.3 National Parks and Wildlife Act 1974

Section 90 of the National Parks and Wildlife Act 1974 (NPW Act) requires an Aboriginal Heritage Impact Permit (AHIP) be granted for certain works that may harm or potentially harm Aboriginal objects or places.

As described in Section 3.2.3 of this SEE, a number of Aboriginal sites are located within Neighbourhood 1B as identified in assessments carries out by Navin Officer Heritage Consultants (NOHC). Various stages of detailed assessment and reporting have been carried out on these sites. As a result, an AHIP is currently with the NSW Office of Environment and Heritage for approval for collection of surface artefacts from some land within Neighbourhood 1B North and Central. This AHIP application covers impact to all sites in Neighbourhood 1B that relate to land where infrastructure works (under the previous Part 3A approvals) are propose and for the areas encompassed by the PTWL conservation area.

In accordance with the recommendations of NOHC, an application for an AHIP for all other sites in Neighbourhood 1B will be lodged with the NSW Office of Environment and Heritage. Reporting on the results of the test excavations and field survey is currently being finalised with a view to lodge with an AHIP application.

The proposed mitigation actions for each of these heritage items affected by this DA is summarised in Table 8. As shown below, the majority of sites are categorised as having low significance, where the proposed mitigation action is to collect the surface artefact.

One item, GA PAD20, has lot to medium significance. This item is mainly located outside of the developable area, thus the anticipated impact as a result of the Neighbourhood 1B DA is "very minimal impacts to subsurface deposits".

One item, GA Scarred Tree, has high cultural significance. The scarred tree is located within the developable area of Neighbourhood 1B and is therefore proposed to be affected. Navin Officer Heritage Consultants recommend the salvage and off-site preservation of the remaining portion of the scarred tree.

The forthcoming AHIP application will seek permission to carry out these actions.

Table 8 Summary of management recommendations for heritage sites in Neighbourhood 1B

Site no.	Description	Significance	Recommended management action
European heritage			
GH1	Shearing shed, quarters and associated buildings	Low	The kitchen and shearing quarters were the most significant elements of this site. These items burnt down and nothing of significance remains. This item does not meet the threshold for heritage listing and therefore no further assessment is required and the item will be dismantled.
GH3	European midden area eroding out of a creek bank	Low	This site could not be relocated in a 2014 survey. NOHC has assumed this site has subsequently washed away during a heavy rain event.

Site no.	Description	Significance	Recommended management action
Aboriginal heritage			
G1B AS1	Artefact scatter	Low	Collection of surface artefacts
G1B AS3	Isolated artefact	Low	Collection of surface artefacts
G1B AS4	Isolated artefact	Low	Collection of surface artefacts
G1B AS5	Isolated artefact	Low	Collection of surface artefacts
G1B AS6	Isolated artefact	Low	Collection of surface artefacts
G1B AS8	Isolated artefact	Low	Collection of surface artefacts
G1B PAD	Sub-surface artefact scatter	Low	None required
GA 4	Isolated artefact	Low	Collection of surface artefacts
GA 19	Isolated artefact	Low	Collection of surface artefacts
GA 20	Isolated artefact	Low	Collection of surface artefacts
GA PAD19	Surface artefacts and subsurface artefact scatter	Low	Collection of surface artefacts
GA PAD20	Surface artefacts and subsurface artefact scatter	Low to medium	Collection of surface artefacts
GA Scarred tree	Probable scarred tree	High cultural significance	The remaining portion of the scarred tree to be salvaged and preserved off site during construction
S.QbnE1	Artefact scatter	Low	Collection of surface artefact

Source: Navin Officer Heritage Consultants

In preparation for the lodgement of an AHIP application, the following works have/are been carried out:

» Further survey and subsurface testing;

» A technical report describing the results of the survey and subsurface testing program, which meets the NSW Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010a);

» A report that meets the Aboriginal cultural heritage consultation requirements for proponents (2010) which can be classified as an ACHAR to accompany an AHIP.

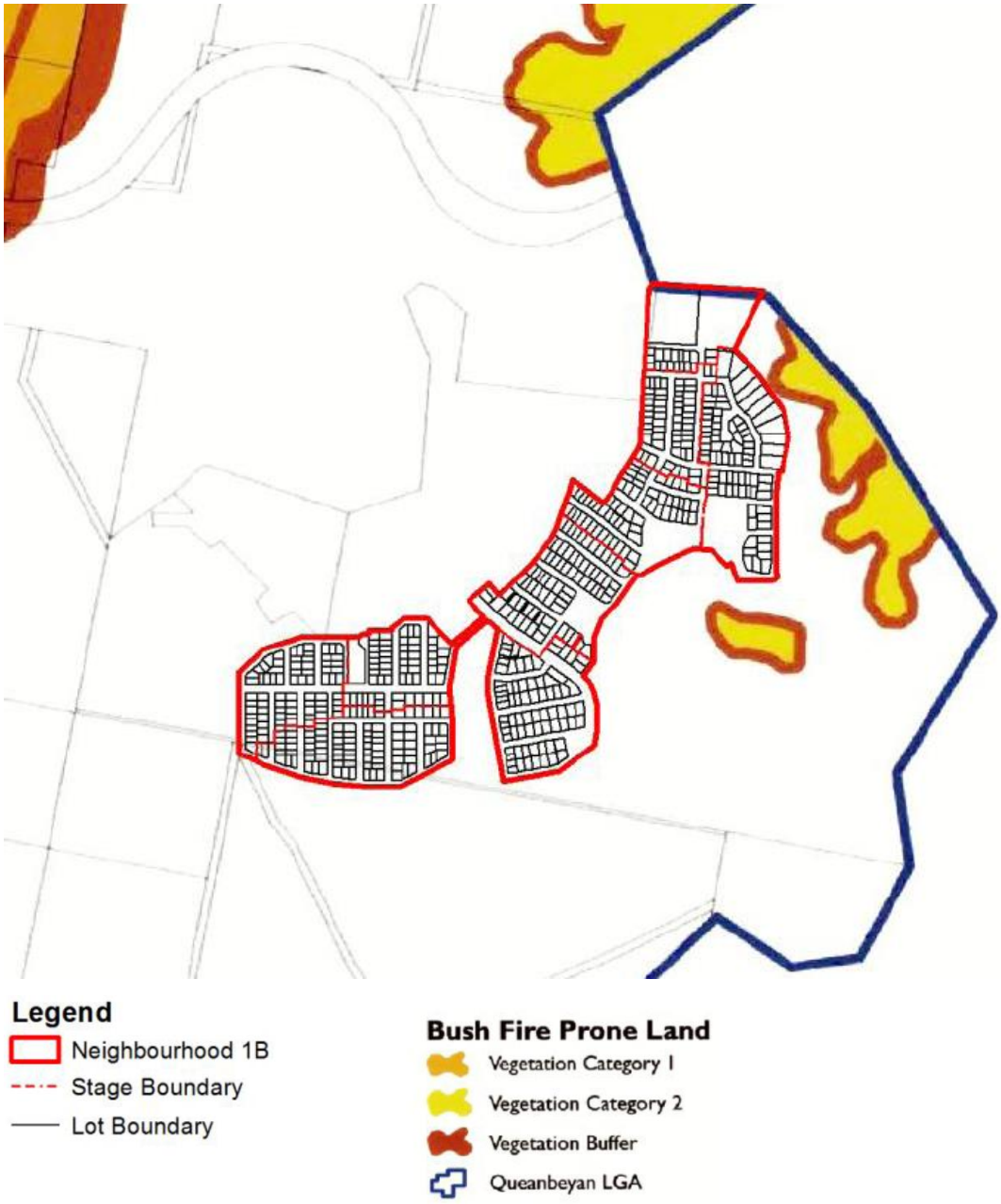
It is noted that no additional Aboriginal sites/items were identified in Neighbourhood 1B beyond those already identified in Table 8, during the survey and subsurface testing of Neighbourhood 1B. Once finalised, there reports will accompany an application to the NSW Office of Environment and Heritage for a Section 90C AHIP for all sites beyond those covered in the current AHIP.

4.2.4 Rural Fires Act 1997

Section 100B of this Act requires authorisation in respect of bush fire safety of subdivision of land that could lawfully be used for residential or rural residential purposes, or development of land for special fire protection purposes.

The proposed development site is mapped as being within 100 metres of Category 2 Bushfire Prone Land, being stands of bushland that have the potential to sustain a bushfire or contribute to bushfire attack (Figure 19). As such, a bushfire assessment of the Neighbourhood 1B proposal has been carried out by Eco Logical Australia (Refer to Appendix B07).

Figure 19 Bush Fire Prone Land Map



Source: Eco Logical Australia

The bushfire assessment concludes that the proposed subdivision satisfies Section 100B of the Rural Fires Act 1997, Clause 44 of the Rural Fires Regulation 2008 and Planning for Bush Fire Protection (2006).

Key elements of the bushfire assessment are summarised below:

Bushfire hazard assessment

The bushfire assessment report contains an assessment of the bushfire hazards in the locality, to determine the appropriate application of bushfire protection measures such as asset protection zone locations and dimensions. It assesses bushfire hazards in accordance with Planning for Bushfire Protection (2006).

Bushfire hazards in and surrounding Neighbourhood 1B include:

» *PTWL Conservation area* – to the east of Neighbourhood 1B, characterised by very open woodland and grasslands on the higher slopes grading into structured woodland and thickets of tall scrub towards Montgomery Creek;

» *Montgomery's Creek riparian corridor* – currently cleared grassland environments with occasional scattered trees and small patches of tall scrub;

» *Proposed new open space areas* – Neighbourhood 1B will include several open space areas that will support detention basins and active and passive recreational uses. These areas will be subject to landscape design features and plantings to complement WSUD, recreational and aesthetic objectives. These landscaped features will consist of discrete separate units that will not act as significant bushfire hazards, will be within a highly managed and controlled environment, and will be separated from lots.

Bushfire protection measures

Given the bushfire hazards described above, the following bushfire protection measures will be provided in Neighbourhood 1B:

» Assets protection zones;

» Access and egress into and out of the developable area (including alternative 'emergency' access);

» Water supply and other utilities; and

» Identification of appropriate building construction standards.

Each of these elements is described below.

Asset protection zones

Taking into account the slope of the land, Eco Logical Australia identified Asset Protection Zone (APZ) requirements suitable for residential development in Neighbourhood 1B, which range from 10m up to 30m.

The APZ requirements are summarised in Table 9 and illustrated in Figure 20.

Table 9 APZ requirements for Neighbourhood 1B

Predominant vegetation	Effective slope	Minimum APZ width
Woodland	Downslope 0-5^{o}	15m
	Downslope 5-10^{o}	20m
	Downslope 10-15^{o}	25m
	Downslope 15-18^{o}	30m

Predominant vegetation	Effective slope	Minimum APZ width
Grassland	Upslope	10m
	Downslope 0-5°	
	Downslope 5-10°	
	Downslope 10-15°	
	Downslope 15-18°	

Source: Ecological Australia (2014)

For the majority of proposed lots adjacent to an APZ, the APZ separation distance from the Neighbourhood 1B boundary to a residential lot will be greater than the minimum required, consisting of road reserve and open space. In most cases the APZ is shown from the development boundary inwards towards the lots and is not located within the PTWL Conservation Area.

The APZ for the larger lots at the northern and north-eastern end of the subdivision will ultimately be maintained within a residential lot at the location of the dwelling (most likely to be on the more elevated portion of the lots closer to the road).

In addition to the larger lots at the northern and north-eastern end, there are three locations in Neighbourhood 1B South where proposed residential lots have direct frontage lots to the open space (lots 400, 416, 433, 444 and 445 in subdivision Stage 4 and lot 888 in subdivision Stage 8). In this location, the lots have direct frontage to the Montgomery's Creek corridor and a 10m APZ is required. The APZ in this area can be outside the lot area, managed within the open space, subject to a suitable design/management regime for the open space is established.

The management of vegetation within an APZ is to achieve the specifications of an Inner Protection Area (IPA) as described by PBP. As such, appropriate measures will be put in place to ensure APZs are managed as follows:

» No tree or tree canopy is to occur within 2 metres of dwelling rooflines;

» The presence of a few scattered trees in the APZ is acceptable provided that they are well spread out, do not form a continuous canopy, and are located far enough away from future buildings so that they will not ignite the buildings by direct flame contact or radiant heat emission;

» Shrubbery should not be planted within the APZ; Any landscaping or garden beds should be located away from the house; and

» The ground fuel is to be maintained to less than 4 tonnes per hectare of fine fuel by regular mowing or slashing.

Access and egress

The proposal includes the construction of roads that will provide appropriate access from a bushfire perspective. Ecological Australia has concluded that the proposed access/egress arrangements, as described below, are satisfactory:

» The proposed street network shows a logical public road layout linked to NH1A to the west at multiple points providing alternatives for access and egress;

» Interface locations with APZs have adequate perimeter access;

» There are four sections of interface approximately 100 metres in length that will not feature a perimeter road within the APZ, however each are short in distance and accessible from perimeter roads at either end;

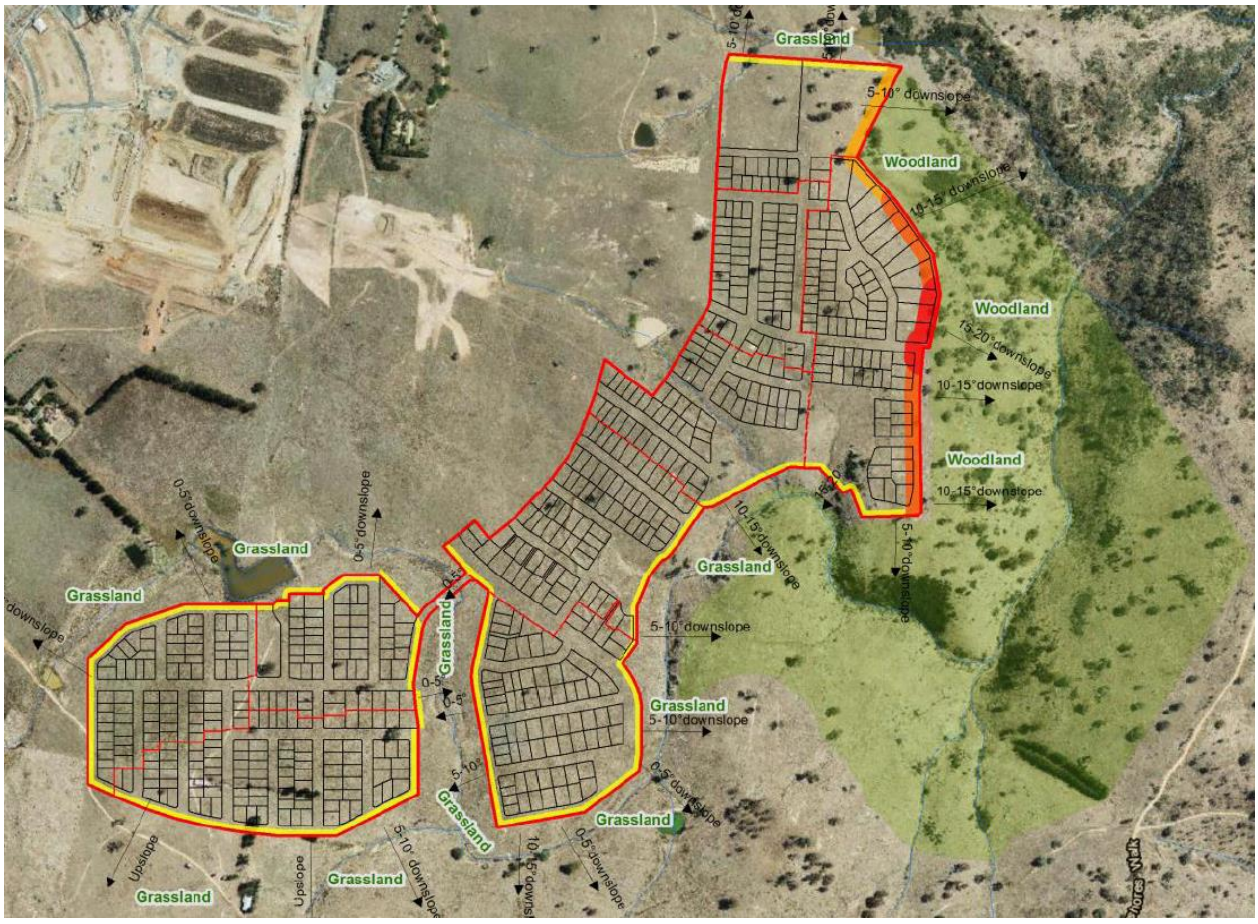
» A temporary (secondary) emergency access linking Neighbourhood 1B South to Googong Road (Refer to Figure 18); and

» A fire trail will provide perimeter access to the rear of lots at the northern end of the subdivision.

The report details the necessary design and construction standards for the roads and concludes that the proposal is acceptable in this respect. It notes that proposed street network includes one street type (DR2) that has 6m carriageways. Where these street types occur, it is noted that there are numerous cross streets to allow for increased accessibility and opportunities for tankers to pass. Thus, the provision of streets with 6m carriageways is considered appropriate in this instance (it is also noted these street types have been approved in Neighbourhood 1A).

The Traffic Impact Assessment also concludes that the street types proposed in Neighbourhood 1B, as well as the intersection designs, will all accommodate a 7.8m x 2.47m tanker as used by the Rural Fire Service Queanbeyan.

Figure 20 APZ requirements for Neighbourhood 1B



Legend

- Neighbourhood 1B
- Stage Boundary
- Lot Boundary
- Drainage
- Pink Tailed Worm Lizard Conservation Area
- Asset Protection Zone - 10m
- Asset Protection Zone - 20m
- Asset Protectin Zone - 25m
- Asset Protection Zone - 30m

Slope	Vegetation	APZ
Upslope	Grassland	10
0-5°	Grassland	10
5-10°	Grassland	10
15-20°	Grassland	10
5-10°	Woodland	20
10-15°	Woodland	25
15-20°	Woodland	30

Source: Eco Logical Australia

Water supply and other utilities

A hydrant system is to be installed to comply with AS 2419.1 – 2005 Fire Hydrant Installations – System Design, Installation and Commissioning (AS 2419) so that all dwellings are within 90m of a hydrant (with a tanker parked in-line maximum 20 metres from the hydrant).

Larger lots, such as those proposed in the north east of the site, may have a static water supply designed at the DA stage for a dwelling, if the dwellings are more than 90m from a hydrant. This option is an acceptable solution prescribed by PBP, and a static supply would typically consist of a 10,000 litre tank for each dwelling to be accessible by fire tankers.

In accordance with PBP, all electricity is to be underground wherever practicable.

Identification of appropriate building construction standards

The application of building construction standards for bushfire protection under *AS 3959-2009 Construction of buildings in bushfire-prone areas* (AS 3959) is to be assessed at the DA stage for individual dwellings and buildings. An assessment under AS 3959 is not required at the subdivision stage. However, the Bushfire Attack Levels (BAL) that may apply to the developable area have been mapped and are included in the bushfire assessment report.

4.2.5 Water Management Act 2000

Section 91 of this Act refers to the requirement to obtain a controlled activity approval to carry out specified controlled activity at a specified location in, on or under waterfront land.

The proposed development is located considerably outside of the 44m wide riparian corridor of Montgomery's Creek. However, some proposed works will affect the corridor:

» Basins C and the batters of streets 222 and 225 extend into the outer 50% of the riparian corridor; and

» Two crossings over Montgomery's Creek (Street 220 and Gorman Drive – future bridge) will be located within the inner 50% of the riparian corridor.

All sections of development located within the riparian corridor will need to be offset with compensatory areas along Montgomery's Creek. The necessary offset areas are provided for as illustrated in C13183 – D260+ to D262+ RIPARIAN CORRIDOR OFFSET PLAN. Section 3.2.2 of this SEE described the offsets sought.

Brown Consulting has carried out an assessment and concluded the offsets provided will conform to the riparian corridor matrix of the NSW Office of Water's Guidelines for Riparian Corridors on Waterfront Land.

An application will be lodged and processed under a streamlined assessment procedure to obtain a controlled activity approval under the Water Management Act 2000.

4.2.6 Threatened Species Conservation Act 1995

The Threatened Species Conservation Act 1995 aims to protect and encourage the recovery of threatened species populations and communities listed under the Act, aiming to conserve threatened species, populations, ecological communities and their habitats, as well as promote their recovery.

If a planned development or activity will have an impact on a threatened species, this must be taken into account in the development approval process.

The impacts of Googong township on threatened flora and fauna have been assessed through various studies, and ultimately peer reviewed by Biosis Research. Biosis' peer review (2011)

concluded that given the history of grazing and other agriculture and the negative survey results of each completed survey [Johnstone Centre (2004), Biosis Research & Ecowise Environmental (2009), Biosis Research (2010b, 2011a)], it is unlikely that any threatened flora species occurs and has remained undetected within the southern section of the Googong township.

In relation to threatened fauna, the review also concluded that the area of Googong township subject to constraint is limited to the PTWL. The PTWL-PMP prepared as a condition of the EPBC Act approval addresses the conservation of habitat for the PTWL.

It is noted that as part of the IWC project approved under (the now repealed) Part 3A of the EP&A Act at Googong, one of the conditions of approval required the development and implementation of an Aprasia Conservation Management Plan for the PTWL conservation area.

The PTWL-PMP was submitted to the Department of Planning and Environment (DPE) for approval given the similar requirements and issues addressed under the EPBC Act. Since this time, the updated Version 5 of the PTWL-PMP has been re-submitted and is pending approval from DPE.

It is understood that Version 5 of the PTWL-PMP has been endorsed from a technical perspective by the NSW Office of Environment and Heritage.

Furthermore, the works required to establish the PTWL conservation area (rock translocation, PTWL capture and translocation, PTWL population monitoring, etc) will be undertaken in accordance with the following:

» Biosis' Scientific Licence issued by the NSW Office of Environment and Heritage (OEH) under the National Parks and Wildlife Act (SL100758, expiry date 31 March 2015); and

» Biosis' approval 11/355 from the NSW Animal Care and Ethics Committee.

Based on advice from Biosis Research following correspondence with the NSW Office of Environment and Heritage, it is understood that no further approvals, licences or permits are required.

4.2.7 Native Vegetation Act 2003

The Native Vegetation Act 2003 does not apply to land that is within the R1 General Residential zone, however does apply to land in the R5 Large Lot Residential and E2 Environmental Conservation zone.

It is not proposed to carry out any major clearing of vegetation in the R5 or E2 zones. The DA is predominantly located outside of these two zones.

There are a small number of trees in the proposed large lots in the R5 zone, where a superlot is being proposed. As discussed in Section 2.3.2, a tree survey of Neighbourhood 1B was carried out by arborists Jim Laity and Steve Thomas (SpaceLab) on 5, 7 and 11 September 2013, and 27 January 2014. The survey identified that trees within that part of the R5 zone where future development for the purposes of a superlot is proposed, are below significant tree classification status. As these will ultimately be large (> 15,000m^2) lots, a large proportion of the trees will be retained.

It is noted that the proposal allows for the retention of the vast majority of trees, which are predominantly located within the PTWL conservation area and/or along the Montgomery's Creek corridor.

Refer to tree retention and removal plan prepared by SpaceLab in Appendix C5.

4.2.8 State Environmental Planning Policies

An assessment of the proposal against relevant State Environmental Planning Policies (SEPPs) is provided below.

SEPP (Infrastructure) 2007

SEPP (Infrastructure) 2007 provides a policy to facilitate the effective delivery of infrastructure across NSW.

Clause 45 contains controls relating to development that is likely to affect an electricity transmission or distribution network. It applies to:

(1) This clause applies to a development application (or an application for modification of a consent) for development comprising or involving any of the following:

(a) the penetration of ground within 2m of an underground electricity power line or an electricity distribution pole or within 10m of any part of an electricity tower,

(b) development carried out:

(i) within or immediately adjacent to an easement for electricity purposes (whether or not the electricity infrastructure exists), or

(ii) immediately adjacent to an electricity substation, or

(iii) within 5m of an exposed overhead electricity power line,

(c) installation of a swimming pool any part of which is:

(i) within 30m of a structure supporting an overhead electricity transmission line, measured horizontally from the top of the pool to the bottom of the structure at ground level, or

(ii) within 5m of an overhead electricity power line, measured vertically upwards from the top of the pool,

(d) development involving or requiring the placement of power lines underground, unless an agreement with respect to the placement underground of power lines is in force between the electricity supply authority and the council for the land concerned.

Clause 45(2) states:

(2) Before determining a development application (or an application for modification of a consent) for development to which this clause applies, the consent authority must:

(a) give written notice to the electricity supply authority for the area in which the development is to be carried out, inviting comments about potential safety risks, and

(b) take into consideration any response to the notice that is received within 21 days after the notice is given.

This proposal involves the provision of underground power lines as described in Section 3.2.4 of this SEE (Refer to Civil Engineering and Utilities Design Report prepared by Brown Consulting in Appendix B06). It is understood that Queanbeyan City Council will refer this application to Essential Energy.

Clause 104 contains controls for traffic-generating development. It provides that:

(3) Before determining a development application for development to which this clause applies, the consent authority must:

(a) give written notice of the application to the RTA within 7 days after the application is made, and

(b) take into consideration:

(i) any submission that the RTA provides in response to that notice within 21 days after the notice was given (unless, before the 21 days have passed, the RTA advises that it will not be making a submission), and

(ii) the accessibility of the site concerned, including:

(A) the efficiency of movement of people and freight to and from the site and the extent of multi-purpose trips, and

(B) the potential to minimise the need for travel by car and to maximise movement of freight in containers or bulk freight by rail, and

(iii) any potential traffic safety, road congestion or parking implications of the development.

(4) The consent authority must give the RTA a copy of the determination of the application within 7 days after the determination is made.

Traffic generating development is defined in Schedule 3 of the SEPP. It includes:

Table 10 SEPP (Infrastructure) 2007 – Schedule 3 – Traffic Generating Development criteria

Purpose	Size of capacity – site with access to any road	Size or capacity –site with access to classified road or to road that connects to classified road (within 90m)
Column 1	**Column 2**	**Colum 3**
Subdivision of land	200 or more allotments where the subdivision includes the opening of a public road	50 or more allotments

The proposal triggers the development referred to in Column 2 of Schedule 3 as it involves subdivision of land for over 200 lots and the opening of a public road.

A traffic impact assessment has been carried out for Neighbourhood 1B by TTM Consulting (Refer to Appendix B08). The assessment considered the capacity of proposed new streets in Neighbourhood 1B to accommodate anticipated traffic volumes and movements, emergency and service vehicle access, on-street car parking provision and traffic impacts on surrounding streets (Googong Dam Road and Old Cooma Road).

Key elements of the assessment are summarised below.

Traffic impacts on Googong Dam Road and Old Cooma Road

» Estimated additional traffic loadings on Googong Dam Road west of Neighbourhood 1A at the completion of Neighbourhoods 1A and 1B is 635 vehicles per hour in the AM peak (westbound) and 159 vehicles per hour in the PM peak (eastbound).

» Estimated additional traffic loadings on Googong Dam Road west of Neighbourhood 1A at the completion of Neighbourhoods 1A and 1B is 8,000 vehicles per day.

» Based on SIDRA analysis, the existing movement network can accommodate the increased traffic volumes without inappropriate peak period congestion. Although these additional traffic loadings will more than double existing traffic on Old Cooma Road, the resultant totals are well

within the capacity of the existing road configuration which is at least 15,000 vehicles per day or 1,400 vehicles per hour per direction.

» A proposal to provide an interim upgrade to the intersection of Old Cooma Road and Googong Dam Road has been identified (Refer to Section 3.2.1 of this SEE). It is proposed to upgrade the intersection to a CHR(S) and a CHL with a splitter island in the interim prior to an ultimate upgrade. TTM Consulting has concluded the upgrade will support the whole of Neighbourhood 1A and 1B.

» RMS has indicated its support for the interim upgrade at this time, subject to a three stage review process at the issuing of a subdivision certificate of 882 lots, 1,000 lots and 1,400 lots (Refer to RMS correspondence in TTM Consulting report in Appendix B08).

Public transport

» GTPL and Qcity Transit have agreed to a proposed bus route (interim) which extends to the Neighbourhood 1A neighbourhood centre. It has been agreed not to extend the bus route into Neighbourhood 1B at this time (refer to TTM Consulting Traffic Impact Assessment in Appendix B08 for further details).

In summary, the TTM Consulting report concludes that streets in Googong have been designed to facilitate legible, safe and efficient pedestrian, bicycle, public transport and private car movement.

SEPP 55 Remediation of Land

SEPP 55 provides a State-wide planning approach to the remediation of contaminated land.

Clause 7 of SEPP 55 states:

7 Contamination and remediation to be considered in determining development application

(1) A consent authority must not consent to the carrying out of any development on land unless:

(a) it has considered whether the land is contaminated, and

(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and

(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.

Various studies have been carried out across the whole Googong township to identify Areas of Environmental Concern (AECs). The resultant AECs Map is embedded in Googong DCP (refer to Figure 21).

It illustrates the AECs that require further contamination assessment and potentially remediation of soils.

Neighbourhood 1B is affected by the following AEC:

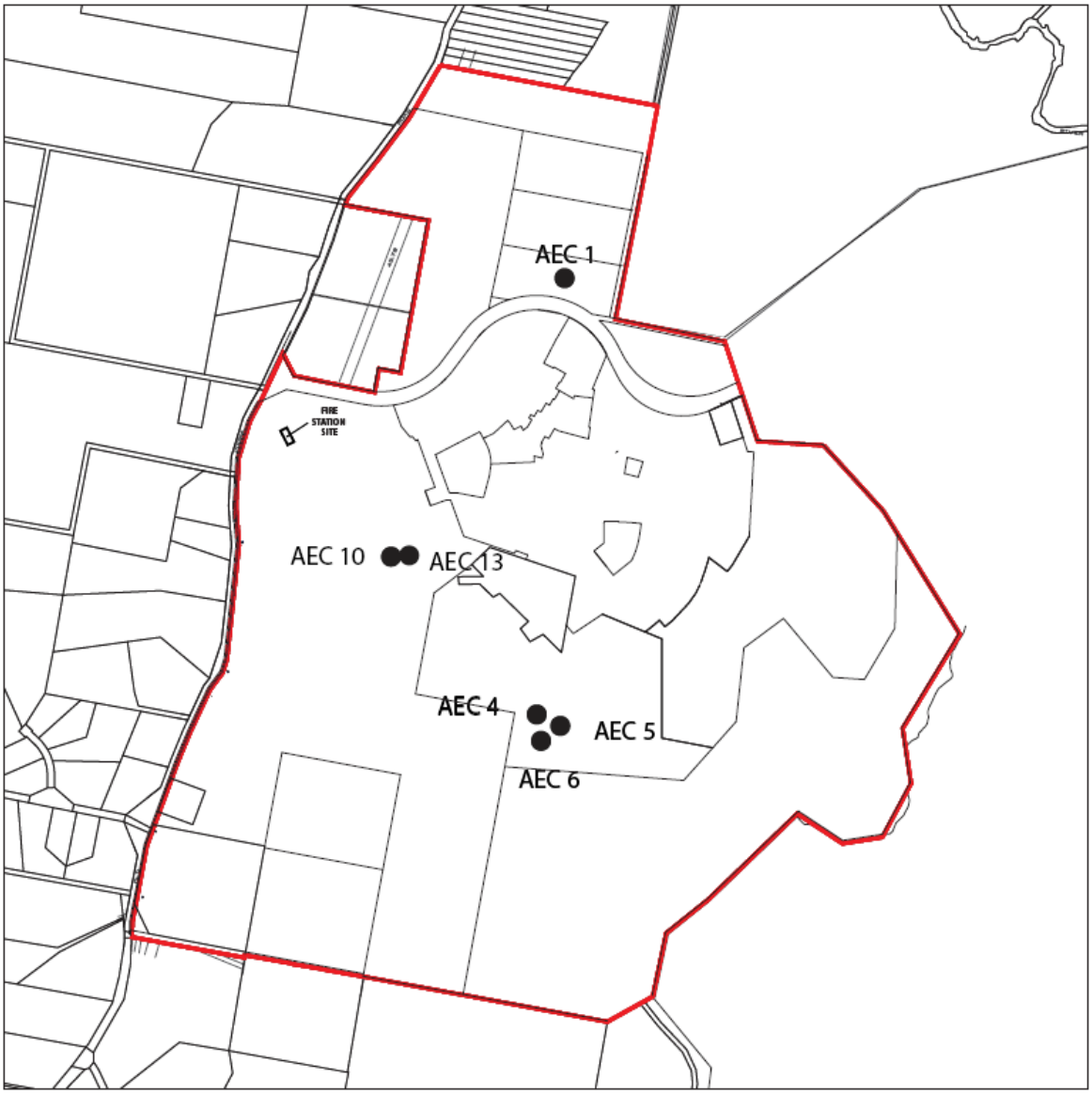
» AEC 4 – Farm shed and above ground oil tank;

» AEC 5 – Sheep dip and shearing shed;

» AEC 6 – Five above ground oil tanks.

AEC 10, a drum fuel storage and car batteries, and AEC 13, a sheep and cattle yard, are located outside of the Neighbourhood 1B site.

Figure 21 Areas of Environmental Concern in Googong



LEGEND

AEC 1 - FARM STORAGE SHED

AEC 4 - FARM SHED AND ABOVE GROUND OIL TANK

AEC 5 - SPRAY SHEEP DIP SITE, SHEARING SHED AND YARDS ADJACENT TO WOOLDSHED

AEC 6 - FIVE ABOVE GROUND OIL TANKS

AEC10 - 44 GALLON DRUM FUEL STORAGE AND CAR BATTERIES

AEC13 - SHEEP AND CATTLE YARDS

Source: AECOM

A detailed contamination assessment of Neighbourhood 1B has been carried out by Geotechnique, Ref No 12675/2-AA, 10 June 2014. It concludes that the AECs in Neighbourhood 1B can be made suitable for residential/open space development subject to the implementation of a number of recommendations, prior to site preparation and earthworks. The recommendations include:

» Demolition of any features/structures containing asbestos, and removal of other contaminants, and their appropriate disposal by licensed contractors;

» Carrying out the necessary validation and obtain certificates following removal and disposal;

» Preparation of a supplementary Sampling, Analysis and Quality Plan (SAQP) to outline additional contamination assessment (groundwater testing), remediation and validation, which is to be approved by Site Auditor[3].

For further details, refer to the Detailed Contamination Assessment prepared by Geotechnique in Appendix B13.

Accredited contaminated land Site Auditor Mr Ron Harwood carried out a review of previous contamination assessment and reporting at the site, and has concluded that the detailed contamination assessment of Neighbourhood 1B was carried out in general accordance with NSW Office of Environment and Heritage *Guidelines for Consultants Reporting on Contaminated Sites*.

Interim Advice from the site auditor (Appendix B12) states that the Neighbourhood 1B sites may be made suitable for residential/open space purposes subject to the following:

» Implementation of the recommendations of the detailed contamination assessment carried out by Geotechnique, Ref No 12675/2-AA, 10 June 2014;

» Installation of groundwater monitoring wells in the former sheep spray area in AEC5; and

» Preparation of a Remedial Works Plan detailing the location and remedial methodology to be adopted at each AEC requiring further work.

Refer to Appendix B12 for the Interim Advice No. 2 prepared by Mr Ron Harwood (30 August 2014).

Preparation of the Remedial Works Plan and preparation of the supplementary SAQP has since been carried out. This document provides details for the required remediation and validation of the contaminated areas.

Based on the above, it is considered that the necessary reporting requirements have been carried out to satisfy SEPP 55 requirements for the purposes of determining this DA.

SEPP (State and Regional Development) 2011

With a Capital Investment of over $20 Million, the proposal is defined for the purposes of this SEPP as "Regional Development". As such, the EP&A Act states that the consent authority will be the Southern JRPP.

[3] Supplementary SAQP has since been prepared, and supplements the original SAQP prepared by C. M. Jewell and Associates Pty Ltd (Ref No. J1526.2R-rev0, April 2012) and a revised SAQP (Ref No. Q6555-L1R1, 11 April 2014) prepared by Geotechnique Pty Ltd and approved by Site Auditor Mr R Harwood.

4.3 Local environmental planning instruments

4.3.1 Queanbeyan Local Environmental Plan 2012

The Queanbeyan Local Environmental Plan 2012 (QLEP) is Queanbeyan's main planning instrument. An assessment of the proposed development against QLEP is provided below.

Land use zoning

Clause 2.3 of QLEP requires the consent authority to have regard to the objectives for development in a zone when determining a development application in respect of land within the zone.

Neighbourhood 1B is affected by four zones:

» R1 General Residential (predominant zone affecting the site);

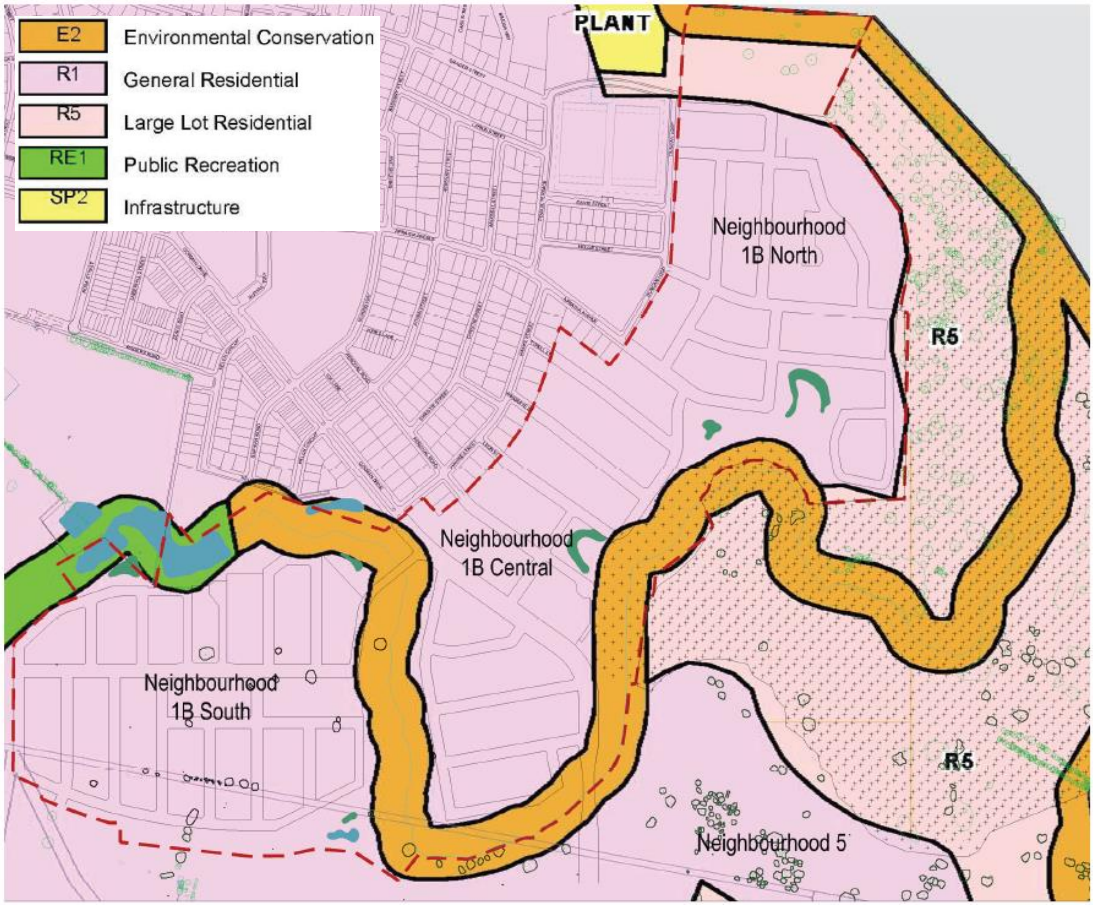
» R5 Large Lot Residential;

» E2 Environmental Conservation; and

» RE1 Public Recreation.

An overlay of the QLEP zoning map and Neighbourhood 1B site area is shown in Figure 22. The proposal is consistent with each of the land use zone objectives and permissibility as provided for in QLEP, as described below.

Figure 22 QLEP Zoning Map overlay



Source: SpaceLab

R1 General Residential

Objectives:

» To provide for the housing needs of the community;

» To provide for a variety of housing types and densities;

» To enable other land uses that provide facilities or services to meet the day to day needs of residents;

» To ensure that buildings with non-residential uses have a bulk and scale that is compatible with the zone's predominantly residential character;

» To promote walkable neighbourhoods and a sense of community;

» To ensure that where possible, development maintains existing bushland; and

» To encourage medium to high density housing located in close proximity to the town and village centres.

Permitted uses include (but are not limited to):

» Roads;

» Dual occupancies;

» Dwelling houses;

» Attached dwellings; and

» Recreation facilities (outdoor).

Nh1B compliance:

The proposal satisfies the objectives of the R1 zone as it seeks to subdivide land for predominantly residential purposes, and carry out subdivision works, to create residential lots ready for the construction of housing. A variety of lot sizes and types are proposed, which will help to provide a variety of housing types and densities in accordance with the second zone objective.

The proposed open space network and landscaping works, provision of pathways, walking tracks and bicycle paths, will promote walkability and encourage healthy lifestyles.

All proposed development in the R1 zone is permitted within that zone.

Zone R5 Large Lot Residential

Objectives:

» To provide residential housing in a rural setting while preserving, and minimising impacts on, environmentally sensitive locations and scenic quality;

» To ensure that large residential lots do not hinder the proper and orderly development of urban areas in the future;

» To ensure that development in the area does not unreasonably increase the demand for public services or public facilities;

» To minimise conflict between land uses within this zone and land uses within adjoining zones;

» To retain existing bushland and natural landscape features to preserve the rural character of the locality; and

» To ensure that rural residential development provides for integrated rural residential communities and its design is innovative and flexible.

Permitted uses include (but are not limited to):

» Roads; and

» Dwelling houses.

Nh1B compliance:

A small portion of Neighbourhood 1B is affected by the R5 zone, being land at the northern end of the neighbourhood adjacent to the Water Recycling Plant. The proposal satisfies the objectives of the R5 zone as it is proposed to create a superlot in the R5 zone where future residential subdivision will be proposed.

As the area is currently affected by an odour buffer, the ultimate subdivision of the land will occur following further testing and ultimately a reduction of the odour buffer area. An indicative subdivision pattern for the land shows that the ultimate proposal is to create two large (> 15,000m^2) lots in the R5 zone. The larger lots will maintain a rural setting and preserve trees and bushlands outside the required APZs.

It is proposed to retain the majority of existing bushland and natural landscape features will be preserves in these lots, to maintain a rural character.

All proposed (and future) development in the R5 zone is permitted within that zone.

E2 Environmental Conservation

Objectives:

» To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values;

» To prevent development that could destroy, damage or otherwise have an adverse effect on those values;

» To protect threatened species and rivers, creeks and gully ecosystems within Queanbeyan;

» To identify and protect escarpment areas that enhance the visual amenity of Queanbeyan and possess special aesthetic or conservational value; and

» To protect water quality by preventing inappropriate development within catchment areas.

Permitted uses include (but are not limited to):

» Roads; and

» Environmental protection works (without consent).

Nh1B compliance:

An E2 Environmental Conservation zone is applied to land in Googong township that is:

» Within 50 metres of the entire eastern boundary of the Googong township, as well as extending into areas within the township that fall within the Googong reservoir catchment (in accordance with the GFIMS); and

» Along the 'lower' catchment of Montgomery's Creek (note: the 'upper' catchment is zoned as RE1 Public Recreation)

The vast majority of the proposed development occurs outside of the E2 zone. Within the zone, the proposed development generally includes revegetation works to enhance the riparian qualities of the Montgomery's Creek corridor. A number of walking trails and pathways are proposed along Montgomery's creek, which will encourage passive recreation within the corridor without adversely affecting the creek system of landforms. Where there are steep, incised parts of the valley, a 1m walking trail is proposed rather than a concrete path, to minimise disruption to the landscape.

The water quality of the catchment area and creek system is protected by the proposed development, as a number of stormwater measures are proposed to protect and treat stormwater before it enters the system.

In some small sections of the E2 zone, there is some encroachment of roads/batters to accommodate a legible road network in Neighbourhood 1B. Roads are permitted in the E2 zone. Where there has been encroachment into the riparian corridor, equivalent offsets have been provided in accordance with the Water Management Act 2000.

All proposed development in the E2 zone is permitted within that zone.

RE1 Public Recreation

Objectives:

» To enable land to be used for public open space or recreational purposes;

» To provide a range of recreational settings and activities and compatible land uses; and

» To protect and enhance the natural environment for recreational purposes.

Permitted uses include (but are not limited to):

» Roads;

» Recreation areas;

» Recreation facilities (indoor);

» Recreation facilities (major); and

» Recreation facilities (outdoor).

Nh1B compliance:

The RE1 zone aligns with the Upper Montgomery's Creek corridor/creekline. Only a small portion of the Neighbourhood 1B proposal is affected by the RE1 zone. The eastern edge of the future Googong Common is proposed in this DA, where open space, walking tracks and pathways are provided (Refer to AECOM's Landscape and Open Space Elements report in Appendix B02).

Ultimately, with the development of Neighbourhood 2, the remainder of Googong Common will be constructed, which will provide an extensive open space resource and will form the 'lungs and playground' for Googong township.

The development proposed in the RE1 land in this proposal includes open space/recreational areas only, and is therefore permitted within the zone.

Subdivision consent requirements (cl 2.6)

Clause 2.6 of QLEP states that land to which this Plan applies may be subdivided, but only with development consent. The subject DA and this SEE seeks consent to subdivide the land.

Minimum subdivision lot size (cl 4.1)

Clause 4.1 of QLEP applies to a subdivision of any land shown on the Lot Size Map that requires development consent and that is carried out after the commencement of this Plan. It requires that the size of any lot resulting from a subdivision must not to be less than the minimum size shown on the Lot Size Map.

The minimum lot size is 330m^2 for land in the R1 zone and 15,000m^2 for land in the R5 zone in Neighbourhood 1B.

All proposed residential lots comply with these minimum lot sizes. It is noted that subdivision Stage 9 proposed a super lot in which future subdivision will be proposed. The indicative future lots shown within Stage 9 will all comply with these minimum lot sizes.

Preservation of trees or vegetation (cl 5.9)

Clause 5.9 of QLEP aims to preserve the amenity and biodiversity values of an area by controlling the removal of trees and vegetation.

It states:

5.9 Preservation of trees or vegetation

(1) The objective of this clause is to preserve the amenity of the area, including biodiversity values, through the preservation of trees and other vegetation.

(2) This clause applies to species or kinds of trees or other vegetation that are prescribed for the purposes of this clause by a development control plan made by the Council.

Note. A development control plan may prescribe the trees or other vegetation to which this clause applies by reference to species, size, location or other manner.

(3) A person must not ringbark, cut down, top, lop, remove, injure or wilfully destroy any tree or other vegetation to which any such development control plan applies without the authority conferred by:

(a) development consent, or

(b) a permit granted by the Council.

(4) The refusal by the Council to grant a permit to a person who has duly applied for the grant of the permit is taken for the purposes of the Act to be a refusal by the Council to grant consent for the carrying out of the activity for which a permit was sought.

(5) This clause does not apply to a tree or other vegetation that the Council is satisfied is dying or dead and is not required as the habitat of native fauna.

(6) This clause does not apply to a tree or other vegetation that the Council is satisfied is a risk to human life or property.

(7) A permit under this clause cannot allow any ringbarking, cutting down, topping, lopping, removal, injuring or destruction of a tree or other vegetation:

(a) that is or forms part of a heritage item or that is within a heritage conservation area, or

(b) that is or forms part of an Aboriginal object or that is within an Aboriginal place of heritage significance,

unless the Council is satisfied that the proposed activity:

(c) is of a minor nature or is for the maintenance of the heritage item, Aboriginal object, Aboriginal place of heritage significance or heritage conservation area, and

(d) would not adversely affect the heritage significance of the heritage item, Aboriginal object, Aboriginal place of heritage significance or heritage conservation area.

Note. As a consequence of this subclause, the activities concerned will require development consent. The heritage provisions of clause 5.10 will be applicable to any such consent.

The Neighbourhood 1B Structure Plan in Googong DCP envisages the removal of a small number of trees in Neighbourhood 1B, as well as the retention of the majority of trees in open space/creek corridors and the PTWL conservation area.

All trees to be removed have be assessed as having low to medium significance, and is it proposed through this DA to obtain consent for their removal. Refer to Section 4.2.7 of this SEE for further details.

One (1) scarred tree that has high Aboriginal heritage/cultural significance is located within the developable area of Neighbourhood 1B. The proposed development would have direct impacts on the scarred tree as it is located in the developable area of Neighbourhood 1B.

An AHIP application is currently being prepared for submission to NSW Office of Environment and Heritage seeking the removal of the remaining portion of the scarred tree, for salvage and preservation off site during construction, in accordance with the recommendation of Navin Officer Heritage Consultants. It is also proposed to 'return to country' of the scarred tree after salvage.

Heritage conservation (cl 5.10)

Clause 5.10 of QLEP aims to conserve the environmental heritage of Queanbeyan, including items of heritage significance, conservation areas, archaeological sites and Aboriginal objects and Aboriginal places of heritage significance.

Neighbourhood 1B is not affected by any items listed in QLEP as heritage items or conservation areas. However, heritage assessments carried out at Googong township have previously identified Aboriginal heritage sites and items in Neighbourhood 1B.

Section 4.2.3 of this report describes the recommendations of heritage assessments and proposed salvage and collection of Aboriginal items, in accordance with the NSW Office of Environment and Heritage.

Urban release areas (Part 6)

Part 6 of QLEP contains provisions for infrastructure and other specialist controls for release and development of land Urban Release Areas (URAs).

Googong is mapped in the Urban Release Area Map as an URA and has therefore been assessed against the following provisions of Part 6:

Clause 6.1

Clause 6.1 requires satisfactory arrangements to be made for the provision of designated State and Territory public infrastructure before the subdivision of land in an URA to satisfy needs that arise from development on the land. It states:

> *(2) development consent must not be granted for the subdivision of land in an urban release area if the subdivision would create a lot smaller than the minimum lot size permitted on the land immediately before:*
>
> > *(a) in relation to land shown as "Googong" on the Urban Release Area Map—24 December 2009, or*
> >
> > *(b) …*
>
> *unless the Director-General has certified in writing to the consent authority that satisfactory arrangements have been made to contribute to the provision of designated State and Territory public infrastructure in relation to that lot.*
>
> *(3) Subclause (2) does not apply to:*
>
> > *(a) any lot identified in the certificate as a residue lot, or*

(b) any lot to be created by a subdivision of land that was the subject of a previous development consent granted in accordance with this clause, or

(c) …

(d) …

Pursuant to clause 6.1(3)(b), this clause does not apply to the land as the proposal is within a lot created by a previous development consent granted in accordance with this clause. Furthermore, all necessary State infrastructure requirements have been agreed to in an executed State Planning Agreement. The State Planning Agreement makes previsions for schools and a fire station at Googong. The State Planning Agreement was executed by the NSW Minister for Planning and Environment on 15 September 2011. Refer to Section 5.1.4 of this SEE for further details about the State Planning Agreement.

Clause 6.2

Clause 6.2 requires the provision of public utility infrastructure, or arrangements to be made to provide public utility infrastructure, prior to development consent being granted in an URA. Its states:

(1) Development consent must not be granted for development on land in an urban release area unless the Council is satisfied that any public utility infrastructure that is essential for the proposed development is available or that adequate arrangements have been made to make that infrastructure available when it is required.

(2) This clause does not apply to development for the purpose of providing, extending, augmenting, maintaining or repairing any public utility infrastructure.

Adequate arrangements have been made for public utility infrastructure to service Neighbourhood 1B. A Local Planning Agreement has been approved and signed by Queanbeyan City Council for the provision of public utility infrastructure, as described in Section 5.1.4 of this SEE, including:

» Land for, and construction of, local roads;

» Monetary contribution for works related to intersection upgrades;

» Provision of local bus infrastructure; and

» Water supply and all utilities including sewer, telecommunications, electricity and gas.

Approval for a Water Treatment Plant and associated infrastructure to service Googong township has been granted under (the now repealed) Part 3A of the EP&A Act.

Clause 6.3

Clause 6.3 outlines the requirements to prepare a development control plan for development relating to URAs. In accordance with this clause, Googong DCP has been adopted by Queanbeyan City Council. The proposed development has been assessed against the provisions of Googong DCP (Refer to Section 4.3.2 of this SEE).

Clause 6.5

Clause 6.5 relates to land identified as the Googong Foreshore Buffer Area on the Googong Map of QLEP. The Googong Foreshore Buffer Area is a 150m buffer zone at the eastern edge of the Googong URA, as required by the GFIMS. Clause 6.5 states that:

(2) Development consent must not be granted to the erection of a building on land identified as "Googong Foreshore Buffer Area" on the Googong Map unless the consent authority is satisfied that:

(a) the building and associated infrastructure envelope identified for each lot will be appropriate, having regard to the land capability and objective of this clause, and

(b) the development will incorporate an appropriate management regime relating to bush fire control, vegetation clearing, access provision, fencing controls, recreational uses, feral animal and weed control, management of grazing, keeping of animals and landscaping with indigenous species.

A small portion of the proposed development within Neighbourhood 1B is within the Googong Foreshore Buffer Area, namely part of the proposed super lot subdivision in which the two larger (>15,000m^2) lots are indicated (for future subdivision).

No development for the purposes of a building is proposed in this land. However, it is noted that the GFIMS sets out detailed management arrangements for land in this buffer area (refer to Section 4.1.1 of this SEE). In accordance with the GFIMS, appropriate management arrangements have been proposed for the two indicative lots to ensure adequate infrastructure can be provided to each lot, and that appropriate bushfire management arrangements are established before future development of these lots. A dwelling may be located in Management Area MA4 – Managed Residential Area.

Refer to details about bushfire management in Section 4.2.4 of this SEE for further details.

Earthworks (cl 7.1)

Clause 7.1 of QLEP relates to the carrying out of earthworks.

The objectives of clause 7.1 are:

(a) to ensure that any earthworks will not have a detrimental impact on environmental functions and processes, neighbouring uses or heritage items and features of the surrounding land

(b) to allow earthworks of a minor nature without separate development consent.

The proposed earthworks will not have a detrimental impact on environmental function or heritage items. Prior to construction, sediment and erosion control measured will be implemented to safeguard environmental impacts (Refer to drawing C13183 – D255+ to D256+ SOIL, WATER AND VEGETATION MANAGEMENT PLAN prepared by Brown Consulting).

Details about the proposed measures to ensure minimisation of potential impacts on hydrology and water quality during the construction period are provided in the Stormwater Management and Drainage Analysis Report by Brown Consulting (Refer to Appendix B05). These measures will be detailed at the Construction Certificate stage, but are proposed to include:

» **Prevention measures** to control the generation of eroded material from the site, e.g.:
  – Mulching of cleared vegetation;
  – Spread mulch over disturbed area to provide a natural erosion barrier; and
  – Establishment and maintenance of stabilised construction compound.

» **Mitigation measures** to control, divert and trap sediments and suspended solids that would be mobilised, e.g.:
  – Diversion of site discharge points to erosion control measures such as silt fences and sedimentation ponds; and
  – Temporary sediment basins (to a minimum depth of 0.6m with an average depth of 1m where achievable).

As discussed in section 4.2.3 of this SEE, regard to cultural heritage has been addressed through the preparation of necessary assessments to obtain the required heritage approvals for surface collection of artefacts. Prior to construction, the works approved by an AHIP will be implemented to ensure the safe salvage and collection of Aboriginal artefacts and a scarred tree.

Clause 7.1(3) states that before granting development consent for earthworks, the consent authority must consider the following matters:

(a) stability in the locality

(b) the effect of the proposed development on the likely future use or redevelopment of the land

(c) the quality of the fill or of the soil to be excavated, or both

(d) the effect of the proposed development on the existing and likely amenity of adjoining properties

(e) the source of any fill material or the destination of any excavated material

(f) the likelihood of disturbing Aboriginal objects or other relics

(g) proximity to and potential for adverse impacts on any watercourse, drinking water catchment or environmentally sensitive area.

It is noted that geotechnical site investigations have been carried out by Douglas Partners (Refer to Appendix B14). The investigations involved excavation of 30 test pits to depths of 0.9m – 5.0m, logging on-site by an experienced technical officer and laboratory testing. The investigations resulted in a number of recommendations for site preparation and earthworks, pavement design and foundations.

In relation to site preparation and earthworks, the investigations identified a number of recommendations that would ensure appropriate stripping, excavation, reuse of excavated materials, filling placement and compaction, and site drainage, such that the earthworks would not create any adverse impacts on the development site, adjacent sites or nearby watercourses or environmentally sensitive lands.

The recommendations ae summarised as:

» Removal of vegetation, uncontrolled filling, topsoil and other deleterious materials from the proposed, to a topsoil stripping depth of about 0.2m, with excavation in some deeper areas able to occur where there are localised deeper topsoils or unsuitable materials/filling;

» Allowance is to be made for partial removal (0.2m – 0.3m following topsoil stripping) of silty and sandy soils;

» It was noted that much of the site is covered by rock outcrops and/or cobbles/boulders and that standard stripping operations will not be possible in these areas, with the use of excavators and articulated trucks recommended;

» The sandy topsoil, residual soils and extremely low to low strength bedrock could be expected to be removed using conventional earthmoving plant and as such no difficulties are anticipated;

» A series of subsoil drainage lines are to be installed within the base of gully lines to collect and control the flow of groundwater seepages; seepage flows can be readily controlled by gravity draining to a collection sump or pond;

» Batters should be protected with toe and spoon drains and vegetated as soon as possible after construction to minimise surface erosion;

» A range of measures to reduce the impact of wet weather on earthworks construction (trafficability), such as retaining grass cover where possible, providing a slight but even cross-

gradient to assist surface drainage, "sealing" exposed fill surfaces at the end of each work say with a smooth-wheeled roller, etc;

» Generally the topsoil and upper silty/sandy layer (underlying the root zone) is not considered suitable for engineering applications, but can be spread thinly (<100 mm thick) over controlled filling before the blocks are topsoiled, or, mixed and blended with other suitable soil and/or rock for use as general filling in road embankments, verges or landscaped areas;

» The natural soils underlying the topsoil and silty/sandy layer comprise a variable mix of sand, silt, clay and gravel, which are generally adequate for re-use as general fill or as controlled filling once moisture conditioned (subject to inspection by a qualified geotechnical engineer); and

» Prior to the placement of filling on the site, the areas to receive the filling should be subjected to test rolling (there are a number of additional recommendations in relation to the placement and compaction of fill).

Refer to full description of recommendations for site preparation and earthworks in the geotechnical investigation report prepared by Douglas Partners (Appendix B14).

Flood planning (cl 7.2)

Clause 7.2 of QLEP relates to the impact of development on flood planning areas. It applies to: (a) land identified as "flood planning area" on the Flood Planning Map, and (b) other land at or below the flood planning level.

No land in Googong is identified as "flood planning area" on the QLEP Flood Planning Map. However, investigations have been carried out to determine the impact on flood hazards as a result of the proposed development, due to the proximity to a nearby water course (Montgomery's Creek).

Clause 7.2(3) states:

(3) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development:

(a) is compatible with the flood hazard of the land, and

(b) is not likely to significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties, and

(c) incorporates appropriate measures to manage risk to life from flood, and

(d) is not likely to significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses, and

(e) is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding.

Flood modelling along Montgomery's Creek was undertaken by Brown Consulting, testing both the existing scenario with the objective of determining the 2, 5, and 100 year ARI flood extents, as well as sizing of the two creek crossings proposed as part of Neighbourhood 1B.

The results of the flood modelling have been used to inform the layout of Neighbourhood 1B, ensuring that developable land it outside of the 100 year ARI peak flow. The results were also used to inform, and test, the adequacy of the proposed Montgomery's Creek crossings. The results indicate:

» The crossing over Montgomery's Creek into Neighbourhood 1B has been designed with Bebo Arch culverts and a proposed road surface level of 732m AHD, which will provide over 2m of freeboard to the road surface level during a 100 year ARI design storm event;

» The proposed (future) bridge into Neighbourhood 5 over Montgomery's Creek has a surface level of 715.9m AHD, providing in excess of 2m freeboard to the road surface level on the bridge during a 100 year ARI design storm event (Note: approval for this bridge is not sought through this DA).

It is also noted that the design of stormwater detention basins takes account of the overall flood levels and flood behaviour for the Googong township in the ultimate development scenario. This ensures the detention basins are appropriately sized to store anticipated stormwater volumes.

Terrestrial biodiversity (cl 7.3)

Clause 7.3 of QLEP applies to land identified as "Biodiversity" on the QLEP Terrestrial Biodiversity Map and has the following objectives:

(1) The objective of this clause is to maintain terrestrial biodiversity by:

(a) protecting native fauna and flora, and

(b) protecting the ecological processes necessary for their continued existence, and

(c) encouraging the conservation and recovery of native fauna and flora and their habitats.

Land within Neighbourhood 1B that is identified as "Biodiversity" on the QLEP Terrestrial Biodiversity Map includes:

» Land that generally accords with the PTWL conservation area; and

» The Montgomery's Creek corridor.

Clause 7.3(3) states:

(3) Before determining a development application for development on land to which this clause applies, the consent authority must consider:

(a) whether the development is likely to have:

(i) any adverse impact on the condition, ecological value and significance of the fauna and flora on the land, and

(ii) any adverse impact on the importance of the vegetation on the land to the habitat and survival of native fauna, and

(iii) any potential to fragment, disturb or diminish the biodiversity structure, function and composition of the land, and

(iv) any adverse impact on the habitat elements providing connectivity on the land, and

(b) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.

Clause 7.3(4) states:

(4) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:

(a) the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or

(b) if that impact cannot be reasonably avoided by adopting feasible alternatives—the development is designed, sited and will be managed to minimise that impact, or

(c) if that impact cannot be minimised—the development will be managed to mitigate that impact.

The proposed development satisfies the objectives and controls of Clause 7.3 as it has been designed to protect and conserve areas of biodiversity, and puts in place measures to minimise any impact on areas of biodiversity during construction and during ongoing/future use. Key elements of the proposed development's consistency with this clause are summarised below:

» **PTWL conservation areas**

- The proposal does not encroach into the PTWL conservation area, which is located to the east of Neighbourhood 1B;
- A Protection and Management Plan for the PTWL conservation area (PTWL-PMP) has been prepared, setting out the requirements for the protection and management of the conservation area;
- All of these requirements have been adhered to as part of the development; and
- Refer to Section 4.1.1 of this SEE for further details.

» **Montgomery's Creek corridor**

- The Montgomery's Creek corridor is preserved and proposed to be enhanced, through walking trails and revegetation in some areas;
- Where there is encroachment into the riparian corridor, equivalent offset areas have been provided in accordance with the NSW Office of Water 'Guidelines for riparian corridors on waterfront land' (2012);
- Appropriate WSUD and stormwater management measures are proposed to ensure stormwater run-off is appropriately treated prior to re-entering the creek system; and
- Refer to Section 4.2.5 of this report for further details about the provision of offsets in the riparian corridor, and Section 3.2.3 for details of the proposed WSUD and stormwater management measures.

Riparian land and watercourses (cl 7.4)

Clause 7.4 of QLEP applies to land identified as "Watercourse" on the QLEP Riparian Lands and Watercourses Map, as well as all land that is within 40 metres of the top of the bank of each watercourse. Clause 7.4 has the following objectives:

(1) The objective of this clause is to protect and maintain the following:

(a) water quality within watercourses,

(b) the stability of the bed and banks of watercourses,

(c) aquatic and riparian habitats,

(d) ecological processes within watercourses and riparian areas.

Clause 7.4(3) states:

(3) Before determining a development application for development on land to which this clause applies, the consent authority must consider:

(a) whether or not the development is likely to have any adverse impact on the following:

(i) the water quality and flows within the watercourse,

(ii) aquatic and riparian species, habitats and ecosystems of the watercourse,

(iii) the stability of the bed and banks of the watercourse,

(iv) the free passage of fish and other aquatic organisms within or along the watercourse,

(v) any future rehabilitation of the watercourse and riparian areas, and

(b) whether or not the development is likely to increase water extraction from the watercourse, and

(c) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.

Clause 7.4(4) states:

(4) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:

(a) the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or

(b) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or

(c) if that impact cannot be minimised—the development will be managed to mitigate that impact.

The proposed development satisfies the objectives and controls of Clause 7.4 as it has been designed to minimise any adverse impact on the Montgomery's Creek watercourse (including, but not limited to, the water quality, flows, banks and ecosystems). As noted above, appropriate measures have been made to ensure:

» Any encroachments into the riparian corridor are offset by equivalent riparian areas, which are to be revegetated in accordance with the NSW Office of Water 'Guidelines for riparian corridors on waterfront land' (2012);

» The design of crossings over Montgomery's Creek has given regard to the need for appropriate flow areas for the creek system; and

» The proposal is identified as Integrated Development and is being referred for approval under the Fisheries Management Act 1994 and the Water Management Act 2000.

Airspace operations (cl 7.6) and development in areas subject to aircraft noise (cl 7.7)

Queanbeyan City Council has indicated that it will refer the proposed development to the relevant airport authorities.

Essential services (cl 7.9)

Clause 7.9 of QLEP states:

Development consent must not be granted to development unless the consent authority is satisfied that any of the following services that are essential for the development are available or that adequate arrangements have been made to make them available when required:

(a) the supply of water,

(b) the supply of electricity,

(c) the disposal and management of sewage,

(d) stormwater drainage or on-site conservation,

(e) suitable vehicular access.

The proposed development involves the provision of all essential services. Refer to Section 3.2 of this SEE which outlines the essential services required to be provided, and an explanation of how these services have been addressed for the proposed development.

Refer also to the reports prepared by Brown Consulting in Annexure B04 (addresses water supply), Annexure B06 (addresses the supply of electricity, disposal and management of sewage) and Annexure B05 (addresses stormwater). Annexure B08 contains a report prepared by TTM Consulting addressing vehicle access to the site.

Schedule 1

Schedule 1 contains a list of additional permitted uses for certain land.

Schedule 1(5) lists the following additional uses for land identified as "Googong Common" the Googong Map of QLEP:

> *(2) Development for the purposes of cellar door premises, depots, entertainment facilities, function centres, garden centres, horticulture, landscaping material supplies, plant nurseries, resource recovery facilities, viticulture, waste or resource transfer stations and water recreation structures is permitted with development consent.*

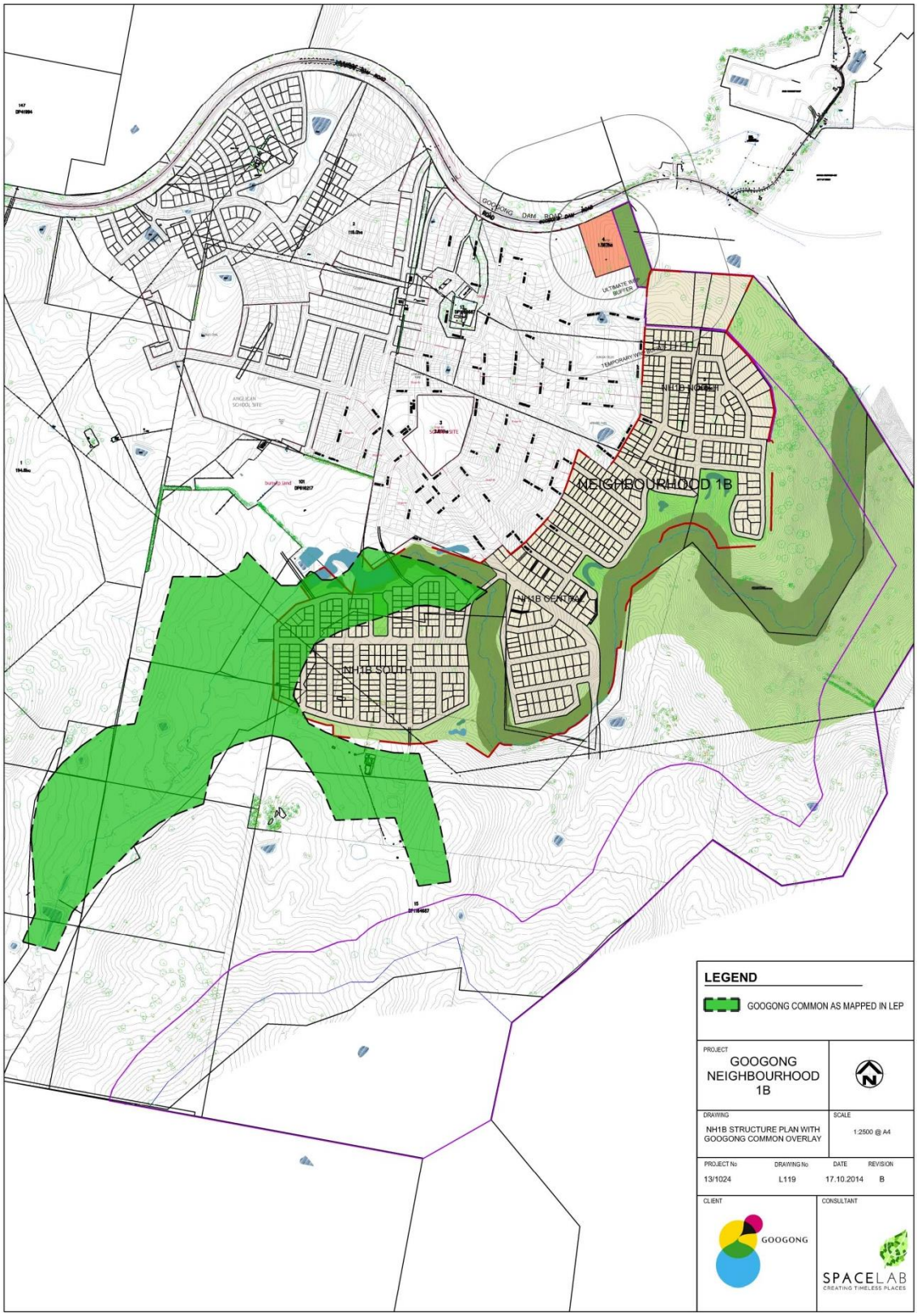
It is noted that through an error in the QLEP mapping of "Googong Common" in the Googong Map, part of the additional permitted uses for Googong Common now apply to some proposed residential lots in Neighbourhood 1B (refer to Figure 23).

The additional permitted uses allowed under Schedule 1(5), and the associated Googong Map, do not preclude the permissibility of residential lots on the land proposed in this DA. The clause and map simply allow for additional uses. It is not proposed to develop any lots within Neighbourhood 1B for the uses allowed under Schedule 1(5). However, Council may elect to remove the right to use the residential lots for any of the Additional Permitted Uses listed in Schedule 1, by placing a restriction on the affected land (as a condition of development consent). This would remove the possibility of proposing development for any of the purposes listed in Schedule 1(5) in the interim period before the mapping error is corrected.

GTPL is in the process of raising and resolving this mapping error with Councils Strategic Planning unit.

It is also noted that there will be no reduction to the land area to be dedicated to the Council as unencumbered open space for "Googong Common" as shown in Schedule 1 of the LPA.

Figure 23 Googong Common overlay with Neighbourhood 1B



Source: SpaceLab

4.3.2 Googong Development Control Plan

The Googong development control plan (DCP) is not a formal environmental planning instrument. However, it has been prepared in accordance with, and to fulfil, the requirements of Clause 6.3 of QLEP.

Googong DCP provides a framework to guide development in the Googong township. Appendix A of this SEE contains a detailed assessment of the Neighbourhood 1B proposal against relevant sections of the Googong DCP.

It is noted that Queanbeyan City Council is currently exhibiting a proposed Amendment to Googong DCP. The Amendment seeks to embed a new Neighbourhood Structure Plan (NSP) for Neighbourhood 1B into the Appendix of Googong DCP. The exhibition period is from 3 October to 3 November 2014.

GTPL has worked closely with Queanbeyan City Council on the preparation of the NSP for Neighbourhood 1B. The proposed development application seeks approval for subdivision, and subdivision works, generally in accordance with the NSP proposed to be embedded into Googong DCP for Neighbourhood 1B.

5 Section 79C Assessment

This section of the SEE contains an assessment of the proposal against the heads of consideration in Section 79C of the EP&A Act.

Section 79C(1) states:

(1) Matters for consideration—general

In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:

(a) the provisions of:

(i) any environmental planning instrument, and

(ii) any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Director-General has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and

(iii) any development control plan, and

(iiia) any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F, and

(iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph), and

(v) any coastal zone management plan (within the meaning of the Coastal Protection Act 1979)

that apply to the land to which the development application relates

(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality

(c) the suitability of the site for the development

(d) any submissions made in accordance with this Act or the regulations

(e) the public interest.

5.1 Assessment against relevant planning provisions – Section 79C(1)(a)

5.1.1 Environmental planning instruments – Section 79C(1)(a)(i)

Section 4 of this SEE provided an assessment of the proposal against all relevant environmental planning instruments, including:

» State Environmental Planning Policy No 55 – Remediation of Land (Section 4.2.8);

» State Environmental Planning Policy No (Infrastructure) 2007 (Section 4.2.8);

» Queanbeyan Local Environmental Plan 2012 (Section 4.3.1);

as well as the following related Acts:

» Environment Protection and Biodiversity Conservation Act 1999 (Section 4.1.1);

» Environmental Planning and Assessment Act 1979 (Section 4.2.1);

» Fisheries Management Act 1994 (Section 4.2.2);

» National Parks and Wildlife Act 1974 (Section 4.2.3);

» Rural Fires Act 1997 (Section 4.2.4);

» Water Management Act 2000 (Section 4.2.5);

» Threatened Species Conservation Act 1995 (Section 4.2.6); and

» Native Vegetation Act 2003 (Section 4.2.7).

5.1.2 Draft environmental planning instruments – Section 79C(1)(a)(ii)

There are currently a number of proposed draft amendments to Queanbeyan LEP 2012, as indicated on the NSW Department of Planning and Environment's LEP tracking System. None of the proposed amendments affect, or are relevant to, the proposed development.

5.1.3 Development control plan – Section 79C(1)(a)(iii)

Section 4.3.2 and Appendix A of this SEE provided an assessment of the proposal against the relevant sections of Googong DCP.

5.1.4 Planning agreements – Section 79C(1)(a)(iiia)

Two planning agreements currently apply to Googong township:

» State planning agreement, executed on 15 September 2011 by Minister for Planning and Environment; and

» Local planning agreement, executed on 12 January 2012 by Queanbeyan City Council.

State planning agreement

The State planning agreement relates land and construction of education facilities and a fire station. The agreement requires GTPL to do the following:

1. Make monetary contributions of 75% of $4,296.71 per developable hectare (subject to indexation) towards the costs of acquisition of land for the purposes of:
   - A fire station (being a 2,000m^2 site);
   - 1 primary school (being a 2.81Ha site);
   - A K-12 school (being a 9Ha site);

   OR

2. Dedicate all 12.01ha of land for the school sites.

Monetary contributions, or other security acceptable to the Minister, are to be made in respect of each Plan of Subdivision prior to the issue of a Subdivision Certificate. Where GTPL elects to dedicate land, the dedication must occur prior to the issue of Subdivision Certificate for certain plans of subdivision as set out below:

» First school site is to be dedicated no later than the date of issue of a Subdivision Certificate for a Plan of Subdivision which contains the 90th developable hectare;

» The K-12 school site to be dedicated no later than 30 June 2024 OR no later than the date of issue of a Plan of Subdivision which contains the 400th developable hectare (whichever is the earlier); and

» Fire Station site is to be dedicated no later than 30 June 2020 OR the date of issue of a Subdivision Certificate for a Plan of Subdivision which contains the 250th developable hectare.

GTPL has elected to dedicate all land for the school sites to the appropriate authority.

Upon submission of a Development Application for the subdivision of land, Council is to request the applicant obtain the Director General's certification that satisfactory arrangements have been made in respect to those lots prior to prior to approval.

Local planning agreement

GTPL has made a Local Planning Agreement (LPA) with the Council for the provision of public infrastructure to and at the development including roads, open space, community facilities and sewer and water services.

Schedule 1 of the LPA identifies the timing for the delivery of the various items of public infrastructure which is to occur:

» Prior to the release of a subdivision certificate (for monetary contributions);

» At the time of registration of a plan of subdivision (when dedicating land); or

» By the time a population threshold is reached (in the case of the provision of facilities and open space embellishments).

For the purpose of the LPA, the population is measured in Equivalent Persons, which are created upon the registration of residential final lots – being lots not intended to be further subdivided.

Table 11 sets out the Equivalent Persons that will be created upon the registration of all the Final Lots in Neighbourhood 1A and Neighbourhood 1B. However, development in Neighbourhood 1B is likely to proceed at the same time as development in Neighbourhood 2.

Table 11 Calculation of EPs

Development type	EP quotient	Dwellings in Nh1A	Dwellings in Nh1B	Dwelling TOTAL	Total EPs
Development type 1 (equal to or greater than 468m^2)	3.2 per dw	636	224	860	2,752.00
Development type 2 (less than 468m^2)	2.61 per dw	567	387	740	2,489.94
Development type 3 (residential apartment or secondary dwelling)	1.89 per dw	7	-	7	13.23
Total	-	1,210	611	1,821	5,255.17

Development in Neighbourhood 1B will deliver the following public infrastructure:

» Land and works for two Local Park (item 1.01 and 1.09)

» Land and works for the creation of the Pink Tailed Worm Lizard Conservation Area and revegetation of Montgomery Creek (item 1.02 and 1.11)

» Land and works for the creation of local roads on site (item 4.01-03);

» Land and works for stormwater management and drainage (item 6.01-02);

» Land and works for potable water/recycled water/sewer infrastructure (item 7.01-02);

» Monetary contribution towards off-site local roads (item 5.01);

» Monetary contribution towards Queanbeyan City Cultural Centre (item 3.01);

» Monetary contribution towards VPA administration costs (item 10); and

» Monetary contribution towards ecological offsets for works at Old Cooma Road/Ellerton Drive (item 11).

While full development of Neighbourhood 1A and Neighbourhood 1B would also trigger the first stage of the Multi-Purpose Centre (sited in Neighbourhood 2) upon the release of a Subdivision Certificate for the 5,182th Equivalent Person, GTPL's intention is to develop Neighbourhood 2 at the same time as Neighbourhood 1A and meet all obligations at the appropriate time. At the time of submission of this application the public infrastructure included in the LPA is being reviewed by Council and GTPL.

5.1.5 EP&A Regulation – Section 79C(1)(a)(iv)

This application is not inconsistent with any of the provisions of the Environmental Planning and Assessment Regulations 2000.

5.1.6 Coastal zone management plan – Section 79C(1)(a)(v)

Not applicable.

5.2 Assessment of likely impacts – Section 79C(1)(b)

5.2.1 Environmental impacts (natural and built)

The environmental impact of the proposed development has been assessed as part of the preparation of the Neighbourhood 1B NSP. Further assessment has been carried out to support this SEE, with a range of mitigation measures incorporated into the DA drawings/plans for approval.

Many of the environmental/built impacts and mitigation measures associated with Neighbourhood 1B have already been discussed in Section 3 and Section 4 of this report, including:

» Aboriginal heritage (see Section 4.2.3 and 4.3.1);

» Stormwater management and water quality (see Section 4.3.1);

» Wastewater treatment and recycling (Section 4.3.1);

» Googong foreshores (see Section 4.1.1 and 4.3.1);

» Bushfire management (see Section 4.2.4);

» Contamination (see Section 4.2.8);

» Biodiversity and ecological values (see Section 4.1.1); and

» Traffic and transport (see Section 4.2.8).

Other impacts not yet addressed in this report, include:

» Odour; and

» Views and vistas.

Odour

Queanbeyan City Council requires the maintenance of a temporary odour buffer of 250m from the boundary of the Water Recycling Plant until such time as it can be demonstrated that noise and odour levels will be acceptable within a reduced setback (150m buffer from the source).

It is noted that the proposal seek approval for a superlot incorporating that part of the land that is affected by the temporary 250m odour buffer. The creation of a superlot ensures that a further application will be required to 'create' the individual lots, but only once testing of the Plant occurs after it commences operation.

In this regard, the proposal does not seek to create residential lots that could be subjected to odour and noise from the Water Treatment Plant.

Views and Vistas

Due to the elevation and slope of the land in Neighbourhood 1B, there are significant opportunities to take advantage of views over the Googong township and celebrate key vistas along the valleys.

The Urban Design report prepared by SpaceLab identifies the location of high points within the site from which significant views and vistas can be achieved. These views generally highlight the Montgomery's Creek corridor, Googong Dam and the surrounding hills.

In addition, a lagoon is located in the Googong common within the study area, between Neighbourhood 1B South and southernmost part of Neighbourhood 1A (i.e. stage 6 in Neighbourhood 1A). High points in Neighbourhood 1B South provides an opportunity to create significant views toward this water body.

The proposal has been designed to capture significant views, orientating residential lots toward views and vistas.

Refer to Urban Design Report prepared by SpaceLab (Appendix B02).

5.2.2 Social and economic impacts

At completion, Googong township will accommodate around 5,550 households in a walkable community. The township will provide access to jobs, services and facilities in the town and neighbourhood centres, active and passive recreational areas, walkable streets and areas of environmental conservation.

Neighbourhood 1B is a logical extension of the approved Neighbourhood 1A. The social and economic impacts of the proposed development include:

» Providing a variety of residential lots, in a mix of sizes and dwelling typologies, to meet the growing demands of the population;

» Providing a range of high quality facilities that address the cultural, health and recreational needs of the community, in this case being two formalised parks and extensive walking and cycling trails; and

» Encouraging healthy lifestyles and physical activity, by providing walkable neighbourhoods, accessible local facilities, and safe pedestrian and cyclist pathways within the street network.

The development is based on the principles of Traditional Neighbourhood Design that seek to create mixed-use, pedestrian friendly community, catering to a diverse population. The orientation of proposed lots promotes good solar access, to provide maximum opportunities for energy efficient house design.

5.3 Assessment of site suitability – Section 79C(1)(c)

Extensive investigations into the environmental features and suitability of the site were carried out in the preparation of the Neighbourhood 1B NSP. A precursor to this was the Local Environmental Study (2004) and preparation of the Googong Master Plan. All of these studies have concluded that the site is suitable for the proposed uses.

Investigations that have been conducted relate to the matters listed below, and have been addressed earlier in this SEE:

» Soil stability (Section 4.3.1);

» Bushfire risk (Section 4.2.4);

» Landform and topography (Section 2.3.2); and

» Contamination (Section 4.2.8).

These investigations confirm the site is suitable for residential development as envisaged in GDCP. Furthermore, the site is predominantly affected by a R1 General Residential zone, which aims to provide housing diversity in terms of dwelling type and mixed densities (amongst other objectives).

It is also noted that the site is identified as the largest and primary urban release area in Queanbeyan LGA within Council's Residential and Economic Strategy 2031.

5.4 Assessment of submissions – Section 79C(1)(d)

Following receipt and acceptance of this application, members of the community will have an opportunity to comment on the proposed DA plans. Any submissions received are required to be duly considered under Section 79C of the EP&A Act.

It is noted that consultation with agencies has already been carried out during the Neighbourhood Structure Planning process for Neighbourhood 1B. It is understood that Queanbeyan City Council sought feedback from:

» NSW Rural Fire Service (RFS);

» NSW Roads and Maritime Services (RMS);

» NSW Office of Environment and Heritage (OEH);

» NSW Office of Water (NOW); and

» QCity Transit.

Comments provided to Queanbeyan City Council after lodgement of the Neighbourhood 1B Structure Plan were used to make amendments to the plans prior to exhibition. Refer to 'Preliminary Response to Submissions: Googong DCP Amendment (Neighbourhood 1B Structure Plan)' report prepared by Elton Consulting (dated 18 August 2014).

5.5 Public interest – Section 79C(1)(e)

The planning of Googong township has involved long and rigorous investigations and thorough considerations of environmental factors, land use planning, infrastructure, stormwater management, traffic, community planning, urban design and landscaping.

This assessment culminated in:

» Gazettal of the Googong LEP Amendment to Queanbeyan LEP 1998 (which has been carried forward to the current Queanbeyan LEP 2012);

» Entering into voluntary planning agreements with the State Government and Queanbeyan City Council for local and State infrastructure provision; and

» Preparation and adoption by Council of the Googong DCP, which embeds the Googong Master Plan and associated development guidelines.

It is in the public interest to approve development that is consistent with the planning framework that has been established through extensive investigation and consultation.

Approval of this application will create the opportunity to deliver additional housing within Queanbeyan LGA, which assists in alleviating housing affordability issues by increasing supply.

This DA will provide these housing opportunities in a high quality environment, which is evident by the urban design and landscape elements of the proposal. This is of public interest.

This proposal is the fourth major stage of development in Googong township, which will deliver a range of community, open space and infrastructure contributions that will benefit the future residents of Googong as well as the wider community. As such, approval of this DA is of significant public interest.

6 Conclusion

The proposed development will commence the delivery of the second major neighbourhood within Googong township – Neighbourhood 1B.

This SEE has addressed all the heads of consideration set out under section 79C of the EP&A Act. It has demonstrated that the proposal complies with all relevant provisions of the Queanbeyan LEP 2013 and related Acts. All potential environmental impacts of the proposed development have been addressed, particularly in relation to urban design, infrastructure provision, biodiversity, stormwater management, landscaping and traffic.

The proposal is suited to the site and is in the public interest to continue the development of Googong township as envisaged in the Googong Master Plan. It will achieve the objectives of the EP&A Act and is consistent with the planning framework which has been based on years of thorough investigations.

The proposal is considered worthy of approval based on the merits set out in this SEE, and as such, it is considered appropriate for the Joint Regional Planning Panel to approve the proposed development subject to Councils standard conditions of consent.

Appendices

A Appendix A – assessment against Googong DCP
B Appendix B – supporting technical reports
C Appendix C – drawings/plans for approval

A Appendix A – assessment against Googong DCP

The following table provides an assessment against relevant controls in Googong DCP.

* Where a matter has previously been addressed in this SEE, a reference is made to the relevant section in which it is addressed. The assessment column therefore predominantly comments on key issues and minor variations.

Table 12 Googong DCP compliance assessment

Clause	GDCP Control	Complies	Assessment*
	Part 1 Preliminary		
1.14	**Checklist for Subdivision Applications**		
	The following plans and details are required: » Site Analysis Plan (refer to Figure 1 above) » Proposed Layout Plans – (three copies) These plans shall: 1) Be prepared in not less than A4 and no greater than A1 in size. 2) Be of suitable scale 1:500 or 1:000 wherever possible). In cases where there is more than one sheet an overall plan at 1:4000 shall be submitted to illustrate the overall layout. 3) Include existing boundaries and lot or portion numbers in broken lines/lettering. 4) Show proposed boundary lines. 5) Show proposed dimensions and areas. 6) Show proposed lots consecutively numbered and include any easements and restricted development areas. 7) Show widths of all existing roads. 8) Show footpath and pavement widths of all proposed roads, proposed road widening and corner splays. 9) Show all proposed roads consecutively numbered. 10) Show the position of all intersecting adjoining property boundaries, existing roads or property boundaries of land on the opposite side of all existing roads adjoining the site. 11) Show all vegetation and trees on the subject property (separate plan). 12) Show contours in one metre intervals at Australian Height Datum. 13) Show all existing buildings, watercourses, drains, dams, swamps, easements, right-of-ways, structures or permanent improvements, heritage items. 14) Show all services.	✓	All reports and plans provided, as required by QCC – See Appendix B and C.
1.16	**General Design**		
	Objectives: 1) Subdivision design and density reflects the land capability, natural constraints and hazard of the land and is	✓	The subdivision complies. All measures have been

Clause	GDCP Control	Complies	Assessment*
	consistent with and enhances the character of the surrounding residential development Controls: a) Consent must not be granted to a subdivision of land unless Council is satisfied that the density of the allotments to be created reflects the land capability, natural constraints and hazard of the land and is consistent with and enhances the character of the surrounding residential development. Land should not be divided: i. In a manner which would prevent the satisfactory future division of land, or any part thereof; ii. If the proposed use is likely to lead to undue erosion of the land and land in the vicinity thereof; iii. Unless wastes produced by the proposed use of the land can be managed so as to prevent pollution of a public water supply or any surface or underground water resources; iv. Unless the development achieves the most efficient use of existing utility services (such as water supply and sewerage services), roads and streets. Where connection to sewer is not possible, the allotment shall be suitable for on-site effluent disposal without adverse effect on ground or surface water quality. v. If the size, shape and location of, and the slope and nature of the land contained in each allotment resulting from the division is unsuitable for the purpose for which the allotment is to be used; vi. Where the land is likely to be inundated by floodwaters; vii. Where the proposed use of the land is the same as the proposed use of other existing allotments in the vicinity, and a substantial number of allotments have not been used for that purpose; and viii. If the division and subsequent use if likely to lead to the clearance of one or more significant trees. Where any lot being created in a subdivision is of mixed title, the land held under Old System Title within that lot shall be brought under the Real Property Act.		put in place to ensure the proposal; » Does not lead to undue erosion of the land; » Prevents pollutants from entering the creek system; » Provides for all utilities and infrastructure to service the land and all proposed lots; » Provides for cut and fill in appropriate places to ensure lots created are suitable for residential development, and avoids areas of significant slope; » Is not, or will not be in the future, impacted by stormwater surges or floodwaters; » Does not propose to clear any significant trees.
1.17	**Lot Size and Design**		
	Objectives: 1) To provide subdivisions which are generally compatible with the urban suitability and capability of the land on which it is to be carried out on. 2) To provide layouts which encourage development compatible with the maintenance and enhancement of the existing urban and scenic character of Queanbeyan LGA. 3) To design subdivision layouts which maximise the potential use of public transport and non-residential uses. Controls: a) The density of allotments should maintain and promote the residential character of the area for infill subdivisions. b) Lot sizes should be compatible with the character of the surrounding area and are to comply with Clauses 2.6, 4.1, 4.1B, 4.2 and 4.2A in the *QLEP 2012* and the minimum area requirement as specified on the Lot Size Map. c) Lot sizes and lot layouts in urban release areas should	✓	All lots comply with minimum lot size provisions, and provide for suitable sized lots given the landscape and character of Neighbourhood 1B.

Clause	GDCP Control	Complies	Assessment*
	take account of the environmental constraints of the area and be designed to conserve agricultural productive land (where applicable) and the retention of any significant natural features of the site. d) Lot sizes and lot layouts in urban release areas which increase potential resident density shall be sited in close proximity to public transport nodes and to commercial/community facilities. e) Lot size and lot layouts should reflect the servicing capacity of the area.		
1.18	**Flora and Fauna**		
	Objectives: 1) To encourage subdivision which recognises the value of threatened species, populations and ecological communities and their habitats and which has a minimal impact on them. 2) To encourage subdivision design which recognises the value of native vegetation and which provides measures to conserve and enhance it where practicable. 3) To encourage subdivision which comply with all applicable legislative requirements. Controls: a) Submission to Council of an "eight point test", and if required, a Species Impact Statement which complies with the *Threatened Species Conservation Act 1995*. b) Application of any measures or amelioration measures identified in the eight point test or the Species Impact Statement. c) Implementation of design and construction measures to achieve the relevant provisions of the *QLEP 2012.* d) Native vegetation which adds to the visual amenity of the locality and /or which is environmentally significant should be preserved in the design of the subdivision proposal.	✓	Submission to Council of a SIS or "eight part test" is not required for this DA. As shown in C3183 – D006+ ENVIRONMENTAL HABITAT PLAN, the proposal does not encroach into any areas of PTWL habitat. Biosis has confirmed no other areas of flora or fauna, given the sites past use for grazing/farming. The application seeks to conserve and protect the PTWL areas in accordance with the approved PTWL-PMP.
1.19	**Natural Hazards**		
	Objectives: 1) To design and construct subdivisions which minimises the exposure of future residential development, residents and users to natural hazards such as slip, bushfire and flood. 2) To design and construct subdivisions which comply with all applicable legislative requirements. Controls: a) Application of measures which minimises risks to future development and users from slip, bushfire, flood and other natural hazards. b) Implementation of design and construction measures designed to achieve and comply with the relevant provisions of the *QLEP 2012*.	✓	Issues such as bushfire risk (and egress in case of emergency), flood risk, contamination and landform issues have been addressed in the SEE and technical supporting studies. Measures will be put in place during construction to ensure appropriate safety precautions and to prevent any pollution or contaminants from entering the creek system.

Clause	GDCP Control	Complies	Assessment*
1.20	**Contamination**		
	Objectives: 1) To require subdivisions which minimise the risk of contamination to future residents. Controls: a) Where required Implementation of measures designed to remediate land to a standard suitable for occupation. b) Implementation of measures designed to achieve and comply with the relevant provisions of the applicable local environmental plan.	✓	All measures to remediate Areas of Environmental Concerns are being carried out, in accordance with SEPP 55. See Appendix B12 to B14 for further details.
1.21	**Stormwater Management and Drainage**		
	Objectives: 1) To ensure that stormwater and drainage systems for subdivisions or new allotments have sufficient capacity to cater for peak demand. 2) To ensure that subdivisions in new release areas have stormwater and drainage systems that maintain or improve pre-development flows in terms of quality and volume. Controls: a) Stormwater and drainage systems shall be designed and engineered to meet the Objectives.	✓	All appropriate measures have been implemented in the design of Neighbourhood 1B to ensure stormwater treatment is carried out such that water re-entering the creek system has been treated appropriately. Refer to Stormwater Management and Drainage Analysis in Appendix B05 for further details of WSUD measures.
1.22	**Aboriginal and European Heritage**		
	Objectives: 1) To ensure that subdivisions respect and do not compromise heritage items, archaeological site, potential archaeological deposits or sites within identified heritage conservation areas. Controls: a) Subdivision layouts which respect the heritage significance or heritage items or sites within heritage conservation areas. b) Subdivisions which are designed to preserve archaeological sites or potential archaeological deposits by siting them in future public areas away from works likely to adversely affect them. c) Measures undertaken as part of the subdivision to ensure compliance with any applicable statutory requirements.	✓	All measures are being taken to obtain AHIPs to salvage and collect known aboriginal items within Neighbourhood 1B. Refer to 'Summary of Archaeological work carried out and proposed remaining works' prepared by Navin Officer Heritage Consultants in Appendix B09 for further details.
1.23	**Roads, Traffic (vehicles, cyclists, pedestrians) and Access**		
	Objectives: 1) To minimise the establishment of traffic generating development along main and arterial roads. 2) To provide safe and convenient access to all residential subdivisions and all allotments within a residential subdivision.	✓	The DA makes provisions for vehicular access to all lots, pedestrian and bicycle pathways across the development, and

Clause	GDCP Control	Complies	Assessment*
	3) To provide safe facilities for pedestrians. 4) To provide safe facilities for cyclists. 5) To provide facilities for users of public transport. Controls: a) Subdivisions designed so that allotments along a main and arterial road have access from a local or secondary road. b) Subdivisions designed to maximise the safety of pedestrians using the road reserve. c) Subdivisions which are designed to comply with any applicable legislative requirements. *d)* Provision of footpaths in accordance with the *Queanbeyan Section 94 Contribution Plan 2012.* e) Provision of an off road cycleway where required in accordance with the *Queanbeyan Section 94 Contribution Plan 2012.* f) Compliance with the design and engineering requirements applicable to roads, crossings, footpaths, cycleways, bus shelters and the like. g) Provision shall be made for coinciding physical and legal access to all proposed lots.		has been designed to comply with relevant standards.
1.24	**Solar Access and Lot Orientation**		
	Objectives: 1) To provide good solar opportunities internally and externally for future development and residents. Controls: a) Subdivision blocks and allotments which are orientated and have lengths and widths which provide opportunities for maximum solar efficiency when developed.	✓	The subdivision pattern has the majority of lots in NH1B in the North/South or East/West orientation bands. Refer to clause 4.2 below for further details.
1.25	**Service Provision**		
	Objectives: 1) To ensure adequate services are available to cater for future development and peak demand. 2) To encourage subdivisions which are serviced by infrastructure designed to achieve sustainable outcomes Controls: a) Provision of all essential services including facilities for stormwater and sewerage disposal. b) Use of shared trenches. c) Use of infrastructure which reduces greenhouse gas emissions. d) Use of infrastructure which reduces water consumption.	✓	All necessary infrastructure services have been provided within the design of Neighbourhood 1B (Refer to Section 3.2 of this SEE).
	Part 3 – The Master Plan		
3.4	**Master Plan Objectives**		
	The Googong Master Plan is the expression of the following objectives: • Establish high quality liveable neighbourhoods within a sustainable township. • Create a transition from lower density residential fringes to urban mixed use centres.	✓	The proposal accords with the objectives in the following manner: » The design and layout of the proposed

Clause	GDCP Control	Complies	Assessment*
	• Promote interconnectivity within and between neighbourhoods through safe and legible pedestrian paths, cycle ways and streets. • Focus each neighbourhood around a 'neighbourhood centre' which is to be a hub of community, commercial and retail activity. • Create a connected open space network catering for all ages with a range of civic, active, passive and civic spaces. • Provide opportunities for future residents and visitors to meet their social, cultural and economic needs.		subdivision will enable Neighbourhood 1B to be developed for predominantly residential purposes. » A variety of lot sizes is proposed which will permit a variety of dwelling types and densities, with larger lots on the periphery to be in keeping with the natural landscape character. » The street network will promote accessibility and connectivity to Neighbourhood 1A and future neighbourhoods, where the VPA provides cultural, recreation and social facilities. » The proposal creates new open space areas for passive and active recreation.
3.5	**Controls**		
	Development is to be generally in accordance with the Master Plan and other controls in this DCP. A variation to the Master Plan must demonstrate that it is consistent with the vision and the applicable objectives of this DCP and can only be amended as part of a neighbourhood structure plan.	✓	Complies and noted.
3.7	**Staged Release of Land**		
	It is recommended that the land be generally developed in accordance with the following sequence: 1) Neighbourhood area No.1 being the first stage (comprising Stages 1A and 1B) with Neighbourhoods 2, 3, 4 and 5 following in logical sequence. 2) The Googong neighbourhoods located north of Googong Dam Road identified in the Master Plan, adjoining to the east and west of the urban areas of Googong, may be developed at the same time as Neighbourhood 1A as the main arterial services required to service that Neighbourhood could also service the rural neighbourhoods.	✓	Neighbourhood 1B is the logical extension to Neighbourhood 1A.

Clause	GDCP Control	Complies	Assessment*
3.8	**Controls for Releasing Land for Development in Googong** The following factors are to be addressed in releasing land for the next stage of development. Orderly Expansion of Googong The release of land shall: » Progress sequentially as outlined on the Googong Master Plan. » Not occur until a Neighbourhood Structure Plan has been approved for the area by Queanbeyan City Council.	✓	A NSP for Neighbourhood 1B is currently being considered by Council. This DA generally accords with the NSP for Neighbourhood 1B.
	Part 4 – Subdivision Controls		
4.2	**General Objectives**		
	1) Create a legible subdivision pattern that maximises the 'sense of neighbourhood' and promotes walking and cycling over private car uses. 2) To set up a neighbourhood pattern that utilises the residential development areas efficiently, optimises the natural attributes of the site and clearly defines and reinforces the public domain. 3) Optimise views and the amenity of residential allotments in regards to views, solar access and proximity to community facilities, open space and public transport. 4) Ensure each neighbourhood within the township has a range of densities and housing choices to cater for the various needs of the community. 5) Provide good solar access opportunities for future dwellings and residents and ensure that the lot layout responds to and optimizes solar access.	✓	The subdivision pattern has the majority of lots in Neighbourhood 1B in the North/South or East/West orientation bands. Those lots in the central part of NH1B follow the predominant Northwest to Southeast slope for topographical reasons. It is noted that driveways are generally located on the southern-most side of lots. For key streets (Aprasia Avenue and East-West street in NH1B South) driveways are sometimes on the North side of corner lots. A plan showing the location of driveways is provided. All lots in Neighbourhood 1B are compliant with LEP objectives and provisions. It is also noted that the proposal creates a variety of residential densities is proposed (Section 3.1.1 of the SEE).
4.3	**General Controls**		
	a) Subdivision design shall be generally in accordance with the Neighbourhood Structure Plan.	✓	The proposal generally complies with the proposed

Clause	GDCP Control	Complies	Assessment*
	b) Subdivision lot sizes shall comply with the minimum lot sizes as specified in the *QLEP 2012* (refer to *QLEP 2012* Lot Size Map). c) Neighbourhoods are to be centred on a focal point of a town or neighbourhood centre with retail, commercial or community facilities that are generally within a 5 – 10 minute walk from all dwellings. 'Walkable communities' are developments where urban design focuses on pedestrian comfort between key destinations (mixed use centre, school, open space), including shade, shelter, surveillance, attractive surroundings, activity, visual interest and land uses. d) Neighbourhood pattern is to create a legible and permeable street hierarchy that responds to the natural site topography, the location of existing significant trees and solar design principles. e) Pedestrian and bicycle connectivity within each residential neighbourhood is to be provided between the residential areas and public open space areas, public transport nodes, education and community / recreation facilities. f) Street blocks are to be generally a maximum of 250m long by 70m wide. Block lengths and widths in excess of 250m may be considered where connectivity objectives are achieved. g) Each new allotment has sufficient building area on it, being land with a slope of less than 20%.		NSP for Neighbourhood 1B. It is noted: » All lots in NH1B are compliant with LEP minimum lot sizes, being 330m2 min in R1 and 15,000m2 min in R5 » There are neighbourhood centres in NH1B, as consistent with the Googong master plan and NH1B NSP. » Lot sizes follow the 'transect' principle previously established, with larger lot sizes on the urban edge to the East » The street pattern is designed to continue the general grid form of streets from NH1A, orienting streets towards the environmental edges to create legible routes and key views for orientation. » Pedestrian and bicycle connections are documented in the landscape and engineering plans, and reflect (with some minor improvements) the details of the NSP » Street block dimensions are typically below 200m in length by 55-60m deep (with some deeper street blocks at around 70m). In the central area Tyrell

Clause	GDCP Control	Complies	Assessment*
			Street and Wingrave Street are 250m long. » Cut and fill is proposed to make all developable lands appropriate for dwelling construction (with less than 20% slope). Refer to Site Grading Plans in Appendix C4. It is noted that on steeper lands, the Subdivision Plans show an indicative dwelling footprint where a future dwelling could be appropriately positioned.
4.4	**Lot Orientation**		
	Lot Orientation Controls: a) Consideration should be given to different lot dimensions depending on the lot orientation. In this regard, upfront detailed tailoring of a layout at the early stages of a project can deliver sustainable outcomes. b) Lot orientation, size and dimensions should enable dwellings to be generally sited either on an N-S or E-W orientation. Where other amenities such as views over open space are available or the topography prevents efficient design then alternative lot orientations can be considered. Refer above. c) Allowances are to be made for different lot depths and widths, depending on orientation, which may also result in increased variety to the streetscape frontage pattern. d) Where E-W oriented lots are proposed lots should be wider to support solar access. e) Design for deeper N-S lots on the southern side of roads, particularly if two storey dwellings are envisaged, to allow for solar access to private open space at the rear. f) N-S oriented lots on the northern side of an E-W road can be less deep than N-S lots on the southern side of the same road. Narrower lots can be accommodated, particularly for the northern lots as they as particularly suitable for two storey dwellings with a lesser footprint. A wider southern lot allows for a central courtyard, which may gain greater solar penetration. **Lot Size and Layout Objectives:** 1) Encourage a variety of lot sizes across the site to promote housing choice and create varied streetscapes. 2) Smaller lot sizes are to be located within easy walking distance of a neighbourhood centre or the town centre, with larger lot sizes generally at the edges of Googong. 3) Promote generally rectangular street blocks and lots to maximise efficiency.	✓ Generally complies	Lot orientation generally complies across Nh1B, and has been designed to ensure maximum amenity and solar access. The proposed street layout has aimed to maximise street block and lot orientation to create generally North-South or East-West lots. Where this is difficult to achieve in the central area of NH1B due to topography, driveways are located on the southernmost side (which is generally the low side) in order to allow for typical house designs that have the solar court on the opposite (northernmost) side of the lot. This is considered an appropriate solution given the topographical constraints. Battleaxe access from

<table>
<tr><th>Clause</th><th>GDCP Control</th><th>Complies</th><th>Assessment*</th></tr>
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Lot Size and Layout Controls:
a) Minimum lot size is to be in accordance with the QLEP 2012 Lot Size Map and the lot dimensions are to be in accordance with the Table 1 below.

Table 1 – Minimum Frontage Dimensions
<table>
<tr><td>170 < 250m^2</td><td>6.0m</td></tr>
<tr><td>250 < 300m^2</td><td>6.0m</td></tr>
<tr><td>300 < 450m^2</td><td>10m</td></tr>
<tr><td>450 < 600m^2</td><td>12m</td></tr>
<tr><td>600 < 900m^2</td><td>12m</td></tr>
<tr><td>900 < 1,500m^2</td><td>15m</td></tr>
<tr><td>> 1,500m^2</td><td>18m</td></tr>
</table>
b) Residential lot size must be capable of accommodating a dwelling, private open space and at least one under cover car parking space.
c) Lot size and layout are to take into account the slope of the land, any environmental constraints and any significant natural features to create a legible and permeable neighbourhood pattern.
d) Lots should be generally rectangular in shape and orientated to allow future dwellings to gain access off streets and where possible, public open spaces.
e) No more than two battle axe shaped allotments should adjoin each other. The access corridor is that part of a battle axe shaped allotment which provides private access between the main part of the allotment and the public road.
f) Council's requirements for access corridors are as follows:
1) Maximum length: 60m
2) Minimum width: 4.0m
3) Minimum width of Shared Access Corridor: 6.0m
4) No more than two allotments should be served by a shared access corridor.
The access corridor of a battle axe allotment is not included in the calculation of the minimum allotment area.
Clause 4.1D of the QLEP 2012 permits variation to the minimum lot size to provide opportunities for affordable medium density housing in appropriate locations. Despite the minimum lot shown on the Lot Size Map, QLEP 2012 land may be subdivided into lots of 170m^2 minimum if the land is located within 200m of Zone B2 Local Centre, or identified as "Additional Development Area" on the Local Clause Map. The proposed development applications must comprise a minimum four lots and include dwelling designs for each lot.
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the rear has been used to lots fronting Gorman Drive, as Gorman Drive is required to be access denied. These are larger lots (18m+ frontages and 35m deep), so garages to the north will not create overshadowing issues.

As stated above, a variety of lot sizes have been proposed (refer to Section 3.1.1 of this SEE and the Appendix C1). The lots have been designed to respond to the site constraints. The lots comply with the minimum lot standard and are capable of accommodating a dwelling, private open space and car parking spaces. The proposed variety of lot sizes maximises opportunities to orientate dwelling towards areas of open space.

The majority of lots comply with the minimum lot frontage controls. One exception is the proposed Lot 501 (in subdivision Stage 5) where the slope of the land requires the street layout to form a curve, and Lot 501 to have a smaller frontage. This is considered appropriate, as the large lot size ensures an appropriate footprint for a dwelling is still provided (refer to indicative dwelling locations in hatched area in the Stage 5 subdivision plans in Appendix C2).
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Clause	GDCP Control	Complies	Assessment*
			A number of battleaxe allotments are proposed in Stage 3, adjoining one another. However, this is a necessary solution as QCC has restricted direct driveway access for lots fronting Gorman Drive. The vast majority of lots are regular in shape; exceptions occur in some circumstances where the slope of the land restricts a regular lot. In these circumstances, slightly larger lots are proposed.
4.6	**Residential Interface with Googong Dam Foreshores**		
	Subdivision Controls: a) The minimum lot size to be in accordance with the *QLEP 2012* Lot Size Map i.e. 1.5ha. b) The configuration of the E2 zone in this locality may preclude subdivisions into satisfactory lot sizes to adjoin with adjacent R5 subdivided land. Strategies for the management and control of this land will need to be submitted as part of Plan of Management. c) An application for development involving E2 zoned land is to demonstrate to Council that an appropriate management regime will be put in place relating to bushfire control, vegetation clearing, access provision, fencing controls, recreational uses, feral animal and weed control, management of grazing, keeping of animals and landscaping with indigenous species. d) Building envelopes in zone R5 must be setback a minimum 10m from an internal road and 10m from adjoining side and rear boundaries.	✓	A superlot is proposed over that land located in the R5 zone to the north of Neighbourhood 1B. Indicative future lots on the R5 land comply with the minimum lot size in QLEP (15,000m2). The future lots would have frontages of over 50m (however this is subject to future approval). The superlot subdivision of this land (in subdivision Stage 9) takes account of the following measures along the northern most edge of the lot (E2 zone): » Management requirements of GFIMS: > Establishment and fencing of boundary; > Weed removal, monitoring and

Clause	GDCP Control	Complies	Assessment*
			management; > Planting of only indigenous plant species; and > Management of biomass. » 10m at the northern boundary to be maintained as an APZ.
	Part 5 Design Guidelines and Controls for Public Domain		
5.2	**Street Network**		
	Objectives: 1) Establish a street network that complements the characteristics of each neighbourhood area and promotes a liveable and permeable local environment 2) Provide safe and convenient access to all subdivisions and all allotments within a subdivision. 3) Facilitate safe movement of road users through the provision of usable and accessible facilities for pedestrian and cyclists. 4) Promote use of public transport through the provision of appropriate facilities for users of public transport. 5) Make provision for legible, safe and efficient pedestrian, bicycle and vehicular movement throughout the township and connections to the established network. 6) Create a street hierarchy that reflects the function and character of each street and forms part of a legible network. 7) Make provision for a public transport route through Googong. 8) Provide as appropriate Water Sensitive Urban Design (WSUD) elements into the street network, as illustrated in images above. Controls: a) Streets are to be designed in accordance with the Master Plan, Council's adopted Engineering Design Specification – Googong, Control Diagrams and numeric controls in the Table 3 as identified herein. b) A development application must demonstrate that the proposed streets are appropriate for their role in the street network. c) All new streets are to comply with the design and engineering requirements applicable to roads and streets, crossings, footpaths, cycle ways, bus shelters and the like in QCC Engineering Design Specification – Googong. d) Streets are to include a stormwater drainage facilities as required. WSUD controls should be provided where possible in central medians. e) Subdivisions are to be designed to provide adequate	✓ Generally complies	The street network satisfies the objectives as follows: » ensures safe and convenient access to all allotments within the site » Creates an interconnected street network that connects seamlessly to neighbourhood 1a » Provides pedestrian and cycle paths along the street network (along verges, of at least 1.5m, up to 2m) » Provides dedicated paths in the Montgomery's creek corridor that link to open spaces/parks » Provides for WSUD elements within the street network. Consultation with QCity Transit has occurred to agree on a temporary bus route plans. The ultimate bus route will run along Gorman Drive through

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<tr><th>Clause</th><th>GDCP Control</th><th>Complies</th><th>Assessment*</th></tr>
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<td>safety for pedestrians using the street verge.
f) Applications for subdivision shall be accompanied by a traffic engineering assessment that includes traffic volumes and movements, cross-sections through typical street types demonstrating that road reserve widths can adequately accommodate electricity, gas, telecommunications, water and waste water infrastructure, street trees, footpaths, shared paths, on-street parking, road pavement widths and where appropriate on-street cycling.
Table 3: Summary Design Control Hierarchy:
<table>
<tr><th>Category</th><th>Maximum Traffic Volume (vpd)</th><th>Carriageway (minimum)</th><th>Verge (minimum)</th><th>Parking</th><th>Footpath</th><th>Cycle Lane</th></tr>
<tr><td>Arterial Road</td><td>20,000</td><td>2 x 8.5m + 6.0m Slip Road</td><td>5.0m</td><td>Included on slip road</td><td>2 x 1.5</td><td>2 x 1.5</td></tr>
<tr><td>Local Arterial Road*</td><td>9,000</td><td>2 X 7.1m includes road, cycle path & parking provisions</td><td>5.0m</td><td>2.1m (indented in verge)</td><td>2 x 1.5</td><td>2 x 1.5</td></tr>
<tr><td>Local Sub-Arterial Road</td><td>6,000</td><td>As above</td><td>5.0m</td><td>2.1m (indented in verge)</td><td>2 x 1.5</td><td>2 x 1.5</td></tr>
<tr><td>Collector Street 1</td><td>3,000</td><td>11.2m includes road & parking</td><td>5.0m</td><td>2.1m</td><td>2 x 1.5m</td><td>See footnote</td></tr>
<tr><td>Local Street 2</td><td>2,000</td><td>9.2m includes road & parking</td><td>5.0m</td><td>2.1m</td><td>1 x 1.5m</td><td>See footnote</td></tr>
<tr><td>Local Street 3</td><td>2,000</td><td>8.0m includes road & parking</td><td>1 x 5.0m
1 x 4.5m</td><td>2.1m</td><td>1 x 1.5m</td><td>See footnote</td></tr>
<tr><td>Local Street-Boulevard</td><td>3,000</td><td>2 x 5.5m</td><td>5.0m</td><td>Included in carriageway width</td><td>2 x 1.5m</td><td>See footnote</td></tr>
<tr><td>Local Street-Open Space Drive</td><td>1,000</td><td>8.0m</td><td>5.0m</td><td>Included in carriageway width</td><td>1 x 1.5m</td><td>See footnote</td></tr>
<tr><td>Access Street</td><td>500</td><td>6.0m</td><td>1 x 4.0m
1 x 2.5m</td><td>Included in carriageway width</td><td>1 x 1.5m</td><td>See footnote</td></tr>
<tr><td>Local Street-Laneway</td><td>100</td><td>3.0m – one way (geometry needs to accommodate garbage service vehicles)</td><td>2.0m</td><td>n/a</td><td>Nil</td><td>Local Street-Laneway</td></tr>
</table>
Notes: *indicates no vehicular access from allotments to road reserve.</td>
<td></td>
<td>Neighbourhood 1B.

A traffic impact assessment is provided (Appendix B08) as well as details of cross sections (Civil Engineering Plans in Appendix C4).

The proposed streets generally accord with Table 3, however an exception is proposed for some streets that extend from Neighbourhood 1A. The following is noted:

» Local Arterial (Gorman Drive) complies with AV1 in Table 3, except the footpath location has been varied due to spatial requirements for reticulated services.

» Street Type 2 (ST2-V1) (Aprasia Avenue) complies with ST2 in Table 2, except a wider verge is provided (6.6m) on the northern side to accommodate additional sewer infrastructure to SPS2.

» Street type 3 (ST3) complies with ST3 in Table 3, except provides for a carriageway width of 7.5m rather than 8m. This is considered appropriate as it exceed best practice (7.2m), allows for safe access by garbage vehicles, and follows the 7.5m road widths approved in</td>
</tr>
</table>

Clause	GDCP Control	Complies	Assessment*
			Neighbourhood 1A for this road type. » The Street type 3 (ST3_V2) running through Neighbourhood 1B South has a wider verge (6m) on both sides than that which is required in Table 3 (4.5m and 5m), so as to create a distinct character for this main east-west main road in Neighbourhood 1B. » The Street Type 3 (ST3-V2) used as the crossing over Montgomery's Creek into Neighbourhood 1B South provides for a more narrow verge, however this design is considered appropriate to minimise the extent of disturbance for the creek crossing. » Drive 1 (DR1) is used in streets that are "one sided" where one side is residential and the other abuts a park. Drive 1 varies slightly from Local Street - Open Space Drive in Table 3, however carried over the street typology approved in Neighbourhood 1A. A 7.5m carriageway is provided, rather than 8m, however this has been justified on the

Clause	GDCP Control	Complies	Assessment*
			basis it provides for appropriate passing opportunities for all emergency vehicles and provided parking on one side of the road. » Drive 2 (DR2) is used in streets that are "one sided" where one side is residential (but not abutting a local park). The road type is generally in keeping with the 13m reservation requirement (it provides roads between 12.9m and 16m). In all, the proposed road types are considered a suitable solution for streets in Neighbourhood 1B, given the expected traffic volumes. All edge roads, either DR1 or DR2, are appropriate edge roads, as they allow for fire tankers to pass even with on-street parking. It is noted, a fire trail is proposed on the north-eastern boundary of larger lots in stage 5. This firetrail solution is considered appropriate from a bushfire perspective (Refer to bushfire assessment in Appendix B07).
5.3 - 5.8	**Road types for various roads**		
		✓	Refer to response in 5.3 above and section 5 of the TTM Consulting Traffic Impact Assessment (Appendix B08).

Clause	GDCP Control	Complies	Assessment*
5.9.	**Public Open Spaces and Landscaping**		
	Design Objectives: 1) Provide a mix of passive, active, formal and informal public open spaces and play opportunities that will cater for and support the future community of Googong. 2) Provide open space areas which are distinctive in character and provide safe and secure access for all users. 3) Establish attractive walking and cycling links throughout. 4) Create attractive landscapes that are durable and generally low maintenance. 5) Landscaping of public open space shall be generally in accordance with the Landscape and Open Space Strategy and Schedule 1 in the local Voluntary Planning Agreement. Relevant Controls: **a) Googong Common - Googong Common shall:** i. Combine recreation, ancillary commercial, functional, environmental and cultural roles. ii. Provide an extensive open space resource for Googong. iii. Embody the character and environmental attributes of the Monaro landscape. iv. Include a feature entry which suitably announces the entry and incorporates signage, shelters and a major water feature. v. Provide cycle and pedestrian paths, amenities, playgrounds, passive recreation, active sports facilities and shelters, art and heritage interpretation, a pedestrian bridge over Montgomery Creek and water bodies. **b) ~~Hill 800 - Hill 800 shall~~:** **c) ~~Neighbourhood Parks - Neighbourhood Parks shall~~:** **d) Local Parks - Local Parks shall:** i. Have a minimum area of 1000m2 and be linked to a larger open space network. ii. Be generally within 200m of most residents (unless that resident is within 400m of a neighbourhood park). iii. Allow for passive and / or active recreation. iv. Provide seating and pathways for circulation. v. Incorporate small children's play facilities as set out in Schedule 1 of the voluntary planning agreement. vi. Provide entry and signage elements. vii. Integrate open space with stormwater management and environmental strategies viii. Optimise ecological functionality through planting of endemic species. **e) ~~Civic spaces in the neighbourhood centres and town centre~~** **f) Linear Parks and drainage reserves** Linear Parks and drainage reserves shall:	✓	The proposal accords with these objectives. Whilst the LOSS does not require any local parks as part of the VPA commitments, the proposal seeks to create two new parks (see Section 3.2.2 of this SEE). The parks, as well as associated open spaces on Montgomery's Creek, will provide a mix of passive, active, formal and informal public open spaces and play opportunities. Walking and cycling links throughout the open spaces and linking them. The Landscaping Plans (Appendix C3) indicate the hard and soft landscaping to be provided within the parks, which generally accords with the controls for local / linear parks and drainage reserves. The proposal commences the eastern-most end of Googong Common, however the majority of Googong Common is located in Neighbourhood 2. The pathways provided through Montgomery's Creek in Neighbourhood 1B create connections to the future delivery of Googong Common. It is noted in the WSUD Plans (see Appendix C4) that appropriate storage areas have been provided for drainage at the location of drainage basins.

Clause	GDCP Control	Complies	Assessment*
	i. Maximise ecological function through the planting of endemic species. ii. Link neighbourhood and local parks and other key community focal points into the continuous open space network. iii. Facilitate overland flow requirements. iv. Integrate non-vehicular circulation within footpaths and cycleways to increase safety and connectivity. v. Include water sensitive urban design elements such as weir structures to control water flow around drainage lines and create pooling where required, urban creek lines along streets and existing creeks. vi. Include bushland regeneration where appropriate.		
5.10.	**Landscaping in the Public Domain** Main access roads and boulevards are to incorporate WSUD bio retention elements where appropriate. Gateways to the site along Old Cooma Road and Googong Dam Road are to include feature planning to establish a visual identity and include exotic species. Any subdivision application shall be accompanied by a planting schedule detailing proposed planting for local streets. Such proposed planting shall include a mix of exotic and local native species. Other plants may be used where it can be demonstrated that they meet the objectives and controls in this DCP. Construction: Construction of Landscaping is to be in accordance with the site analysis plan and landscape plan and is not to commence until it has been approved by Council and a construction certificate has been issued for the subdivision or for that part of the subdivision where landscaping in accordance with the approved plan is to occur. A landscape plan must be submitted with a DA application for subdivision. The Landscape Plan is to demonstrate the full understanding of: • The existing site and its landscape features including landform, soil, climate, ecology and vegetation. • The existing surrounding land use and neighbourhood character. • The influence the existing and any proposed development may have on the amenity of the area. • The potential bushfire threat to the property/land and whether a bush fire hazard exists on or is adjacent to the land. • The implications of vegetation and wildlife corridors. The Landscape Plan is to provide details on: • Earthworks • Plant species and sizes • Hard and soft landscape treatments • Utilities and services • Entry statements, street furniture, signage, public lighting, play equipment • Waste management • Rehabilitation/remediation work to any degraded land • Treatment and protection measures of gullies, creeks and	✓	The proposal accords with the controls (Refer to the accompanying report prepared by AECOM, which details proposed Street Tree hierarchy and species). Key details are noted below: » The street tree strategy seeks to ensure that an attractive streetscape is delivered via the selection and location of plant material. » WSUD bioretention elements are incorporated where appropriate. » A mix of native and exotic tree species has been selected. This is considered an appropriate response to the climatic conditions and soil type at the site. Furthermore, the vegetation has been selected to maintain a low impact on the environment and natural resources, by selecting plant material that is

Clause	GDCP Control	Complies	Assessment*
	river corridors and significant tree and other vegetation.		endemic to the region or exotic plants that will complements the desired character or other aesthetic or functional needs. Eucalyptus trees have not been selected for all roads, rather a number of streets in Nh1B will be landscaped with exotic species (Refer to Streetscape Concept Plan, Appendix C3). This mix is considered an appropriate response with respect to sustainability matters and aesthetic.
	Part 8 – Environmental Management		
8.2	**Soils and Salinity**		
	Objectives: 1) To minimise erosion and sediment loss during and after construction. 2) To minimise water pollution due to erosion, siltation and sedimentation. 3) To ensure development will not significantly increase the salt load in existing watercourses within the site. 4) To ensure measures are implemented as part of the development to prevent any degradation of the existing soil and groundwater environment. 5) To minimise the damage caused to property and vegetation by existing saline soils, or processes that may create saline soils. Controls: a) All development must incorporate soil conservation measures to minimise soil erosion and siltation during construction and following completion of development. Soil and Water Management Plans, prepared in accordance with *Managing Urban Stormwater – Soils and Construction (NSW Department of Housing 3rd Edition March 2004* ('The Blue Book') are to be submitted with each subdivision development application. b) All sediment and erosion controls are to be installed prior to the commencement of any construction works and maintained throughout the course of construction until disturbed areas have been revegetated/established. c) Unless provided at the neighbourhood structure plan stage each subdivision application is to be accompanied by	✓	The proposal complies. A range of erosion and sediment control measures are proposed, including **preventative measures** to try and control the generation of eroded material from the site (e.g. mulching) and **mitigation measures** designed at controlling, diverting and trapping sediments and suspended solids that would be mobilised. Refer to the accompanying detailed stormwater management and drainage analysis prepared by Brown Consulting (Appendix B05) and Soil, Water and Vegetation Management Plan prepared by Brown Consulting for further details on sediment

Clause	GDCP Control	Complies	Assessment*
	a salinity report prepared by a suitably qualified consultant, reporting on the conditions of the site, the impact of the proposed subdivision on the saline land, the mitigation measures that will be required during the course of construction and a requirement that the consultant signs off the project upon completion of works. Investigations and sampling for salinity are to be conducted in accordance with the requirements of Site Investigations for Urban Salinity (DNR).		and erosion control measures proposed. A detailed Soil, Water and Vegetation Management Plan, that accords with Managing Urban Stormwater – Soils and Construction (NSW Department of Housing 3rd Edition March 2004 ('The Blue Book'), will be required at CC stage. Agsol undertook extensive salinity investigations for Googong township as part of the Part 3A application for the Integrated Watercycle System, which considered salinity as part of the Land Capability Assessment. Furthermore, the geotechnical report for Neighbourhood 1B, which included field work to determine site suitability, did not identify any salinity issues.
8.3	**Cut and Fill**		
	Objectives: 1) Minimise the extent of excavation and fill. 2) Ensure that the built form responds to the topographical constraints of the Googong site. 3) Ensure dwelling designs allow for accessible driveway grades and safe vehicular movement. 4) Ensure that the amenity of adjoining residents is not adversely affected by any cut and fill operation. 5) To minimise the need for retaining walls. 6) To ensure that batters can be maintained and to limit the potential for soil erosion. Controls: a) Excavation and fill on building sites shall be limited to a max of 1.5m. Greater depth may be considered by Council, if within the building envelope, suitably retained and/or stabilised and not visible from the street. b) Development applications are to identify the extent of proposed cut and/or fill land and provide justification for the proposed changes to the land levels. c) The maximum height of retaining walls is to be 1.0m. d) Where terraced walls are proposed the minimum	✓	Some cut and fill is required in order to prepare the site for development and counter topographic constraints. Measures have been taken to minimise the extent of excavation and fill on site. Designs will be further developed for the CC Drawings. Refer to the report prepared by Douglas Partners (Appendix B14) and to Site Grading drawings prepared by Brown Consulting (Appendix C4) for details on the extent of cut and fill

Clause	GDCP Control	Complies	Assessment*
	distance between each step is 0.5m. e) A variation to the retaining wall heights can be considered with supporting justification and concurrence of the adjoining neighbours. Walls over 1m in height are to be designed/certified by a structural engineer f) Batters are to be limited to a maximum gradient of 1 vertical: 4 horizontal. g) Proposed cut or fill in the vicinity of sewer and stormwater mains must comply with Council's Development Adjacent to Water, Sewer and Stormwater Mains Policy.		site grading. Due to the significant slope of the land, particularly sloping down to Montgomery's Creek , the proposal includes the provision of gabion retaining walls in some areas (Refer to blue markings for retaining walls in Site Grading Plans prepared by Brown Consulting - C13183-D035+ (Sheets 1 to in Appendix C4). The highest wall is a 5.5m wall at the eastern edge of the southern-most section of Neighbourhood 1B Central. This retaining wall is located where there will ultimately be a bridge connecting to Neighbourhood 5.
8.4	**Stormwater Management and Flooding**		
	Objectives: 1) Ensure that all development within Googong incorporates stormwater reuse, retention and detention strategies to limit the changes to the hydrological regime of the receiving waterways. 2) To minimise the impacts of development and associated infrastructure on the health and amenity of natural waterways. 3) Treat run-off from development such that it does not adversely impact on downstream flora and fauna during construction and post development phases. 4) Incorporate Water Sensitive Urban Design (WSUD) in the planning of the site layout and design and development to promote sustainable and integrated management of land and water resources incorporating best practice stormwater management, water conservation and environmental protection. Controls: a) All Development Applications shall include a Stormwater Drainage Analysis, addressing the management of water quality and quantity (having regard to all contributing catchments and downstream water bodies), for the range of storm events from the 1 Year ARI to the 100 Year ARI storm event and addressing the objectives of WSUD. b) Existing natural drainage lines shall form part of a stormwater and runoff drainage management system utilising soil conservation measures (including detention basins and or wetlands) to alleviate stormwater peaks and	✓	The proposal complies. Full details of the stormwater management measures incorporated into Neighbourhood 1B are provided in Section 3.2.3 of this SEE and the Stormwater and Drainage Analysis report prepared by Brown Consulting (Appendix B05). Key points to note: » The design takes account of all stormwater retention and detention, and incorporates WSUD and treatment measures to ensure waters re-entering the creek system have been treated for

Clause	GDCP Control	Complies	Assessment*
	retain sediments and pollutants. c) Stormwater management strategies shall be adopted to maximize the efficient use of land and facilitate adequate allocation of land for these purposes. d) Stormwater management strategies shall be developed and implemented in a manner which addresses potential salinity hazards. e) Stormwater treatments are to be designed to meet the minimum level of performance which is a reduction in the stormwater peak run off flows to predevelopment levels for the range of storms from the 1 year ARI to the 100 year ARI event.		pollutants, etc » The proposal incorporates appropriate WSUD elements including swales, bioretention/biofiltration basins, gross pollutant traps, etc. » The design of the Montgomery's Creek causeway takes account of potential future flooding during a 100 year ARI design storm event.
8.5	**Bushfire Management**		
	Objectives: 1) Consider bushfire protection and management issues in land use planning and development decisions, to provide a safer environment for the community. 2) Manage vegetation to reduce potential bushfire attack in the vicinity of habitable buildings. 3) Design and siting of habitable buildings for the protection of life and to improve the survivability of the building during the passage of a fire front. 4) Provide safe access for emergency service personnel. 5) Ensure adequate water supplies are available to householders and emergency services to assist in the defence of habitable buildings against bushfire attack. 6) Establish a maintenance regime for fire protection for the life of the habitable building. Controls: a) A Bushfire Threat Assessment report must form part of all development applications for lands identified as 'bush fire prone' on the Bush Fire Prone Lands Maps. This assessment is to be prepared in accordance with *"Planning for Bushfire Protection",* by the Rural Fire Service and Planning NSW, and specify the mitigation and other measures required to comply with those Guidelines. b) Assessment of bushfire threat must examine impacts on the proposed development from fire both on and approaching the site. It must also include an evaluation of the capacity of the existing road network serving the site to accommodate traffic in emergency situations, and consider emergency vehicle access to those parts of the site fronting a potential bushfire source. c) Preparation of an assessment of threat from bushfire should include reference to: i. NSW Rural Fire Service (RFS) – *Planning for Bushfire Protection a guide for land use planners, fire authorities, developers and home owners.*	✓	The proposal complies. Full details of the bushfire management measures and compliance with the Rural Fires Act are provided in Section 4.2.4 in this SEE and the bushfire assessment report contained in Appendix B07. All necessary APZ requirements, water supply requirements (and other utilities) and access/egress requirements have been satisfied.

Clause	GDCP Control	Complies	Assessment*
	ii. *AS 3959*, Construction of buildings in bushfire-prone areas. iii. Consultation with Council. d) The recommendations of the Assessment report must be incorporated into the design of the proposed development. That design may require further amendment based on additional conditions which may be imposed by the approving authority (normally Council or the RFS). e) Subject to detailed design at development application stage, the location and widths of APZs are to be provided generally as follows: i. Are to be located wholly within the development site. ii. May incorporate roads. iii. Are to be maintained in accordance with the *Planning for Bushfire Protection 2006* (RFS). iv. Are to be generally bounded by a perimeter fire trail/road that is linked to the public road system at regular intervals in accordance with Planning for Bushfire Protection. f) Reticulated water is to meet the standards contained within Planning for Bushfire Protection 2006. Water supply is to be via a ring main system, engineered to the requirements of Australian Standard 2419.1-1994 Fire Hydrant Installations. g) Dwellings adjacent to APZs are to be constructed in accordance with the requirements of Appendix 3 of *Planning for Bushfire Protection 2006* and *Australian Standard 3959 - Construction of Building in Bushfire Prone Areas.*		
8.6	**Aboriginal Heritage**		
	Objectives: 1) To ensure that any Aboriginal heritage significance is appropriately incorporated into the redevelopment of the precinct. Controls: a) Areas containing potential indigenous sites are identified at the Archaeological (Indigenous & European) Map contained within Appendix 2. Development shall not proceed within these areas without appropriate investigation and consultation with the relevant local Aboriginal groups. b) The investigations are to identify, where required, conservation zones for the protection and management of archaeological deposits. A Plan of Management is to be prepared to address the ongoing protection and management of the archaeological deposits. c) Any development application for development within these sites is to be accompanied by an Aboriginal Archaeological Report that is supported by the comments of the local Aboriginal groups. d) Where development impacts upon an identified Aboriginal site, Consent to Destroy Permits will need to be sought under *Section 90 of the NSW Parks and Wildlife Act 1974.*	✓	The proposal complies. Full details of the actions/ management measures in relation to Aboriginal heritage are contained in Section 4.2.3 SEE and the heritage report contained in Appendix B09. All necessary steps to obtain AHIPs are in progress.

Clause	GDCP Control	Complies	Assessment*
8.7	**European Archaeological Heritage**		
	Objectives: 1) To protect the recognised European archaeological significance of the precinct. 2) To ensure that information regarding the archaeological heritage significance of the precinct is incorporated into the development of the precinct. Controls: a) Elements of European archaeological heritage significance are shown on Archaeological (Indigenous & European) map in Appendix 2. Prior to any development that affects these elements a detailed assessment of heritage significance (Heritage Impact Statement) is to be undertaken which addresses the significance assessment criteria contained in the NSW Heritage Manual. b) An applicant is to demonstrate to Council how any proposed development that affects the identified elements responds to any identified archaeological constraints. If any relics are to be retained in situ, an applicant is to outline with the development application all management measures to ensure ongoing protection of the relics.	✓	The proposal complies. Full details of the actions/ management measures in relation to European heritage are contained in Section 4.2.3 SEE and the heritage report contained in Appendix B09. Navin Office Heritage Consultants have confirmed no further actions are required.
8.8	**Tree Retention and Biodiversity**		
	Objectives: 1) Development should minimise the loss of trees to protect scenic values, habitat and biodiversity. 2) Development should minimise the loss of existing site trees that enhance natural or scenic values, control sunlight, or provide shade, shelter, habitat or screening. 3) The development should minimise the environmental impacts of clearing for bushfire hazard reduction. 4) To maintain or improve as much existing vegetation as practicable within the locality. 5) Reduce impacts of runoff from roads and impervious areas on adjacent lands. 6) To manage weeds on the site during and after construction to prevent the spread of weeds. Controls: a) Development must provide filter and protection strips to natural drainage lines, watercourses, streams, foreshores of constructed drainage corridors, riparian habitat strips and exclusion zones for preserving vulnerable and/or significant remnant vegetation and species. b) All high recovery potential vegetation is to be retained within open space. The moderate recovery potential vegetation is to be retained, where possible, within open space but may be retained within private lots. c) Existing significant trees, in particular large hollow bearing trees, are to be retained wherever possible within development sites, public and community parks, streetscapes and riparian corridors. d) Native vegetation (canopy level) shall be provided, where possible within pocket parks, riparian corridors and street verges. Details of any planting shall be provided within a detailed Landscape Plan submitted at development	✓	The proposal complies. Whilst some tree removal is proposed as part of this application, the vast majority of trees in the Neighbourhood 1B area will be retained, particularly to the east in the PTWL conservation area and the Montgomery's Creek corridor. Details of a tree survey carried out by arborists are provided in Section 4.2.7 of this SEE. (refer to Tree retention and removal plans in Appendix C5).

Clause	GDCP Control	Complies	Assessment*
	application stage. e) Where development is located within or close to a known biodiversity corridor fencing shall be sympathetic to the passage of native fauna. f) Development must provide temporary tree/vegetation protection measures prior to any clearing works. g) Erosion and sediment controls during and after construction should have minimal impact on watercourses and remnant bushland. h) Where required by Council, subdivision development applications are to be accompanied by a Weed Management Plan that identifies weed control measures during and after development.		
8.9	**Land Contamination Management**		
	Objectives: 1) To minimise the risks to human health and the environment from the development of potentially contaminated land. 2) To ensure that potential site contamination issues are adequately addressed at the subdivision stages. Controls: a) Development applications for development in Areas of Environmental Concern (AEC) as identified within Appendix 2 shall be accompanied by a Stage 2 Detailed Site Investigation prepared in accordance with Council's Policy – *Management of Contaminated Lands.* A Remediation Action Plan (RAP) will be required for areas identified as contaminated land in the Stage 2 Site Investigation. b) When redevelopment is proposed on a site where Council suspects that contamination may be present or for applications proposing a change of use to a more sensitive land use (e.g. residential, education, public recreation facility etc), Council may request a Stage 1 Preliminary Site Contamination Investigation. c) All investigation, reporting and identified remediation works must be in accordance with the protocols of Council's Policy – Management *of Contaminated Lands,* the NSW Office of Environment and Heritage (OEH) *Guidelines for Consultants Reporting on Contaminated Sites* and *SEPP 55 – Contaminated Land.* d) Prior to granting development consent, Council must be satisfied that the site is suitable, or can be made suitable for the proposed use. Remediation works identified in any RAP will require Council consent prior to the works commencing. e) Council may require a Site Audit Statement (SAS) (issued by an OEH Accredited Site Auditor) where remediation works have been undertaken to confirm that a site is suitable for the proposed use.	✓	The proposal complies. A detailed contamination assessment is provided in Appendix B13 of this SEE, which has been peer reviewed by a site auditor (see Appendix B12). As described in section 4.2.8 of this report, all necessary controls in SEPP 55 have been satisfied, demonstrating the site is suitable for its intended use. The necessary remediation works shall be carried out in accordance with a Remedial Works Plan.
8.10	**Odour**		
	Objectives: 1) To ensure appropriate levels of odour amenity for future residents near the sewerage treatment plant. Controls:	✓	An odour buffer of 250m is shown in the NSP for Neighbourhood 1B. As instructed by Council, those lots

Clause	GDCP Control	Complies	Assessment*
	a) If an odour impact assessment was not prepared as part of the Neighbourhood Structure Plan stage any residential development within 400m of the proposed or operating sewerage treatment plant is to be accompanied by a *Level 3 Odour Impact Assessment* (using the dispersion-modelling program CALPUFF) to verify the actual nuisance levels of odour generated by the sewerage treatment plant. The assessment is to be undertaken in accordance with the DECCW *"Approved Methods for modelling and assessment of air pollutants in NSW" 1985.* b) Any land identified by the odour Level 3 study as being within a nominated separation distance shall not be developed until it can be demonstrated to Council that changes to the operation of the sewerage treatment plant have resulted in removal of the odour source.		within the 250m odour buffer are shown as a superlot for future residential development, subject to further studies/testing of odour impacts once the plant is operational.
8.11	**Construction Waste**		
	Objectives: 1) Development should include design and project management to maximise avoidance, reuse and recycling of subdivision debris and refuse, demolition waste and building/construction materials. 2) Building designs and construction techniques should minimise waste generation. Controls: a) A Waste Management Plan must be provided for all development requiring construction works on site. The level of detail in the plan will reflect the scale of development being undertaken but will generally include details of: i. The volume and type of waste to be generated. ii. How waste is to be stored and treated on site. iii. How and where residual material is to be disposed. b) The Waste Management Plan must be accompanied by drawings with specific details showing: i. On site sorting and storage areas. ii. Access for collection vehicles. iii. Vegetation to be removed or retained. c) The Waste Management Plan must optimise recycling to reduce waste to landfill.	✓	Details relating to a Waste Management Plan will be developed and included in the Construction Management Plan to be provided to Council prior to the issue of a CC. A Construction Management Plan has been provided with this DA (drawing C3183 – D004+ CONSTRUCTION MANAGEMENT PLAN in Appendix C4) to show the broader details for construction management, such as access and a compound location. These details will be expanded at CC stage.
8.12	**Landfill/Earthworks**		
	Objectives: 1) To ensure that any earthworks (excavation or filling) will not have a detrimental impact on environmental functions and processes, neighbouring uses or heritage items and features of the surrounding land. 2) Proposed development that includes any landfill activity using material other than VENM should be referred to the EPA as an integrated development assessment. 3) Development should minimise the amount of landfill required. Controls:	✓	Full analysis of the site has been undertaken (refer attached Geotechnical Assessment prepared by Douglas Partners). The proposed grading will be contained within the development footprint of the site (refer to C13183 –

Clause	GDCP Control	Complies	Assessment*
	a) Adequate justification of the need for landfill to be deposited on a site must be provided. b) The type and origin of landfill material being used must be detailed. Landfill activity must only be undertaken using VENM such as clay, gravel, sand, soil and rock only must be used for land filling activities. c) Material that is mixed with any other type of waste which has been excavated from areas of land contaminated with human made chemicals as a result of industrial, commercial, mining or agricultural activities or which contains sulphidic ores or soils must not be used for landfill. d) Council may approve the addition of selected crushed inert materials to VENM for specific landfill activities. e) A scaled plan must be provided demonstrating the location of any existing features on the property such as drainage lines and infrastructure, vegetation, roads etc. f) A site plan prepared by a registered surveyor must be submitted demonstrating the existing levels of the property and proposed levels of the landfill. g) The extent of the fill including location, depth, direction and gradient slope of the surface and batter slopes must be clearly demonstrated on a plan. h) Landfill must not adversely affect the natural flow of drainage or runoff.		D035+ SITE GRADING KEY PLAN in Appendix C4).
8.13	**Development near Googong Dam Foreshores**		
	This clause applies to development on land identified as "Googong Foreshore Buffer Area" on the Local Clause Map. Objectives: 1) To protect the Googong Dam water supply catchment from inappropriate development that may compromise water supply and quality. Controls: An applicant is to demonstrate to Council that: a) The building and associated infrastructure envelope identified for each existing or proposed lot are appropriate having regard to the land capability and the objective of this clause. b) The development incorporates an appropriate management regime relating to stormwater run-off, bushfire control, vegetation clearing, access provision, fencing controls, recreational uses, feral animal and weed control, management of grazing, keeping of animals and landscaping with indigenous species.	✓	A superlot is proposed over that land located in the R5 zone to the north of Neighbourhood 1B, which is affected by the GFIMS. Indicative future lots on the R5 land have been proposed. The superlot subdivision of this land (in subdivision Stage 9) takes account of the following measures along the northern most edge of the lot (E2 zone): » Management requirements of GFIMS: > Establishment and fencing of boundary; > Weed removal, monitoring and management; > Planting of only

Clause	GDCP Control	Complies	Assessment*
			indigenous plant species; and > Management of biomass. » 10m at the northern boundary to be maintained as an APZ.

Appendix 3 of Googong DCP – Neighbourhood Structure Plans

It is noted that a current Amendment to Googong DCP is seeking to embed a NSP for Neighbourhood 1B (together with associated plans) into Appendix 3 of Googong DCP. The proposed development is consistent with the broad structure proposed in the NSP, and will deliver the necessary subdivision works to allow development to occur.

As such, this proposal is considered to be consistent with the proposed Amendment to Googong DCP.

B Appendix B – supporting technical reports

Appendix B contains the following supporting technical reports/documents:

Code	Report/document title	Report/document author
Appendix B01 (Subdivision)	Nh1B Subdivision Proses Explanation (Ref: 03074.DA4)	LANDdata Surveys
Appendix B02 (Urban Design)	Googong Neighbourhood 1B Planning and Urban Design Report	SpaceLab
Appendix B03 (Open Space and Landscape)	Googong North NH1B Landscape and Open Space Elements	AECOM
Appendix B04 (Water Supply)	Googong Neighbourhood 1B Water Supply Report	Brown Consulting
Appendix B05 (Stormwater and Drainage)	Googong Neighbourhood 1B Stormwater Management and Drainage Analysis	Brown Consulting
Appendix B06 (Civil Engineering and Utilities)	Googong Neighbourhood 1B Development Application Civil Engineering and Utilities Design Report	Brown Consulting
Appendix B07 (Bushfire)	Bushfire Assessment, Proposed Subdivision – Googong Neighbourhood 1B	Eco Logical Australia
Appendix B08 (Traffic)	Googong North Neighbourhood 1B DA Traffic Impact Assessment	TTM Consulting
Appendix B09 (Heritage)	Googong Neighbourhood 1B, Summary of Archaeological work carried out and proposed remaining works	Navin Officer Heritage Consultants
Appendix B10 (Biodiversity)	Googong Township Development (EPBC 2011/5829) Approval of revised plan and strategy required under Condition 1 and 2 (Ref: EPBC 2011/5829)	Commonwealth Department of the Environment, Environment Assessment and Compliance Division
Appendix B11 (Biodiversity)	PTWL Conservation Area (boundary) and GFIMS Management Areas	Biosis

Code	Report/document title	Report/document author
Appendix B12 (Contamination)	Interim Advice No. 2, Googong Neighbourhood 1B Audit – Review of "Detailed Contamination Assessment" Googong township Residential Development Neighbourhood 1B – Googong Dam Road, Googong and Geotechnique Pty Ltd (10 June 2014)	Environmental Strategies
Appendix B13 (Contamination)	Detailed Contamination Assessment, Googong Township Residential Development, Neighbourhood 1B, Googong Dam Road, Googong	Geotechnique
Appendix B14 (Geotechnical)	Report on Geotechnical Investigation, Proposed Residential Development, Neighbourhood 1B, Googong Township	Douglas Partners

C Appendix C – drawings/plans for approval

Appendix C contains the following drawings/plans for approval:

Item No.	Drawing type	Prepared by	Drawing name
C1	Lot Mix/Staging	SpaceLab	LOT MIX AND STAGING PLAN
C2	Subdivision plans	LANDdata surveys	03074.DA4_BOUNDARY_ADJUSTMENT
			03074.DA4_COMPOSITE_PLAN
			03074.DA4_Stage1_DA_PLAN
			03074.DA4_Stage2_DA_PLAN
			03074.DA4_Stage3_DA_PLAN
			03074.DA4_Stage4_DA_PLAN
			03074.DA4_Stage5_DA_PLAN
			03074.DA4_Stage6_DA_PLAN
			03074.DA4_Stage7_DA_PLAN
			03074.DA4_Stage8_DA_PLAN
			03074.DA4_Stage9_DA_PLAN
C3	Landscape plans	AECOM	L00 Cover Sheet
			L01 Landscape Masterplan
			L02 Local Park Landscape Plan
			L03 Plant Species Lists
			L04 Landscape Character
			L05 Streetscape Concept
			L06 Streetscape Tree Species
			L07 Streetscape Groundcover Species
			L08 Street Hierarchy Diagram
			L09 Street Sections 1 of 4
			L10 Street Sections 2 of 4
			L11 Street Sections 3 of 4
			L12 Street Sections 4 of 4

Item No.	Drawing type	Prepared by	Drawing name
C4	Civil engineering plans	Brown Consulting	C3183 – D000+ COVER SHEET AND SHEET INDEX
			C3183 – D002+ EXISTING SERVICES AND FEATURES PLAN
			C3183 – D003+ GENERAL ARRANGEMENT PLAN
			C3183 – D004+ CONSTRUCTION MANAGEMENT PLAN
			C3183 – D005+ STAGING PLAN
			C3183 – D006+ ENVIRONMENTAL HABITAT PLAN
			C3183 – D007+ HERITAGE CONSTRAINTS
			C3183 – D008+ STREET HIERARCHY PLAN
			C3183 – D011 TYPICAL CROSS SECTIONS – AV1 & ST2-V1
			C3183 – D012 TYPICAL CROSS SECTIONS – ST3 & ST3A
			C3183 – D013 TYPICAL CROSS SECTIONS – ST3-V1 & ST3-V2
			C3183 – D014 TYPICAL CROSS SECTIONS – DR1 & DR2
			C3183 – D015 TYPICAL CROSS SECTIONS – DR2-V1 & LA-7
			C3183 – D021 TYPICAL DETAILS SHEET 1 OF 3
			C3183 – D022 TYPICAL DETAILS SHEET 2
			C3183 – D023 TYPICAL DETAILS SHEET 3
			C3183 – D030+ ROAD AND PATH NETWORK PLAN
			C3183 – D031+ BUS ROUTE NETWORK PLAN
			C3183 – D032+ DRIVEWAY LOCATION PLAN
			C13183 – D035+ SITE GRADING KEY PLAN
			C13183 – D036+ SITE GRADING SHEET 1 OF 4
			C13183 – D037+ SITE GRADING SHEET 2
			C13183 – D038+ SITE GRADING SHEET 3
			C13183 – D039+ SITE GRADING SHEET 4
			C3183 – D041 TYPICAL SECTIONS SHEET 1 OF 3
			C3183 – D042 TYPICAL SECTIONS SHEET 2

Item No.	Drawing type	Prepared by	Drawing name
			C3183 – D043 TYPICAL SECTIONS SHEET 3
			C3183 – D161+ DRAINAGE CATCHMENT PLAN
			C3183 – D163+ DRAINAGE CONCEPT DATA
			C3183 – D164+ DRAINAGE CONCEPT MASTER PLAN
			C13183 – D180+ GOOGONG TOWNSHIP SEWER CONCEPT CATCHMENT PLAN
			C13183 – D181+ GOOGONG TOWNSHIP SEWER CONCEPT CATCHMENT DATA
			C13183 – D182+ SEWER CONCEPT MASTER PLAN SHEET 1 OF 2
			C13183 – D183+ SEWER CONCEPT MASTER PLAN SHEET 2
			C13183 – D201+ POTABLE WATER SUPPLY CONCEPT MASTER PLAN
			C13183 – D202+ POTABLE WATER SUPPLY CONCEPT DATA
			C13183 – D211+ RECYCLE WATER SUPPLY CONCEPT MASTER PLAN
			C13183 – D212+ RECYCLE WATER SUPPLY CONCEPT DATA
			C31383 – D231+ UTILITIES CONCEPT MASTER PLAN – SHEET 1 OF 4
			C31383 – D232+ UTILITIES CONCEPT MASTER PLAN – SHEET 2
			C31383 – D233+ UTILITIES CONCEPT MASTER PLAN – SHEET 3
			C31383 – D234+ UTILITIES CONCEPT MASTER PLAN – SHEET 4
			C13183 – D240+ WSUD POND PLAN SHEET 1 OF 2
			C13183 – D241+ WSUD POND PLAN SHEET 2
			C13183 – D242+ WSUD POND DETAIL SHEET 1 OF 2
			C13183 – D243+ WSUD POND DETAILS SHEET 2
			C13183 – D225+ SOIL, WATER AND VEGETATION MANAGEMENT PLAN SHEET 1 OF 2
			C13183 – D226+ SOIL, WATER AND VEGETATION MANAGEMENT PLAN SHEET 2

Item No.	Drawing type	Prepared by	Drawing name
			C13183 – D260+ RIPARIAN CORRIDOR OFFSET KEY PLAN
			C13183 – D2601+ RIPARIAN CORRIDOR OFFSET PLAN SHEET 1 OF 4
			C13183 – D2602+ RIPARIAN CORRIDOR OFFSET PLAN SHEET 2
			C13183 – D2603+ RIPARIAN CORRIDOR OFFSET PLAN SHEET 3
			C13183 – D2604+ RIPARIAN CORRIDOR OFFSET PLAN SHEET 4
			C13183 – D272+ MONTGOMERY'S CREEK CAUSEWAY
			C13183 – D272+ MONTGOMERY'S CREEK BRIDGE CONCEPT LONGITUDINAL SECTION
C5	Tree retention and removal plans	SpaceLab	TREE RETENTION PLAN (Drawing L205.0) – 5 Sheets

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