Part A

Introduction and description of the project

Googong Township water cycle project

Environmental Assesment

November 2010

1 Introduction

The Googong township will be located in the Canberra region, seven kilometres south of Queanbeyan in NSW. It has been designed to be one of the first purpose-built, large-scale water efficient communities in Australia, which would allow 16,000 people to use the same amount of drinking water that traditionally sustains only 6,000 people. This would be achieved through the Googong Water Cycle Project (the Project), which is proposed by CIC Australia Ltd (CIC) to provide the essential water related services to the township.

This environmental assessment (EA) has been prepared under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to support the application for concept approval for the Project, and project approval for Stage 1 of the Project. The EA describes the Project, assesses the key environmental issues associated with construction and operation of the Project, and identifies the impact mitigation and management measures that would be implemented. It has been prepared in accordance with relevant guidelines and the project-specific Director-General's Requirements (DGRs), released by the NSW Department of Planning (DoP) on 12 January 2009 (refer to Section 1.8).

1.1 Structure of this report

Part A – Introduction and description of the project

- Chapter 1 – introduces the Project, provides background information and describes the study area.
- Chapter 2 – outlines the strategic context of the Project and how it relates to key planning strategies.
- Chapter 3 – provides an overview of the legislative framework, approvals process, environmental planning instruments and strategic planning context for the Project.
- Chapter 4 – outlines the alternatives that were considered, including a discussion of the environmental costs and benefits of the Project, infrastructure locations and discharge options.
- Chapter 5 – provides a detailed description of Stage 1 of the Project, including construction, operation and staging. An overview of the remaining stages of the Project is also provided.

Part B – Environmental assessment

- Chapter 6 – provides a summary of the environmental risk assessment for the Project.
- Chapter 7 – assesses water quality issues, potential impacts and management measures.
- Chapter 8 – assesses human health issues, potential impacts and management measures.
- Chapter 9 – assesses soil issues, potential impacts and management measures.
- Chapter 10 – assesses groundwater issues, potential impacts and management measures.
- Chapter 11 – assesses ecological issues, potential impacts and management measures.
- Chapter 12 – assesses heritage issues, potential impacts and management measures.
- Chapter 13 – assesses human amenity issues, potential impacts and management measures. This includes traffic, waste, air quality, noise hazards and risks, and visual amenity.

- Chapter 14 – assesses other environmental issues, including socio-economic, greenhouse gas emissions, utilities and services. It includes an assessment of cumulative impacts.
- Chapter 15 – provides a summary of the residual environmental risk assessment for the Project.

Part C – Consultation, conclusions and commitments

- Chapter 16 – outlines the stakeholder engagement and consultation undertaken for the EA.
- Chapter 17 – provides an overall summary of the impacts and benefits of the provision of water related services for the Googong township. It also provides a justification for undertaking the Project in the manner described.
- Chapter 18 – provides the draft statement of commitments (SoCs) for the Project.

Appendices

Appendices provide detailed information about the Project and specialist studies commissioned to address specific environmental aspects.

1.2 The Project

The Project involves the construction and operation of water related services (including drinking water, recycled water and wastewater infrastructure) for the proposed Googong township.

The Project includes:

- A water recycling plant (WRP).
- Reservoirs for recycled and potable water.
- Pumping stations for sewage, recycled water and potable water.
- Mains pipework for sewage, recycled water and potable water.

Stage 1 of the Project – which is required to facilitate construction of the first subdivisions of the Googong township – includes:

- Stage 1 of the water recycling plant.
- Stage 1 reservoirs for recycled and potable water.
- Stage 1 pumping stations for sewage, recycled water and potable water.
- Stage 1 mains pipework for sewage, recycled water and potable water.

The stormwater management system for Googong township is not part of the Project assessed in this EA. However, as the stormwater system forms part of the integrated water cycle, it is described in this document as context for the Project.

1.3 The proponent

CIC is the proponent of the Googong township development (including the subdivision and water cycle components). CIC is listed on the Australian Stock Exchange and is based in the ACT, with offices also in Adelaide and Darwin. CIC projects are spread across the ACT, southern NSW, South Australia, the Northern Territory and Western Australia. It is CIC policy to recognise, protect and enhance the environment and improve sustainability.

1.4 Background

1.4.1 Project background

CIC is proposing to develop a new, essentially self-contained, residential community at Googong township, which would be located south of Queanbeyan in NSW to the west of Googong Reservoir. The proposed Googong township would have about 5,500 dwellings and be home to an estimated 16,000 people. It would be established in stages over a 25-year period. The broad geographical context of the Project is shown in Figures 1.1 and 1.2, with the masterplan for the proposed township shown in Figure 1.3.

The proposed Googong township is well positioned to fulfil a significant role in accommodating some of the 65,000 additional people that are projected to live in the Canberra-Queanbeyan region by 2021 in a way that is more sustainable than traditional development patterns in the region. The township would utilise contemporary environmental and social sustainability processes, incorporating a host of major initiatives, ranging from walkable neighbourhoods and energy efficiency to water re-use and savings that is designed to reduce potable water use by at least 60 per cent, compared to traditional developments.

1.4.2 The integrated water cycle

It has been recognised throughout Australia that substantial improvements in the management of the water cycle are required for urban development to become more sustainable. Water is a particularly important element in the planning of the Googong township, due to the relatively low regional rainfall and increasingly constrained water resources. The vision for the township is to achieve high levels of water sensitive urban planning and design. The development of an integrated water cycle for Googong township is intended to ensure more sustainable urban use of the region's water resources. This would be achieved through reducing potable water demand, maximising water re-use and minimising environmental impacts of the Googong township.

The integrated water cycle for the Googong township focuses on smarter ways of managing water resources. A key to this approach is to look at water in an integrated sense and not just as separate issues of water supply, wastewater disposal and stormwater release. The Googong integrated water cycle incorporates stormwater (roof water and overland stormwater) capture and re-use, wastewater re-use, potable water supply and water sensitive urban design.

Several broad-scale environmental assessments have been undertaken in relation to potential urban development in the area and are referred to in this EA as appropriate. These assessments address site issues such as fauna and flora, heritage, soils, geology, drainage, groundwater, slope and erosion.

1.4.3 Approval process

The overall planning for the Googong township is currently well advanced, with rezoning of the land via a new Googong local environmental plan approved in December 2009. CIC intends to develop the township in stages with respect to subdivision of the land and provision of associated infrastructure. Queanbeyan City Council is the consent authority for the subdivision and development applications under Part 4 of the EP&A Act. Further detail of the interaction of Parts 3A and 4 of the EP&A Act approval processes is provided in Section 1.7.

This EA examines the impacts of constructing and operating the water related services infrastructure proposed by CIC for the Googong Water Cycle Project. The scale of the Project, both in terms of the population of the Googong township and the capital cost of the infrastructure, is deemed a 'major project' under NSW legislation and thus requires assessment under Part 3A of the EP&A Act.

This EA report has been prepared under Part 3A of the EP&A Act to support CIC's application for concept approval of the Project and project approval of Stage 1 of the Project.

The approval of a concept plan for a project is made under section 75M of the EP&A Act. To this end, this EA sets out the scope of the concept plan and the staging of the water cycle infrastructure (including the water recycling plant, reservoirs, pumping stations and mains pipework) for the entire Googong township. Project approval is made under section 75E, in accordance with section 75M, of the EP&A Act.

1.5 The study area

Figure 1.4 shows the study area for the Project and the component of this area for Stage 1 of the Project. The study area includes the entirety of the proposed Googong township, as well as a corridor to the north east of the township to accommodate the connection to the potable water supply. All areas required for the construction and operation of Stage 1 of the Project are located wholly in the study area.

1.6 Consultation

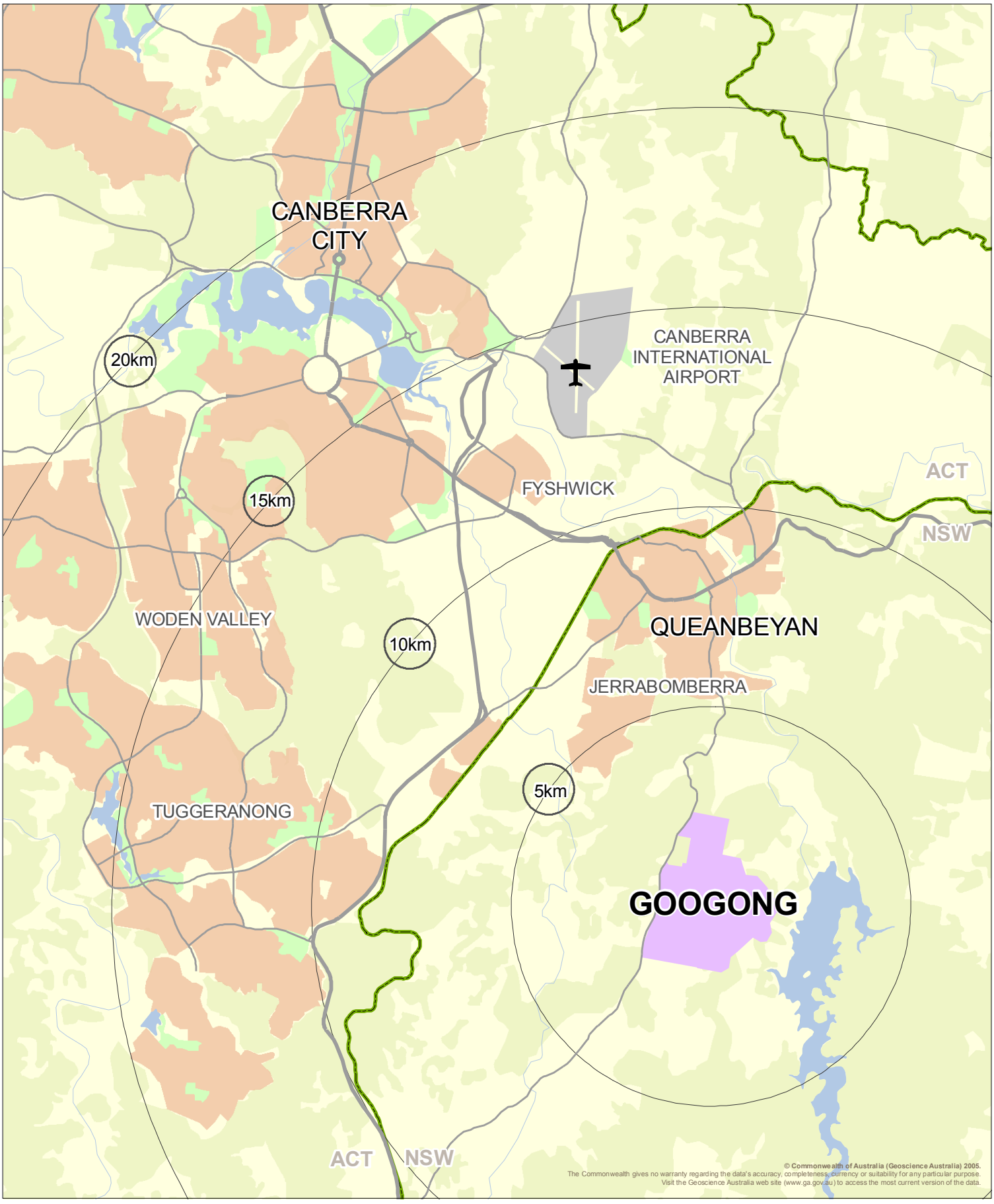
CIC has developed a communications and stakeholder strategy for the Project to ensure that stakeholders are consulted and appropriately informed. Consultation with local government and relevant government agencies was undertaken during the preparation of the EA. The main consultation activities have included:

- A planning focus meeting, held by the DoP on 11 December 2008 and attended by representatives of key NSW Government agencies, Queanbeyan City Council and Palerang Council.
- Regular correspondence with government representatives at federal, state, territory and local levels to ensure that all issues and concerns have been correctly documented.
- The creation and maintenance of a project specific website (www.googong.net).
- Meetings with the local community as part of the local environmental plan amendment process to rezone Googong township.

Consultation with all stakeholders and the community is flexible and ongoing. Chapter 16 provides more details about the past and planned consultation activities.

1.7 Assessment of elements of the Googong township under Part 3A and Part 4 of the EP&A Act

CIC is responsible for the planning and delivery or coordination of all services required to accommodate the Googong township. These services include water infrastructure, roads, telecommunications, gas, electricity and stormwater systems. This section aims to demonstrate what services are to be incorporated within the Part 3A approval process and what services would be incorporated into separate development applications to be lodged with Queanbeyan City Council under Part 4 of the EP&A Act. It is important to note that some services require statutory approvals under both approval pathways, but all are managed by CIC.



Googong Environmental Assessment

Proponent CIC Australia

Date 20 August 2010

Drawing no. 08003g_ea_fig1-1

Source Geoscience Australia

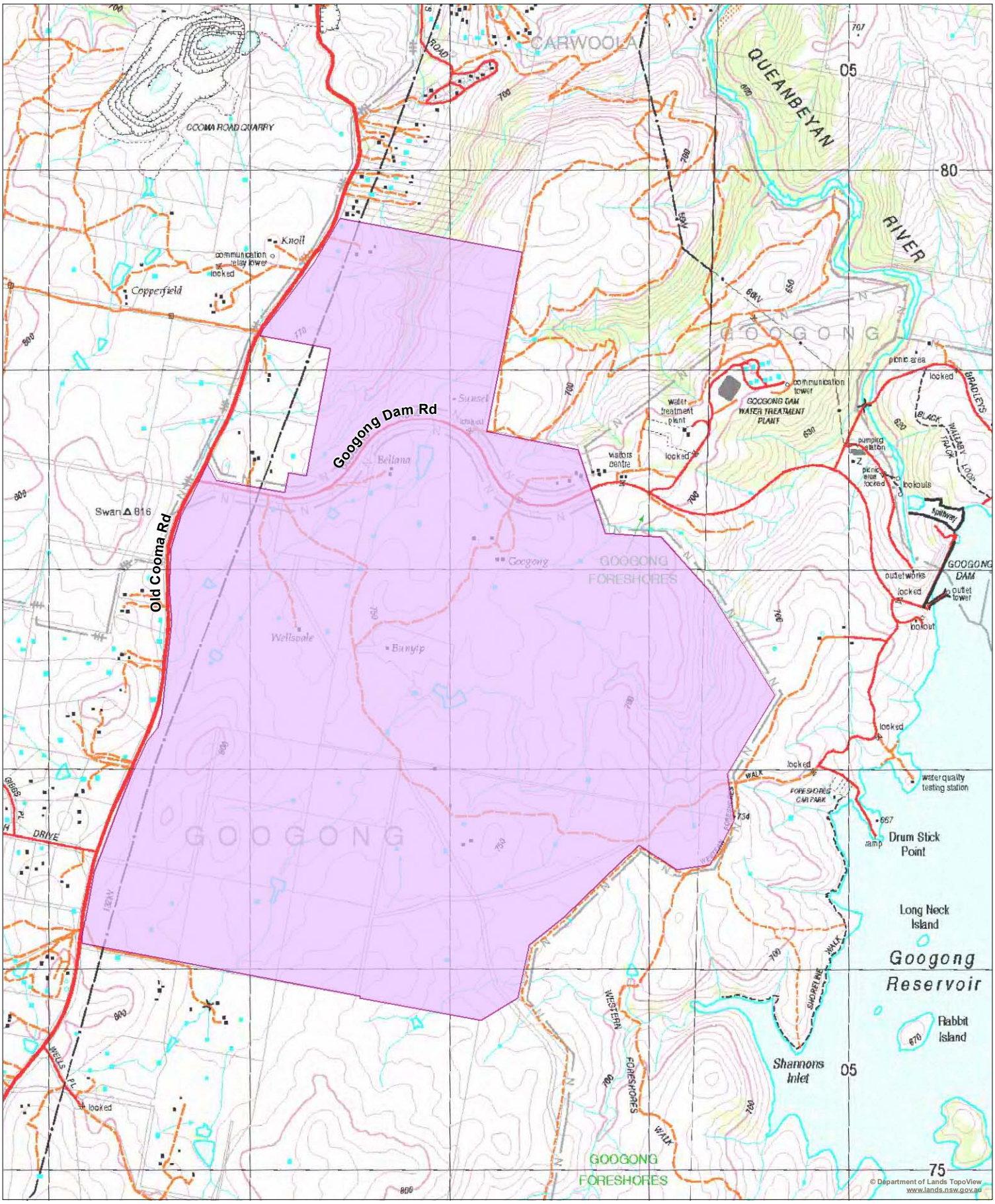
Googong township
Waterbody
Built-up area
Recreation area
Vegetation
River
Primary road
Secondary road
State boundary

1:125,000

0 1 2 3 4Km

Figure 1.1 Geographical context - Googong township

Yarnidis Roberts



Googong Environmental Assessment

Proponent CIC Australia

Date 20 August 2010

Drawing no. 08003g_ea_fig01-2

Source Brown Consulting, NSW LPMA

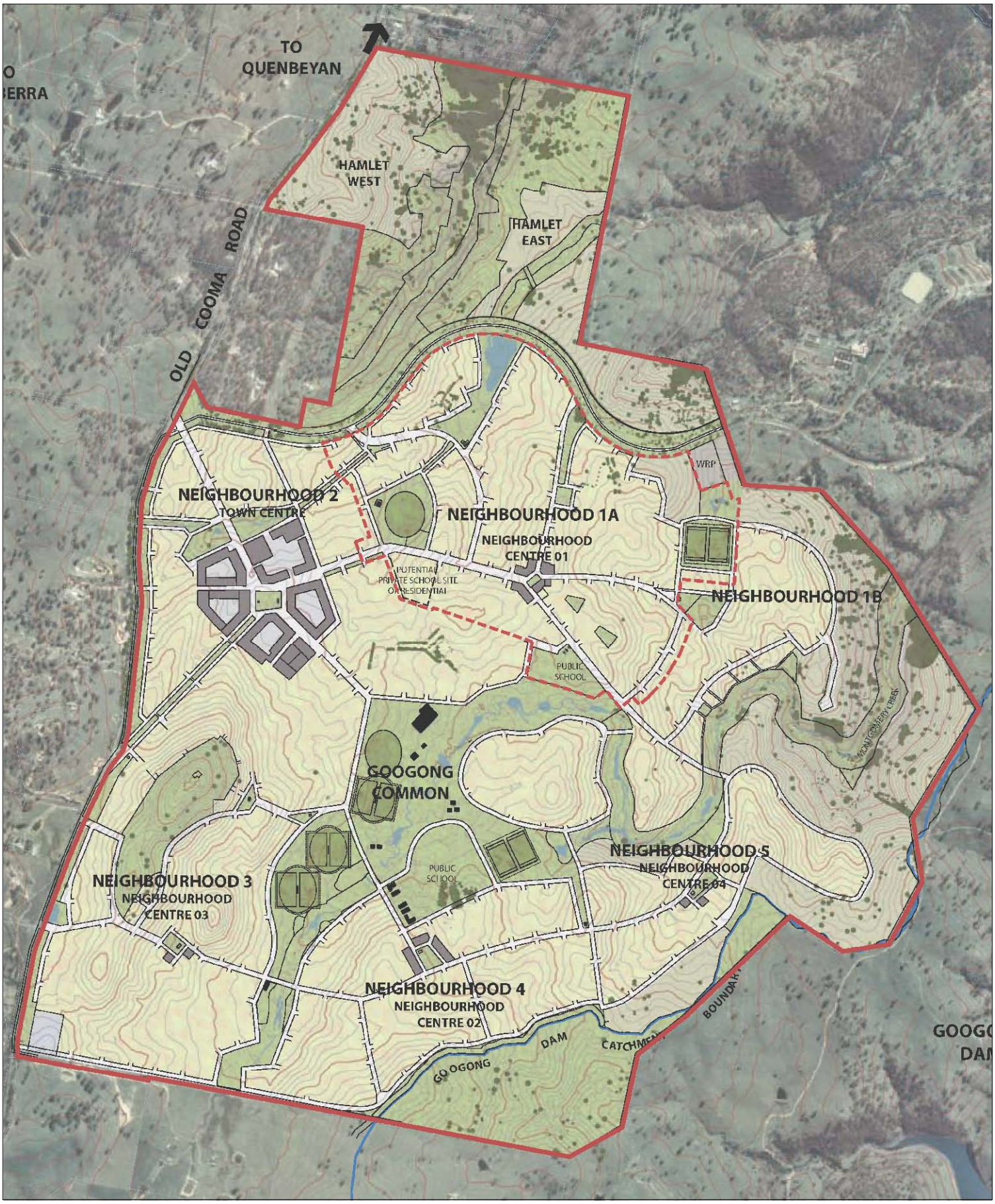
Googong township

1:25,000

0 200 400 600 800m

Figure 1.2 Local context - Googong township

Hanidis Roberts



Googong Environmental Assessment

Proponent CIC Australia

Date 20 August 2010

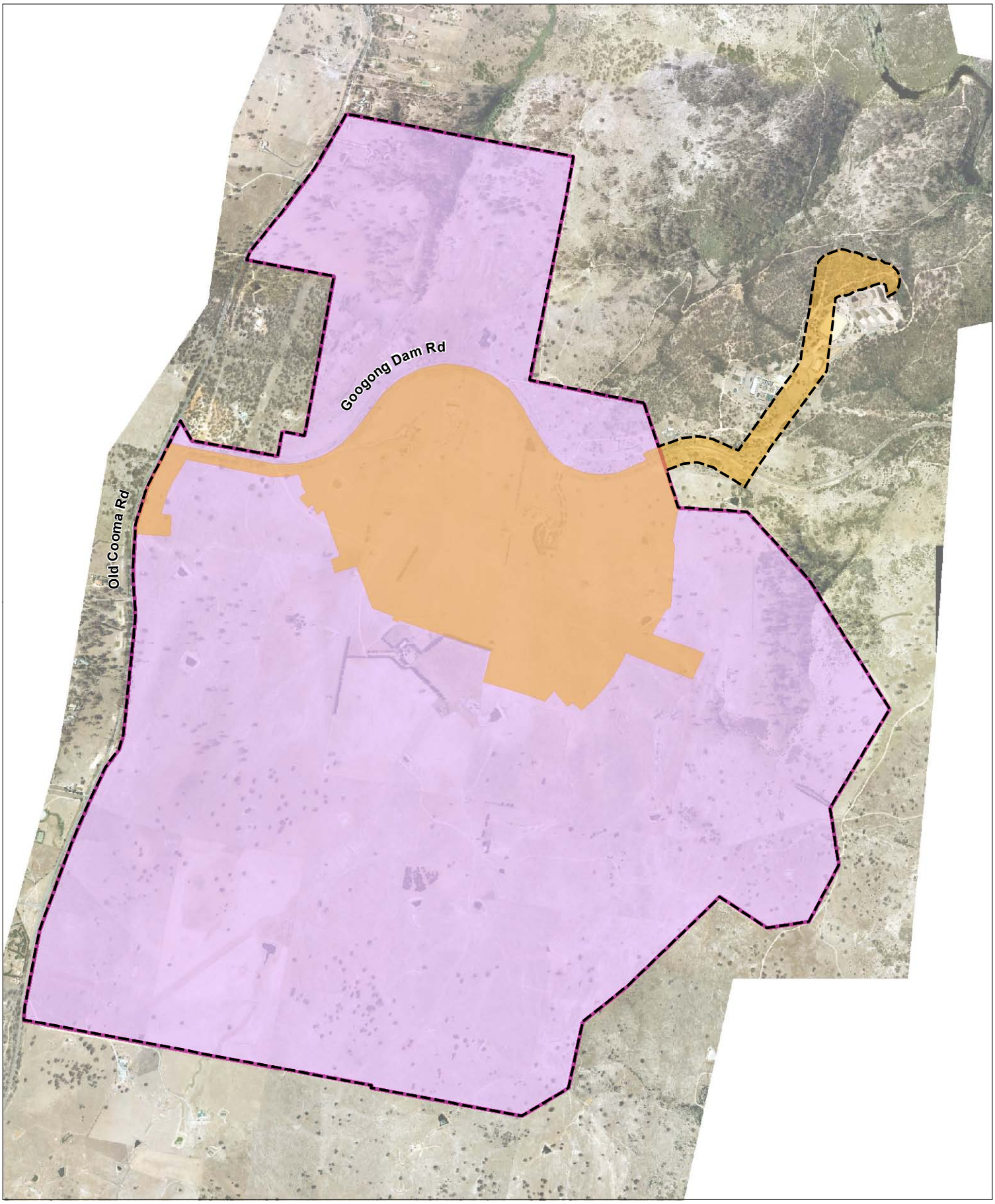
Drawing no. 08003g_ea_fig1-3

Source CIC, robertsday

Note: Original drawing scale = 1:5000 @ A3

Figure 1.3 Masterplan

Yanidis Roberts



Googong Environmental Assessment

Proponent CIC Australia

Date 20 August 2010

Drawing no. 08003g_ea_fig01-4

Source Brown Consulting, MWH

Study area
Subject site
Googong township

1:20,000

0 150 300 450 600m

Figure 1.4 Aerial photograph

Hamidis Roberts

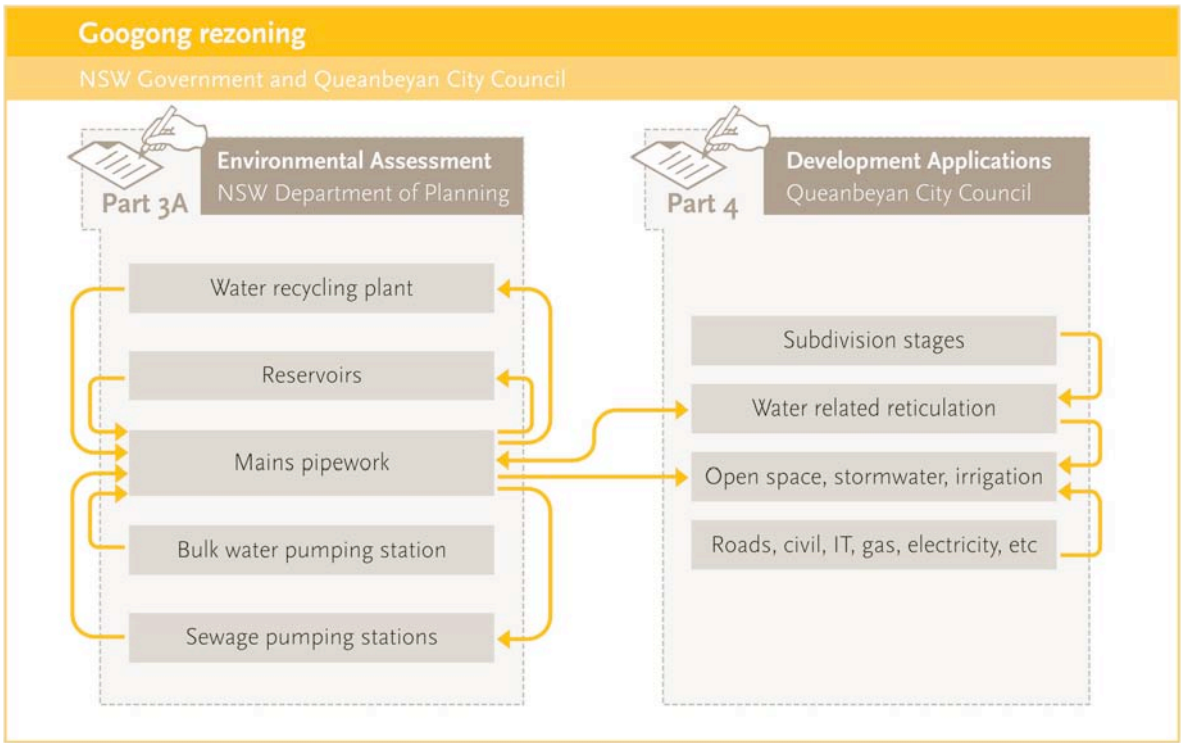
1.7.2 Water cycle infrastructure elements assessed under Part 3A

In the initial stages of the planning process it was determined that the sewage facility needed for the Googong township met Part 3A requirements under section 75B of the EP&A Act, which specifies the types of projects to which Part 3A of the Act may apply (refer to Section 3.2.2 of the EA for further details regarding Part 3A of the EP&A Act). This outcome meant that all key water infrastructure components needed to be included in the Part 3A approval process (refer to Chapter 5 for further detail). These components include:

- A water recycling plant (including a recycled water pumping station).
- Potable and recycled water reservoirs.
- Mains pipework (potable and recycled water rising mains, potable and recycled water distribution mains, and sewage rising and transfer mains).
- A bulk water pumping station.
- Sewage pumping stations.

This water cycle infrastructure is the only utility service for the Googong township that is required to be assessed under Part 3A and is the subject of this EA. Figure 1.5 shows the relationships between the Part 3A water cycle elements and the activities that would be assessed through development applications under Part 4 of the EP&A Act.

Figure 1.5 Googong township rezoning, and elements under Part 3A and Part 4 of the EP&A Act



1.7.3 Elements assessed via development applications under Part 4

In December 2009, rezoning of the land within the study area was undertaken through Queanbeyan City Council and approved by the NSW Government (refer to Sections 2.2 and 2.3 for further information). Therefore, notwithstanding the infrastructure being assessed under Part 3A, the current zoning of the majority of the study area allows for the installation of services to support the development of the Googong township under Part 4 of the EP&A Act. Elements of the township that would be assessed under Part 4 are described below.

Subdivision stages

The Googong township would be developed in subdivision stages over a 25-year period, as shown in the masterplan in Figure 1.3. A development application would be prepared for each subdivision stage. The first of these development applications, for subdivision stages 1 and 2 of Neighbourhood 1A (NH1A) (refer to Figure 1.3), has been completed and will be formally submitted to Queanbeyan City Council upon public exhibition of this EA.

Water related reticulation

Sewerage, potable and recycled water reticulation required within the Googong township would be assessed and approved under Part 4 development applications. These applications would include connections to the pipework and infrastructure assessed under Part 3A.

Open space, stormwater and irrigation

In each subdivision development application, a landscaping design would clearly indicate the layout for open spaces and areas requiring irrigation. Open spaces would be influenced by the road layout and other infrastructure, including Part 3A water cycle elements.

The stormwater systems would utilise the principles of a water sensitive urban design (WSUD) and would be integrated into streetscapes and open space areas. The stormwater system is an important aspect to consider in the Part 3A assessment, as certain mitigation and management measures in this EA relate to the stormwater designs under Part 4.

Roads and civil works

Roads and civil works would be undertaken by CIC and approved under Part 4 development applications.

Communications, gas and electricity services

Services such as electricity, gas and telecommunications would be managed by CIC and approved under Part 4 development applications.

1.7.4 Elements associated with the township undertaken by public agencies

In addition to the above elements associated with the development of the Googong township that would be undertaken by CIC, there are local and regional activities that are linked to the township and other growth areas in the Queanbeyan and Canberra region that would be undertaken by public agencies. These include regional upgrades to roads, services (eg electricity substations) and other required activities to support population growth in the region. These activities would be approved under the relevant approval processes for that public agency (such as under Part 5 of the EP&A Act).

1.8 Director-General's Requirements

Table 1.1 details the DGRs and identifies where in this EA each requirement is addressed. Chapters and sections of this EA also contain the relevant DGRs in a breakout box for easy reference. A copy of the formal DGRs and accompanying letter can be found in Appendix A.

Table 1.1 Director-General's Requirements

Director-General's Requirement	Chapter/section reference
General requirements	
An executive summary.	Executive summary
A detailed description of Stage 1 of the project, including construction, operation, and staging. Sufficient information must be provided on the remaining stages to enable a clear understanding of these components.	Chapter 5 Section 5.2.1
Consideration of any relevant statutory provisions including the consistency of the project with the objects of the *Environmental Planning and Assessment Act 1979.*	Chapter 3
An assessment of the key issues outlined below, during construction, operation and decommissioning (as relevant). Sufficient information on all aspects of the Concept Plan must be presented to demonstrate that the cumulative impacts of Googong township as a whole are acceptable and justified.	Chapters 6 to 15
A draft Statement of Commitments detailing measures for environmental mitigation, management and monitoring for the project.	Table 18.1
A conclusion justifying the project taking into consideration the environmental, social and economic impacts of the project, the suitability of the site, and the public interest.	Chapter 17 Section 17.6
Certification by the author of the EA that the information contained in the EA is neither false nor misleading.	Before the Executive Summary
Strategic and project justification	
The EA shall clearly outline the strategic context of the project, having regard to existing and future development of the Sydney-Canberra corridor area and its relationship to the Sydney-Canberra Corridor Regional Strategy.	Chapter 2 Section 2.1
The EA must describe the need for and objectives of the project; its relationship with urban development plans for the area; alternatives considered (including an assessment of the environmental costs and benefits of the project relative to alternatives) and provide justification for the preferred project taking into consideration the objects of the *Environmental Planning and Assessment Act 1979*.	Chapters 2, 4 and 17 Section 2.5 Tables 4.2 and 4.3 Table 17.3
Water quality and hydrology	
The EA shall include an assessment of water quality impacts arising from the construction and operation of the project. With respect to construction, risks associated with laying pipelines, including across watercourses, erosion and sedimentation controls and management of any discharges from the project to prevent impacts to nearby watercourses must be addressed. With respect to operation, details of the quality of the recycled water must be provided.	Chapter 7 Sections 7.4 and 7.5

Director-General's Requirement	Chapter/section reference
Details on the proposed use(s) of the recycled water and how this will be managed, particularly with respect to runoff into waterways and the need for buffer zones, must be provided.	Section 7.5.1
Details on the impacts and management of wastewater and infrastructure must be provided, including impacts from discharges from the recycled water plant (both wastewater and surplus treated water).	Section 7.5
Where relevant, wet weather effluent storage requirements, the location of infrastructure within riparian areas and details of any dry and wet weather sewage overflows must be provided. These details must include the predicted frequency of overflows and contingency measures to minimise inflation.	Section 7.5.2
Consideration must also be given to water cycle management plans for the area.	Section 7.2
Human health	
The EA shall address the human health impacts arising from the application of recycled water and discharges of wastewater and recycled water. The assessment must be undertaken in accordance with the *Australian Guidelines for Water Recycling: Managing Health and Environmental Risks* (NRMMC, EPHC & AHMC, 2006).	Chapter 8 Section 8.5
Soil and groundwater	
The EA shall include consideration of existing soil conditions, the suitability and sustainability of long-term recycled water application, including measures to avoid soil degradation and inappropriate nutrient loading.	Chapter 9 Section 9.3 Section 9.3.4
An assessment of groundwater impacts must be provided, focussing specifically on the potential for accessions to groundwater of recycled water and salinity/sodicity impacts.	Chapter 10 Sections 10.4 and 10.5
Consideration must also be given to the impact of trenching and other underground work on groundwater and subsurface flows.	Section 10.4
Flora and fauna	
The EA shall include a flora and fauna impact assessment taking into consideration impacts on any threatened species, populations, ecological communities and/or critical habitat and any relevant recovery plan in accordance with the DECC's *Guidelines for Threatened Species Assessment* (2005).	Chapter 11 Section 11.1.1 and 11.1.2
This assessment shall justify the need for clearing any vegetation and/ or habitat features and include an evaluation of potential impacts on waterways, aquatic ecosystems or riparian zones, including any instream stormwater basins, potential for weed infestation, impacts to fish passage, and the provision of any compensatory habitat/ biodiversity offsets.	Chapter 11 Section 11.1.4 Section 11.2
Indigenous and non-indigenous heritage	
The EA shall include an assessment of indigenous and non-indigenous heritage values that may be impacted by the project with details on subsurface archaeological investigations undertaken for potential archaeological deposits.	Chapter 12 Sections 12.5 to 12.7

Director-General's Requirement	Chapter/section reference
The assessment must address the information and consultation requirements of the draft *Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation* (DECC, 2005).	Section 12.3
Traffic and transport	
The EA shall include an assessment of impacts to the local and regional road network and intersections, including direct impacts from any traffic rerouting and any access restrictions to property.	Sections 13.1.3 to 13.3.5
This assessment must include details on the nature/mode of traffic generated from the construction and operation of the project, transport routes and traffic volumes.	Sections 13.1.5 and 13.1.6
Consideration must also be given to the impact of the project in the context of any other major construction traffic likely to be utilising the same roads during the construction of the project.	Section 13.1.4
Waste generation and management	
The EA shall detail the likely waste quantities and qualities generated during the construction (including spoil generation) and operation of the project.	Section 13.2.3
Specific focus must be placed on potential contamination of soils, and on sludges, solids and aqueous wastes produced through the operation of the project.	Sections 13.2.5 and 13.2.6 See also Section 9.3.5
Details of appropriate waste management and disposal options for those materials must be provided.	Table 13.7
The assessment must take into consideration the DECC's *Waste Classification Guidelines* (2008).	Section 13.2.2 Table 13.7
Air quality	
The EA shall include an assessment of the air quality impacts associated with the project prepared in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (DEC, 2005), *Assessment and Management of Odour from Stationary Sources in NSW* (DEC, 2001) and *Technical Notes: Draft Policy: Assessment and Management of Odour from Stationary Sources in NSW* (DEC, 2001).	Sections 13.3.3 to 13.3.5
This assessment must consider any potential impacts on nearby sensitive receptors, including future residential receptors associated with the Googong urban development area.	Sections 13.3.4 and 13.3.5
Noise and vibration	
The EA shall include an assessment of noise and vibration impacts during construction and operation and in the context of planned urban development in the area.	Sections 13.4.3 to 13.4.5
Construction traffic noise must also be addressed.	Section 13.4.4
The assessment must take into account the following guidelines, as relevant: *Environmental Noise Control Manual* (EPA, 1994), *Environmental Criteria for Road Traffic Noise* (EPA, 1999), *Industrial Noise Policy* (EPA, 2000) and *Assessing Vibration: A Technical Guideline* (DECC, 2006).	Section 13.4.3

Director-General's Requirement	Chapter/section reference
Hazards and risk	
The EA shall include an assessment of the hazards and risk associated with the project including details of hazardous materials used or kept on the premises during the construction and operation phases.	Section 13.5
The assessment must refer to the Department's Guideline *Applying SEPP 33* (DUAP, 1994).	Section 13.5.3
If relevant, a *Preliminary Hazard Analysis* in accordance with the Department's Hazardous Industry Planning Advisory Paper No.6, *Guidelines for Hazard Analysis* must be included as part of the EA.	Section 13.5.5
Visual amenity	
The EA shall include an assessment of the impact of the project on visual amenity, particularly highly visible structures such as the proposed reservoirs.	Section 13.6 Section 13.6.5
This assessment must include any proposed mitigation measures for visual amenity.	Section 13.6.5
Environmental risk analysis	
Notwithstanding the above key assessment requirements, the EA shall include an environmental risk analysis to identify potential environmental impacts associated with the project (construction and operation), proposed mitigation measures and potentially significant residual environmental impacts after the application of proposed mitigation measures.	Chapters 6 and 15
Where additional key environmental impacts are identified through this environmental risk analysis, an appropriately detailed impact assessment of this additional key environmental impact must be included in EA.	Chapter 6 Chapters 7 to 14
Consultation	
You should undertake an appropriate and justified level of consultation with relevant parties during the preparation of the EA, including: • Queanbeyan City Council. • Palerang Council. • NSW Department of Health. • NSW Department of Water and Energy. • NSW Department of Environment and Climate Change. • NSW Department of Primary Industries. • NSW Roads and Traffic Authority. • Department of Environment, Water, Heritage and the Arts. • ACT Territory and Municipal Services. • Murrumbidgee Catchment Management Authority. • Affected regional utility providers. • Specialist interest groups, including local Aboriginal land councils. • The local community, including affected landowners.	Chapter 16
The EA must describe the consultation process, document all community consultation undertaken to date and identify the issues raised (including where these have been addressed in the EA).	Chapter 16