# Part A

# Background to the Project

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# Background

This chapter provides a brief description of the Tillegra Dam project. It also identifies the Proponent and sets out the structure for the environmental assessment report.

## 1.1 Overview of the Project

Hunter Water Corporation (HWC) is proposing to construct a 450 gigalitre dam at Tillegra near the town of Dungog in the Hunter Valley (refer Figure 1.1). It will substantially increase the total existing water storage capacity of the Lower Hunter region. Existing dams at Grahamstown and Chichester currently hold a maximum of 210 gigalitres. The dam is deemed an essential component of the NSW Government's State Plan *A New Direction for NSW* (NSW Government 2006a) to secure the water future of the region for the next 50 years.

Tillegra Dam was first considered as far back as the 1950s due to the large catchment area, good rainfall and low environmental impacts. HWC began purchasing land in the Tillegra area in the early 1980s at which time landholders were informed of the proposed dam. In the mid to late 1980s HWC deferred plans for the construction of Tillegra Dam as a result of the community's positive response to pay-for-use water pricing and the overall reduction in water demand.

The current proposal to build Tillegra Dam has come about as a result of:

- the need to improve drought security for existing customers in the Lower Hunter region
- significant growth in the Hunter as predicted by the most recent regional strategy
- long-term climate change implications.

As noted in the Gosford and Wyong Councils' *Water Plan 2050*, Tillegra Dam also has potential long term benefits for the Central Coast's water supply by ensuring security of water transfers to that area, should they be required at any time in the future.

The Project comprises a number of components which are summarised in Table 1.1. These are described in more detail in Chapter 6.

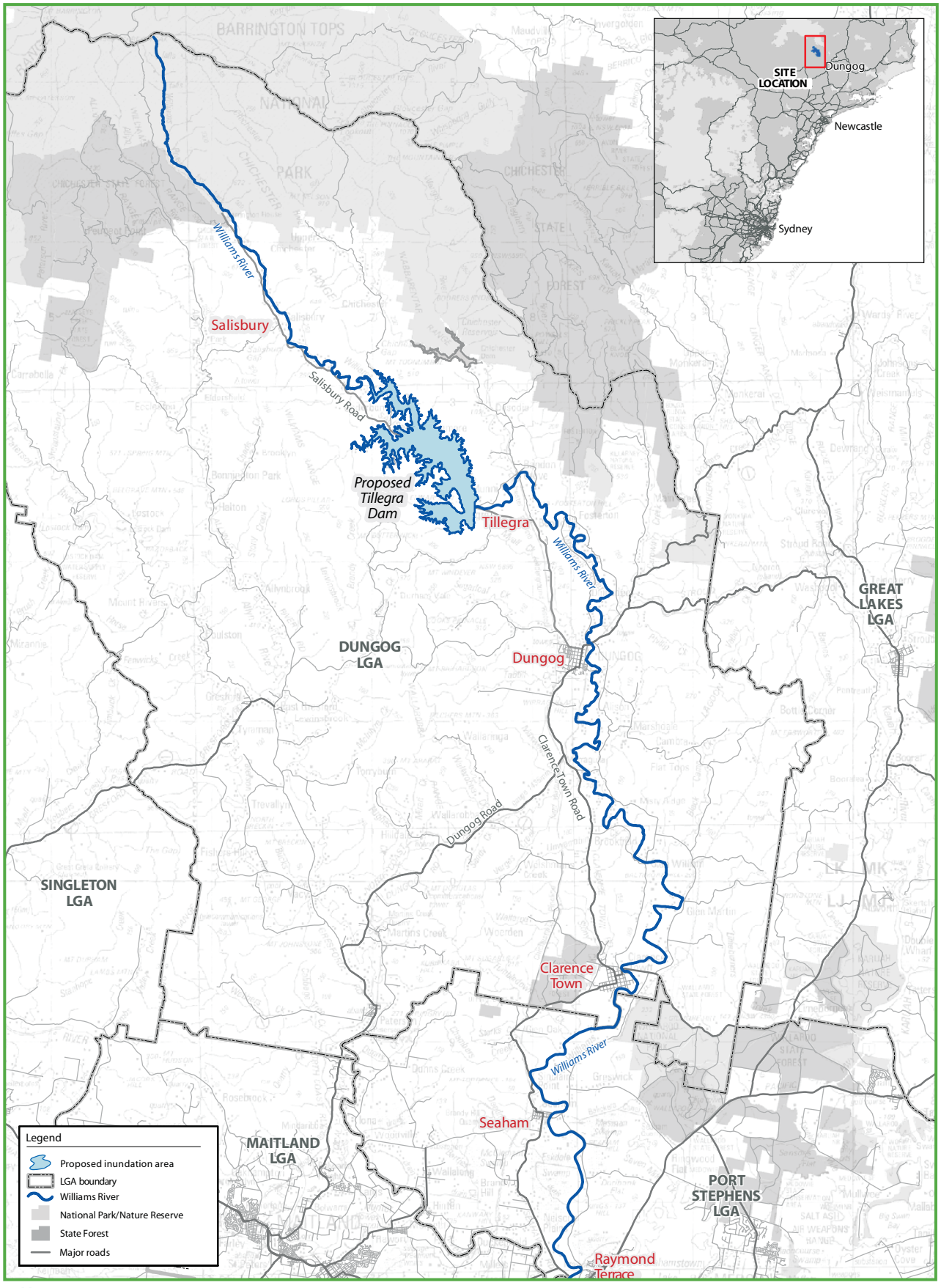


**FIGURE 1.1** REGIONAL LOCALITY MAP

**TABLE 1.1** KEY COMPONENTS OF THE PROJECT

| COMPONENT | KEY•ASPECTS |
|---|---|
| Dam wall (embankment) | • Concrete face rockfill dam (CFRD), approximately 76 metres high and 800 metres wide located at Tillegra |
| Spillway | • Simple chute spillway approximately 600 metres long controlled by an ogee crest located on the right abutment. The spillway would have a 40 metre wide ogee crest that contracts to a 30 metre wide concrete lined chute, terminating in a flip bucket |
| Water storage | • Approximately 450 gigalitres in volume with a surface area of 2,100 hectares |
| Multi-level offtake tower | • Full height offtake tower with height selective withdrawal facilities allowing for optimum water quality releases from below the storage surface |
| Provision for a mini hydroelectric power (HEP) plant | • Plant would be capable of generating up to 3,000 MWh of electricity annually |
| Transfer pipeline and pump station | • For transfers of water from the dam to the Chichester Trunk Gravity Main (CTGM). The pipeline would run generally within the road reserve on the northern side of Salisbury Road |
| Salisbury Road realignment and other road works | • Realignment of approximately 16.9 kilometres of Salisbury Road<br>• Construction of three waterway crossings<br>• Provision of alternative access currently provided from Quart Pot Creek Road |
| Relocation of affected utility installations | • Principally electricity and telecommunications<br>• Approximately 20 kilometre route |
| Relocation of public infrastructure | • Rural Fire Service (RFS) station |
| Social and Heritage conservation works | • Including the relocation of Quart Pot/Munni Cemetery and preservation of the historic Munni House |
| Carbon offset initiatives | • Including tree planting, riparian revegetation, and habitat corridor creation |
| Ancillary works | • Such as potential recreational access areas, lookouts and related facilities |

The dam and associated infrastructure are expected to have a capital construction cost of approximately $396 million ($406 million nominal).

Subject to HWC securing all necessary environmental planning approvals, construction work would commence (Year 1) with the first component of works being the bridges and approaches for the new section of Salisbury Road. Construction of the dam would begin in Year 2 together with the remainder of road works. Road works are expected to be completed in Year 3 while construction of the dam would finish by Year 4. The upper Williams River catchment receives large, regular flood flows and it is anticipated the dam would fill in approximately five years. The first water would be expected to be available in Year 3.

## 1.2 Purpose and structure of the EA report

The EA (environmental assessment) Report has been prepared in accordance with the relevant matters under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Further detail on statutory matters is provided in Chapter 8 *Planning and Assessment Process*. The assessment is intended to identify and describe details of the Project and the process of its assessment. The EA Report (and supporting documentation) provides an analysis of key issues relating to the Project as specified by the Director-General of the Department of Planning (DoP).

The EA Report comprises six major parts (A to F). These are described in the following table together with an outline of the constituent chapters.

**TABLE 1.2** STRUCTURE OF EA REPORT

| PART | DESCRIPTION |
|---|---|
| Part A<br>*Background to the Project* | Part A contains five chapters that introduce the Project and highlight the need and objectives of the Project. This part includes a chapter which sets out the context for the sustainable development and operation of the Project. An overview of the Project area and consultation undertaken to date is also provided. |
| Part B<br>*Description of the Project* | Part B provides a detailed description of all components of the Project, including matters relating to operation of the storage. It also discusses activities related to construction of the dam and to the relocation of Salisbury Road and Quart Pot Creek Road. |
| Part C<br>*Planning and assessment processes* | Part C provides a detailed outline of the planning and assessment processes, together with the environmental risk analysis undertaken to differentiate key issues and other environmental issues. |
| Part D<br>*Assessment of key environmental issues* | Part D contains six chapters that address the following key issues:<br>• assessment and management of impacts on the Williams River (holistically considering water quality and hydrology, fluvial geomorphology, and aquatic and riparian ecology)<br>• terrestrial ecology<br>• socioeconomic issues<br>• contemporary heritage<br>Aboriginal heritage<br>• landscape and visual amenity.<br>Each chapter provides a description of the affected environment as it relates to the aspect of interest, together with an assessment of the anticipated impacts. Impact mitigation and management measures are identified and evaluated. |
| Part E<br>*Other environmental issues* | Part E contains five chapters that address the following matters:<br>• management of other environmental issues<br>• cumulative, consequential and indirect impacts<br>• residual environmental risk analysis<br>• climate change issues and greenhouse gas emissions related to the Project<br>• assessment of how the Project addresses sustainability within the context of the framework described in Part A. |
| Part F<br>*Justification and conclusions* | The justification and conclusions for the Project are presented in Part F. |

The EA Report is supported by the following working papers which document the specialist investigations undertaken for the Project:

A Water quality and hydrology
B Fluvial geomorphology
C Aquatic ecology
D Environmental flows and river management
E Terrestrial ecology
F Sustainable resource use
G Socioeconomic assessment
H Quart Pot/Munni Cemetery relocation plan
I Roads and other infrastructure
J Air quality
K Noise and vibration
L Contemporary heritage
M Aboriginal heritage
N Draft integrated land use plan
O Construction environmental management plan guide

These are attached as Volume 2 to the EA Report.

Additionally, the EA Report includes the following appendices:

1 Draft statement of commitments (SOCs)
2 Minister for Planning's Section 75B(2) Declaration
3 Minister for Planning's Section 75C Declaration
4 Director-General's environmental assessment requirements (DGRs) and EA checklist
5 Study team.

## 1.3 The Proponent

The Proponent for the purposes of Part 3A of the EP&A Act is the Hunter Water Corporation.WC is a State-owned corporation, and the water and wastewater service provider for over half a million people in the Lower Hunter region. Approximately 214,000 properties are connected to the water supply network and 202,000 to the wastewater network.

HWC's area of operation covers 5,475 km$^2$ with a population of around 517,000 including the local government areas (LGAs) of Cessnock (48,000), Lake Macquarie (194,000), Maitland (61,000), Newcastle (149,000) and Dungog (8,500). Bulk water is also supplied to Dungog Shire Council and to small parts of Singleton and the Great Lakes area. HWC also has the capacity to supply up to 35 megalitres per day to the Central Coast. In total, HWC delivers, on average, 200 megalitres of water a day using assets worth in excess of $2 billion.