Transgrid

People. Power. Possibilities.

HumeLink

Agricultural Impact Assessment
Addendum
Technical Report 4

Executive summary

Background

Transgrid proposes to increase the energy network capacity in southern New South Wales (NSW) through the development of around 365 kilometres (km) of new 500 kilovolt (kV) high-voltage transmission lines and associated infrastructure between Wagga Wagga, Bannaby and Maragle. This project is collectively referred to as HumeLink.

An Environmental Impact Statement (EIS) was prepared in accordance with the requirements of Division 5.2 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The EIS was placed on public exhibition by the NSW Department of Planning, Housing and Infrastructure (DPHI) (formerly the NSW Department of Planning and Environment (DPE)) for a period of 42 days, between 30 August 2023 and 10 October 2023.

Transgrid has proposed amendments and refinements to the project as described in the EIS. These amendments provide functional improvements to the design and construction methodology of the project. The proposed amendments take into account submissions received during the public exhibition of the EIS and ongoing design and construction methodology development following the selection of the construction contractors. Project refinements have also been made as part of the ongoing design and construction methodology development since the EIS was exhibited.

The purpose of this report is to assess the potential additional or changed agricultural impacts of the proposed amendments and refinements and forms an addendum to *Technical Report 4 - Agricultural Impact Assessment* prepared for the EIS. This report has been prepared to support the HumeLink Amendment Report.

Existing environment

Compared to the EIS project footprint, there would be less agricultural land impacted as a proportion of the total area of the amended project footprint and more forestry land impacted. This mainly results from the Green Hills corridor amendment which includes a high proportion of forestry land.

The Green Hills corridor amendment also has a high proportion of land and soil capability (LSC) class 6 land, increasing the total proportion of that land classification across the amended project footprint.

There would be a small increase in the amount of biophysical strategic agricultural land (BSAL) and draft State significant agricultural land (SSAL) within the amended project footprint, compared to the EIS project footprint. This results from an increase in the area of the amended project footprint, compared to the EIS project footprint, mostly associated with the larger access track area considered. This area includes existing tracks/roads which provide property access, but support little or no grazing or cropping activities.

Construction impacts

The total agricultural area affected during construction of the amended project (2,622.9 hectares) represents about two per cent of the agricultural study area, which is an increase of 404.8 hectares (18 per cent) compared to the EIS project.

Changes to the area of access tracks has been the primary contributor to the increase in the total agricultural area affected during construction. Upgraded tracks are likely to already impact the agricultural production of the land on which they are located, and therefore the impact of the

amended project on areas of agricultural productive land presented in this assessment are conservative and likely overestimate the potential impact on agricultural production.

The value of agricultural production loss for the amended project is assessed at approximately $1,482,523 over a two and a half year period of construction related disruption. This compares to the EIS project amount of $837,800. The increase mainly arises from the change to the quantification of new and upgraded access track areas. The direct impact of the amended project on agricultural production would be relatively low during construction and would have a minor effect on agricultural productivity in the context of the total area of agricultural holdings in the five impacted LGAs. It should be noted, however, that most of the upgraded tracks would already impact the agricultural production of the land on which they are located. Therefore, the impact of the amended project on areas of agricultural productive land presented in this assessment are conservative and likely to overestimate the potential impacts on agricultural production.

Noise and movement produced by proposed helicopter use, drone use and controlled blasting activities could impact livestock in specific circumstances, especially during calving and lambing periods. Any potential impacts on livestock would be appropriately managed through implementation of environmental management measures (refer to Chapter 7 (Management of impacts)).

There would be an increase in the number of Travelling Stock Reserves (TSRs) which may be affected temporarily by restricted access to construction areas, however the impact on agriculture would be negligible.

Operational impacts

The total agricultural area affected by operation of the amended project (2,477.1 hectares) would represent an increase of 306 hectares (14 per cent) compared to the EIS project. Most of the change would be related to the amended transmission line easement and changes to the assessed area of access tracks to be retained.

The value of agricultural production loss is assessed at $350,106 per annum.

Management of impacts

The management of agricultural impacts remains mostly consistent with *Technical Report 4 – Agricultural Impact Assessment* prepared for the EIS, apart from a new mitigation measure related to consultation with landowners who utilise aerial farming. The impact of the amended project on agricultural productivity at a regional scale would be minimal with the application of mitigation measures. Most of the impacts would be temporary, and permanent impacts would be relatively small compared to the value of regional agricultural production.

Table of Contents

Figures

Tables

Attachments

Abbreviations

Abbreviation	Description
ACT	Australian Capital Territory
AEMO	Australian Energy Market Operator
BSAL	biophysical strategic agricultural land
CSSI	Critical State Significant Infrastructure
DPI	Department of Primary Industries
DPHI	Department of Planning, Housing and Infrastructure
DPIE	former Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979*
ha	hectares
km	kilometres
kV	kilovolt
LGA	local government area
LLS	Local Land Services
LSC	Land and soil capability as set out in *The Land and soil capability assessment scheme – a General Land Evaluation System for New South Wales* (OEH, 2012)
m	metres
MW	megawatts
MWh	megawatt hour
NSW	New South Wales
PMPs	property management plans
SEARs	Planning Secretary's Environmental Assessment Requirements
SSAL	State significant agricultural land
TSR	travelling stock reserve
VNI West	Victoria to NSW Interconnector West

Glossary of terms

Term	Description
agricultural land	Agricultural land is land mapped as being used for agricultural purposes as per the 'NSW Landuse 2017' data (DPIE, 2020),
amended agricultural study area	The amended project footprint plus a 1.5 kilometre buffer, encompassing the agricultural areas likely to be directly and indirectly affected by the amended project.
amended project (the)	The CSSI project "HumeLink", which is the subject of the Amendment Report and inclusive of the proposed amendments and project refinements to the project as described in the EIS. The project involves the construction and operation of high voltage transmission lines and associated infrastructure between Wagga Wagga, Bannaby and Maragle.
amended project footprint (the)	The area that has been assumed for the purpose of the Amendment Report to be directly affected by the construction and operation of the project. It includes the indicative location of project infrastructure, the area that would be directly disturbed during construction and any easement required during operation.
amendment	A change in what the proponent is seeking approval for following the public exhibition of the EIS. It requires changes to the project description in the EIS and amendments to the associated infrastructure application.
brake and winch site	A brake and winch site is a temporarily cleared area where plant and equipment are located to spool and winch conductors into place on transmission line structures. The locations of the brake and winch sites may or may not be within the nominated transmission line easement. These sites are only required for construction of the project and do not need to be maintained during operation.
construction compounds	Main construction compounds proposed for construction of the project. Each main construction compound would accommodate a range of facilities which may include (but not limited to): • laydown areas • site offices • amenities • construction support facilities such as vehicle and equipment storage, maintenance sheds, chemical/fuel stores and stockpile areas • concrete batching plants • helipads • crushing/screening plants • parking.
EIS agricultural study area	The EIS project footprint plus a 1.5 kilometre buffer.
EIS project (the)	The CSSI project "HumeLink", which was the subject of the Environmental Impact Statement. The project involves the construction and operation of high voltage transmission lines and associated infrastructure between Wagga Wagga, Bannaby and Maragle.

Term	Description
EIS project footprint (the)	The area that was assumed for the purpose of the EIS to be directly affected by the construction and operation of the project. It includes the indicative location of project infrastructure, the area that would be directly disturbed during construction and any easement required during operation.
future Maragle 500 kV substation	The future Maragle 500/330 kV substation that would be built under the approved Snowy 2.0 Transmission Connection Project, which is subject to a separate planning approval (reference SS1-9717, EPBC 2018/836).
proponent	The entity seeking approval for the CSSI application, which for the HumeLink project is NSW Electricity Networks Operations Pty Ltd (referred to as Transgrid).
refinement	Refinements to the project are defined as aspects of the project that generally fit within the limits set by the project description in the EIS. Refinements do not change what is being sought for approval or require an amendment to the infrastructure application for the project
telecommunications hut	The proposed optical repeater telecommunications hut as part of HumeLink, which was required in the EIS project to boost the signal in the optical fibre ground wire.
Transgrid	The project is proposed to be undertaken by NSW Electricity Networks Operations Pty Ltd (referred to as Transgrid). Transgrid is the operator and manager of the main high voltage transmission network in NSW and the ACT, and is the Authorised Network Operator for the purpose of an electricity transmission or distribution network under the provisions of the *Electricity Network Assets (Authorised Transactions) Act 2015*.
transmission line corridor	An area generally 200 metres wide that the transmission line route and easement would be located within.
transmission line easement	A legal right attached to a parcel of land that enables the non-exclusive use of the land by a third party other than the owner. For transmission lines, an easement defines the corridor area where the lines are located and that allows access, construction and maintenance work to take place. The easements for the 500 kV transmission lines would typically be 70 metres wide. However, a few select locations would require wider easements up to 130 metres wide for specific engineering or property reasons. The easement grants a right of access and for construction, maintenance and operation of the transmission line and other operational assets.
transmission line route	The location of the transmission line structures along the middle of the transmission line easement.
transmission line structures	Proposed free standing structures to support the transmission lines.
transposition	Transposition is the periodic swapping of positions of the conductors of a transmission line in order to improve transmission reliability.
work site	A general word to describe a defined construction location.
worker accommodation facilities	Temporary worker accommodation facilities that would be established for the construction workers.

1. Introduction

1.1. Background

Transgrid proposes to increase the energy network capacity in southern New South Wales (NSW) through the development of around 365 kilometres (km) of new 500 kilovolt (kV) high-voltage transmission lines and associated infrastructure between Wagga Wagga, Bannaby and Maragle. This project is collectively referred to as HumeLink. The project would be located across six Local Government Areas (LGAs) including Wagga Wagga City, Snowy Valleys, Cootamundra-Gundagai Regional, Upper Lachlan Shire, Yass Valley and Goulburn Mulwaree. HumeLink is a priority project for the Australian Energy Market Operator (AEMO) and the Commonwealth and NSW governments and has been declared as Critical State Significant Infrastructure (CSSI). The project would deliver a cheaper, more reliable and more sustainable grid by increasing the amount of renewable energy that can be delivered across the national electricity grid, helping to transition Australia to a low carbon future.

An EIS was prepared in accordance with the requirements of Division 5.2 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The EIS was placed on public exhibition by the NSW Department of Planning, Housing and Infrastructure (DPHI) (formerly the NSW Department of Planning and Environment (DPE)) for a period of 42 days, between 30 August 2023 and 10 October 2023.

Transgrid has proposed amendments and refinements to the project as described in the EIS. The amendments provide functional improvements to the design and construction methodology of the project. The proposed amendments take into account submissions received during the public exhibition of the EIS and ongoing design and construction methodology development following the selection of the construction contractors. Project refinements have also been made as part of the ongoing design and construction methodology development since the EIS was exhibited. These amendments and refinements have been described and considered in relevant impact assessments.

1.2. Key features of the project (as publicly exhibited)

The key components of the project as outlined and assessed in the EIS included:

- construction and operation of around 360 kilometres of new double circuit 500 kV transmission lines and associated infrastructure between Wagga Wagga, Bannaby and Maragle
- construction of a new 500/330 kV substation at Gregadoo (Gugaa 500 kV substation) approximately 11 kilometres south-east of the existing Wagga 330/132 kV substation (Wagga 330 kV substation)
- demolition and rebuild of a section of Line 51 (around two kilometres in length) as a double circuit 330 kV transmission line connecting into the Wagga 330 kV substation
- modification of the existing Wagga 330 kV substation and Bannaby 500/330 kV substation (Bannaby 500 kV substation) to accommodate the new transmission line connections
- connection of transmission lines to the future Maragle 500/330 kV substation (Maragle 500 kV substation, approved under the Snowy 2.0 Transmission Connection Project (SSI-9717))
- provision of one optical repeater telecommunications hut and associated connections to existing local electrical infrastructure
- establishment of new and/or upgraded temporary and permanent access tracks

- ancillary works required for construction of the project such as construction compounds, worker accommodation facilities, utility connections and/or relocations, brake and winch sites, and helipad/helicopter support facilities.

1.3. Overview of the proposed amendments and refinements

Since the public exhibition of the EIS, several amendments and refinements to the project have been proposed.

The proposed amendments to the project include:

- changes to the transmission line corridor, including the realignment of the route through Green Hills State Forest to the west of Batlow
- change to the number and location of construction ancillary facilities, including worker accommodation facilities and construction compounds
- nomination of access tracks to support the construction and operation of the project
- additional telecommunications connections to existing substations.

The proposed refinements to the project include:

- transmission line and substation design refinements at Gregadoo
- identification of areas where controlled blasting may be required
- use of approved water sources
- use of helicopters and drones.

Refer to Chapter 2 of this report for a detailed description of amendments and refinements relevant to this assessment.

Figure 1-1 shows the location of the amended project, and Figure 1-2 shows the key components of the amended project.

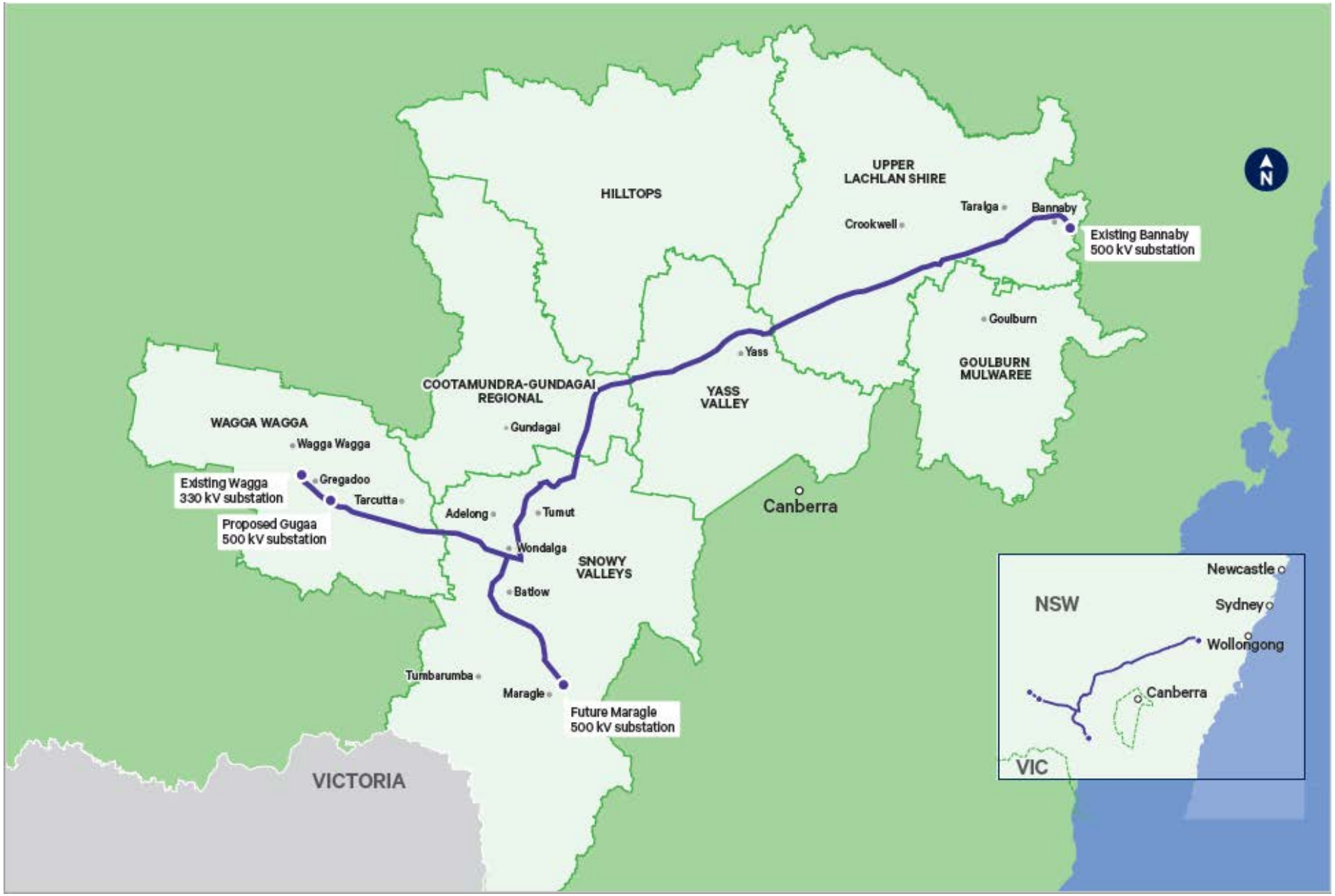
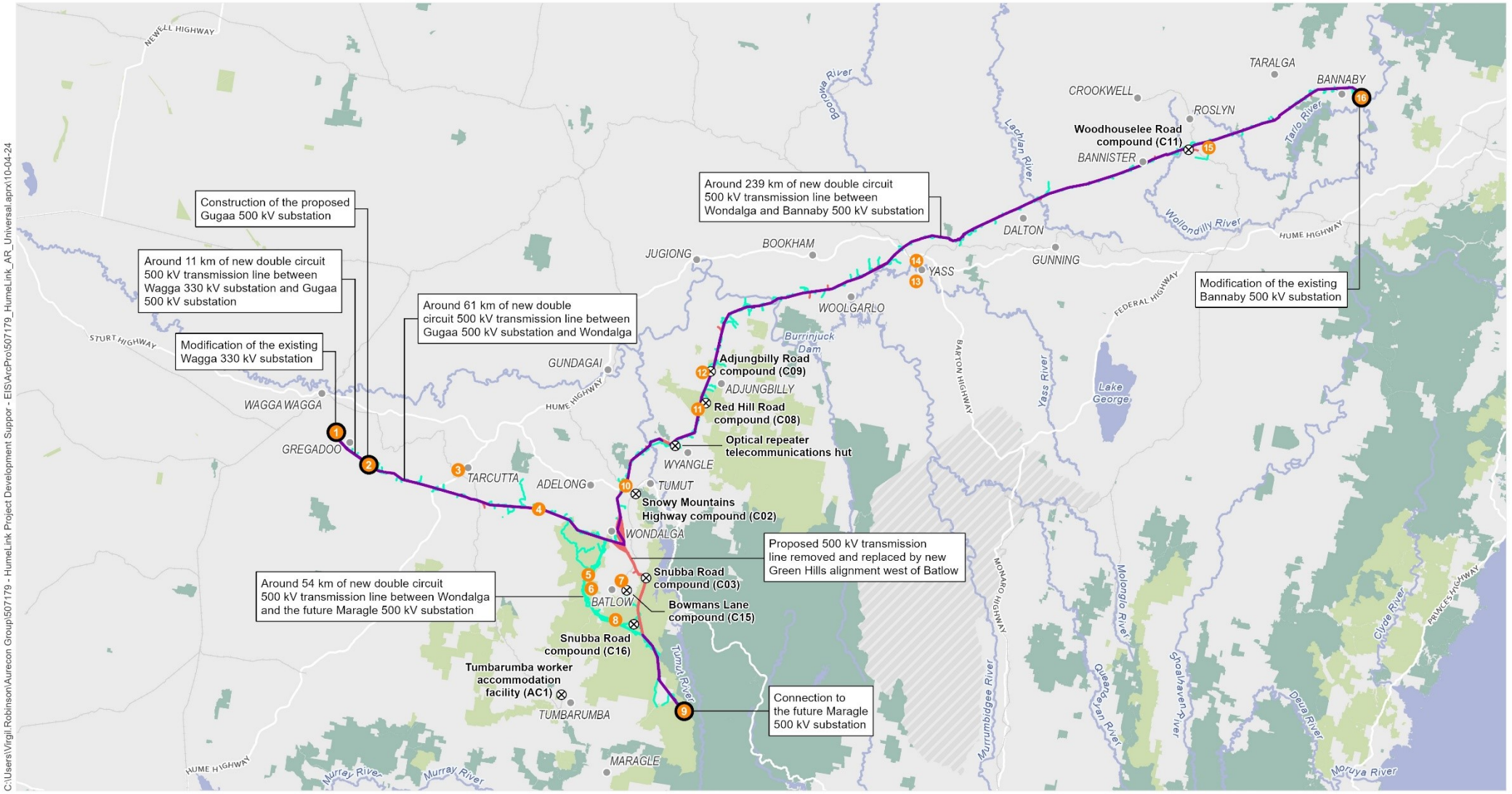


Figure 1-1: Overview of the amended project location



C:\Users\Virgil.Robinson\Aurecon Group\507179 - HumeLink Project Development Suppor - EIS\ArcPro\507179_HumeLink_AR_Universal.aprx\10-04-24

EIS project footprint
Removed footprint
Amendments
Removed project facility
National park and reserve
State forest
Waterbody
Waterway
Major road
Railway

Construction ancillary facilities

1. Wagga 330 kV substation compound (C01)
2. Amended Gregadoo Road compound (C06)
3. Tarcutta accommodation facility and compound (AC03)
4. Ellerslie Road compound (C21)
5. Ardrossan Headquarters Road compound (C17)
6. Green Hills accommodation facility and compound (AC07)
7. Amended Memorial Avenue compound (C14)
8. Snubba Road compound (C18)
9. Maragle 500 kV substation compound (C05)
10. Gadara Road compound (C19)
11. Amended Honeysuckle Road compound (C07)
12. Adjungbilly accommodation facility and compound (AC04)
13. Yass substation compound (C10)
14. Yass accommodation facility and compound (AC05)
15. Crookwell accommodation facility and compound (AC06)
16. Amended Bannaby 500 kV substation compound (C12)

Source: *Aurecon, Transgrid, Spatial Services (DCS), ESRI Basemap*

1:925,000
0 20 40km

Projection: GDA 1994 MGA Zone 55

HumeLink **Agricultural Impact Assessment**

Figure 1-2: Key components of the amended project

1.4. Purpose and structure of this report

This report forms an addendum to *Technical Report 4 - Agricultural Impact Assessment* prepared for the EIS. The purpose of this report is to support the HumeLink Amendment Report by assessing the potential impacts to agriculture associated with the proposed amendments and refinements to the project.

This report is structured as follows:

- Chapter 1 (Introduction) – provides an overview of the project, the proposed amendments and the purpose of this report.
- Chapter 2 (Summary of the proposed amendments and refinements) – provides a description of the proposed amendments and refinements relevant to this assessment.
- Chapter 3 (Legislative and policy context) – provides an outline of the key legislative requirements and policy guidelines relating to the proposed amendments to the project.
- Chapter 4 (Methodology) – provides an outline of the methodology used for the preparation of this report.
- Chapter 5 (Existing environment) – describes the existing environment with reference to the potential for impacts to agriculture.
- Chapter 6 (Assessment of impacts) – describes the potential construction and operation impacts associated with the proposed amendments and refinements of the project.
- Chapter 7 (Management of impacts) – outlines any new or revised mitigation measures for the proposed amendments to the project.
- Chapter 8 (Conclusion) – provides a conclusion of the potential impacts of the proposed amendments to the project with reference to the potential for agricultural impacts.
- Chapter 9 (References) – identifies the key information sources (including reports and documents) used to generate the assessment.

1.5. Key project terms

The key project terms used in this assessment include:

- Agricultural land – is defined as land mapped as being used for agricultural purposes as per the 'NSW Landuse 2017' data (DPIE, 2020). Agricultural purposes include grazing, cropping, horticulture and intensive agriculture, but not forestry.
- Amended agricultural study area – The amended project footprint plus a 1.5 kilometre buffer, encompassing the agricultural areas likely to be directly and indirectly affected by the amended project.
- Amended project – The CSSI project "HumeLink", which is the subject of the Amendment Report and inclusive of the proposed amendments and project refinements to the project as described in the EIS. The project involves the construction and operation of high voltage transmission lines and associated infrastructure between Wagga Wagga, Bannaby and Maragle.
- Amended project footprint – The area that has been assumed for the purpose of the Amendment Report to be directly affected by the construction and operation of the project. It includes the indicative location of project infrastructure, the area that would be directly disturbed during construction and any easement required during operation.
- EIS agricultural study area – The EIS project footprint plus a 1.5 kilometre buffer.
- EIS project - The CSSI project "HumeLink", which was the subject of the EIS. The project involves the construction and operation of high voltage transmission lines and associated infrastructure between Wagga Wagga, Bannaby and Maragle.

- EIS project footprint – The area that was assumed for the purpose of the EIS to be directly affected by the construction and operation of the project. It includes the indicative location of project infrastructure, the area that would be directly disturbed during construction and any easement required during operation.

2. Summary of the proposed amendments and refinements

Transgrid has identified several proposed amendments and refinements to the project as described in the EIS. These amendments and refinements reflect functional improvements to the design and construction methodology of the project. They consider:

- feedback received from stakeholders prior to and during the public exhibition of the EIS
- comments made in formal submissions on the EIS
- ongoing design and construction methodology development by the construction contractors.

Amendments to the project are defined as changes in what the proponent is seeking approval for following the public exhibition of the EIS. Project amendments require changes to the project description in the EIS and amendments to the associated infrastructure application.

The proposed amendments to the project include:

- changes to the transmission line corridor including the realignment of the route through Green Hills State Forest to the west of Batlow
- changes to the number and location of construction ancillary facilities including worker accommodation facilities and construction compounds
- nomination of access tracks to support the construction and operation of the project
- additional telecommunications connections to existing substations.

Refinements to the project are defined as aspects of the project that generally fit within the limits set by the project description in the EIS. Refinements do not change what is being sought approval for or require an amendment to the infrastructure application for the project. For completeness, these refinements have been considered in this report.

The proposed refinements to the project include:

- transmission line and substation design refinements at Gregadoo
- identification of areas where controlled blasting may be required
- use of approved water sources
- use of helicopters and drones.

Table 2-1 describes the proposed amendments and refinements relevant to this technical report. A full description of the amended project is provided in Chapter 3 (Description of amended project) of the Amendment Report. The construction contractors will continue to refine and confirm the design and construction methodology during detailed design and construction planning.

Table 2-1 Proposed amendments and refinements relevant to this assessment

Amendment / refinement	Description
Amendments	
Changes to the transmission line corridor	The amended project includes the preferred western route through Green Hills State Forest. The new 32.5 km route extends from Wondalga through the Green Hills State Forest before travelling to the west and south of Batlow and connecting to the EIS project transmission line corridor in Bago State Forest. In addition, the following minor changes have been made to the transmission line corridor following design considerations and feedback from landholders: • 1.4 km realignment of the corridor to the north between Ashfords Road to Ivydale Road, Gregadoo • 2.5 km realignment of the corridor to the south across Kyeamba Creek and Tumbarumba Road, Book Book • 2.7 km realignment of the corridor to the east near Snowy Mountains Highway, Gadara • 1.4 km realignment of the corridor to the east adjacent Minjary National Park at Gocup • 5.9 km realignment of the corridor from north of the crossing of Tumut River to south of the crossing of Killimicat Creek, Killimicat (including a minor 50 m shift to the north for 2.1 km and a 2.6 km shift to the south from Brungle Road to before the crossing of Killimicat Creek) • 0.4 km realignment of the corridor to the north at Bannister, about 2.7 km west of Crookwell Road/Goulburn Road • narrowing of the project footprint at Wondalga, Gobarralong and Bowning.
Updates to construction ancillary facilities including worker accommodation facilities and construction compounds	**Changes to construction compounds** Following further construction planning and consultation with landowners, the following compounds described and assessed in the EIS have been removed from the project: • Snowy Mountains Highway compound (C02) • Snubba Road compound (C03) • Red Hill Road compound (C08) • Adjungbilly Road compound (C09) • Woodhouselee Road compound (C11) • Bowmans Lane compound (C15) • Snubba Road compound (C16). These have been replaced with the following compounds: • Ardrossan Headquarters Road compound (C17) – located about 7.6 km west of Batlow • Snubba Road compound (C18) – located about 7.7 km south of Batlow • Gadara Road compound (C19) – located about 4.9 km west of Tumut • Ellerslie Road compound (C21) – located about 13.1 km south-west of Adelong. The proposed footprint for the Gregadoo Road compound (C06), Honeysuckle Road compound (C07), Bannaby substation compound (C12) and Memorial Avenue compound (C14) have also been revised. Following these changes, there are now 11 standalone construction compounds proposed.
	Changes to accommodation facilities The Tumbarumba accommodation facility (AC01) is no longer required. The amended project includes the following new combined worker accommodation facilities and compounds: • Tarcutta accommodation facility and compound (AC03) – located about 1.5 km south-west of Tarcutta

Amendment / refinement	Description
	• Adjungbilly accommodation facility and compound (AC04) – located about 21.7 km east of Gundagai • Yass accommodation facility and compound (AC05) – located on the north-western outskirts of the Yass township • Crookwell accommodation facility and compound (AC06) – located off Graywood Siding Road, about 18.1 km north of Goulburn • Green Hills accommodation facility and compound (AC07) – located about 6.5 km west of Batlow.
Nomination of access tracks	New access tracks or upgrades to existing access tracks are proposed to connect construction areas and the transmission line easement to the existing road network. Existing unsealed local roads, forest roads, and tracks proposed for use as part of the access arrangements may also require minor improvement work, such as grading or resurfacing, or drainage work.
Additional telecommunications connections to existing substations	Removal of the telecommunications hut at Killimicat from the scope and inclusion of additional telecommunications connections to the following Transgrid substations: • Gadara 132 kV substation • Gullen Range 330 kV substation • Crookwell 2 330 kV substation.
Refinements	
Transmission line and substation design refinements at Gregadoo	The transmission line between the existing Wagga 330 kV substation and the proposed Gugaa 500 kV substation has been assessed as operating at 500 kV for the amended project. However, energisation to 500 kV would only occur at the commissioning stage of the Victoria to NSW Interconnector West (VNI West) project, which is subject to a separate Planning Approval. Until such time, the line will operate at 330 kV.
	Associated changes with energisation to 500 kV include additional infrastructure at the proposed and relocated Gugaa 500 kV substation. The area of land required for the proposed Gugaa 500 kV substation has also increased in size.
Identification of areas where controlled blasting may be required	Preliminary geotechnical investigations and further consideration of terrain along the amended project alignment have identified several potential areas where controlled blasting may be required.
Use of approved water sources	Further analysis of water sources has been carried out for the project which complements the analysis carried out in the EIS. In addition, a process has been proposed to assist with selecting water sources to be used during construction.
Use of helicopters and drones	Additional information and assessment for the use of helicopters and drones for stringing transmission lines is now available with the engagement of construction contractors and this information has been presented in the Amendment Report. Drones are also expected to be used for additional construction activities such as, but not limited to, surveys and vegetation management. With the use of helicopters confirmed by the construction contractors and the proposed changes to ancillary facilities, the potential helipad locations have also been revised.

3. Legislative and policy context

There has been no change to the legislative and policy context presented in *Technical Report 4 - Agricultural Impact Assessment* prepared for the EIS.

4. Methodology

4.1. Key tasks

The key aspects of the methodology to assess the proposed amendments were as follows:

- The existing environment in the amended project footprint was identified and described using a desktop study based on data from various sources referenced in Chapter 5 (Existing environment), including satellite imagery, reference material and public GIS datasets.
- The assessment of the impacts of the amended project on agriculture was based on the desktop study, consultation with landowners and other stakeholders, previous property inspections and professional knowledge.
- Cumulative impacts with other major developments in the region were assessed, based on the type, degree and proximity of the impacts of each development.
- The identification of mitigation and management measures was based on information from the existing environment and impact assessment, previous consultations with landowners and other stakeholders, previous property inspections, professional knowledge, and various information sources as referenced in Chapter 5 (Existing environment).

4.2. Study areas

The agricultural impacts of the amended project have been assessed with reference to the following amended study areas (refer to Figure 4-1):

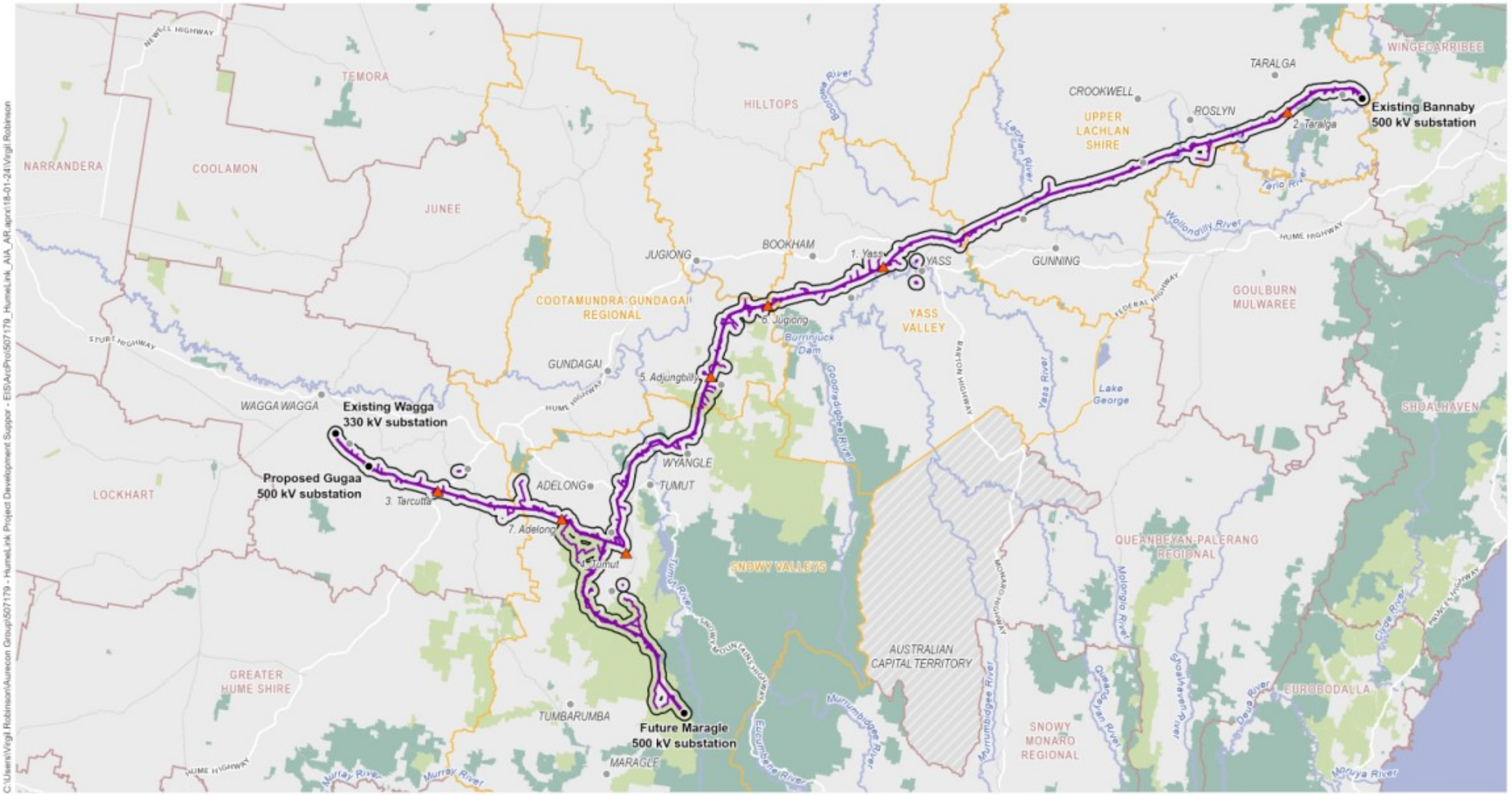
- Amended project footprint, which would generally be the area of direct project impacts on agriculture. However, for the purposes of this assessment this is conservative as not all areas of the amended project footprint would be used during construction and operation and therefore would not entirely impact on agriculture. For example, grazing enterprises would be largely unaffected by the final transmission line easement.
- Amended agricultural study area, which comprises the project footprint with a 1.5 kilometre buffer and encompasses the agricultural areas likely to be directly and indirectly affected by the amended project.
- Impacted LGAs, which provides context for the understanding of agricultural land uses in the LGAs surrounding the amended project. Impacted LGAs include Wagga Wagga City, Snowy Valleys, Cootamundra-Gundagai Regional, Upper Lachlan Shire and Yass Valley[1].

These different study areas are used because some impacts, such as noise disturbance on livestock and restrictions on aerial agriculture, may occur beyond the amended project footprint.

All access tracks (including existing tracks/roads, upgraded tracks and new tracks) fall within the amended agricultural study area. The broader amended study area may be subject to indirect impacts from dust and noise arising from all access tracks.

[1] The amended project footprint falls within the Goulburn Mulwaree LGA. However, for the purposes of this assessment, it is not considered an impacted LGA.

However, only new tracks and upgraded tracks are likely to result in a loss of productive agricultural land and have been included in the calculations for this direct loss in Section 6.1.1 and Section 6.2.1. Refer to Section 4.4 for further detail.



Amended project footprint
Amended agricultural study area
Local Government Area
Impacted Local Government Area
National park and reserve
State forest
Waterway
Major road
Railway
Substation
Landowner interview location

Source: *Aurecon, Transgrid, Spatial Services (DCS), ESRI Basemap*

1:925,000
0 20 40km

Projection: GDA 1994 MGA Zone 55

HumeLink **Agricultural Impact Assessment**

FIGURE 4-1: Assessment approach

4.3. Agricultural impact assessment

The description of the existing environment of the amended project was a desktop study based on data from various sources referenced in Chapter 5 (Existing environment). However, this information was also evaluated with reference to the information gathered during the previous property inspections and landowner consultations completed for the EIS. The assessment of the existing environment concentrated on:

- geographical factors (such as climate, topography and soils) that have the greatest influence on agriculture in the amended agricultural study area
- measures which best appraise the nature and productivity of agricultural enterprises in the amended agricultural study area (such as land and soil capability, land use and value of production).

The assessment of the impacts on agriculture was based on information from the existing environment assessment and consultation undertaken with landowners and other stakeholders. The assessment also compares the impacts of the amended project with the EIS project.

Agricultural land is defined as land mapped as being used for agricultural purposes as per the 'NSW Landuse 2017' data (DPIE, 2020). Agricultural purposes include grazing, cropping, horticulture and intensive agriculture, but not forestry.

Mitigation measures are defined as actions, processes or structures, which minimise or eliminate the impacts of the amended project. The identification of mitigation and management measures was based on information from the existing environment and impact assessments, previous consultations with landowners and other stakeholders, previous property inspections, professional knowledge, and various information sources as referenced in Chapter 5 (Existing environment).

4.4. Approach to assessment

The assessment presented in Section 6.1.1 and Section 6.2.1 follows the approach detailed below.

Transmission line structures and transmission line easement

The construction assessment of the transmission line easement and transmission line structures (including construction brake and winch sites) has been based on preliminary detailed design that assumes a typical indicative 70 metre transmission line easement that will be located within the amended project footprint. However, a few locations (such as at transposition locations) may require transmission line easements up to 110 metres wide and up to 130 metres wide where the new 500 kV transmission line would parallel the relocated section of Line 51.

The operational assessment of the transmission line structures has applied a worst case indicative footprint of 450 square metres for each transmission line structure footing and therefore likely presents an over estimate of potential impacts. The actual area required will depend on ground conditions and the proposed transmission line structure type, and will vary between approximately 300 to 450 square metres.

Access tracks

Based on input from construction contractors and in response to government agency submissions received on the EIS, additional access track routes have been identified. The amended project footprint includes existing tracks/roads, upgraded tracks and new tracks as defined in Chapter 3 (Description of amended project) of the Amendment Report.

The amended study area may be subject to indirect impacts from dust and noise arising from the use of access tracks. However, the nature of the dust and noise impacts arising from traffic along access tracks has not changed from *Technical Report 4 – Agricultural Impact Assessment* prepared for the EIS and are therefore not addressed in this report.

Existing tracks/roads have not been included in the calculations of the direct loss of productive agricultural land presented in Section 6.1.1 and Section 6.2.1 as it is unlikely that these existing tracks/roads are used as productive agricultural land. Including these existing tracks/roads would therefore result in an overestimate of the area of productive agricultural land affected by the amended project.

As such, only new tracks, upgraded tracks and intersection upgrades are included in the calculation of the loss of productive agricultural land presented in Section 6.1.1 and Section 6.2.1, consistent with the approach taken in the EIS. It should be noted, however, that most of the upgraded tracks would already impact the agricultural production of the land on which they are located. Therefore, the impact of the amended project on areas of agricultural productive land presented in this assessment are conservative and likely to overestimate the potential impacts on agricultural production.

The requirements to retain or remove access tracks would be determined in consultation with landholders once the access tracks are constructed. Existing access tracks/roads may be upgraded, as required, to facilitate HumeLink construction activities. The permanent retention of new tracks and upgraded tracks will be agreed upon in consultation with individual landowners once constructed. All requirements would be documented within the property specific property management plans (PMPs).

Accommodation facilities and construction compounds

The assessment for accommodation facilities and construction compounds has been calculated based on the amended project footprint at these locations. However, it is likely that several compounds may require a smaller area than the amount of land that has been assessed, which is subject to further detailed design to determine construction compound requirements and layouts.

5. Existing environment

5.1. General description

5.1.1. Soils

The soils of the amended agricultural study area would be the same as described in the EIS for the EIS agricultural study area. A map of inherent soil fertility (OEH, 2017) across the amended agricultural study area and the amended project footprint is provided in Figure 5-1 and further detail is shown in Attachment 1.

5.1.2. Land use

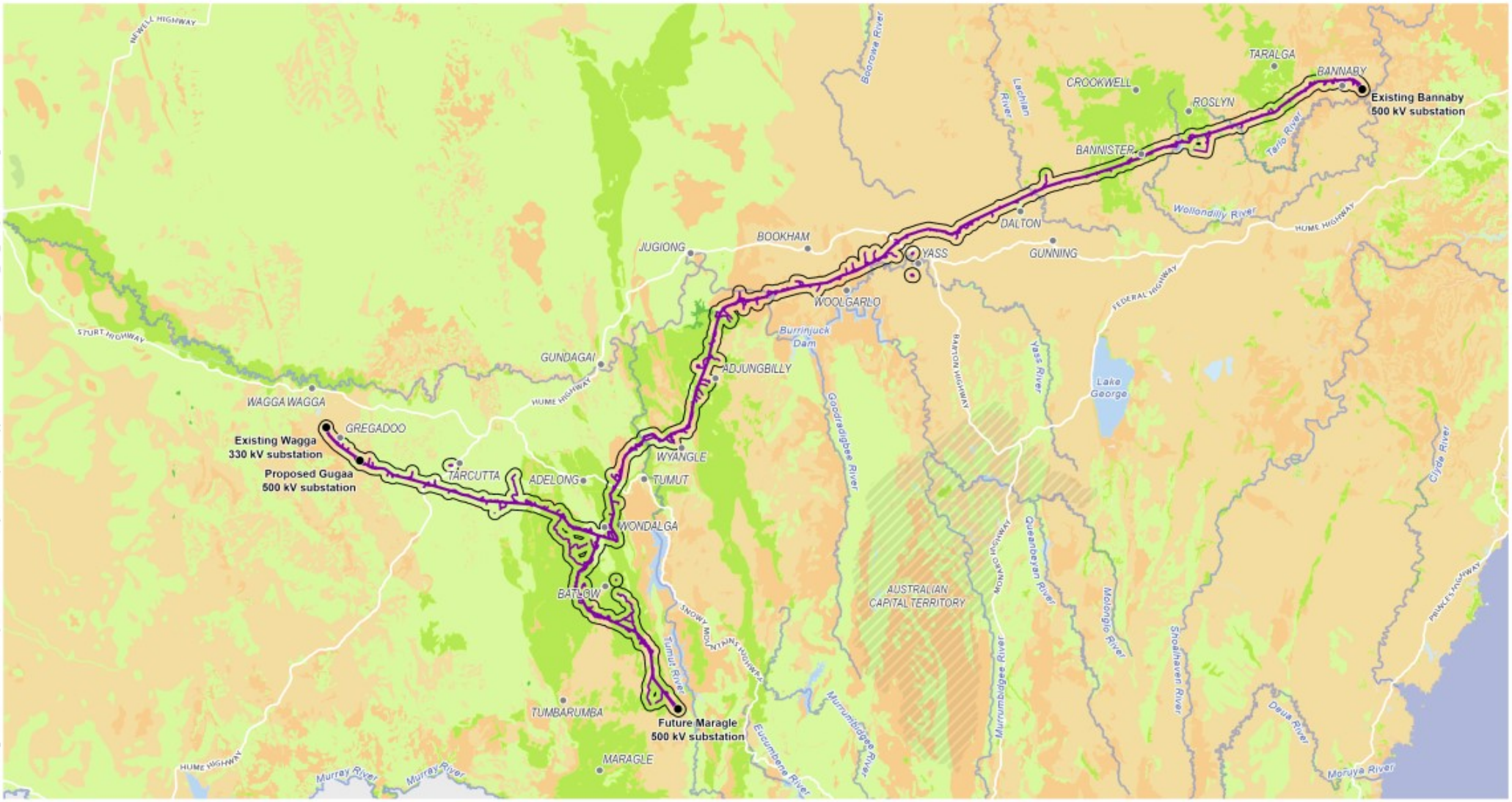
Maps of the land use (DPIE, 2020) across the amended agricultural study area have been included as Attachment 2. Relevant areas of land use are summarised in Table 5-1.

Table 5-1 Summary of land use

Land Use (DPIE, 2020)	Amended agricultural study area (ha)	Proportion	Amended project footprint (ha)	Proportion
Agricultural land uses				
2.1.0 Grazing native vegetation	36,424	22.7%	2,097	23.7%
3.2.0 Grazing modified pastures	63,836	39.8%	3,786	42.9%
3.3.0 Cropping	15,316	9.6%	921	10.4%
3.4.0 Perennial horticulture	6	<0.1%	-	-
4.3.0 Irrigated cropping	97	0.1%	-	-
4.4.0 Irrigated perennial horticulture	320	0.2%	16	0.2%
5.1.0 and 5.2.0 Intensive agriculture	58	<0.1%	< 0.1	<0.1%
Sub-total – Agriculture	116,056	72.4%	6,821	77.2%
Non-agricultural land uses				
Conservation and natural environments	2,864	1.8%	40	0.4%
Production native and plantation forestry	34,512	21.5	1,728	19.6%
Residential and farm infrastructure	2,463	1.5%	27	0.3%
Other intensive uses (mining, transport, etc)	955	0.6%	86	1.0%
Water (lakes, rivers, etc)	3,387	2.1%	133	1.5%
Other	73	<0.1%	0	0.0%
Total	**160,311**	**100.0%**	**8,835**	**100.0%**

*Note on Table 5-1: Individual amounts may not sum to the totals due to rounding.

The general land uses across the amended agricultural study area would be the same as described in the EIS for the EIS agricultural study area. However, the main difference in the land use of the amended project footprint and amended agricultural study area would be that there is less agricultural land as a proportion of the total area of the amended project footprint and more forestry land. This mainly results from the Green Hills corridor amendment which has a high proportion of forestry land.



Amended project footprint
Amended agricultural study area
Major road
Waterway
Substation

Inherent soil fertility

1 - Low
2 - Moderately low
3 - Moderate
4 - Moderately high
5 - High
Water

Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:925,000
0 20 40km

Projection: GDA 1994 MGA Zone 55

HumeLink **Agricultural Impact Assessment**

FIGURE 5-1: Inherent soil fertility

The proportion of agricultural land within the amended project footprint and amended agricultural study area would be approximately seven per cent lower than for the EIS project footprint and EIS agricultural study area. Correspondingly, the proportional forestry area would be approximately seven per cent higher.

5.2. Land and soil capability

A map of land and soil capability (LSC) across the amended agricultural study area is included in Attachment 4. The area of each LSC class (OEH, 2012) is summarised in Table 5-2.

The general land and soil capability descriptions included in the EIS would remain unchanged for the amended agricultural study area.

The amended project footprint and amended agricultural study area would have a larger proportion of class 6 land (low capability land) than the EIS agricultural study area. This would be mainly associated with the Green Hills corridor amendment where there is a high proportion of class 6 land.

The proportion of class 6 land within the amended project footprint and amended agricultural study area is approximately four to eight per cent higher than for the EIS project footprint and EIS agricultural study area. Correspondingly, the proportions of other classes are slightly higher.

Table 5-2 Summary of land and soil capability

	Amended agricultural study area		Amended project footprint	
LSC class	**Area (ha)**	**Proportion**	**Area (ha)**	**Proportion**
3 - High capability	9,088	5.7%	578	6.5%
4 - Moderate capability	37,741	23.6%	1,928	21.8%
5 - Moderate–low capability	26,108	16.3%	1,476	16.7%
6 - Low capability	55,755	34.8%	3,298	37.3%
7 - Very low capability	31,371	19.2%	1,548	17.5%
8 - Extremely low capability	93	0.1%	2	<0.1%
Sub Total	160,156	100.0%	8,831	100.0%
Unclassified	154		4	
Total	**160,311**		**8,835**	

5.3. Travelling stock reserves and livestock routes

There would be an increase in the number of travelling stock reserve (TSR) blocks intersected by the amended project footprint compared to the EIS project footprint. The additional TSRs would be as follows:

- Tooles, Gregadoo East Road, Gregadoo
- Unnamed (R17429), Old Tumbarumba Road, Wondalga
- Unnamed (R1002811), Hume Highway, Tarcutta
- Unnamed (R43517), Hume Highway, Tarcutta.

In addition, the TSRs listed in the EIS would continue to be intersected by the amended project footprint. These would be as follows:

- Hume Creek, Gurrundah Road, Gurrundah
- Gurrundah, Bannister Lane, Bannister
- Bannister, Range Road, Bannister
- Cowpers Creek, Taralga Road Myrtleville.

The intersected TSR blocks and other nearby blocks within the amended agricultural study area, are shown in Figure 5-2 and Attachment 3 (LLS, 2021).

5.4. Other measures of land capability

5.4.1. Biophysical strategic agricultural land

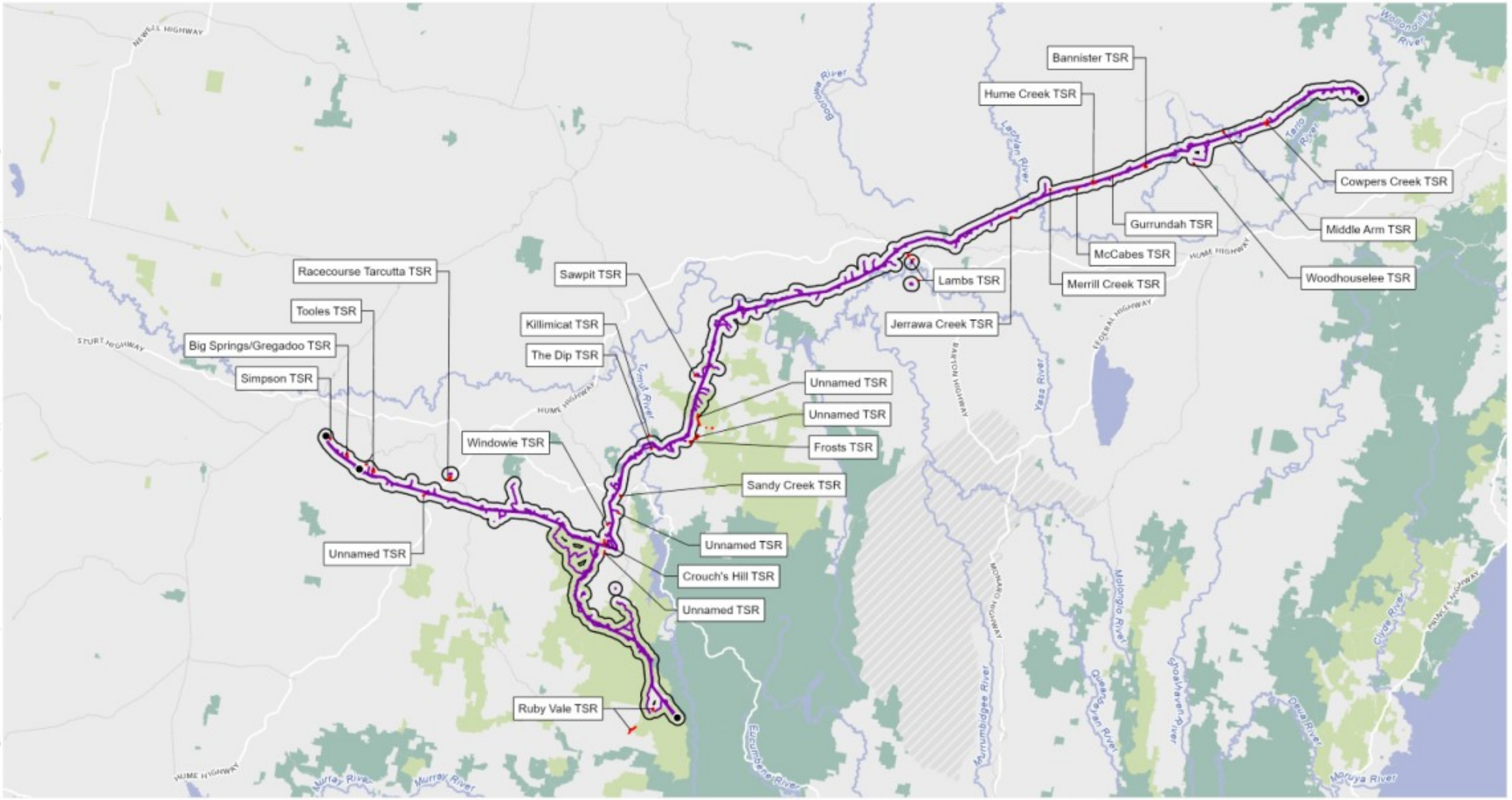
There would be relatively little change to the amount of biophysical strategic agricultural land (BSAL) within the amended project footprint (OEH, 2013). No BSAL would be added or excluded by the amended project footprint associated with the Green Hills corridor amendment (refer to Figure 5-3).

The amended project footprint includes 509 hectares of BSAL, an increase of 14 per cent on the EIS value. This is equivalent to 5.8 per cent of the amended project footprint.

5.4.2. Draft State significant agricultural land

There would be small increase in the amount of draft State significant agricultural land (SSAL) within the amended project footprint (DPI, 2021). The major change to the amended project footprint associated with the new corridor from Wondalga through the Green Hills State Forest would result in only small change to the amount of SSAL affected (refer to Figure 5-3).

The amended project footprint includes 631 hectares of SSAL, an increase of 18 per cent on the EIS value. This is equivalent to 7.1 per cent of the amended project footprint. This results from an increase in the area of the amended project footprint, compared to the EIS project footprint, mostly associated with the larger access track area considered.



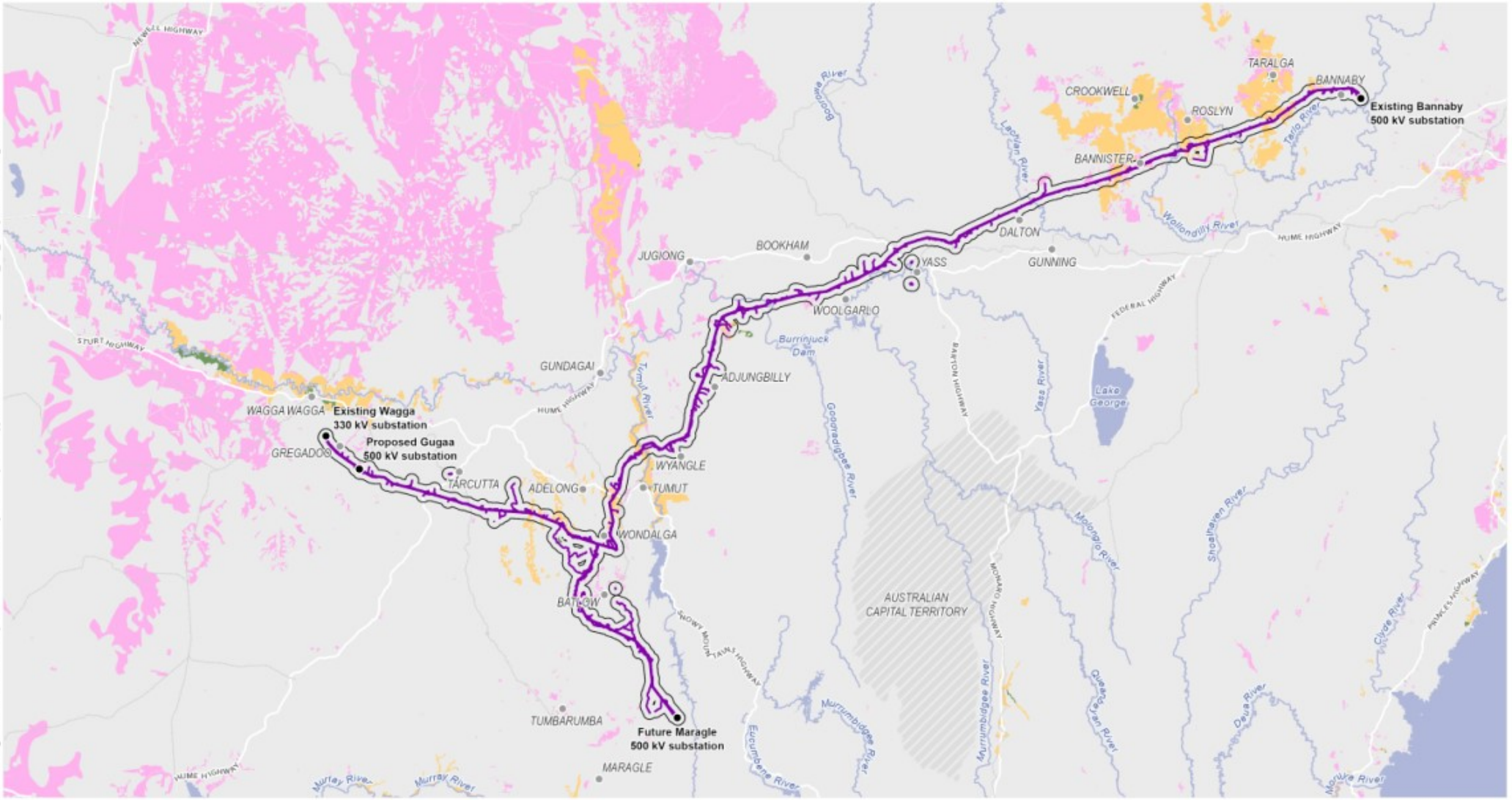
Source: *Aurecon, Transgrid, Department of Regional New South Wales, Spatial Services (DCS), ESRI Basemap*

1:925,000
0 20 40km

Projection: GDA 1994 MGA Zone 55

HumeLink **Agricultural Impact Assessment**

FIGURE 5-2: Travelling Stock Reserves within the amended agricultural study area



Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:925,000
0 20 40km

Projection: GDA 1994 MGA Zone 55

FIGURE 5-3: BSAL and SSAL

6. Assessment of impacts

6.1. Construction impacts

6.1.1. Loss of land use

Impacts to agricultural land

The amended project footprint includes areas required for permanent infrastructure such as transmission line structures, access tracks and substations as well as temporary areas required for construction (such as temporary construction compounds, brake and winch sites, temporary access tracks and combined worker accommodation facilities and construction compounds).

The amended project footprint covers an area of 8,835 hectares. Of this, approximately 6,821 hectares (77.2 per cent) is mapped as agricultural land (refer to Table 5-1). Although the amended project footprint is relatively large, the agricultural land directly impacted by permanent and temporary works would be relatively small in the context of the amended agricultural study area and the regional agricultural industry. The portion of the amended project footprint on agricultural land (6,821 hectares) is equivalent to approximately 0.4 per cent of the total area of agricultural holdings in the five impacted LGAs (1,650,215 hectares).

The Crookwell accommodation facility and compound (AC06) would occupy land which has been previously disturbed, and currently used as a construction compound, as part of the construction of the Crookwell 3 Wind Farm (SSD-6695). Upon completion of the construction stage of the Crookwell 3 Wind Farm project, it was assessed that the facility would be rehabilitated to former agricultural land use. As such, for the purposes of this assessment it has been assumed that this is agricultural land as per the methodology presented in Section 4.3.

Table 6-1 Indicative area of agricultural land affected by construction of the amended project

Element	Land affected by construction		
	Indicative total area (ha)	Indicative area within agricultural land uses (ha)	Proportion within agricultural land uses
Transmission line structures, transmission line easement and access tracks	3,138.7	2,450.6	78%
Construction compounds	128.7	45.0	35%
Worker accommodation facilities	104.8	83.7	80%
Proposed Gugaa 500 kV substation	34.3	32.9	96%
Bannaby 500 kV substation	6.7	0.2	2%
Wagga 330 kV substation	0.1	0	0%
Telecommunications connections	15.2	10.6	70%
Total	**3,428.4**	**2,622.9**	**77%**

Note: Hectare area has been rounded to one decimal point

The amended project footprint is conservative and not all the land is likely to be used for construction of the amended project. As outlined in Table 6-1, based on preliminary detailed design and construction methodology, the indicative area of land within the amended project footprint that is likely to be used for construction of the amended project is approximately 3,428.4 hectares. Of this, approximately 2,622.9 hectares (77 per cent) is within land mapped as agricultural land uses (approximately 0.2 per cent of the total area of agricultural holdings in the five impacted LGAs). Agricultural land use across the transmission line construction footprint (1,617.8 hectares is attributable to 'easement' within Table 6-1) would largely continue during construction as grazing and cropping would be possible during the majority of the construction period apart from transmission line structure locations. Therefore, 1,005.1 hectares of agricultural land use would be lost during construction.

Most of the increase in agricultural land affected would be related to access tracks. The increase in access track area would be 303 hectares and relates to new and upgraded tracks. The upgraded tracks cover a wide variety of existing conditions from well-established sections to rarely used tracks which are barely visible. As described in Section 4.4, existing tracks/roads are excluded from the access track areas in Table 6-1. This is because these existing tracks/roads are already disturbed and are therefore not included in the calculations for determining construction impacts from access tracks.

Apart from the increase in the area required for new and upgraded access tracks, other increases in agricultural areas affected by construction amount to 102 hectares, and are mostly due to the five combined worker accommodation facilities and construction compounds.

The land required for construction compounds and accommodation facilities will be less than the total areas presented in Table 6-1. Several compounds may require a smaller area than the amount of land that has been assessed, which is subject to further detailed design to determine construction compound requirements and layouts. Land within the amended project footprint not required for construction compounds would remain available for utilisation by landowners during construction. For example, ongoing grazing opportunities may be facilitated where appropriate. Further information on the layout and size of construction compounds and worker accommodation facilities, and areas available for continued agricultural activities, will be presented in the construction contractors' Enabling Works Management Plans.

As set out in Table 6-1, the total agricultural area impacted by construction represents an increase of 404.8 hectares (18 per cent) compared to the EIS project.

Impacts to agricultural productivity

The value of agricultural production loss is assessed at $590 per hectare per annum (as per the EIS). Across the 1,005.1 hectares of agricultural land directly impacted by construction; this equates to a total agricultural production loss of $593,009 per annum. Allowing for an average two and a half year period of disruption across all work sites[2], the total loss of agricultural production is estimated at approximately $1,482,523.

The amended value of agricultural production loss is greater than is set out in the EIS ($335,120 per annum). This mainly arises from the change to the quantification of access track areas and the additional area of the combined worker accommodation facilities and construction compounds.

The amended value of agricultural production loss is based on a complete loss of potential agricultural production on affected areas during construction. However, as the upgraded tracks have a pre-existing impact on agricultural production, the loss in these areas would be less than the full potential agricultural production. Therefore, the amended value of agricultural production loss presented in this assessment is conservative and would likely overestimate

[2] It is expected that productivity will be fully restored by the end of the assessed average disruption period.

the impact of the amended project. Most of the impacts would be temporary, and permanent impacts would be relatively small compared to the value of regional agricultural production.

Access tracks proposed for the amended project have been communicated to the relevant landowners. Communications and subsequent consultations are taking place regarding construction access and ongoing access throughout operation of the amended project, where required. Feedback from landowners to date has informed the most effective and least impactful means of access to and from the transmission line easement and has been reflected in the amended project footprint. In accordance with the mitigation measure to manage property access, a property management plan will be developed for directly impacted properties in consultation with landowners and stakeholders.

The direct impact of the amended project on agricultural production would be relatively low during construction and would have a minor effect on agricultural productivity in the context of the total area of agricultural holdings in the five impacted LGAs. It should be noted, however, that most of the upgraded tracks would already impact the agricultural production of the land on which they are located. Therefore, the impact of the amended project on areas of agricultural productive land presented in this assessment are conservative and likely to overestimate the potential impacts on agricultural production.

6.1.2. Impacts on livestock enterprises

The EIS concluded that the main potential impact on livestock enterprises would be disturbance of sheep and cattle caused by noise and vehicle movements. The amended project includes the use of helicopters and/or drones for transmission line stringing during construction and the use of drones for construction activities such as aerial surveys and vegetation management. Construction planning has also confirmed the need for controlled blasting in areas along the transmission line corridor.

Noise and movement produced by these activities could impact on livestock in specific circumstances, especially during calving and lambing periods. The degree of impact will depend on the level of noise, the timing of the activity and the location relative to sensitive livestock. Livestock can be panicked, particularly if they are unfamiliar with low-flying aircraft or blasting noises. This could lead to injury, disruption to grazing and mismothering.

Impacts could be avoided or minimised by consultation with landowners concerning the location of sensitive livestock and the timing of crucial periods such as calving and lambing.

Controlled blasting would be used for some construction activities where hard rock has been identified. The agricultural productivity of land where hard rock is located is often restricted by shallow soils. Most potential controlled blasting areas are on land of a relatively low LSC class and are expected to have relatively low stocking rates and low productivity. Some controlled blasting is proposed in areas used for little or no agricultural production. These factors will reduce the impact of any potential disturbance by controlled blasting.

Although there is potential for some additional disturbance, the impact on livestock can be minimised by appropriate management of the activities, including timely liaison with landowners regarding proposed activities. Therefore, the effect on productivity is expected to be relatively minor.

6.1.3. Biophysical strategic agricultural land

The area of BSAL within the amended project footprint would be 509 hectares, equivalent to 5.8 per cent of the amended project footprint. This is an increase of 14 per cent compared to the EIS project.

The impact on BSAL would be minor due to the small area involved and because agricultural production would only be temporarily lost on most of this area during construction and for a limited time afterwards. Most of the area would be restored or rehabilitated (if required) and returned to its former land use after construction is completed or as agreed with the landowner. There would be small areas with long-term impacts due to permanent structures.

6.1.4. Draft State significant agricultural land

The area of draft SSAL within the amended project footprint would be 631 hectares, an increase of 18 per cent compared to the EIS project. This is equivalent to 7.1 per cent of the amended project footprint and 24 per cent higher than the amount of BSAL.

The impact on SSAL would be minor due to the small area involved and the temporary impact on most of this area during construction. Most of the area would be restored or rehabilitated (if required) but there would be small areas with permanent impacts due to the location of permanent structures.

6.1.5. Travelling stock reserves and livestock routes

There would be an increase in the number of TSRs which may be affected temporarily by restricted access to construction areas. However, these restrictions would be of a short duration during construction and stringing procedures and the impact of the amended project on livestock movements and use of TSRs would be negligible. Only eight TSRs intersect with the amended project footprint (refer to Section 5.3).

6.2. Operational impacts

6.2.1. Loss of land use

Impacts to agricultural land use

The direct impact of the amended project on agricultural production would be minimal during operation due to the small area affected relative to total size of agricultural enterprises within the five impacted LGAs.

Table 6-2 Summary of land affected by operation of the amended project

Element	Land affected by operation		
	Indicative total area (ha)	Indicative area within agricultural land uses (ha)	Proportion within agricultural land uses
Transmission line structures	37.3	28.2	76%
Transmission line easement and access tracks	3,082.5	2,405.5	78%
Proposed Gugaa 500 kV substation	34.3	32.9	96%
Bannaby 500 kV substation	6.7	0.2	2%
Wagga 330 kV substation	0.1	0.0	0%
Telecommunications connections	14.9	10.4	70%
Total	**3,175.9**	**2,477.1**	**78%**

Note: Hectare area has been rounded to one decimal point

The total area of agricultural land affected is assessed at approximately 2,477.1 hectares (refer to Table 6-2). Most of this area would consist of the transmission line easement (1,883.7 hectares) and agricultural land uses could continue; however restrictions would be in place in accordance with *Easement Guidelines - Living and working with electricity transmission lines* (Transgrid, n.d). For example, cropping in this area would be precluded, but grazing could continue in parts of this area, such as underneath the transmission line and around transmission line structures. Therefore, the area of agricultural land use that would be lost during operation is estimated at 593.4 hectares. This is equivalent to 0.04 per cent of the total area of agricultural holdings in the five impacted LGAs.

The total area of land affected by the operation of the amended project as set out in Table 6-2 would represent an increase of 585.6 hectares (23 per cent) compared to the EIS project. The total agricultural area affected by operation of the amended project would increase by 306 hectares (14 per cent) compared to the EIS project. Most of this change is related to the amended easement and changes to the assessed area of access tracks to be retained and based on a conservative assumption that all access tracks utilised for construction would be retained during operation.

Impacts to agricultural productivity

The value of agricultural production loss is assessed at $590 per hectare per annum (as per the EIS). Across the 593.4 hectares of agricultural land directly impacted by operation; this equates to a total agricultural production loss of $350,106 per annum. Impacts associated with direct loss of productive agricultural land would be minimised through compensation of landowners by agreement and/or in accordance with the requirements of the *Land Acquisition (Just Terms Compensation) Act 1991*. Overall, the impact of the project on agricultural production would be minimal during operation due to the small area affected relative to the total size of agricultural enterprises within the surrounding LGAs.

Wherever possible, access tracks have been chosen in consultation with landowners with individual land use needs in mind to provide mutually beneficial outcomes for the construction and operation of the amended project and the landowner's land use as well as minimising the overall environmental impacts. The requirements to retain or reinstate access tracks will be determined in consultation with landowners during property negotiations and ahead of the commencement of operation.

Use of some upgraded tracks and new tracks would be required during operation of the amended project for asset maintenance given their general proximity to the transmission line

corridor. However, these asset maintenance activities can predominantly be undertaken with light vehicle access within the transmission line easement and the use of formed access tracks may not be required to all transmission line structures.

Based on the current level of design development and construction planning, it is estimated that about 40 per cent of substantially upgraded tracks and new tracks, would be restored with groundcover following construction. This estimate excludes upgraded tracks which are currently well established and regularly utilised by landowners.

The final extent of reinstatement is uncertain given that some landowners may wish to retain access tracks which Transgrid do not intend to use for asset maintenance. Transgrid will continue to work with landowners to determine the post construction condition of access tracks. All requirements will be documented within the property specific PMPs or as otherwise agreed with the landowner.

Some permanent access tracks may provide improved property access which would be of greater benefit to landowners to support agricultural productivity. Therefore, the assessed impact of access tracks on agricultural production may be offset to some degree by the value of improved property access.

6.2.2. Biophysical strategic agricultural land

The area of BSAL within the amended project footprint would be 509 hectares, equivalent to 5.8 per cent of the amended project footprint. This is an increase of 14 per cent compared to the EIS project. The increase mostly arises from the larger area of access tracks required for the amended project. However, this would be considered an overestimate as some of the access tracks would be temporary and returned to agricultural use as agreed to with landowners.

The impact on BSAL would be minor due to the small area involved. Most of the area would be restored or rehabilitated (if required) and returned to its former land use during operation.

6.2.3. Draft State significant agricultural land

The area of draft SSAL within the amended project footprint would be 631 hectares, an increase of 18 per cent compared to the EIS project. This is equivalent to 7.1 per cent of the amended project footprint and is 24 per cent higher than the amount of BSAL. The increase mostly arises from the larger area of access tracks.

As for BSAL, the impact on SSAL would be minor due to the small area involved and the restoration or rehabilitation of most of the area.

6.3. Cumulative impacts

Since the public exhibition of the EIS, an updated cumulative impact search has been undertaken. This updated search has identified the following two proposed projects that had not been considered in Chapter 25 (Cumulative impacts) of the EIS:

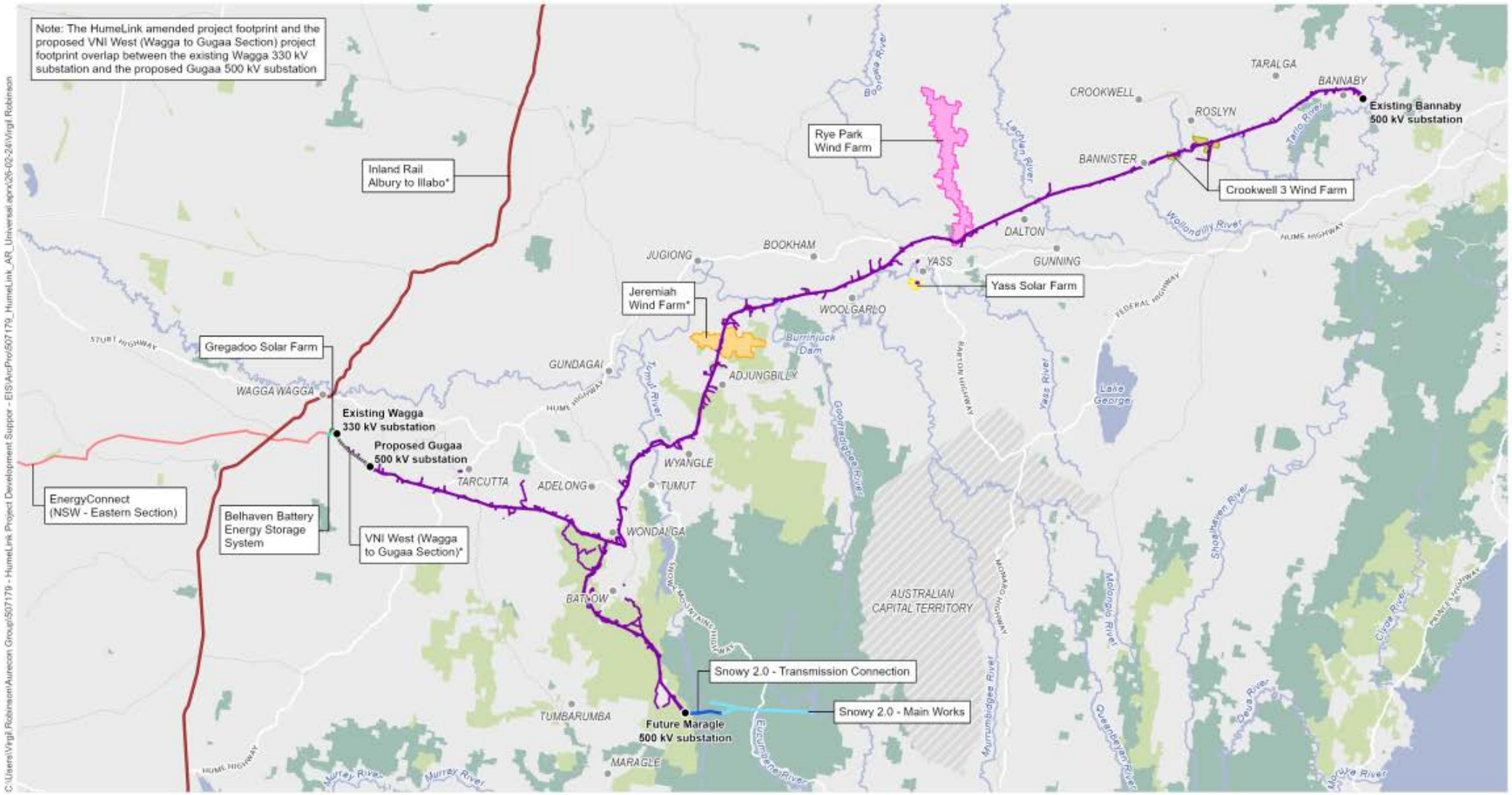
- Belhaven Battery Energy Storage System
- Yass Solar Farm.

Table 6-3 presents the cumulative impacts of the amended project for these two newly identified proposed projects.

Table 6-3 Summary of cumulative impacts identified

Project	Details	Status	Distance and Interface	Cumulative Impacts
Belhaven Battery Energy Storage System	Construction and operation of a 400 MW / 800 MWh battery energy storage system including transmission connection and associated infrastructure.	EIS is being prepared. SEARs issued on 18 May 2023.	The main site is located about 1.5 km west of the existing Wagga Wagga 330 kV substation, but a connection from the battery energy storage system to the substation (most likely underground) is proposed. Based on publicly available information there are likely to be overlapping construction programs.	The proposed Belhaven Battery Energy Storage System project area is only 25 hectares of low to moderate capability land and therefore there would be relatively little agricultural impact. Consequently, cumulative impacts on agriculture would be low.
Yass Solar Farm	The construction, operation and decommissioning of a 100 MW solar photovoltaic energy generating facility with an associated battery energy storage system.	EIS is being prepared. SEARs issued on 22 December 2023.	The site surrounds the Yass substation, and based on publicly available information, there are likely to be overlapping construction programs. However, given the proximity and likely impacts, cumulative impacts are likely limited to the establishment and use of HumeLink's combined worker accommodation facility and construction compound proposed at Yass during construction only.	The proposed Yass Solar Farm project is a relatively small solar farm of approximately 150 hectares. It consists mostly of existing grazing land of low to moderate capability, although it is mostly zoned for environmental living. It is proposed that 'extensive agriculture' would continue on the solar farm. There would be relatively little agricultural impact and, cumulative impacts would be small.

The location of projects for which cumulative impacts were considered relative to the amended project is set out in Figure 6-1.



Amended project footprint
National park and reserve
State forest
Waterbody
Waterway
Major road
Railway
Substation

Relevant future projects

- Belhaven Battery Energy Storage System
- Crookwell 3 Wind Farm
- EnergyConnect (NSW - Eastern Section)
- Gregadoo Solar Farm
- Inland Rail Albury to Illabo*
- Jeremiah Wind Farm*
- Rye Park Wind Farm
- Snowy 2.0 - Main Works
- Snowy 2.0 - Transmission Connection
- VNI West (Wagga to Gugga Section)*
- Yass Solar Farm

*Note: Subject to approval

Source: *Aurecon, Transgrid, Spatial Services (DCS), ESRI Basemap*

1:925,000
0 20 40km

Projection: GDA 1994 MGA Zone 55

HumeLink Agricultural Impact Assessment

FIGURE 6-1: Relevant future projects

7. Management of impacts

The approach to management of impacts during both construction and operation of the amended project is consistent with what was included in *Technical Report 4 – Agricultural Impact Assessment* prepared for the EIS, apart from a new mitigation measure related to aerial farming.

Table 7-1 provides a summary of any new or revised mitigation measures that would be implemented for the amended project. Any new or revised mitigation measures are marked in **bold** and any mitigation measures that are no longer relevant are ~~struck out~~.

Table 7-1 Revised and new mitigation measures for the amended project

Impact	Mitigation measures	Timing	Relevant location
LP2 Property impacts	A property management plan will be developed for directly impacted properties in consultation with landowners and stakeholders. The property management plans will outline the protocols that will be implemented to address landowner concerns during construction. This may include: - the process for rectification of any damage to property infrastructure caused by construction - the process for **restoration or** rehabilitation and stabilisation of disturbed areas following the completion of construction - measures to minimise disruption to agricultural practices during construction - any fencing and gate requirements - specific biosecurity protocols.	Detailed design and construction	All locations
LP4 Biosecurity	Biosecurity controls will be implemented to minimise the risk of off-site transport or spread of disease, pests or weeds. Controls will be in accordance with **a Biosecurity Management Plan developed as part of the Biodiversity Management Plan during construction, and** *Transgrid's Biosecurity Procedure and Biosecurity Environmental Guidance Note* **during operation,** and **will** include development of specific controls if high biosecurity risks are identified. Appropriate measures will be implemented with respect to foot and mouth disease to control any risk of introduction via the project. The specific controls applicable to a property will be identified in consultation with the affected landowner. The effectiveness of these controls will be monitored in a manner and time interval consistent with the level of risk on each property. In the event of new infestations of notifiable weeds as a result of construction activities, the relevant control authority will be notified as per *Biosecurity Act 2015* (NSW) and Biosecurity Regulation 2017.	Construction and operation	All locations
LP8 Consultation regarding aerial farming	**Consultation will be undertaken with relevant landowners who utilise aerial farming operations to identify appropriate mitigation arrangements (where feasible) such as the installation of aerial warning markers on the transmission lines.**	**Construction and operation**	**Transmission line**

8. Conclusion

When compared to the EIS project, the amended project would increase the potential construction impacts on agricultural activities as a result of the larger area temporarily removed from agricultural land use. Potential disturbances may also occur as a result of controlled blasting and helicopter and drone use.

Impacts during operation are similar to those assessed in the EIS.

The scope of the increase in construction impacts would be reduced by the following factors:

- the relatively small total amount of land temporarily affected by construction activities and permanently removed from agriculture compared to regional agricultural activity
- the general continuation of agriculture activity across the amended project footprint and the agricultural study area during construction
- the lower proportion of agricultural land in the amended project footprint
- effective mitigation measures would be implemented to reduce the impacts of the amended project on the agricultural industry.

In particular, the increase in assessed construction impacts between the EIS project and the amended project is due to an increase in access track area in the amended project footprint. However, most of this increase arises from the inclusion of upgraded tracks. Therefore, the impact of the amended project on areas of agricultural productive land presented in this assessment are conservative and likely to overestimate the potential impact on agricultural production and the value of agricultural production loss. Consequently, the construction impact of the amended project would be lower than assessed in this report. Accordingly, the increase in the construction impact of the amended project compared to the EIS project would also be lower than assessed in this report.

The impact of the amended project on agricultural productivity at a regional scale would be minimal due to the above factors, including the application of mitigation measures. Most of the impacts would be temporary, and permanent impacts would be relatively small compared to the value of regional agricultural production.

9. References

Aurecon (2024), *Submissions Report – Humelink.*

DPI (2021), *Draft state significant agricultural land map – exhibition,* Accessed from: https://nswdpi.mysocialpinpoint.com/ssal. Accessed on 8 November 2023.

DPIE (2020), *NSW Landuse 2017,* Accessed from: https://data.nsw.gov.au/data/dataset/nsw-landuse-2017. Updated 14 July 2020.

LLS (2021), *Travelling Stock Reserves - State Classification Map*, Accessed from: https://www.arcgis.com/apps/webappviewer/index.html?id=dd585551cd5c4320bfcd2d671d8f2364. Accessed on 9 November 2023.

OEH (2012), *The Land and Soil Capability Assessment Scheme (second approximation) – a General Land Evaluation System for New South Wales*. Office of Environment & Heritage, Sydney. Accessed from: https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Land-and-soil/land-soil-capability-assessment-scheme-120394.pdf.

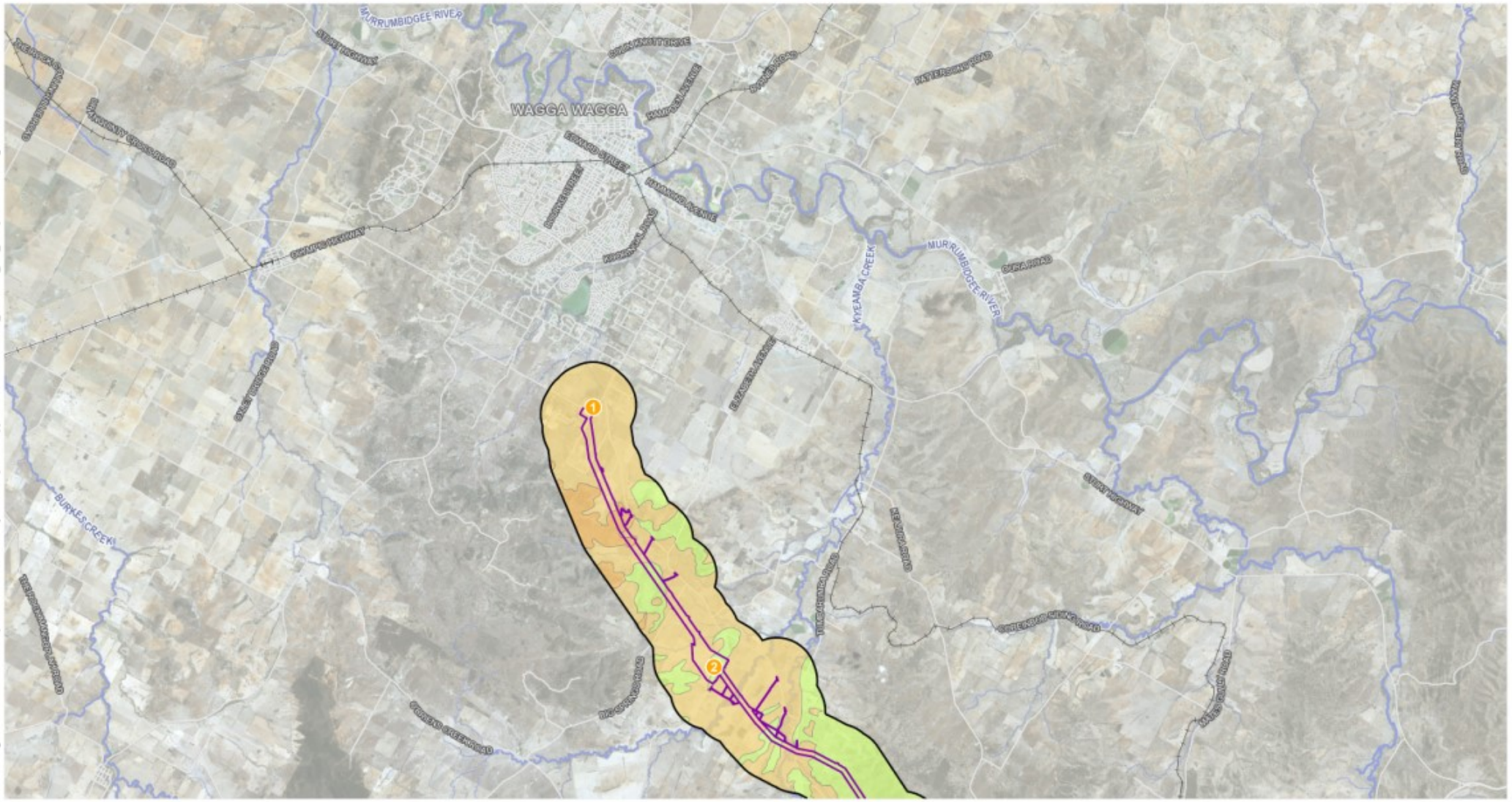
OEH (2013), *Interim Protocol for Site Verification and Mapping of Biophysical Strategic Agricultural Land*. NSW Office of Environment and Heritage, Sydney. Accessed from: https://www.planning.nsw.gov.au/sites/default/files/2023-03/interim-protocol-for-site-verification-and-mapping-of-biophysical-strategic-agricultural-land.pdf.

OEH (2017), *Estimated Inherent Soil Fertility of NSW.* NSW Office of Environment and Heritage, Sydney.

Transgrid (n.d) *Easement Guidelines - Living and working with electricity transmission lines* Accessed from: https://www.transgrid.com.au/media/3tkdd5lr/easement-guidelines.pdf.

Attachments

Attachment 1 Inherent soil fertility maps



C:\Users\Virgil Robinson\Aurecon Group\507179 - HumeLink Project Development Suppor - EIS\ArcPro\507179_HumeLink_AIA_AR.aprx\18-01-24\Virgil Robinson

Amended project footprint

Amended agricultural study area

Waterway

Railway

Construction ancillary facilities

1. Wagga 330 kV substation compound (C01)
2. Amended Gregadoo Road compound (C06)

Inherent Soil Fertility

1 - Low

2 - Moderately low

3 - Moderate

Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

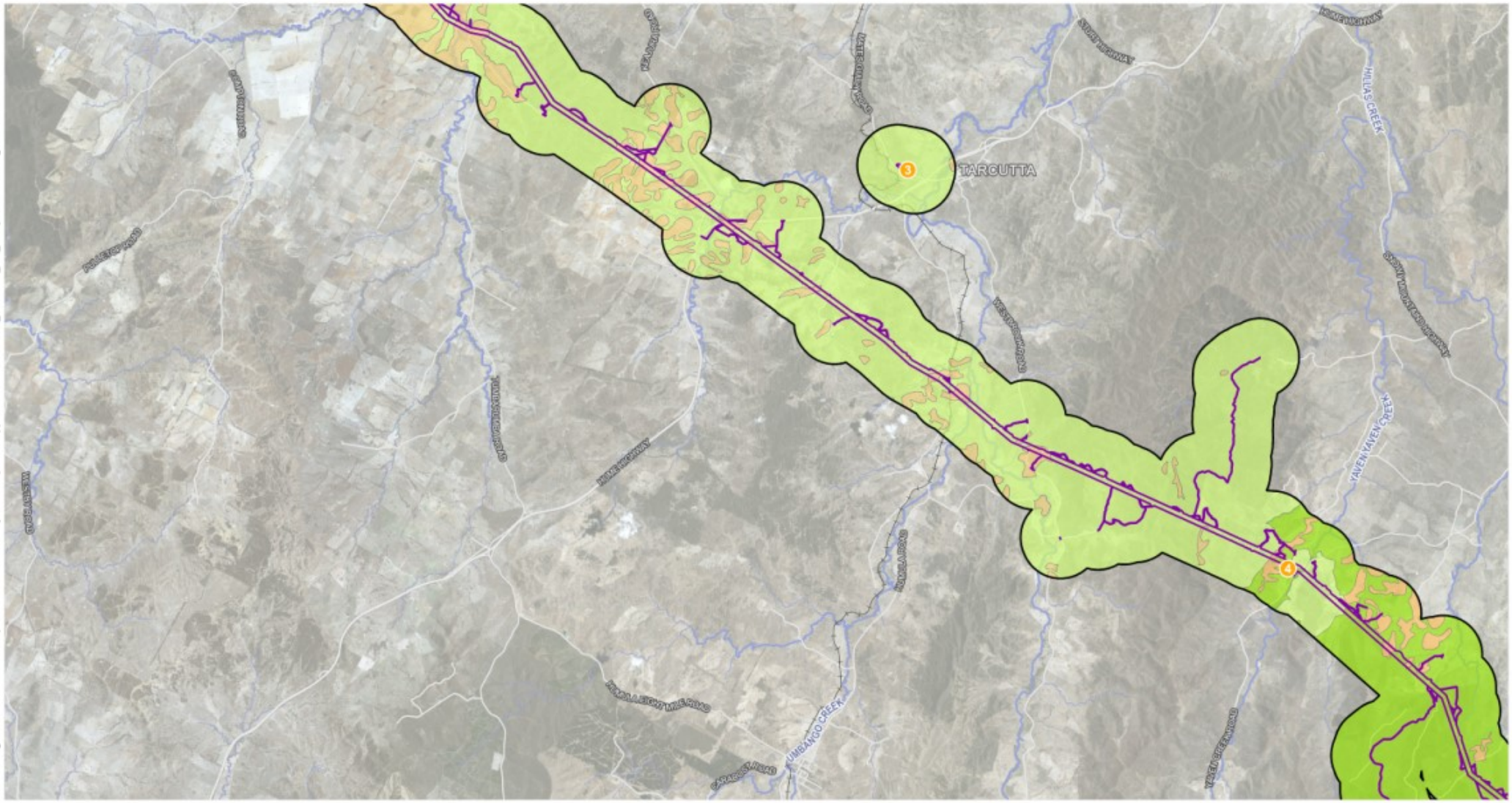
1:150,000

0 3 6 km

Projection: GDA 1994 MGA Zone 55

HumeLink

Attachment 1: Inherent Soil Fertility **Attachment 1 of 10**



C:\Users\Virgil Robinson\Aurecon Group\507179 - HumeLink Project Development Suppor - EIS\ArcPro\507179_HumeLink_AIA_AR.aprx\18-01-24\Virgil Robinson

Amended project footprint

Amended agricultural study area

Waterway

Railway

Construction ancillary facilities

3 Tarcutta accommodation facility and compound (AC03)

4 Ellerslie Road compound (C21)

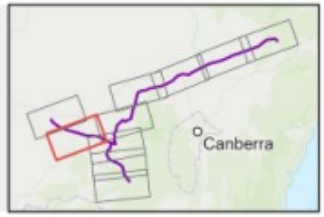
Inherent Soil Fertility

1 - Low

2 - Moderately low

3 - Moderate

4 - Moderately high



Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

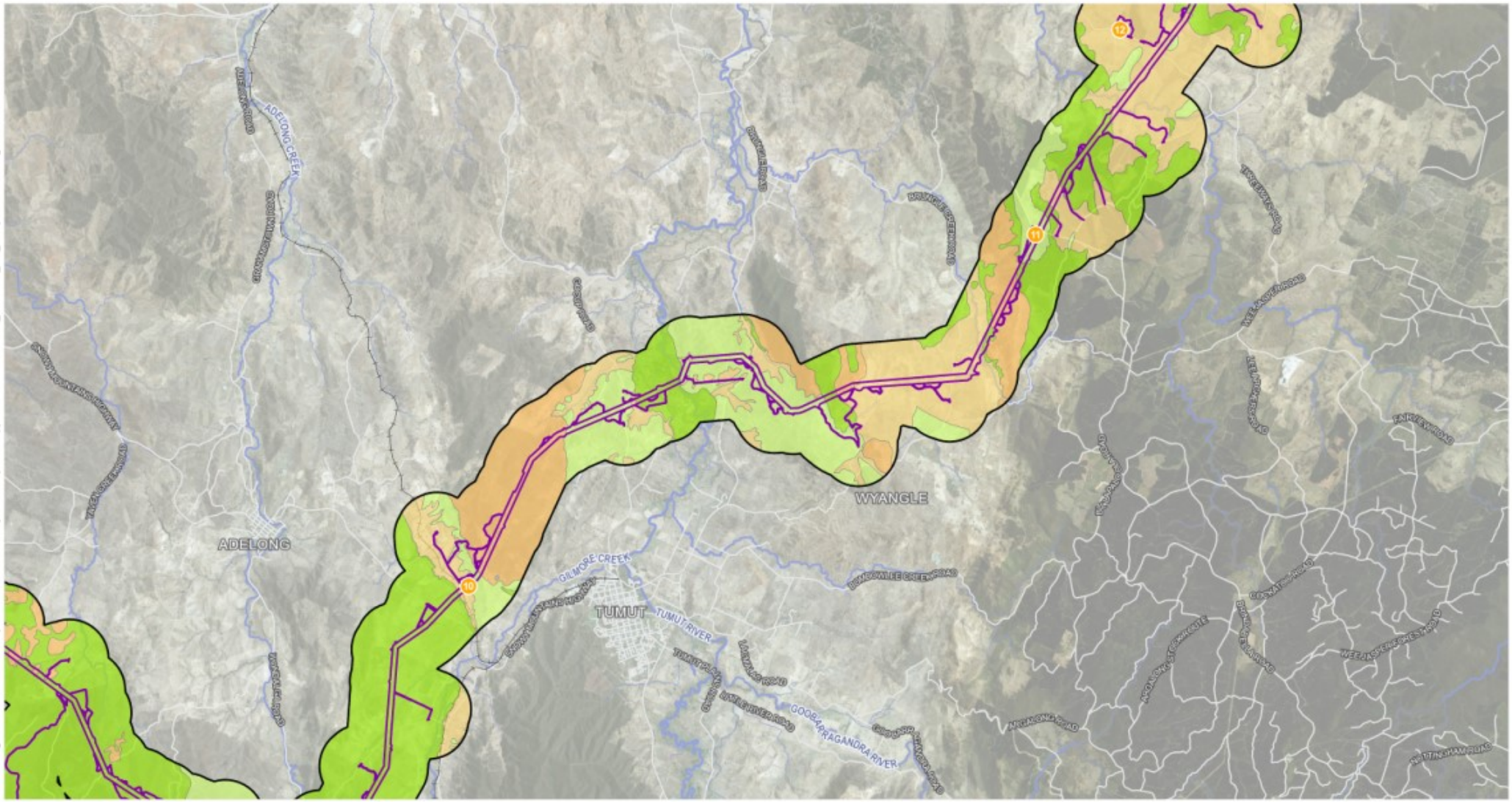
1:150,000

0 3 6 km

Projection: GDA 1994 MGA Zone 55

HumeLink

Attachment 1: Inherent Soil Fertility **Attachment 2 of 10**



Amended project footprint
Amended agricultural study area
Waterway
Railway

Construction ancillary facilities

10 Gadara Road compound (C19)
11 Amended Honeysuckle Road compound (C07)
12 Adjungbilly accommodation facility and compound (AC04)

Inherent Soil Fertility

1 - Low
2 - Moderately low
3 - Moderate
4 - Moderately high
Not assessed

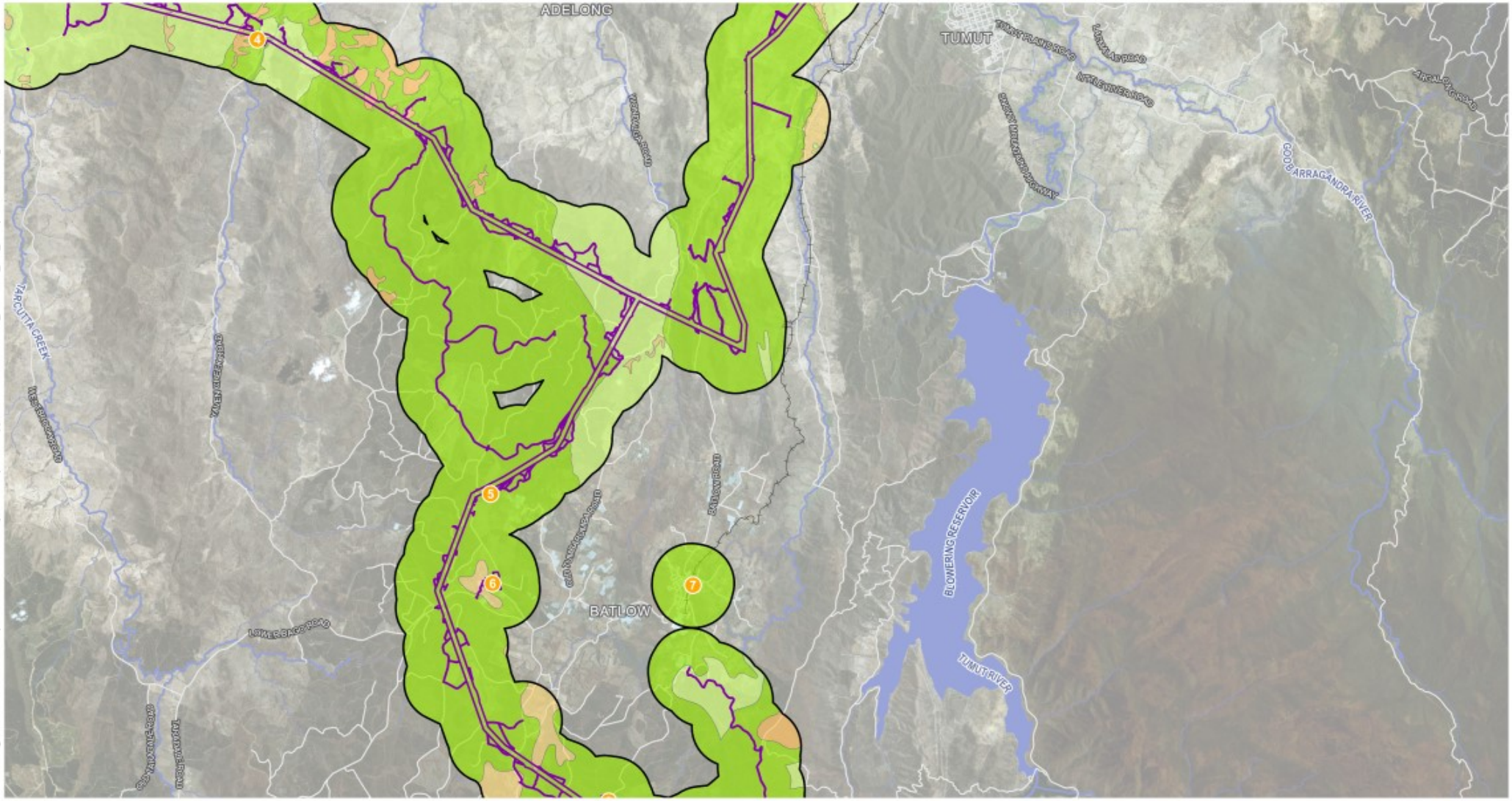
Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000
0 3 6 km

Projection: GDA 1994 MGA Zone 55

HumeLink

Attachment 1: Inherent Soil Fertility **Attachment 3 of 10**



C:\Users\Virgil.Robinson\Aurecon Group\507179 - HumeLink Project Development Suppor - EIS\ArcPro\507179_HumeLink_AIA_AR.aprx\22-02-24\Virgil Robinson

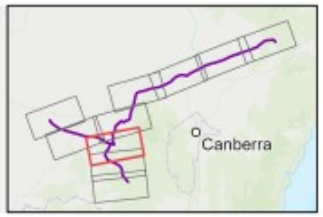
- Amended project footprint
- Amended agricultural study area
- Waterbody
- Waterway
- Railway

Construction ancillary facilities

4. Ellerslie Road compound (C21)
5. Ardrossan Headquarters Road compound (C17)
6. Green Hills accommodation facility and compound (AC07)
7. Amended Memorial Avenue compound (C14)
8. Snubba Road compound (C18)

Inherent Soil Fertility

- 1 - Low
- 2 - Moderately low
- 3 - Moderate
- 4 - Moderately high



Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

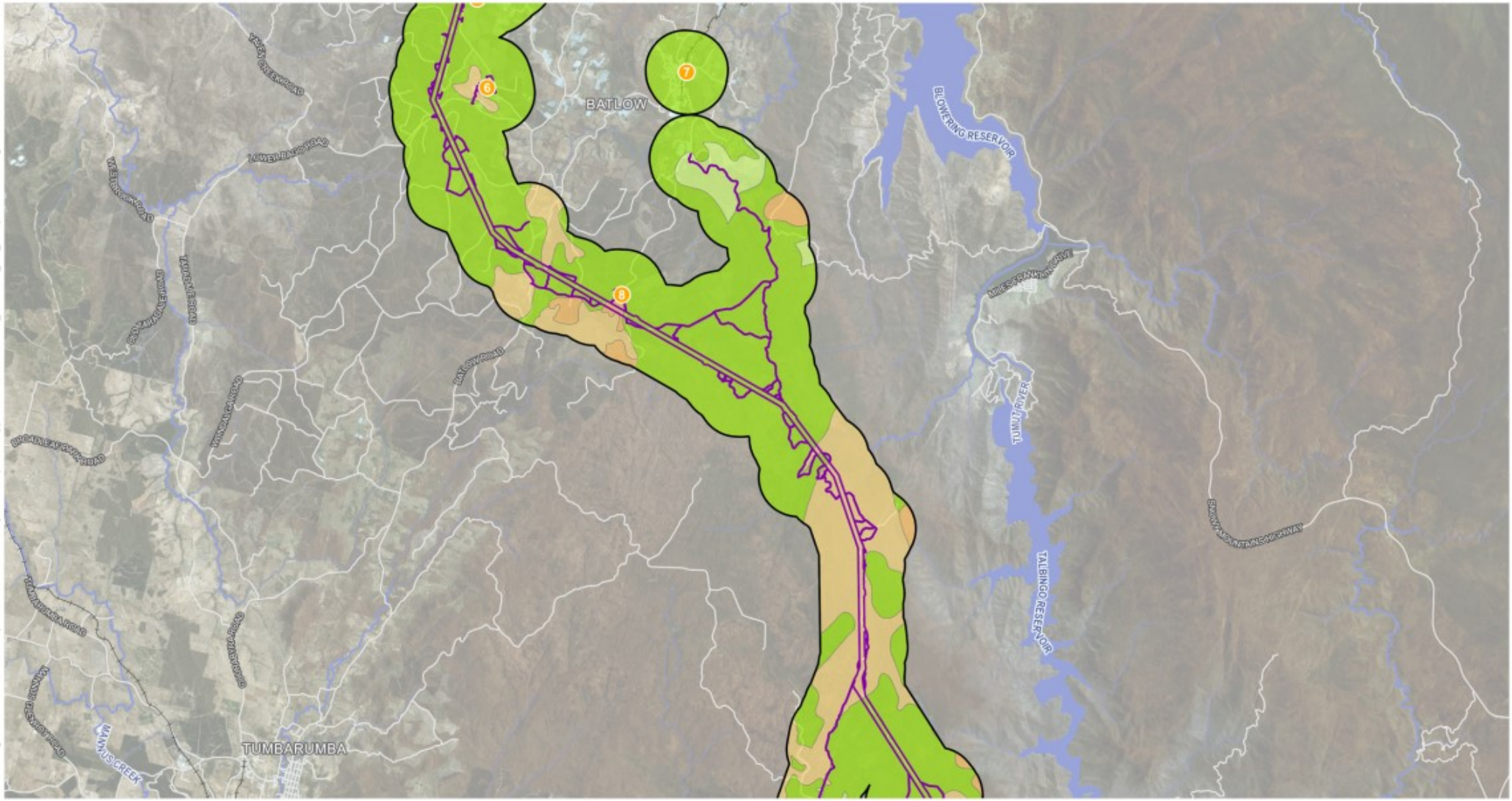
1:150,000

0 3 6 km

Projection: GDA 1994 MGA Zone 55

HumeLink

Attachment 1: Inherent Soil Fertility **Attachment 4 of 10**



Amended project footprint
Amended agricultural study area
Waterbody
Waterway
Railway

Construction ancillary facilities

5 Ardrossan Headquarters Road compound (C17)
6 Green Hills accommodation facility and compound (AC07)
7 Amended Memorial Avenue compound (C14)
8 Snubba Road compound (C18)

Inherent Soil Fertility

1 - Low
2 - Moderately low
3 - Moderate
4 - Moderately high

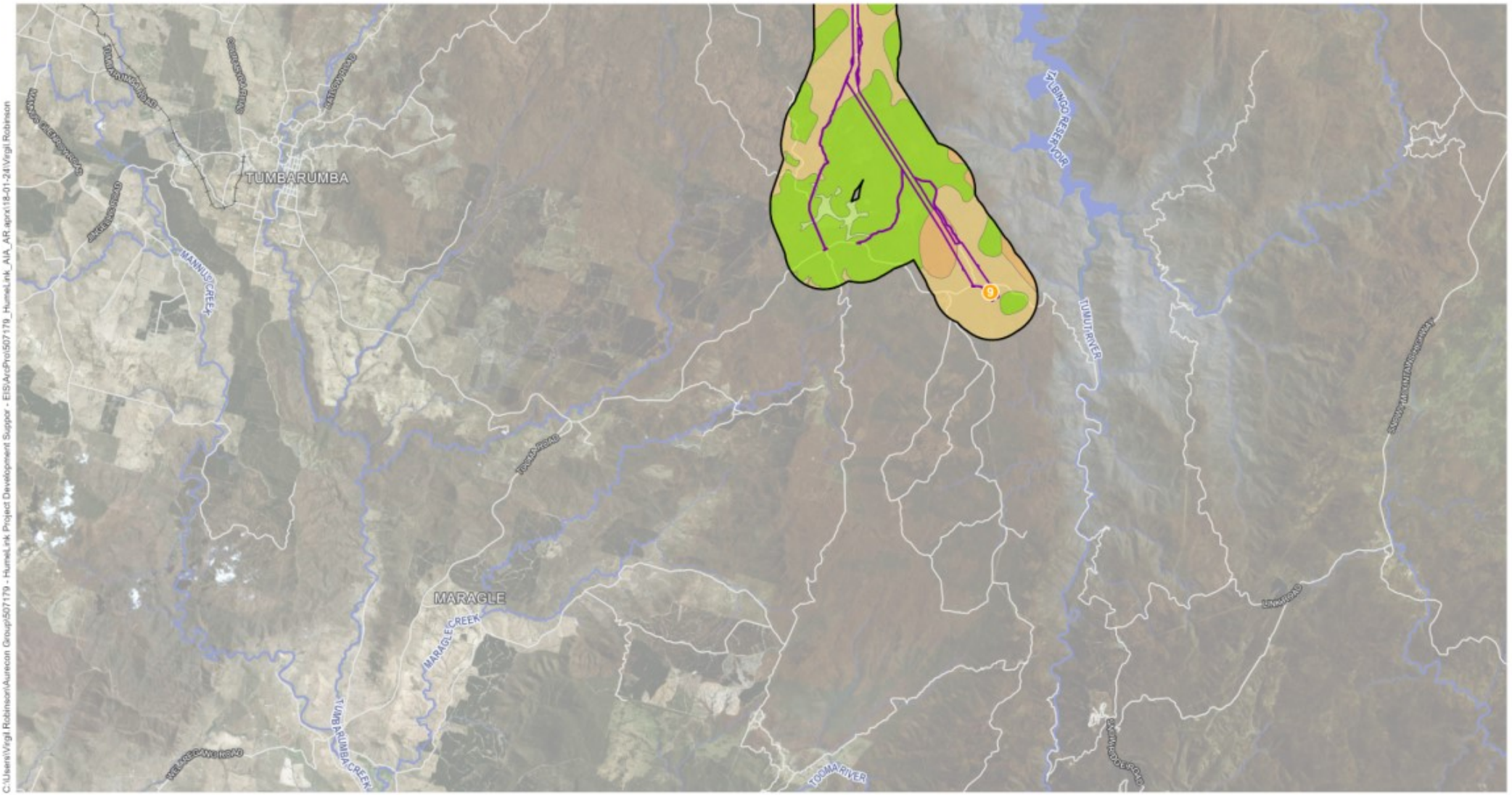
Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000
0 3 6 km

Projection: GDA 1994 MGA Zone 55

HumeLink

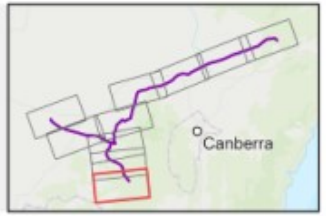
Attachment 1: Inherent Soil Fertility **Attachment 5 of 10**



Amended project footprint
Amended agricultural study area
Waterbody
Waterway
Railway

Construction ancillary facilities
9 Maragle 500 kV substation compound (C05)

Inherent Soil Fertility
1 - Low
2 - Moderately low
3 - Moderate
4 - Moderately high



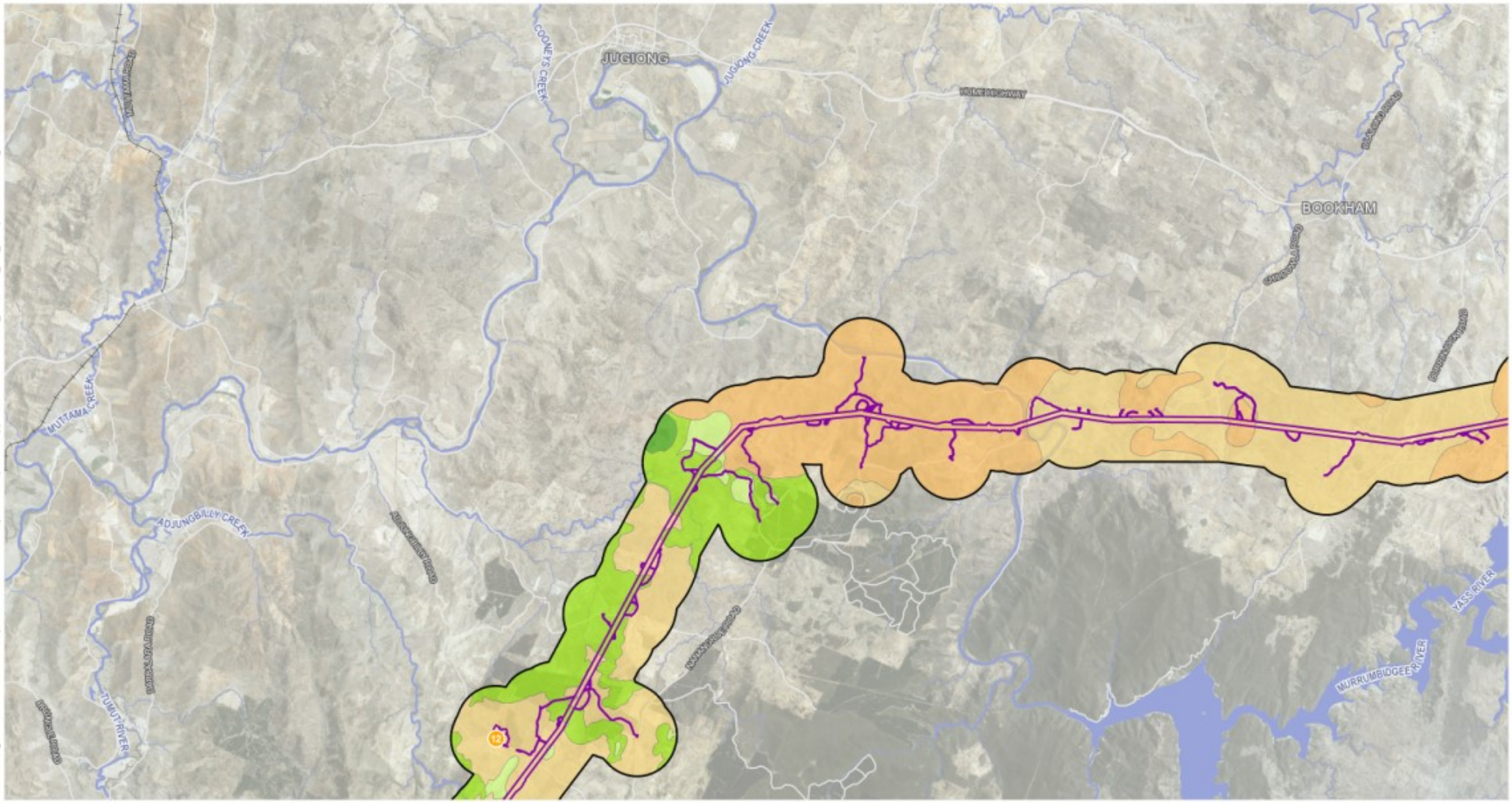
Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000
0 3 6 km

Projection: GDA 1994 MGA Zone 55

HumeLink

Attachment 1: Inherent Soil Fertility **Attachment 6 of 10**



Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

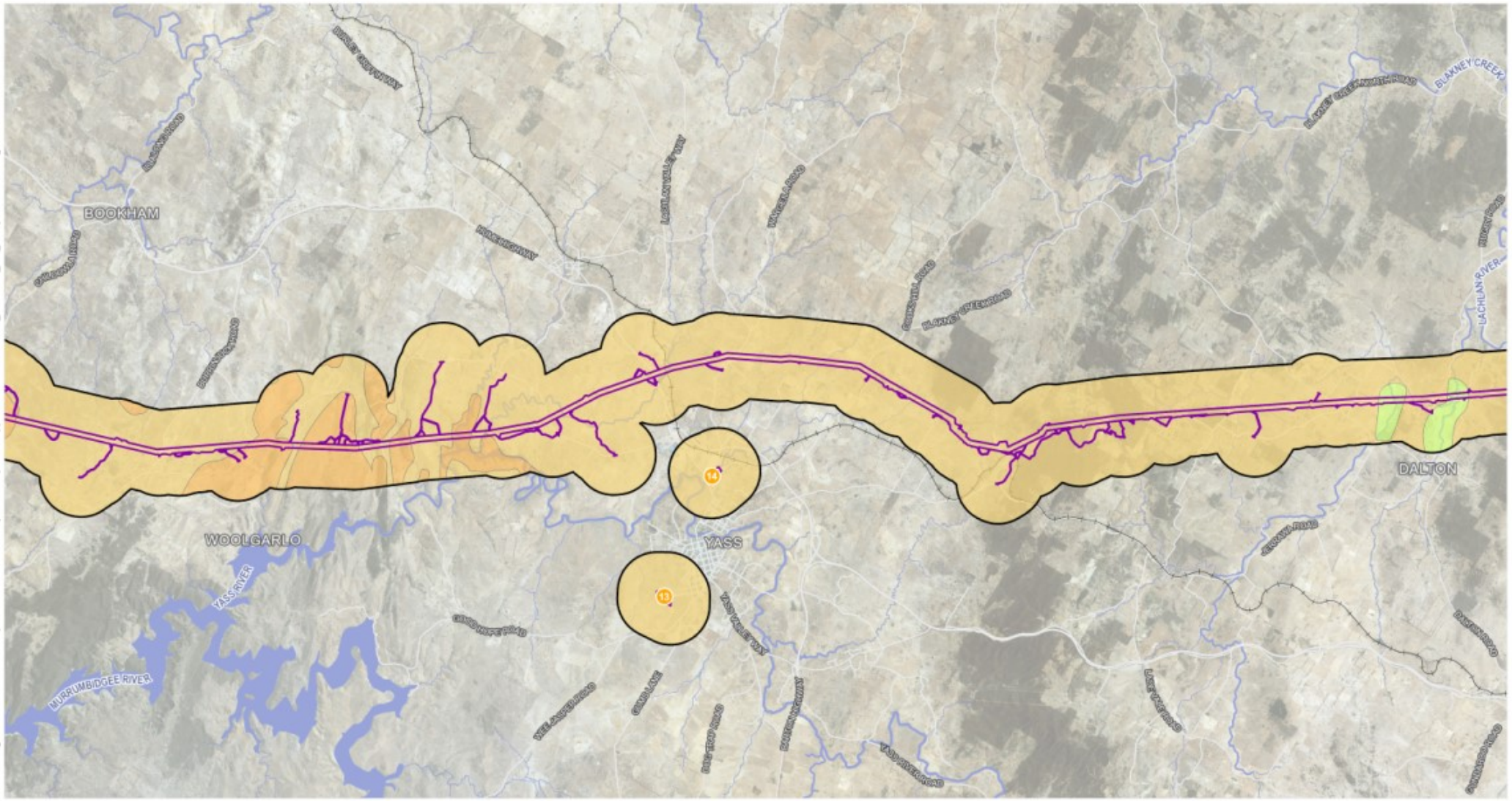
1:150,000

0 3 6 km

Projection: GDA 1994 MGA Zone 55

HumeLink

Attachment 1: Inherent Soil Fertility **Attachment 7 of 10**



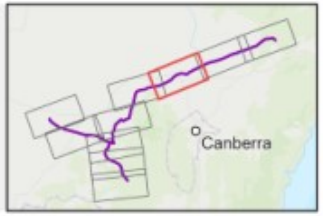
Amended project footprint
Amended agricultural study area
Waterbody
Waterway
Railway

Construction ancillary facilities

13 Yass substation compound (C10)
14 Yass accommodation facility and compound (AC05)

Inherent Soil Fertility

1 - Low
2 - Moderately low
3 - Moderate



Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

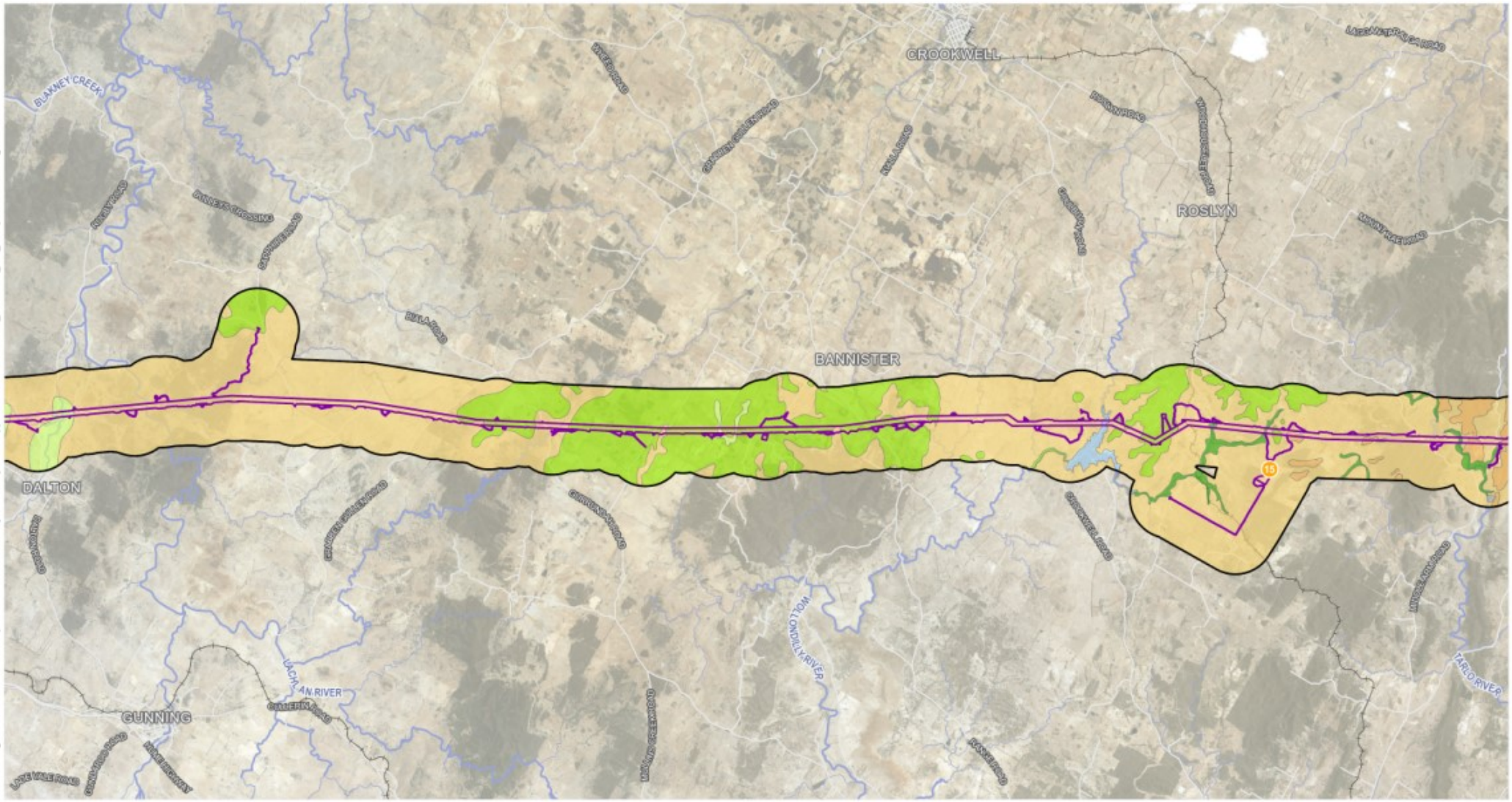
1:150,000
0 3 6 km

Projection: GDA 1994 MGA Zone 55

HumeLink

Attachment 1: Inherent Soil Fertility **Attachment 8 of 10**

C:\Users\Virgil Robinson\Aurecon Group\507179 - HumeLink Project Development Suppor - EIS\ArcPro\507179_HumeLink_AIA_AR.aprx\18-01-24\Virgil Robinson



C:\Users\Virgil Robinson\Aurecon Group\507179 - HumeLink Project Development Suppor - EIS\ArcPro\507179_HumeLink_AIA_AR.aprx\18-01-24\Virgil Robinson

Amended project footprint

Amended agricultural study area

Waterway

Railway

Construction ancillary facilities

15 Crookwell accommodation facility and compound (AC06)

Inherent Soil Fertility

1 - Low

2 - Moderately low

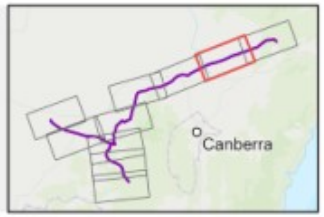
3 - Moderate

4 - Moderately high

5 - High

Not assessed

Water



Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

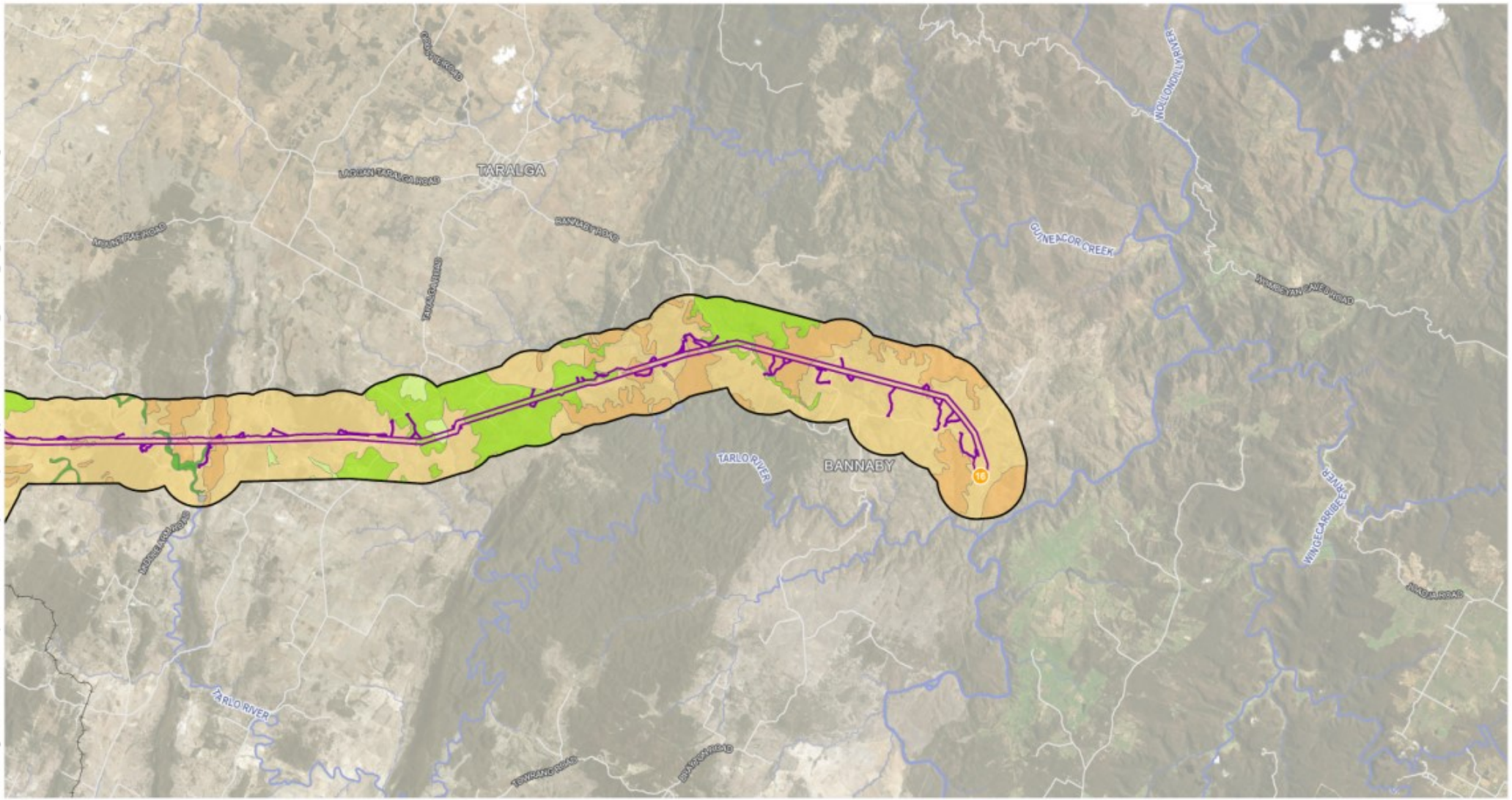
1:150,000

0 3 6 km

Projection: GDA 1994 MGA Zone 55

HumeLink

Attachment 1: Inherent Soil Fertility **Attachment 9 of 10**



Amended project footprint

Amended agricultural study area

Waterway

Railway

Construction ancillary facilities

Amended Bannaby 500 kV substation compound (C12)

Inherent Soil Fertility

1 - Low

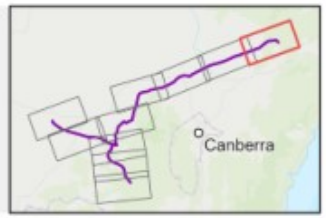
2 - Moderately low

3 - Moderate

4 - Moderately high

5 - High

Not assessed



Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000

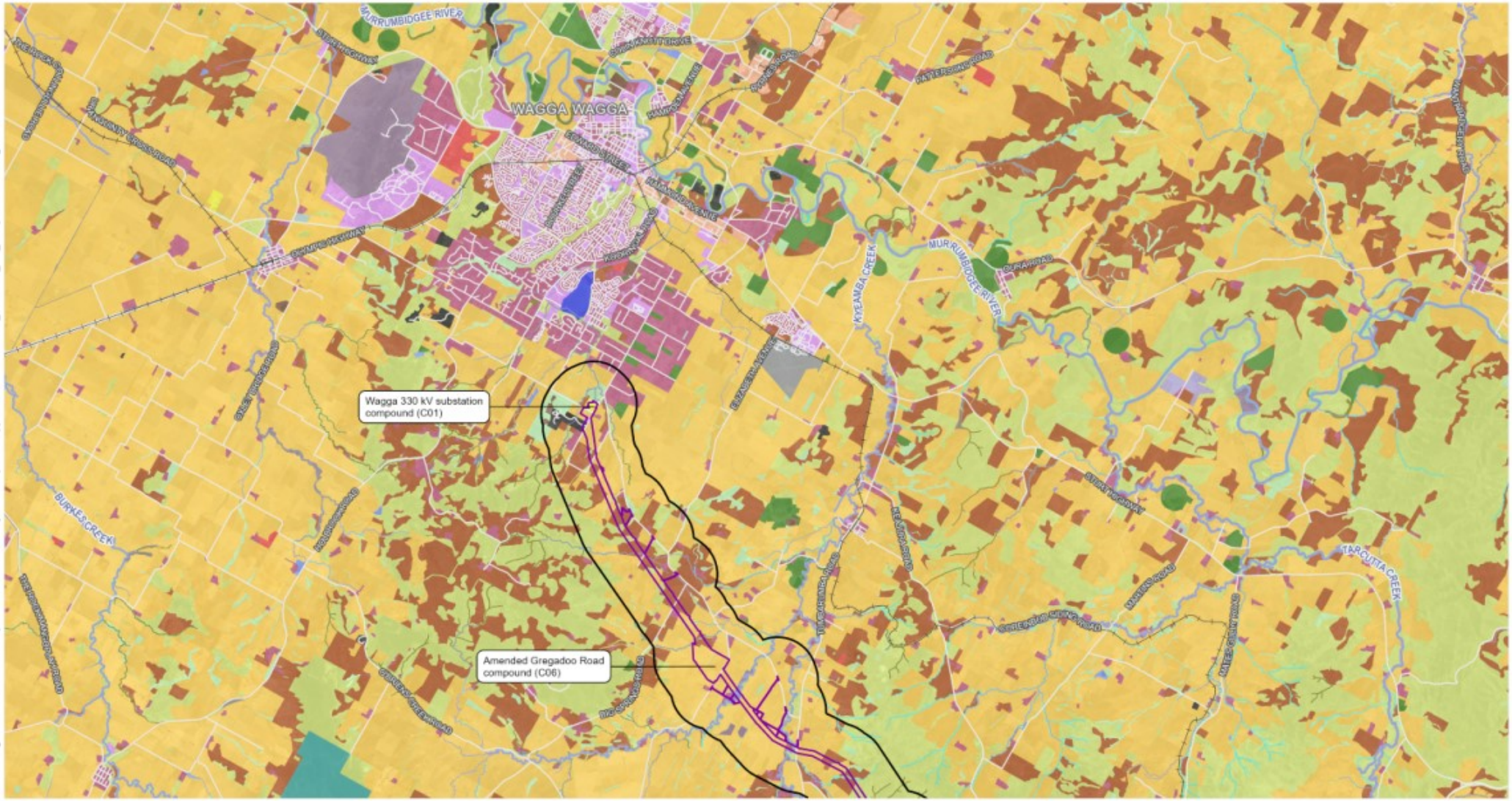
0 3 6 km

Projection: GDA 1994 MGA Zone 55

HumeLink

Attachment 1: Inherent Soil Fertility **Attachment 10 of 10**

Attachment 2 Land use maps



Amended project footprint

Amended agricultural study area

Waterway

Railway

Land Use 2017

- 1.1.0 Nature conservation
- 1.2.0 Managed resource protection
- 1.3.0 Other minimal use
- 2.1.0 Grazing native vegetation
- 3.1.0 Plantation forests
- 3.2.0 Grazing modified pastures
- 3.3.0 Cropping
- 3.6.0 Land in transition
- 4.4.0 Irrigated perennial horticulture
- 5.3.0 Manufacturing and industrial
- 5.4.0 Residential and farm infrastructure
- 5.5.0 Services
- 5.6.0 Utilities
- 5.7.0 Transport and communication
- 5.8.0 Mining
- 5.9.0 Waste treatment and disposal
- 6.1.0 Lake
- 6.2.0 Reservoir/dam
- 6.3.0 River
- 6.5.0 Marsh/wetland
- Other agricultural and primary production land use classes

Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000

0 3 6km

Projection: GDA 1994 MGA Zone 55

HumeLink

Amended project footprint

Amended agricultural study area

Waterway

Railway

Land Use 2017

1.1.0 Nature conservation

1.2.0 Managed resource protection

1.3.0 Other minimal use

2.1.0 Grazing native vegetation

2.2.0 Production native forestry

3.1.0 Plantation forests

3.2.0 Grazing modified pastures

3.3.0 Cropping

4.4.0 Irrigated perennial horticulture

5.3.0 Manufacturing and industrial

5.4.0 Residential and farm infrastructure

5.5.0 Services

5.7.0 Transport and communication

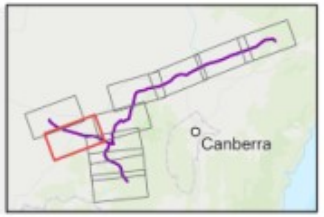
5.8.0 Mining

6.2.0 Reservoir/dam

6.3.0 River

6.5.0 Marsh/wetland

Other agricultural and primary production land use classes

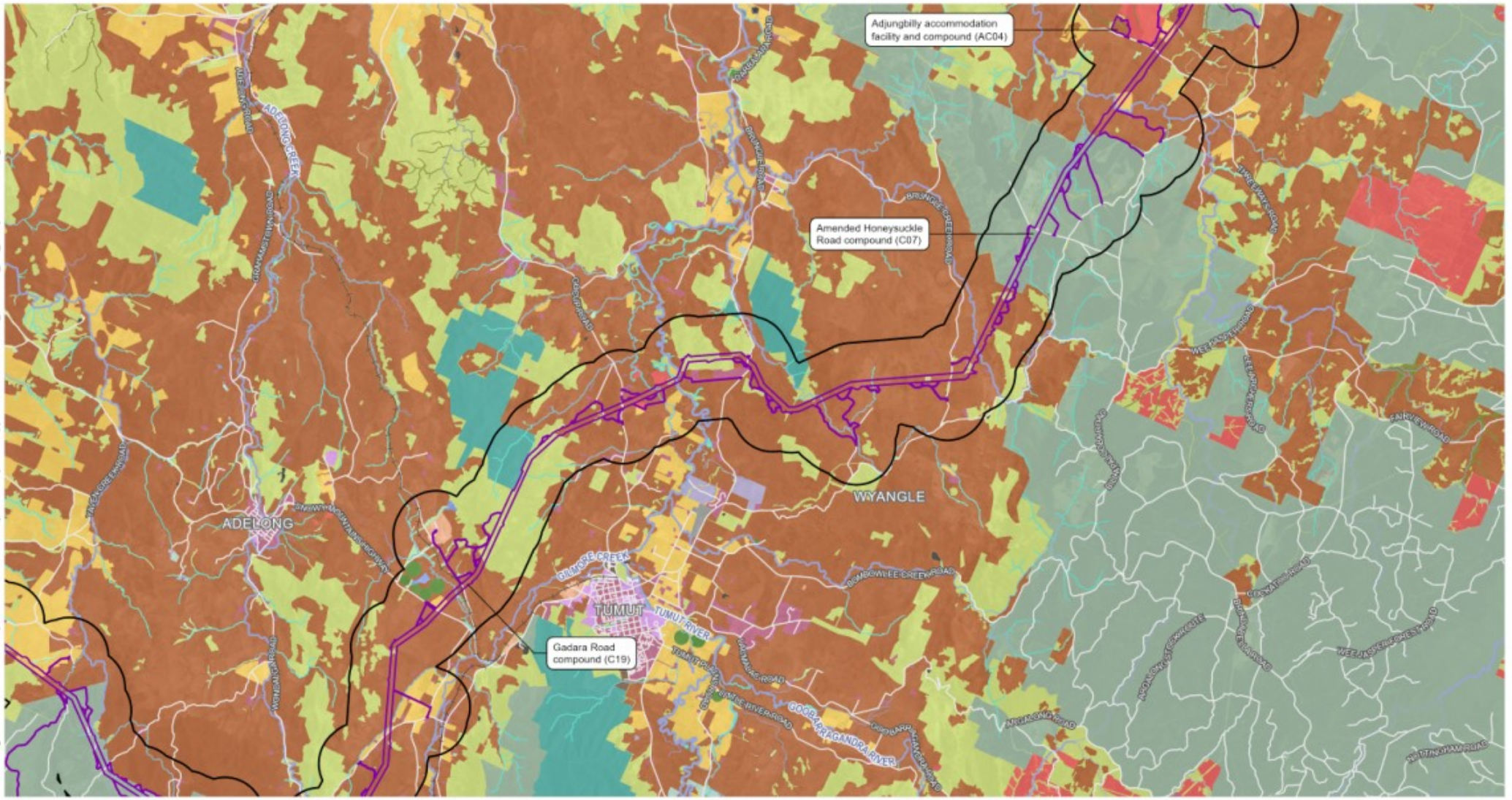


Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000

0 3 6km

Projection: GDA 1994 MGA Zone 55



C:\Users\Virgil Robinson\Aurecon Group\507179 - HumeLink Project Development Suppor - EIS\ArcPro\507179_HumeLink_AIA_AR.aprx\18-01-24\Virgil Robinson

Amended project footprint
Amended agricultural study area
Waterway
Railway

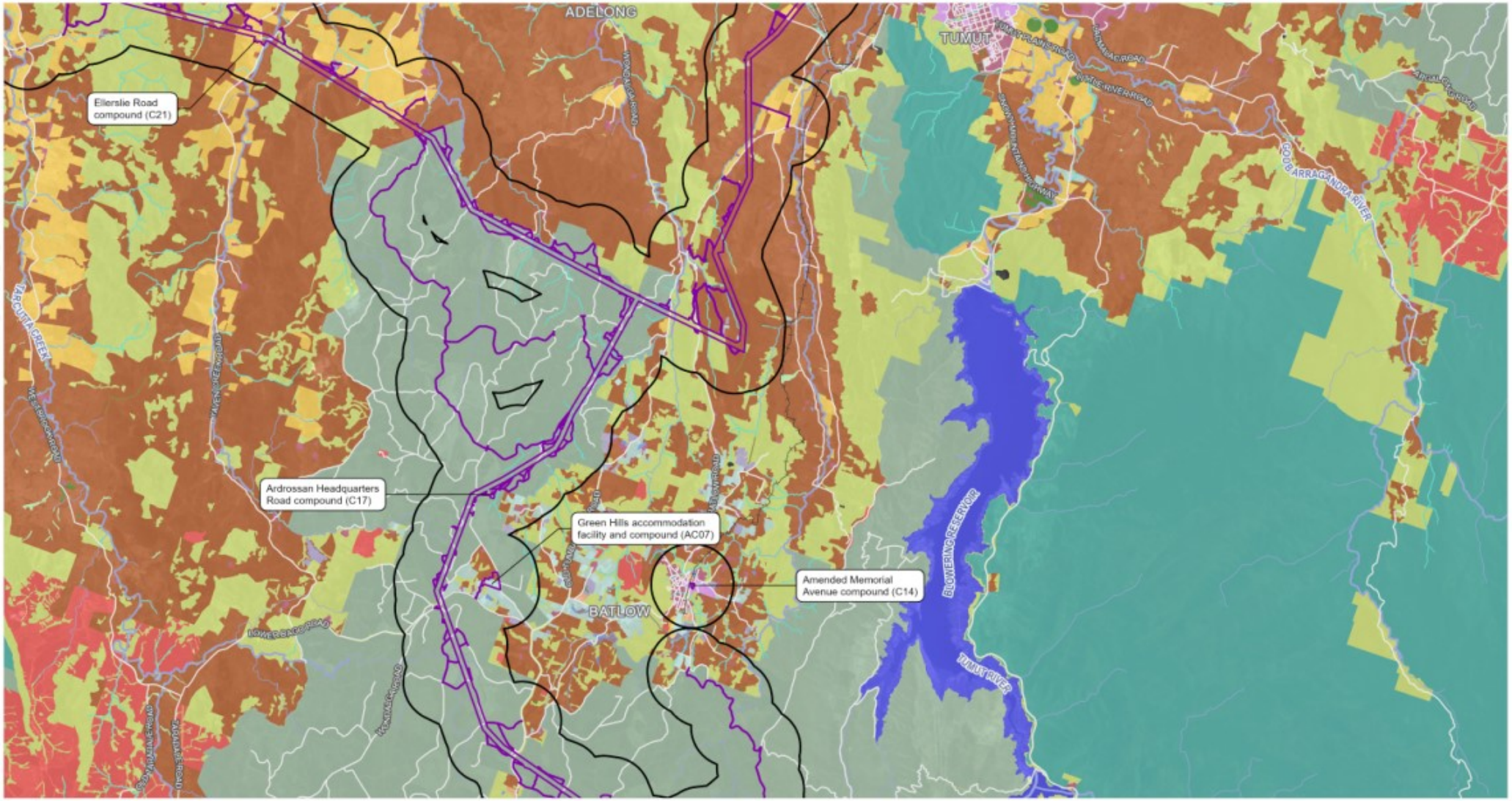
Land Use 2017

1.1.0 Nature conservation
1.2.0 Managed resource protection
2.1.0 Grazing native vegetation
2.2.0 Production native forestry
3.1.0 Plantation forests
3.2.0 Grazing modified pastures
3.3.0 Cropping
3.6.0 Land in transition
4.4.0 Irrigated perennial horticulture
5.3.0 Manufacturing and industrial
5.4.0 Residential and farm infrastructure
5.5.0 Services
5.6.0 Utilities
5.7.0 Transport and communication
5.8.0 Mining
5.9.0 Waste treatment and disposal
6.2.0 Reservoir/dam
6.3.0 River
6.5.0 Marsh/wetland
Other agricultural and primary production land use classes

Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000
0 3 6km

Projection: GDA 1994 MGA Zone 55



Amended project footprint

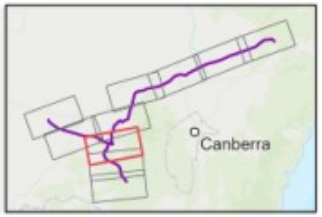
Amended agricultural study area

Waterway

Railway

Land Use 2017

- 1.1.0 Nature conservation
- 1.2.0 Managed resource protection
- 1.3.0 Other minimal use
- 2.1.0 Grazing native vegetation
- 2.2.0 Production native forestry
- 3.1.0 Plantation forests
- 3.2.0 Grazing modified pastures
- 3.3.0 Cropping
- 3.6.0 Land in transition
- 4.4.0 Irrigated perennial horticulture
- 5.3.0 Manufacturing and industrial
- 5.4.0 Residential and farm infrastructure
- 5.5.0 Services
- 5.6.0 Utilities
- 5.7.0 Transport and communication
- 5.8.0 Mining
- 5.9.0 Waste treatment and disposal
- 6.1.0 Lake
- 6.2.0 Reservoir/dam
- 6.3.0 River
- 6.5.0 Marsh/wetland
- Other agricultural and primary production land use classes

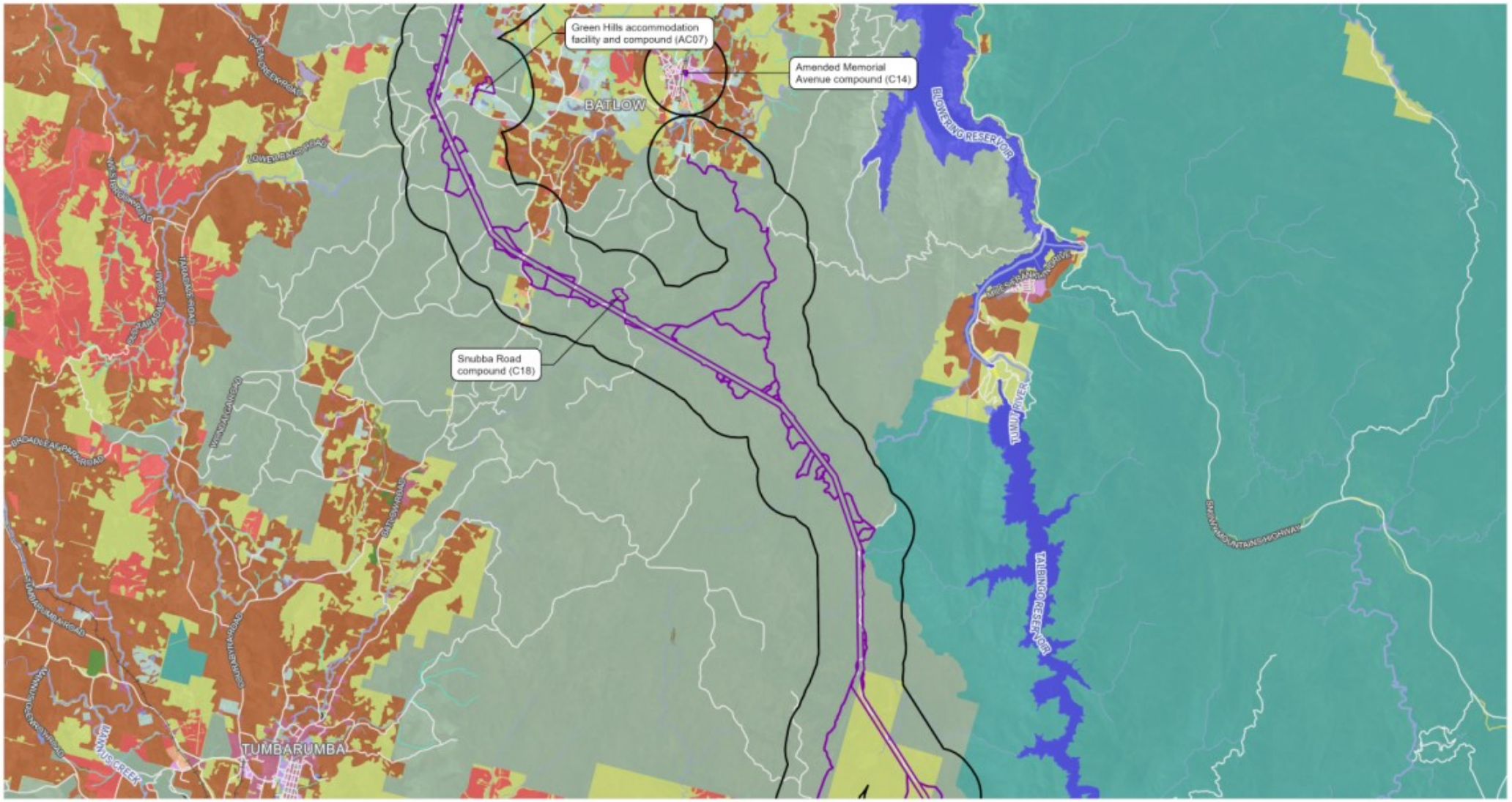


Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000

0 3 6km

Projection: GDA 1994 MGA Zone 55



C:\Users\Virgil Robinson\Aurecon Group\507179 - HumeLink Project Development Suppor - EIS\ArcPro\507179_HumeLink_AIA_AR.aprx\22-02-24\Virgil Robinson

Amended project footprint
Amended agricultural study area
Waterway
Railway

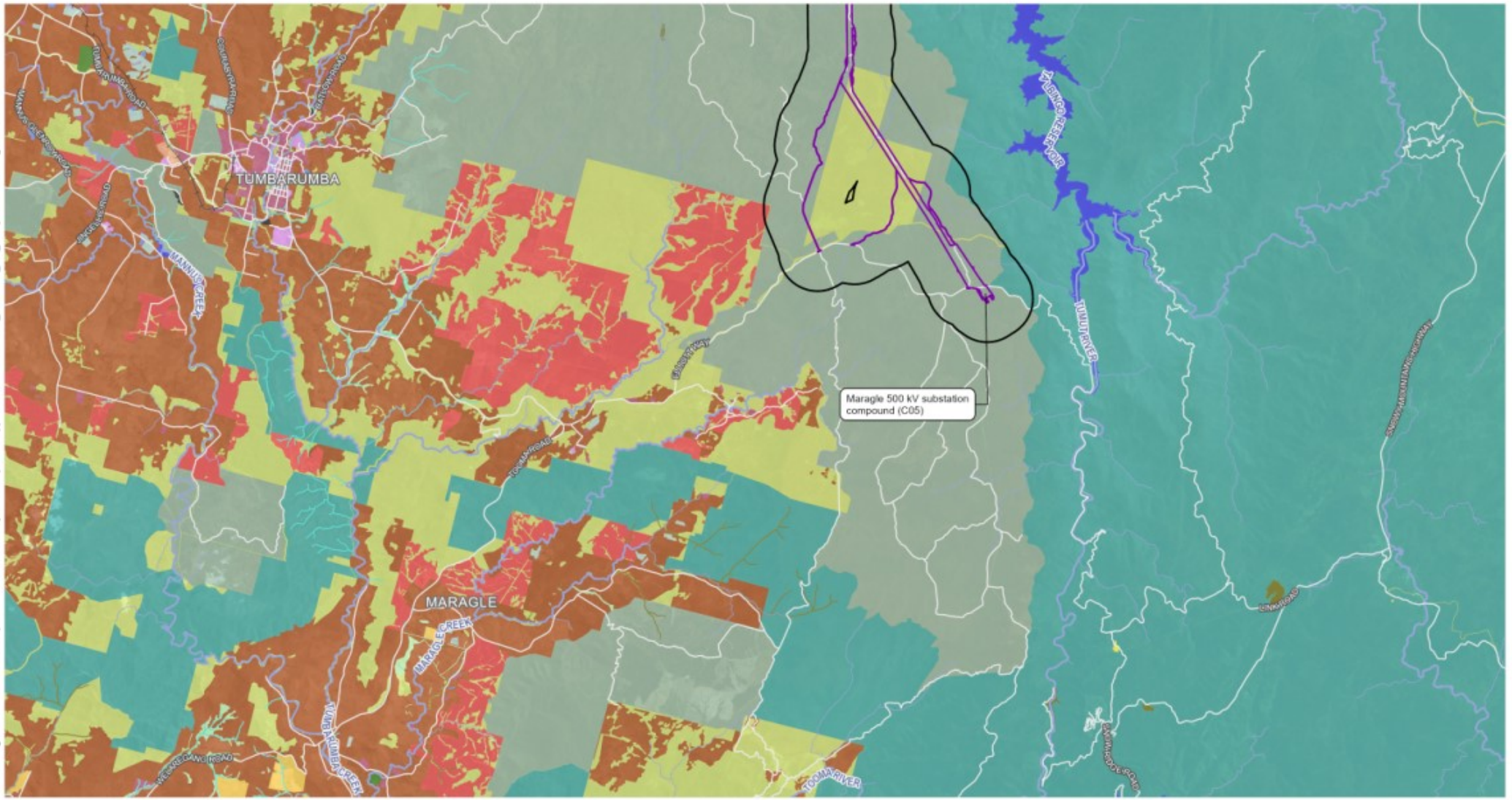
Land Use 2017

- 1.1.0 Nature conservation
- 1.2.0 Managed resource protection
- 1.3.0 Other minimal use
- 2.1.0 Grazing native vegetation
- 2.2.0 Production native forestry
- 3.1.0 Plantation forests
- 3.2.0 Grazing modified pastures
- 3.3.0 Cropping
- 3.6.0 Land in transition
- 4.4.0 Irrigated perennial horticulture
- 5.3.0 Manufacturing and industrial
- 5.4.0 Residential and farm infrastructure
- 5.5.0 Services
- 5.6.0 Utilities
- 5.7.0 Transport and communication
- 5.8.0 Mining
- 5.9.0 Waste treatment and disposal
- 6.1.0 Lake
- 6.2.0 Reservoir/dam
- 6.3.0 River
- 6.5.0 Marsh/wetland
- Other agricultural and primary production land use classes

Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000
0 3 6km

Projection: GDA 1994 MGA Zone 55

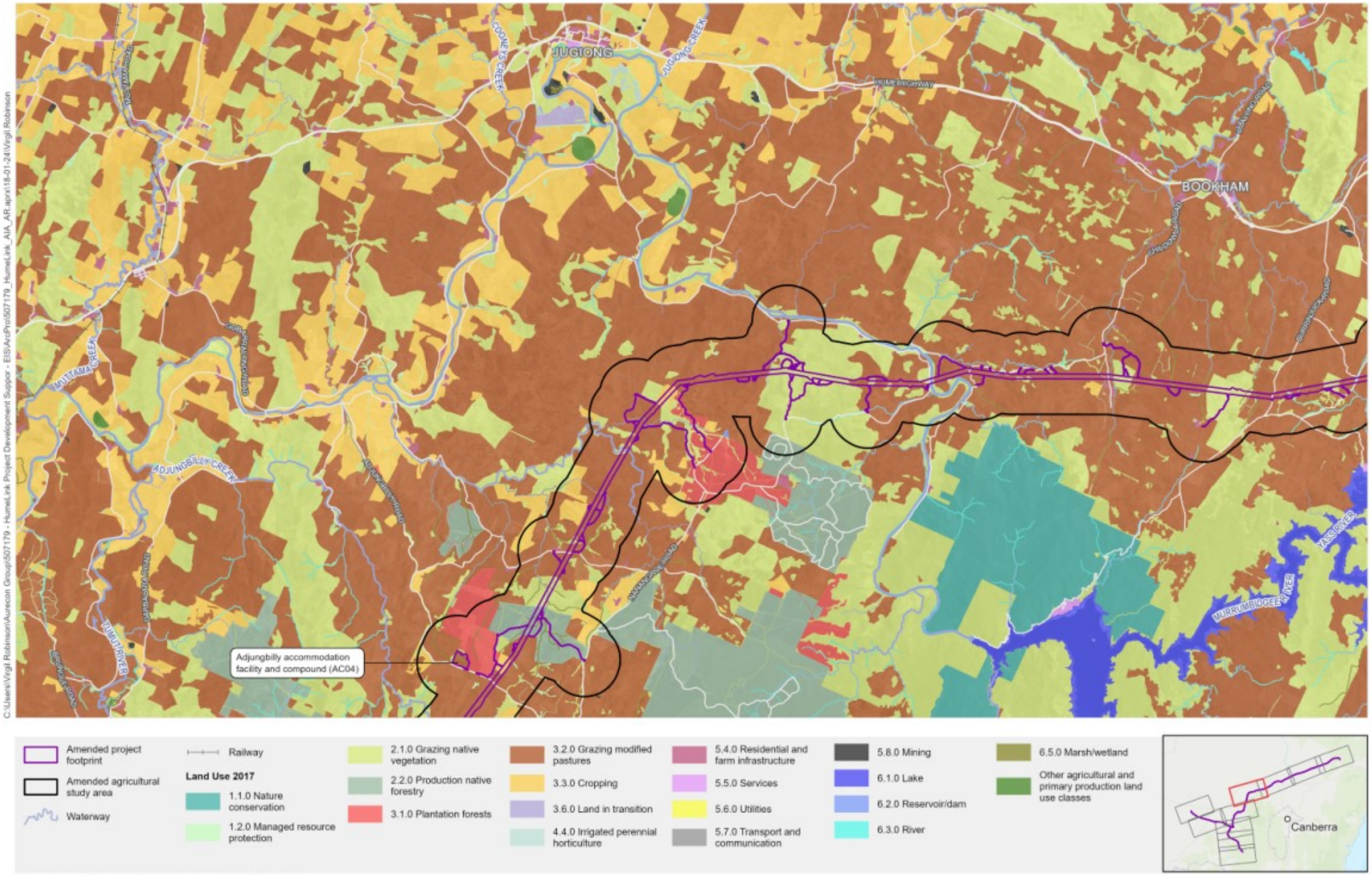


Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000

0 3 6km

Projection: GDA 1994 MGA Zone 55

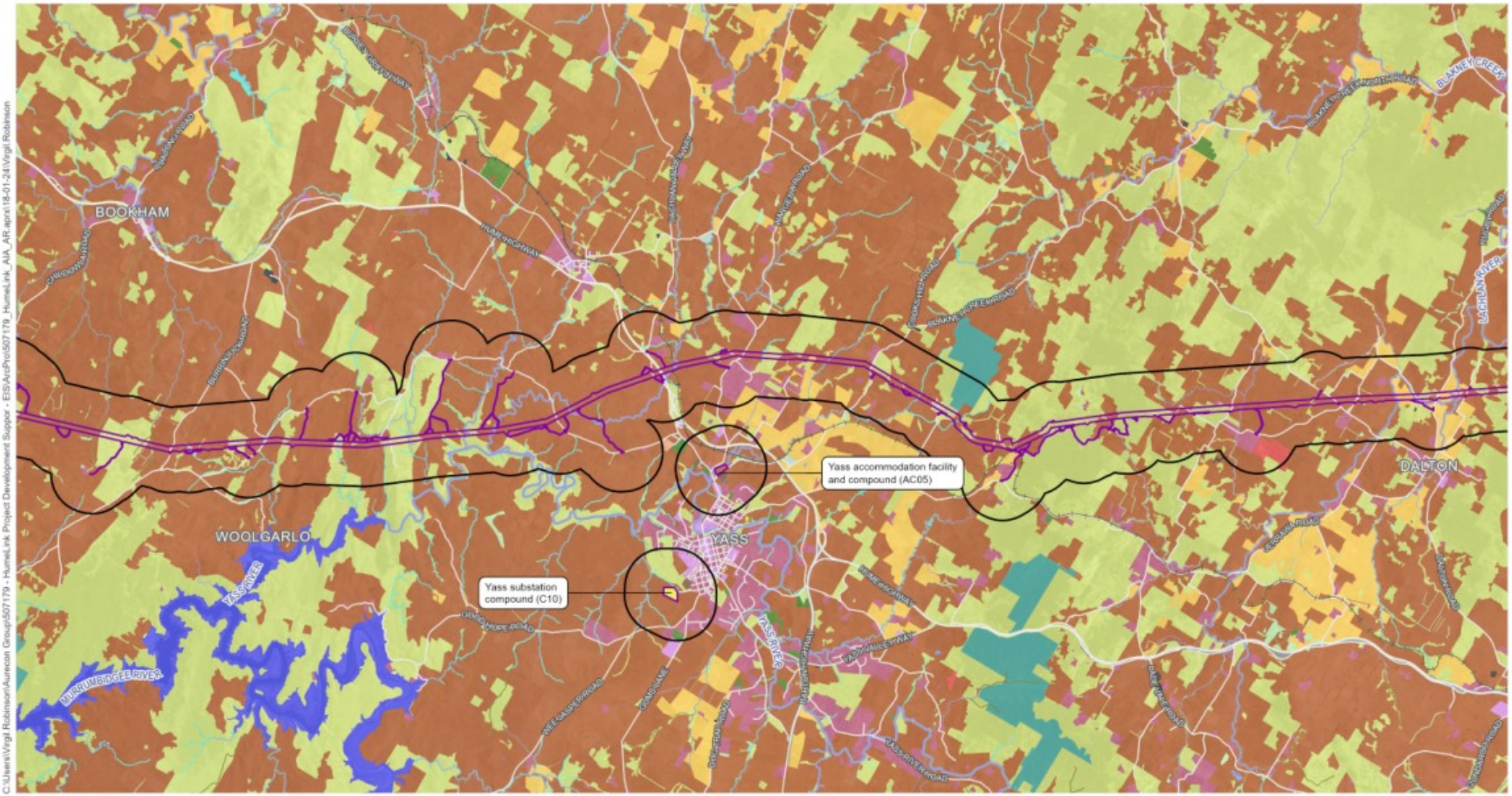


Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000

0 3 6km

Projection: GDA 1994 MGA Zone 55



Amended project footprint

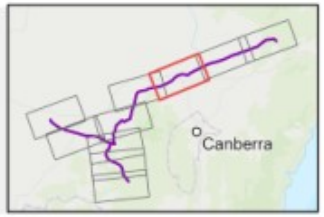
Amended agricultural study area

Waterway

Railway

Land Use 2017

- 1.1.0 Nature conservation
- 1.2.0 Managed resource protection
- 1.3.0 Other minimal use
- 2.1.0 Grazing native vegetation
- 3.1.0 Plantation forests
- 3.2.0 Grazing modified pastures
- 3.3.0 Cropping
- 4.4.0 Irrigated perennial horticulture
- 5.3.0 Manufacturing and industrial
- 5.4.0 Residential and farm infrastructure
- 5.5.0 Services
- 5.6.0 Utilities
- 5.7.0 Transport and communication
- 5.8.0 Mining
- 5.9.0 Waste treatment and disposal
- 6.1.0 Lake
- 6.2.0 Reservoir/dam
- 6.3.0 River
- 6.5.0 Marsh/wetland
- Other agricultural and primary production land use classes

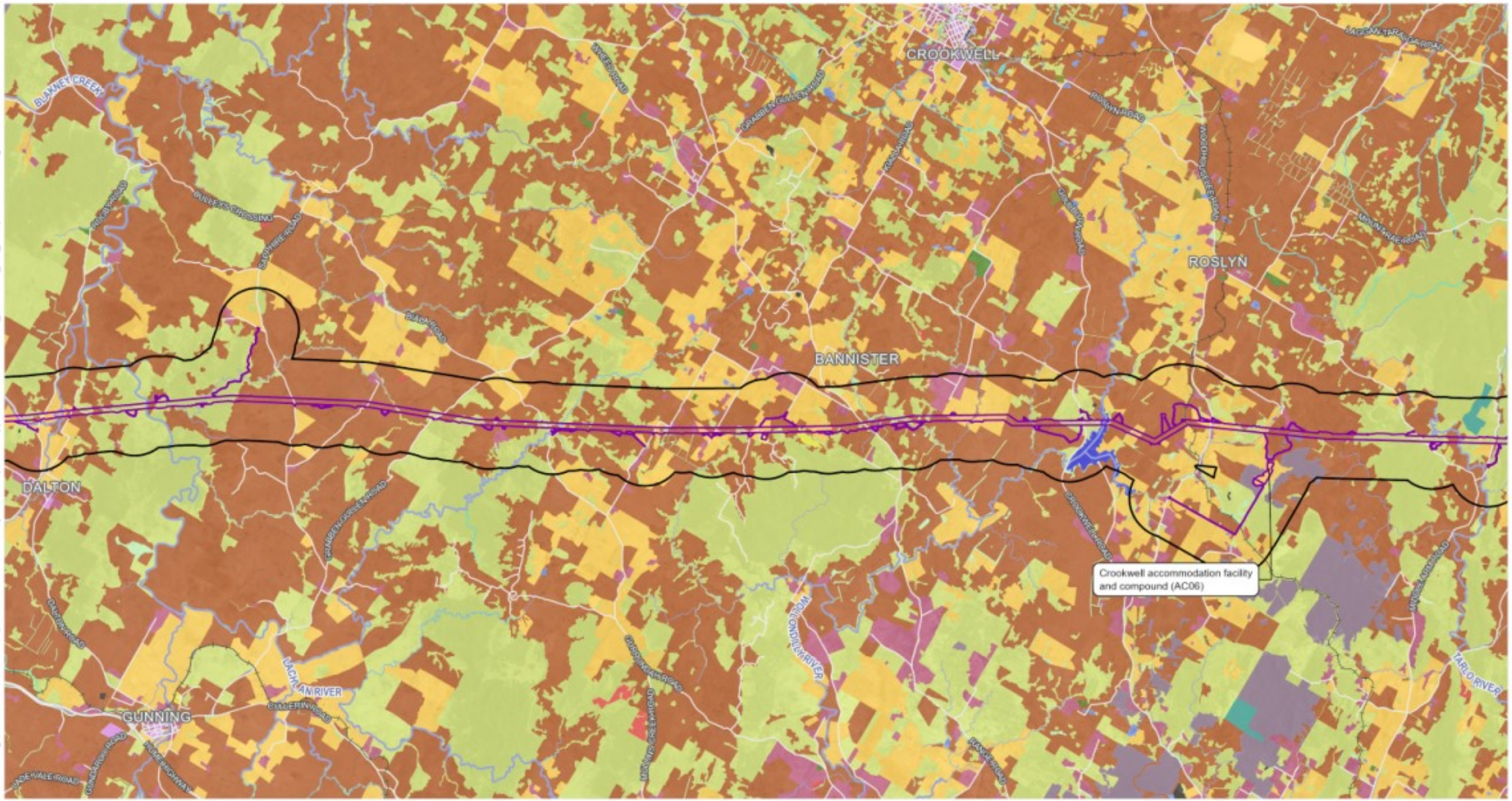


Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000

0 3 6km

Projection: GDA 1994 MGA Zone 55



C:\Users\Virgil Robinson\Aurecon Group\5071179 - HumeLink Project Development Suppor - EIS\ArcPro\5071179_HumeLink_AIA_AR.aprx\18-01-24\Virgil Robinson

Amended project footprint

Amended agricultural study area

Waterway

Railway

Land Use 2017

1.1.0 Nature conservation

1.2.0 Managed resource protection

1.3.0 Other minimal use

2.1.0 Grazing native vegetation

3.1.0 Plantation forests

3.2.0 Grazing modified pastures

3.3.0 Cropping

5.3.0 Manufacturing and industrial

5.4.0 Residential and farm infrastructure

5.5.0 Services

5.6.0 Utilities

5.7.0 Transport and communication

5.8.0 Mining

5.9.0 Waste treatment and disposal

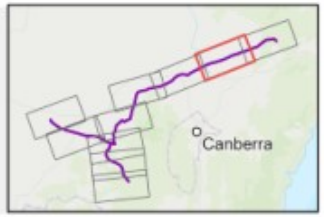
6.1.0 Lake

6.2.0 Reservoir/dam

6.3.0 River

6.5.0 Marsh/wetland

Other agricultural and primary production land use classes

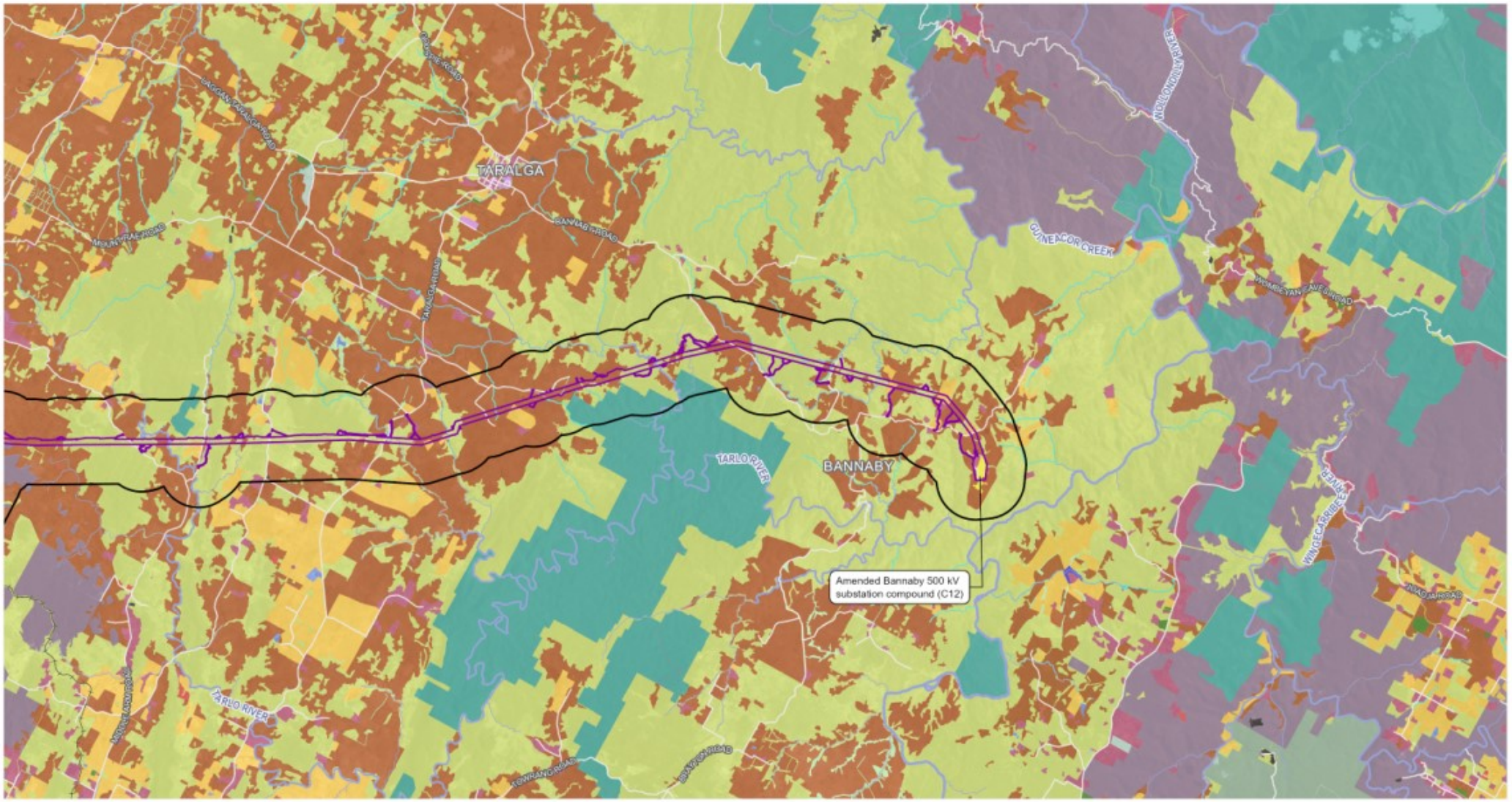


Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000

0 3 6km

Projection: GDA 1994 MGA Zone 55



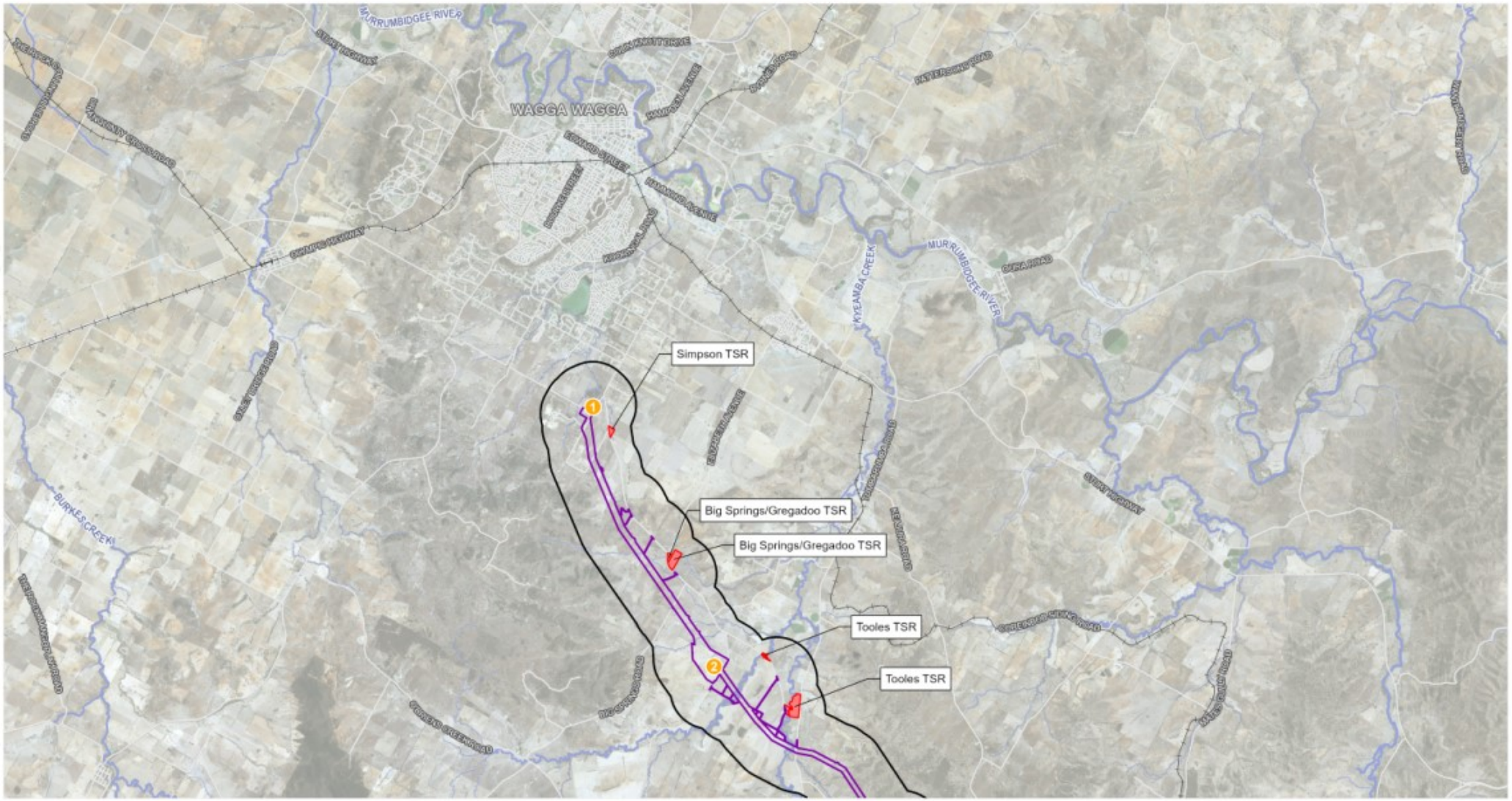
Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000

0 3 6km

Projection: GDA 1994 MGA Zone 55

Attachment 3 Travelling stock reserves within the amended project footprint



Amended project footprint
Amended agricultural study area
Travelling stock reserve
Waterway
Railway

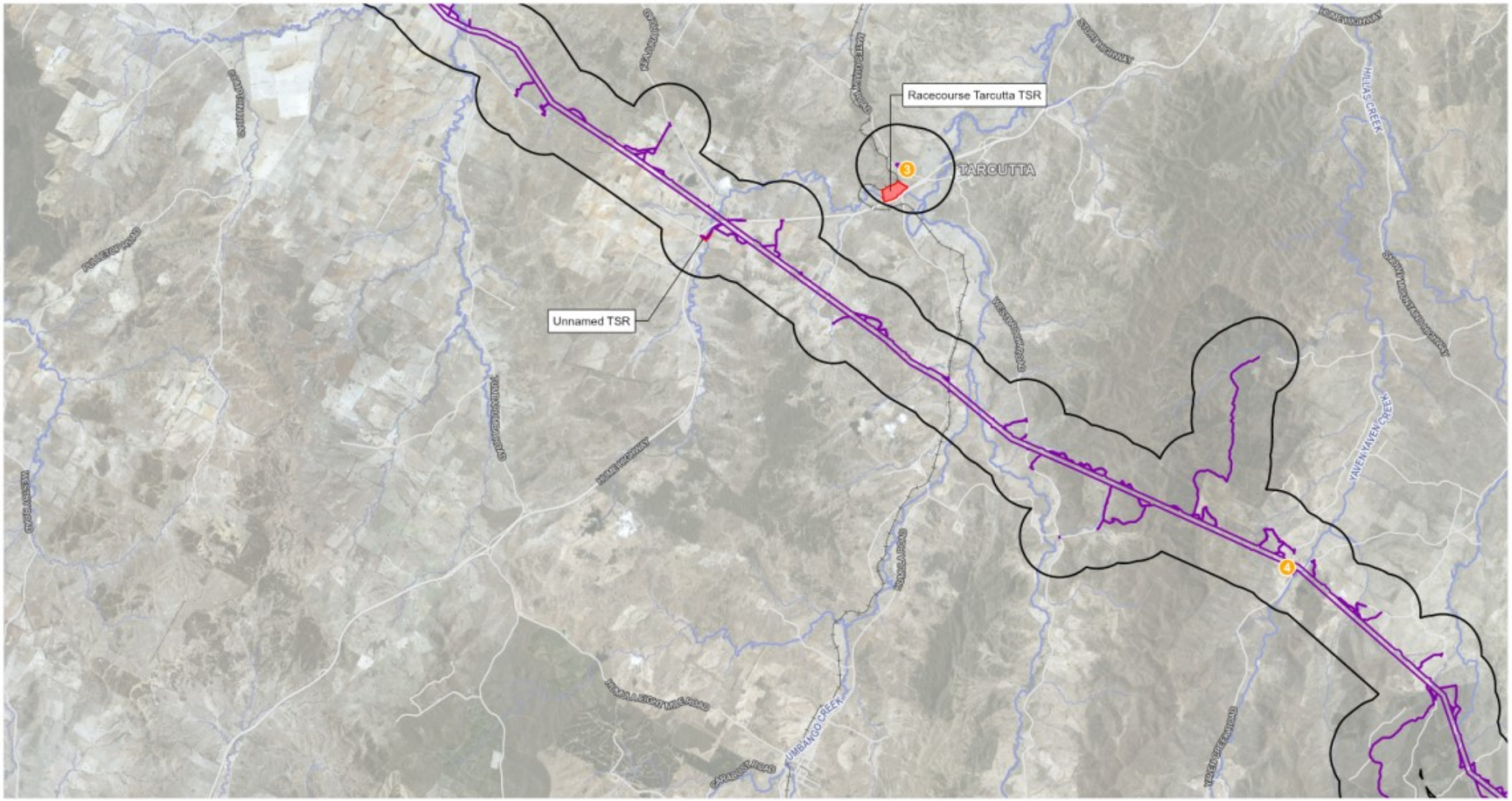
Construction ancillary facilities

1. Wagga 330 kV substation compound (C01)
2. Amended Gregadoo Road compound (C06)

Source: *Aurecon, Transgrid, Department of Regional New South Wales, Spatial Services (DCS), ESRI Basemap*

1:150,000
0 3 6km

Projection: GDA 1994 MGA Zone 55

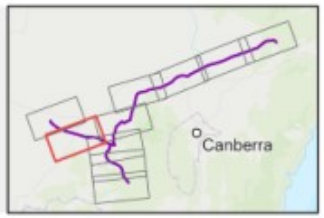


C:\Users\Virgil Robinson\Aurecon Group\507179 - HumeLink Project Development Suppor - EIS\ArcPro\507179_HumeLink_AIA_AR.aprx\23-02-24\Virgil Robinson

Amended project footprint
Amended agricultural study area
Travelling stock reserve
Waterway
Railway

Construction ancillary facilities

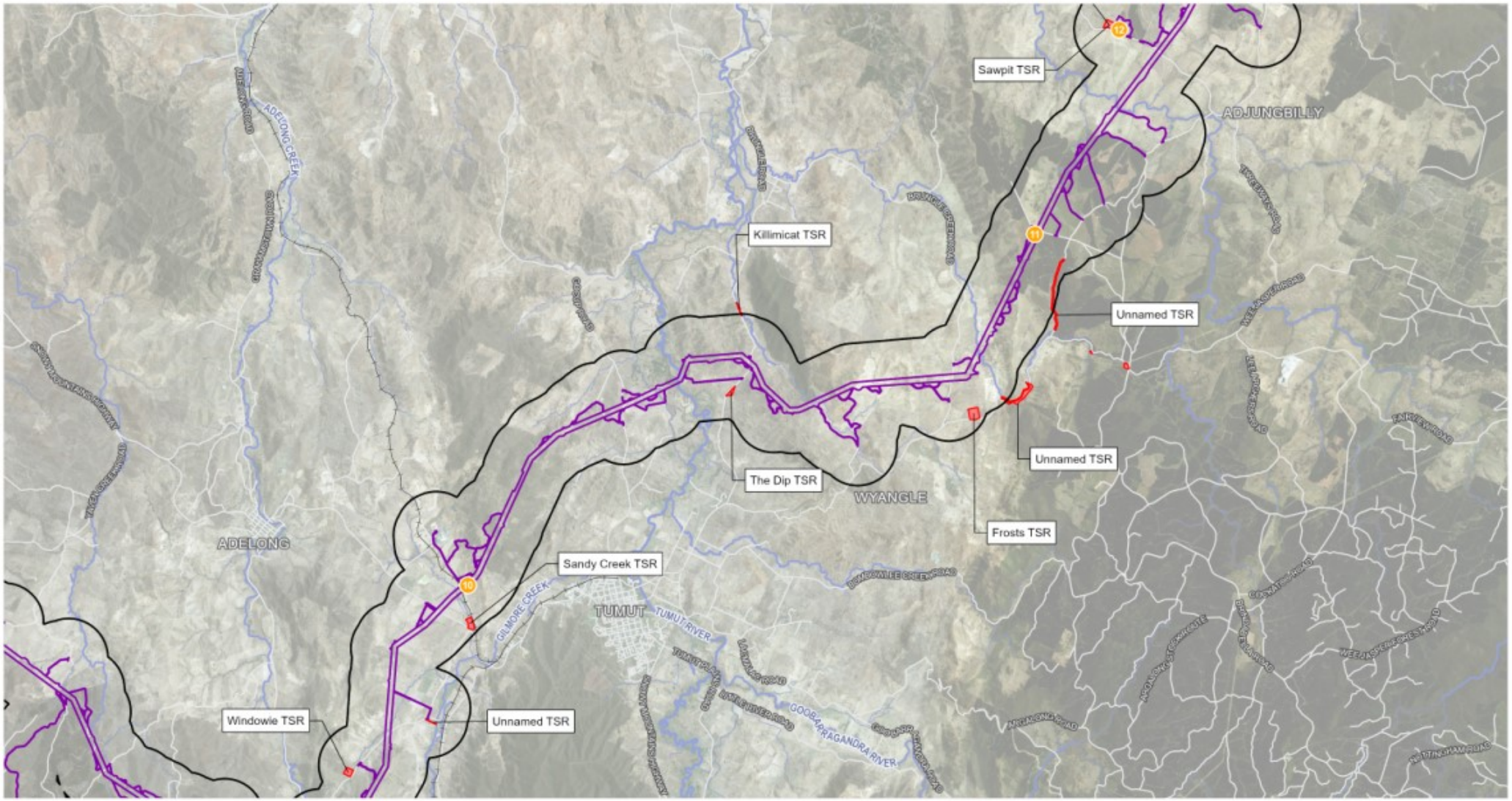
3 Tarcutta accommodation facility and compound (AC03)
4 Ellerslie Road compound (C21)



Source: *Aurecon, Transgrid, Department of Regional New South Wales, Spatial Services (DCS), ESRI Basemap*

1:150,000
0 3 6km

Projection: GDA 1994 MGA Zone 55



Amended project footprint
Amended agricultural study area
Travelling stock reserve
Waterway
Railway

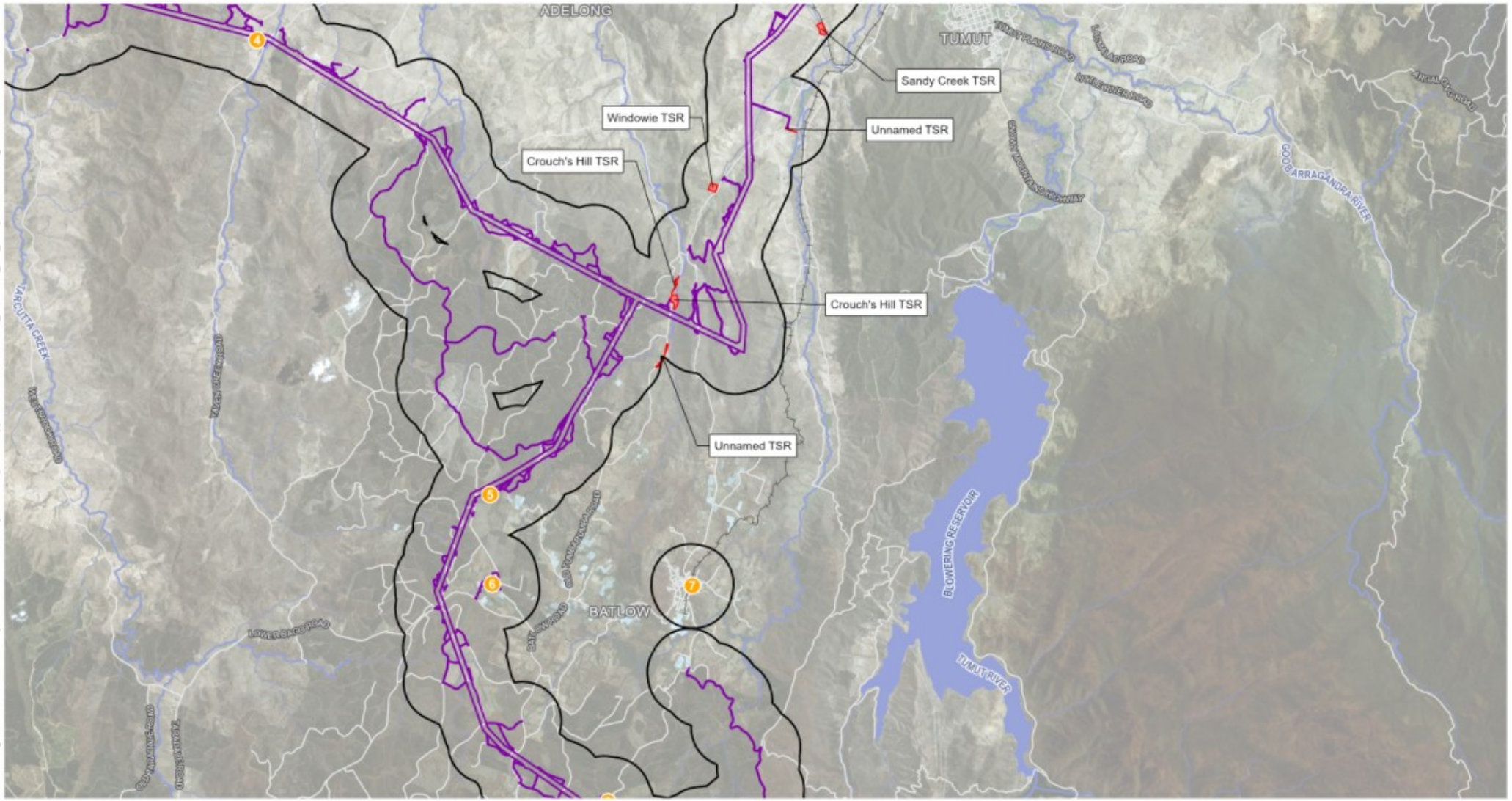
Construction ancillary facilities

10 Gadara Road compound (C19)
11 Amended Honeysuckle Road compound (C07)
12 Adjungbilly accommodation facility and compound (AC04)

Source: *Aurecon, Transgrid, Department of Regional New South Wales, Spatial Services (DCS), ESRI Basemap*

1:150,000
0 3 6km

Projection: GDA 1994 MGA Zone 55



C:\Users\Virgil Robinson\Aurecon Group\507179 - HumeLink Project Development Suppor - EIS\ArcPro\507179_HumeLink_AIA_AR.aprx\23-02-24\Virgil Robinson

Amended project footprint
Amended agricultural study area
Travelling stock reserve
Waterbody
Waterway
Railway

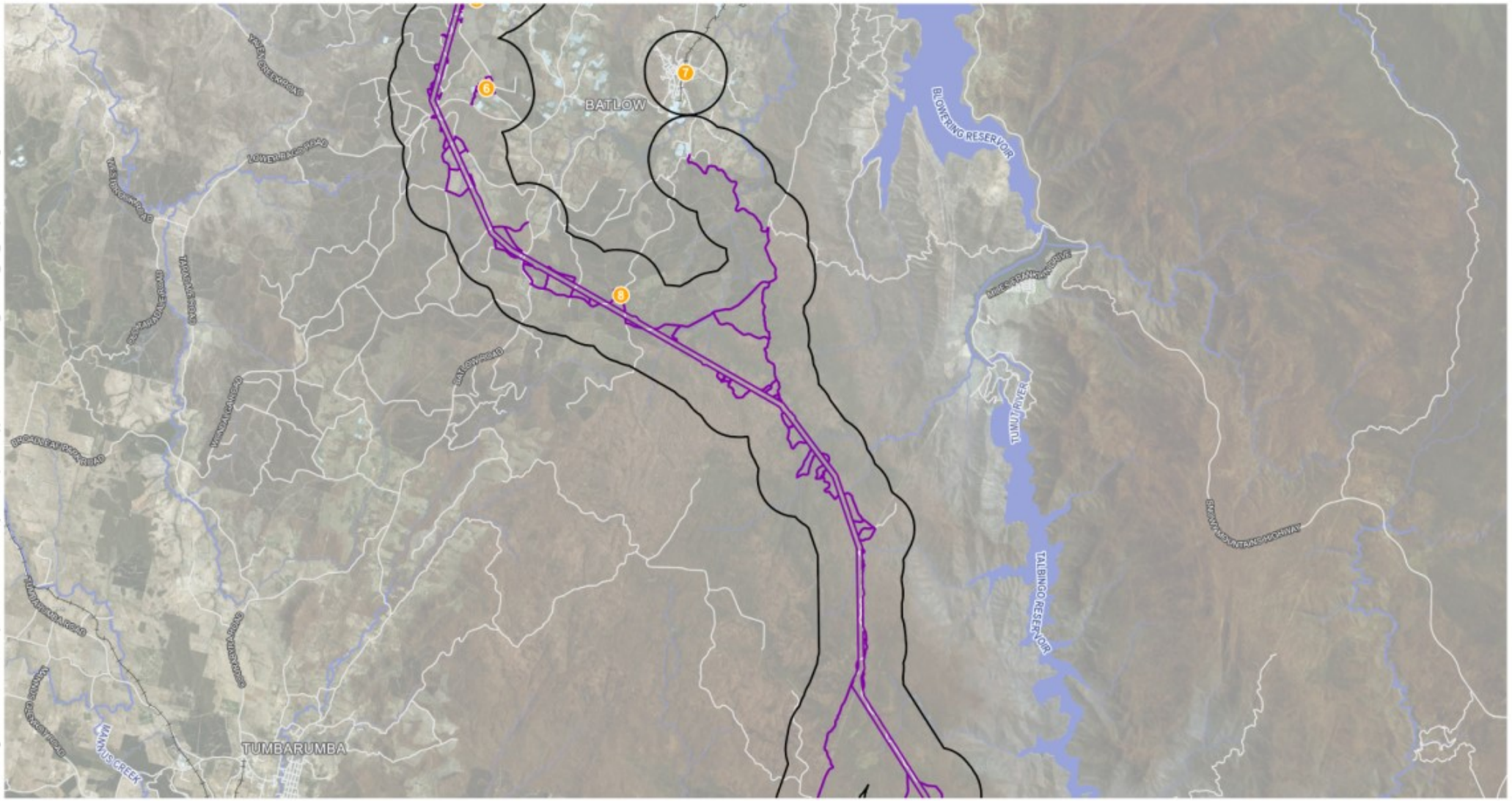
Construction ancillary facilities

4 Ellerslie Road compound (C21)
5 Ardrossan Headquarters Road compound (C17)
6 Green Hills accommodation facility and compound (AC07)
7 Amended Memorial Avenue compound (C14)
8 Snubba Road compound (C18)

Source: *Aurecon, Transgrid, Department of Regional New South Wales, Spatial Services (DCS), ESRI Basemap*

1:150,000
0 3 6km

Projection: GDA 1994 MGA Zone 55



C:\Users\Virgil Robinson\Aurecon Group\507179 - HumeLink Project Development Suppor - EIS\ArcPro\507179_HumeLink_AIA_AR.aprx\23-02-24\Virgil Robinson

Amended project footprint

Amended agricultural study area

Waterbody

Waterway

Railway

Construction ancillary facilities

5 Ardrossan Headquarters Road compound (C17)

6 Green Hills accommodation facility and compound (AC07)

7 Amended Memorial Avenue compound (C14)

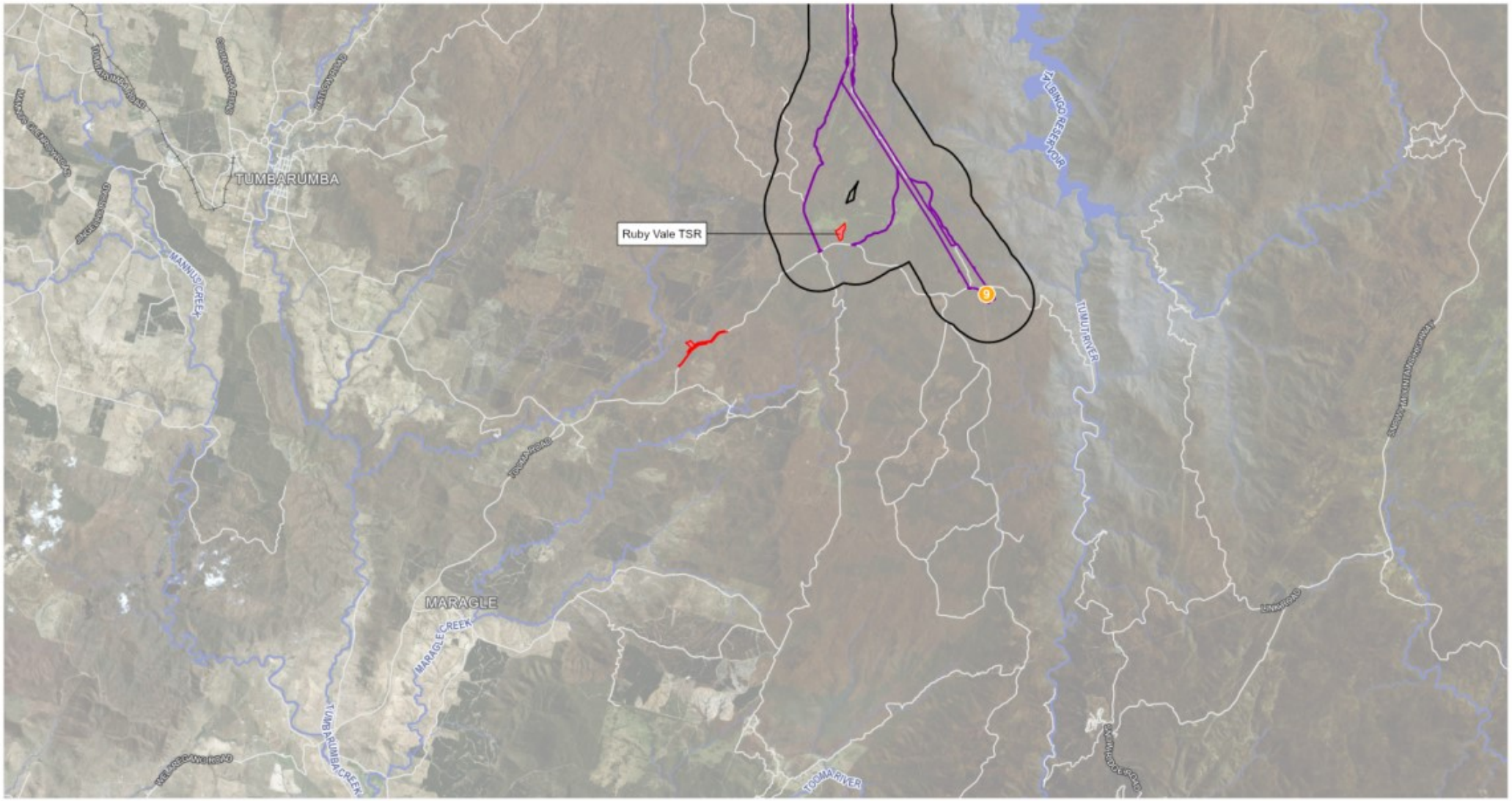
8 Snubba Road compound (C18)

Source: *Aurecon, Transgrid, Department of Regional New South Wales, Spatial Services (DCS), ESRI Basemap*

1:150,000

0 3 6km

Projection: GDA 1994 MGA Zone 55

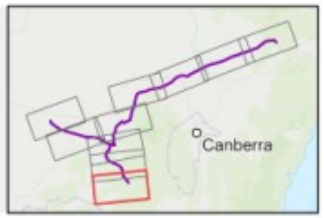


C:\Users\Virgil Robinson\Aurecon Group\507179 - HumeLink Project Development Suppor - EIS\ArcPro\507179_HumeLink_AIA_AR.aprx\23-02-24\Virgil Robinson

Amended project footprint
Amended agricultural study area
Travelling stock reserve
Waterbody
Waterway
Railway

Construction ancillary facilities

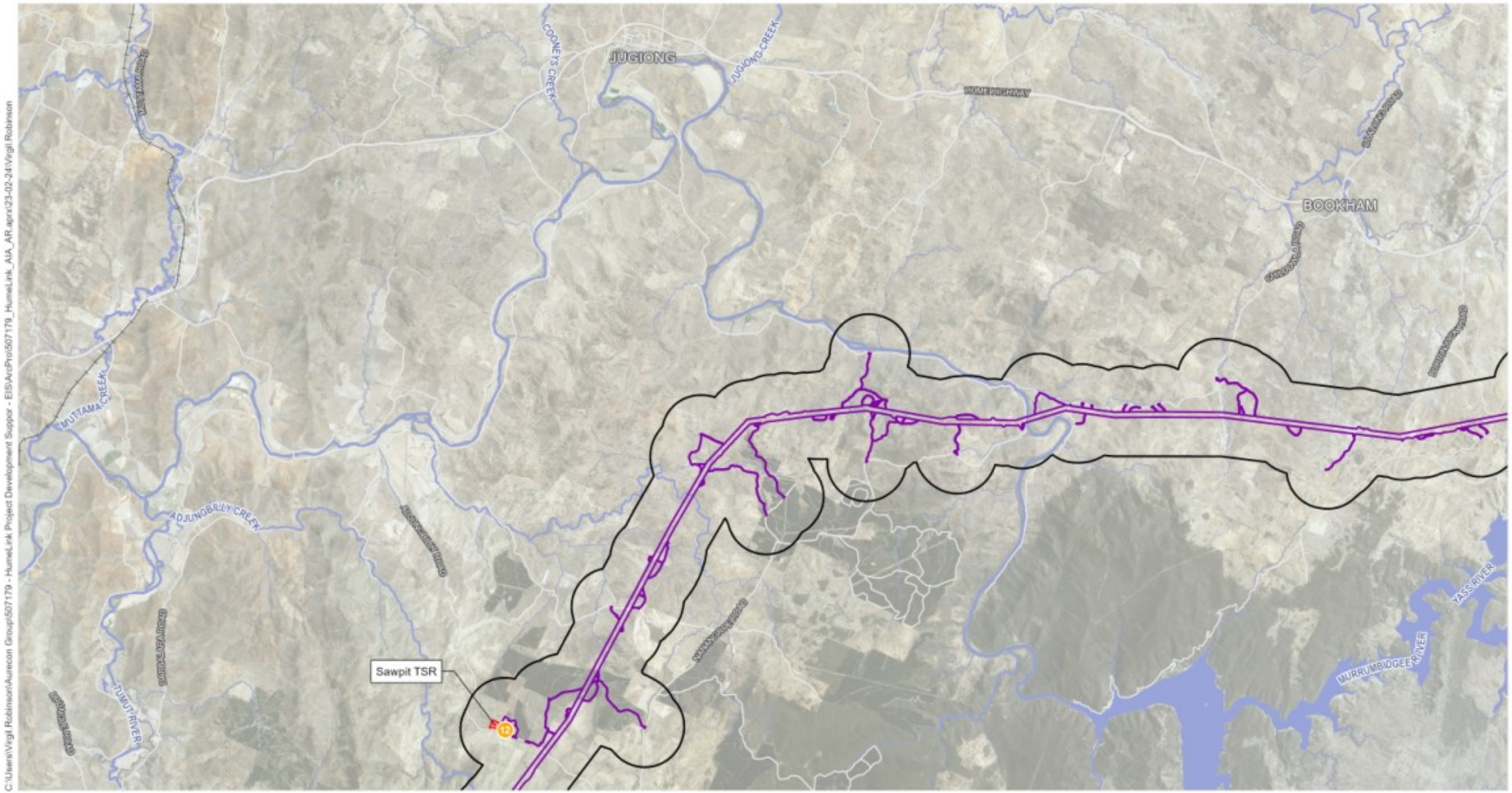
9 Maragle 500 kV substation compound (C05)



Source: *Aurecon, Transgrid, Department of Regional New South Wales, Spatial Services (DCS), ESRI Basemap*

1:150,000
0 3 6km

Projection: GDA 1994 MGA Zone 55



C:\Users\Virgil Robinson\Aurecon Group\507179 - HumeLink Project Development Suppor - EIS\ArcPro\507179_HumeLink_AIA_AR.aprx\23-02-24\Virgil Robinson

Amended project footprint
Amended agricultural study area
Travelling stock reserve
Waterbody
Waterway
Railway

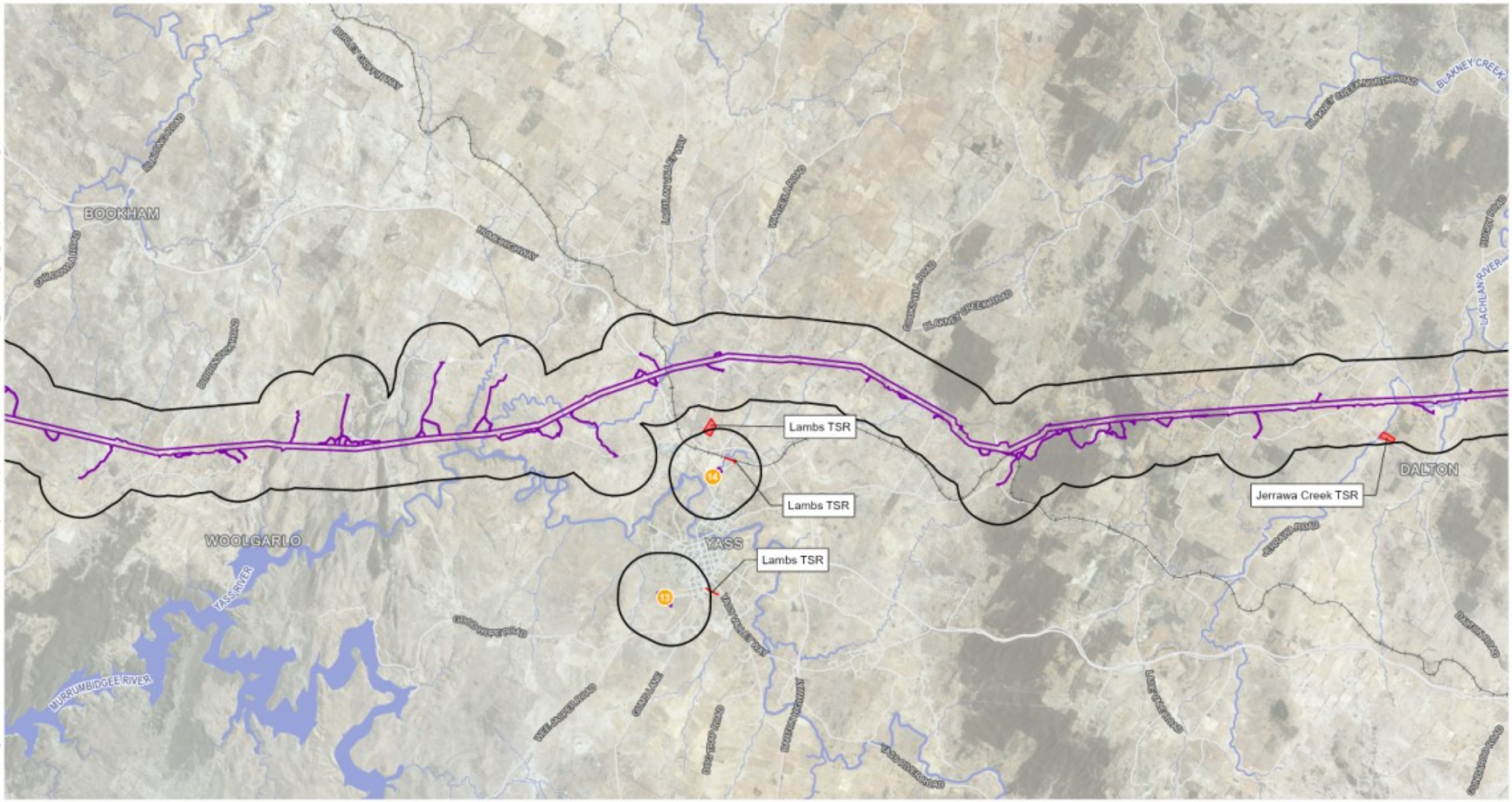
Construction ancillary facilities

12 Adjungbilly accommodation facility and compound (AC04)

Source: *Aurecon, Transgrid, Department of Regional New South Wales, Spatial Services (DCS), ESRI Basemap*

1:150,000
0 3 6km

Projection: GDA 1994 MGA Zone 55



Amended project footprint
Amended agricultural study area
Travelling stock reserve
Waterbody
Waterway
Railway

Construction ancillary facilities

13 Yass substation compound (C10)

14 Yass accommodation facility and compound (AC05)

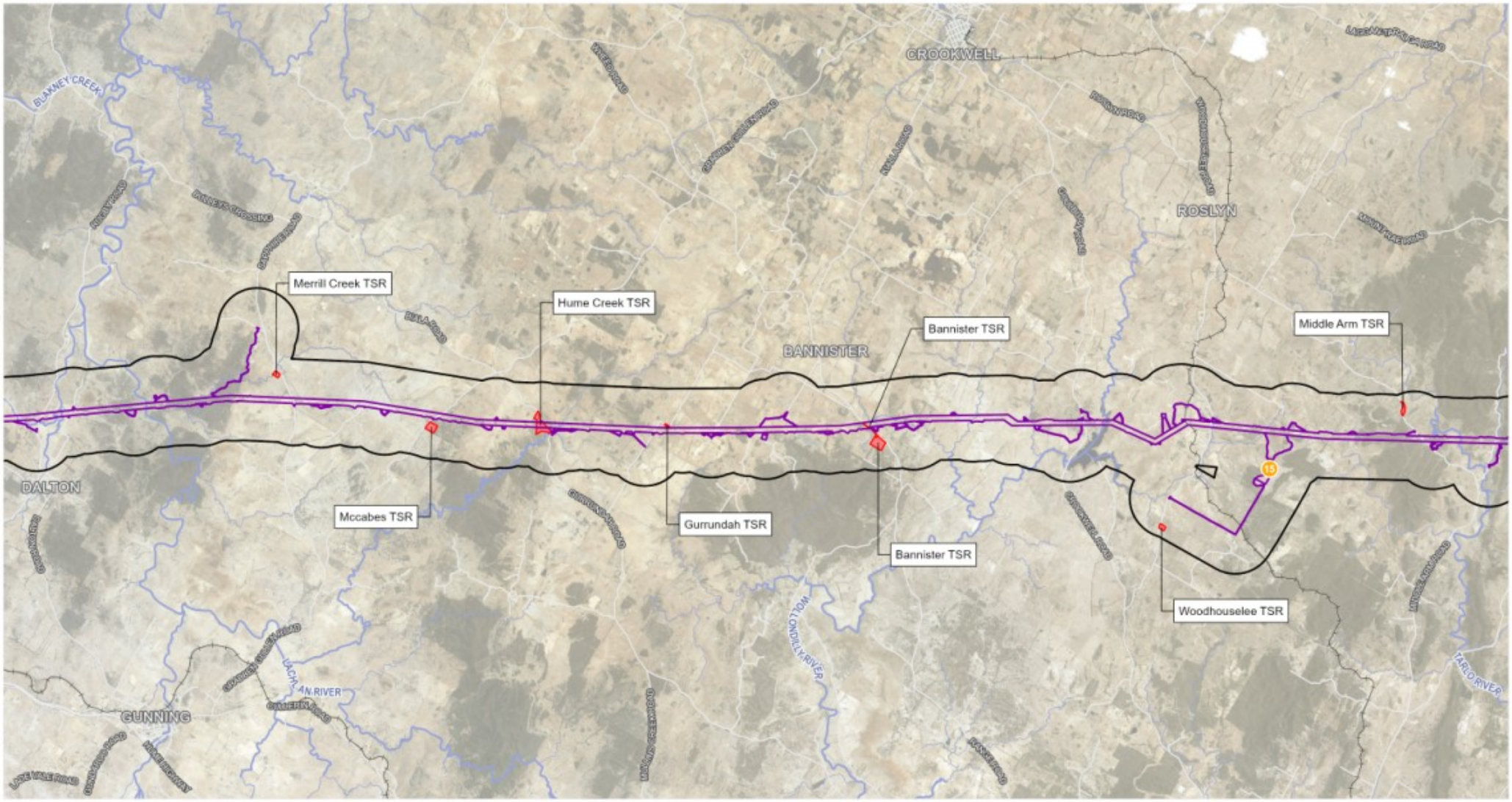
Source: *Aurecon, Transgrid, Department of Regional New South Wales, Spatial Services (DCS), ESRI Basemap*

1:150,000
0 3 6km

Projection: GDA 1994 MGA Zone 55

HumeLink

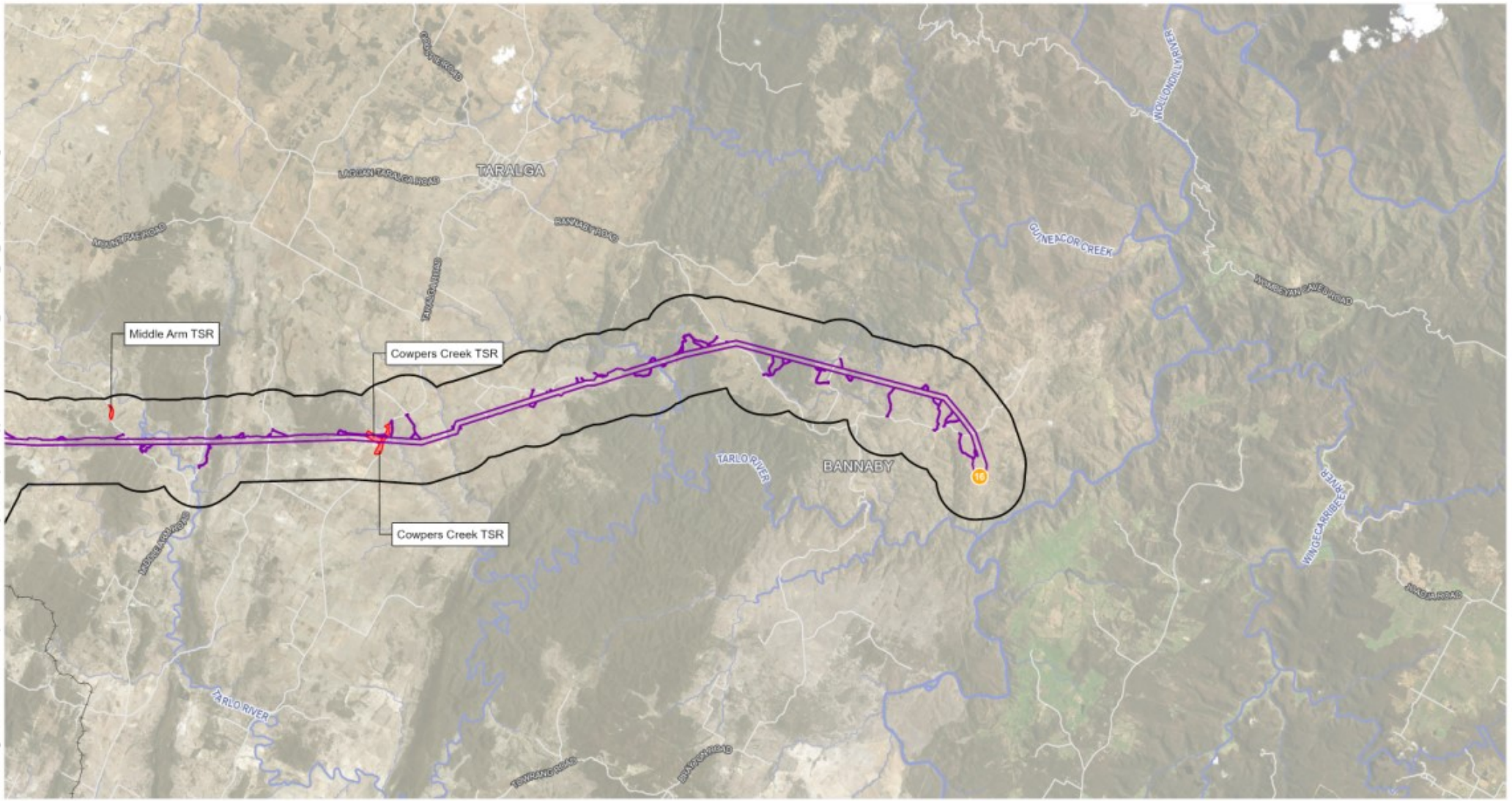
Attachment 3: Travelling Stock Reserves within the amended agricultural study area **Page 8 of 10**



Source: *Aurecon, Transgrid, Department of Regional New South Wales, Spatial Services (DCS), ESRI Basemap*

1:150,000
0 3 6km

Projection: GDA 1994 MGA Zone 55



C:\Users\Virgil Robinson\Aurecon Group\507179 - HumeLink Project Development Suppor - EIS\ArcPro\507179_HumeLink_AIA_AR.aprx\23-02-24\Virgil Robinson

Amended project footprint
Amended agricultural study area
Travelling stock reserve
Waterway
Railway

Construction ancillary facilities

10 Amended Bannaby 500 kV substation compound (C12)

Source: *Aurecon, Transgrid, Department of Regional New South Wales, Spatial Services (DCS), ESRI Basemap*

1:150,000

0 3 6km

Projection: GDA 1994 MGA Zone 55

HumeLink

Attachment 3: Travelling Stock Reserves within the amended agricultural study area **Page 10 of 10**

Attachment 4 Land and soil capability maps

C:\Users\Virgil.Robinson\Aurecon Group\507179 - HumeLink Project Development Suppor - EIS\ArcPro\507179_HumeLink_AIA_AR.aprx\18-01-24\Virgil Robinson

Amended project footprint

Amended agricultural study area

Waterway

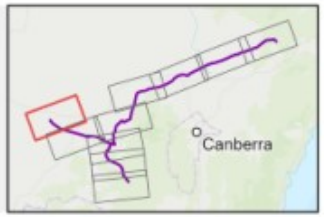
Railway

Construction ancillary facilities

1. Wagga 330 kV substation compound (C01)
2. Amended Gregadoo Road compound (C06)

Most limiting land and soil capability

- 3 - Moderate limitations
- 4 - Moderate to severe limitations
- 5 - Severe limitations
- 6 - Very severe limitations
- 7 - Extremely severe limitations

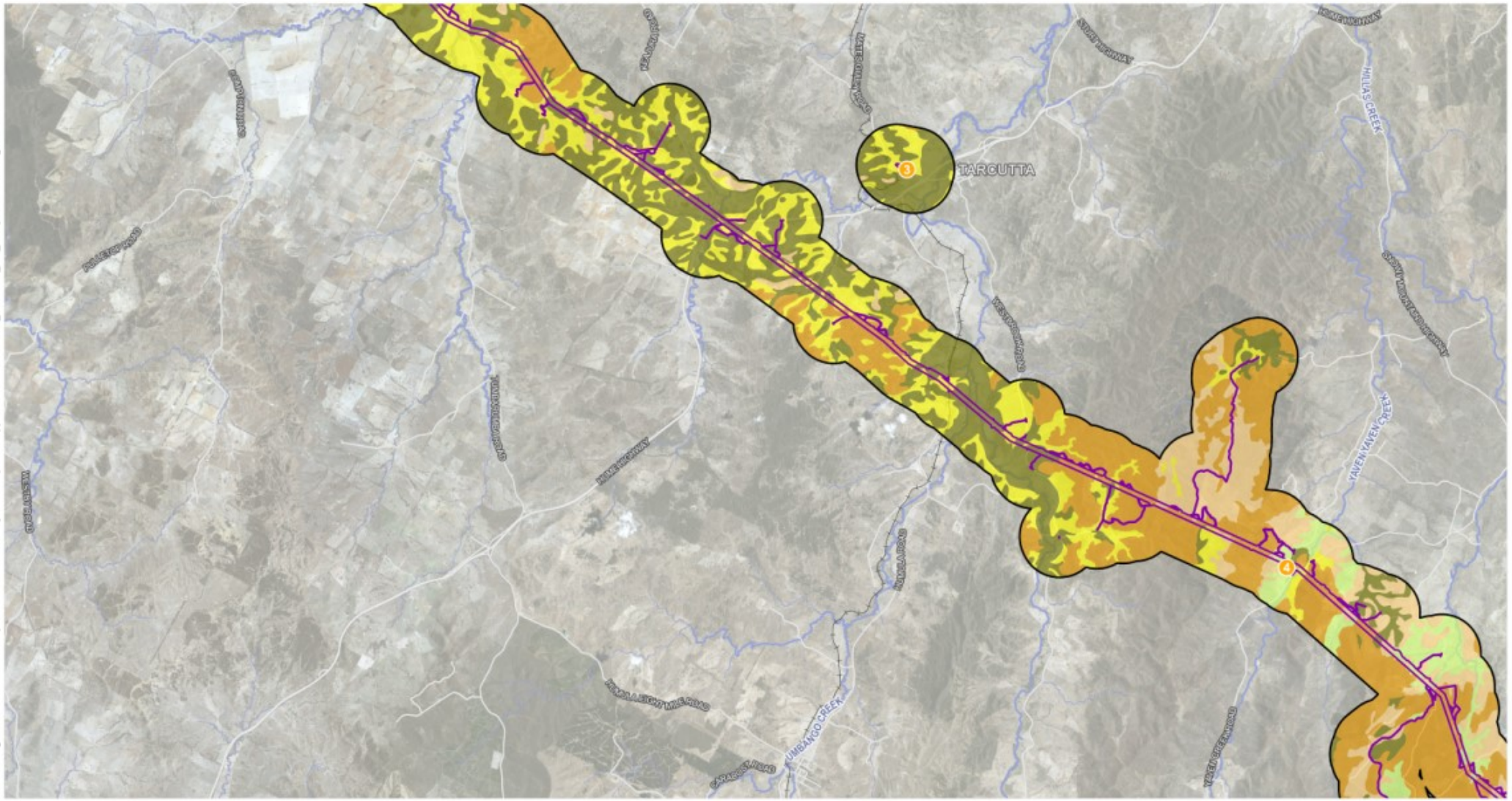


Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000

0 3 6 km

Projection: GDA 1994 MGA Zone 55



C:\Users\Virgil Robinson\Aurecon Group\507179 - HumeLink Project Development Suppor - EIS\ArcPro\507179_HumeLink_AIA_AR.aprx\18-01-24\Virgil Robinson

Amended project footprint

Amended agricultural study area

Waterway

Railway

Construction ancillary facilities

3 Tarcutta accommodation facility and compound (AC03)

4 Ellerslie Road compound (C21)

Most limiting land and soil capability

3 - Moderate limitations

4 - Moderate to severe limitations

5 - Severe limitations

6 - Very severe limitations

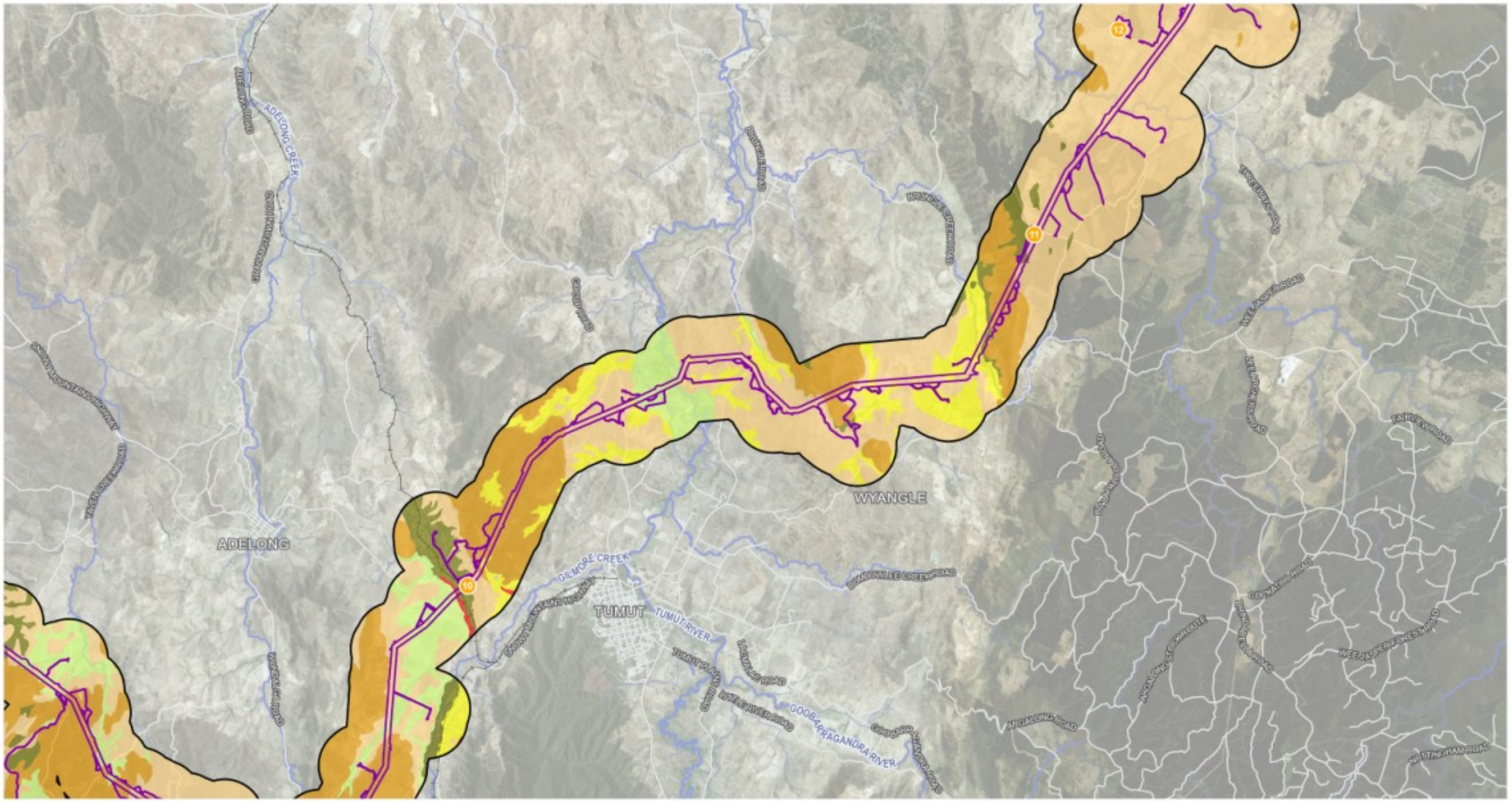
7 - Extremely severe limitations

Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000

0 3 6 km

Projection: GDA 1994 MGA Zone 55



Amended project footprint
Amended agricultural study area
Waterway
Railway

Construction ancillary facilities

10 Gadara Road compound (C19)
11 Amended Honeysuckle Road compound (C07)
12 Adjungbilly accommodation facility and compound (AC04)

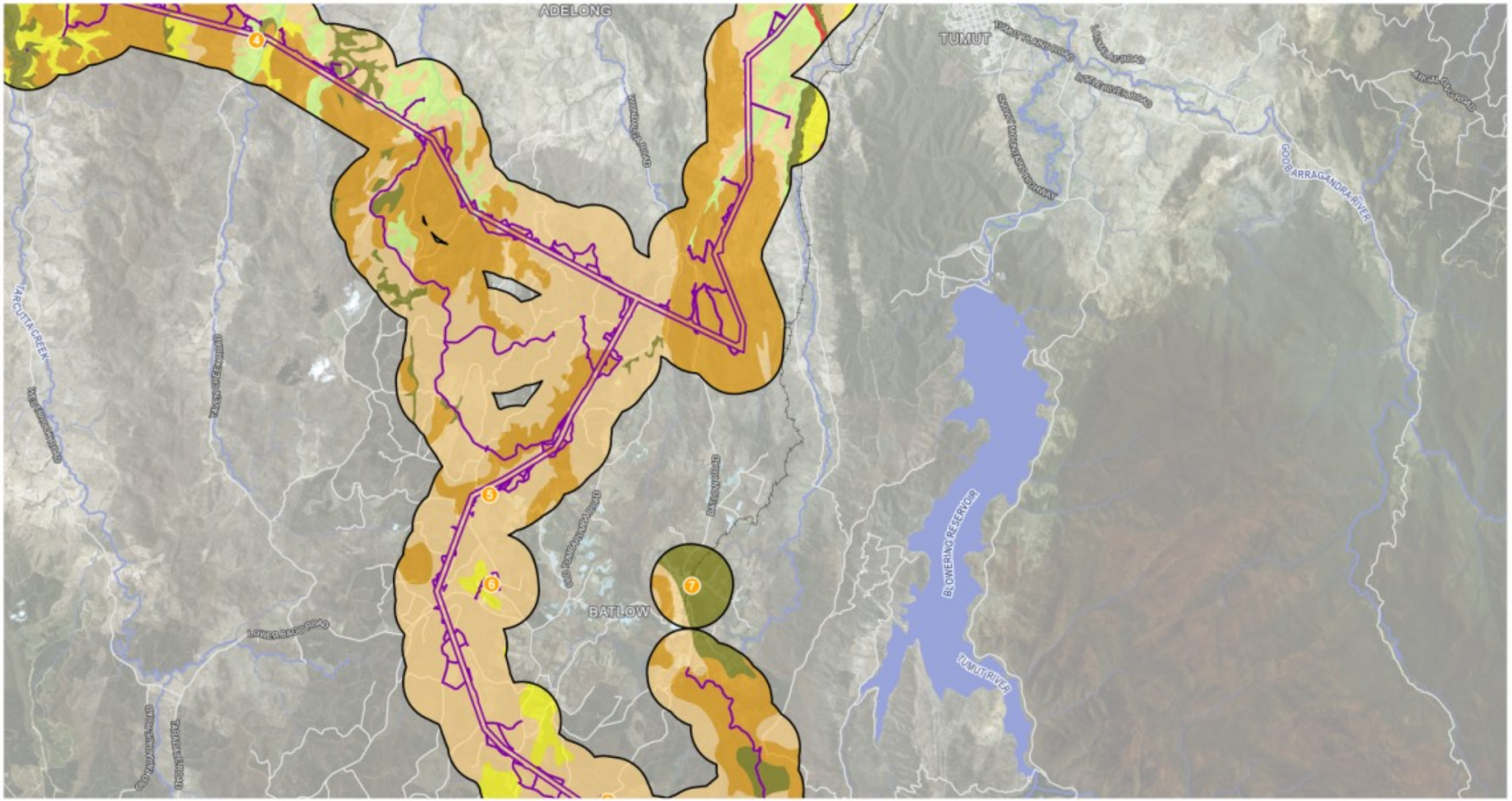
Most limiting land and soil capability

3 - Moderate limitations
4 - Moderate to severe limitations
5 - Severe limitations
6 - Very severe limitations
7 - Extremely severe limitations
8 - Extreme limitations

Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000
0 3 6 km

Projection: GDA 1994 MGA Zone 55



C:\Users\Virgil Robinson\Aurecon Group\507179 - HumeLink Project Development Suppor - EIS\ArcPro\507179_HumeLink_AIA_AR.aprx\22-02-24\Virgil Robinson

Amended project footprint

Amended agricultural study area

Waterbody

Waterway

Railway

Construction ancillary facilities

4 Ellerslie Road compound (C21)

5 Ardrossan Headquarters Road compound (C17)

6 Green Hills accommodation facility and compound (AC07)

7 Amended Memorial Avenue compound (C14)

8 Snubba Road compound (C18)

Most limiting land and soil capability

3 - Moderate limitations

4 - Moderate to severe limitations

5 - Severe limitations

6 - Very severe limitations

7 - Extremely severe limitations

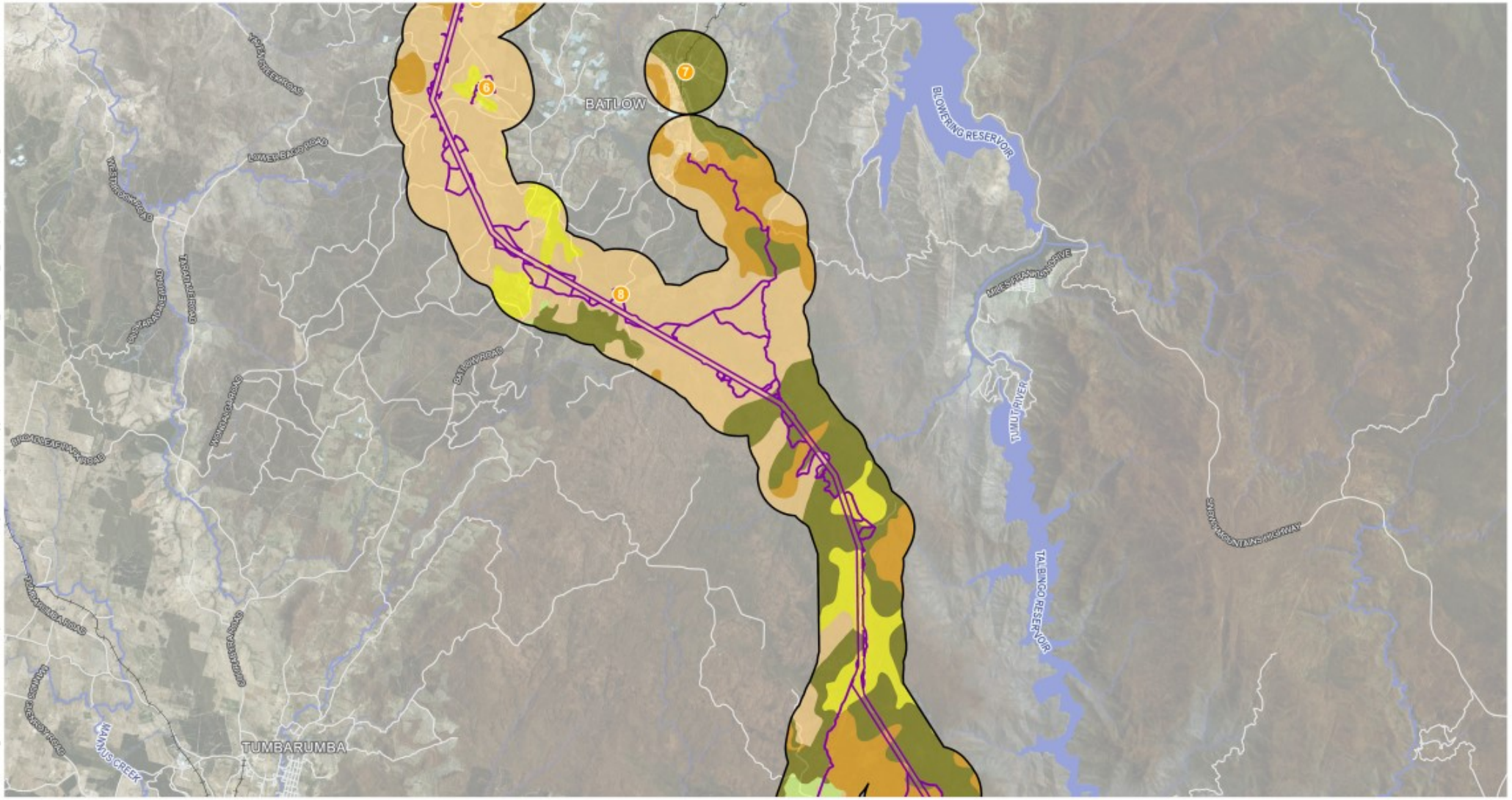
8 - Extreme limitations

Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000

0 3 6km

Projection: GDA 1994 MGA Zone 55



Amended project footprint

Amended agricultural study area

Waterbody

Waterway

Railway

Construction ancillary facilities

5 Ardrossan Headquarters Road compound (C17)

6 Green Hills accommodation facility and compound (AC07)

7 Amended Memorial Avenue compound (C14)

8 Snubba Road compound (C18)

Most limiting land and soil capability

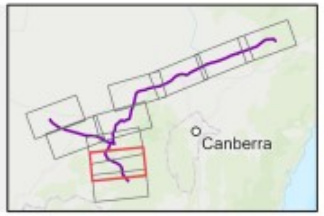
3 - Moderate limitations

4 - Moderate to severe limitations

5 - Severe limitations

6 - Very severe limitations

7 - Extremely severe limitations

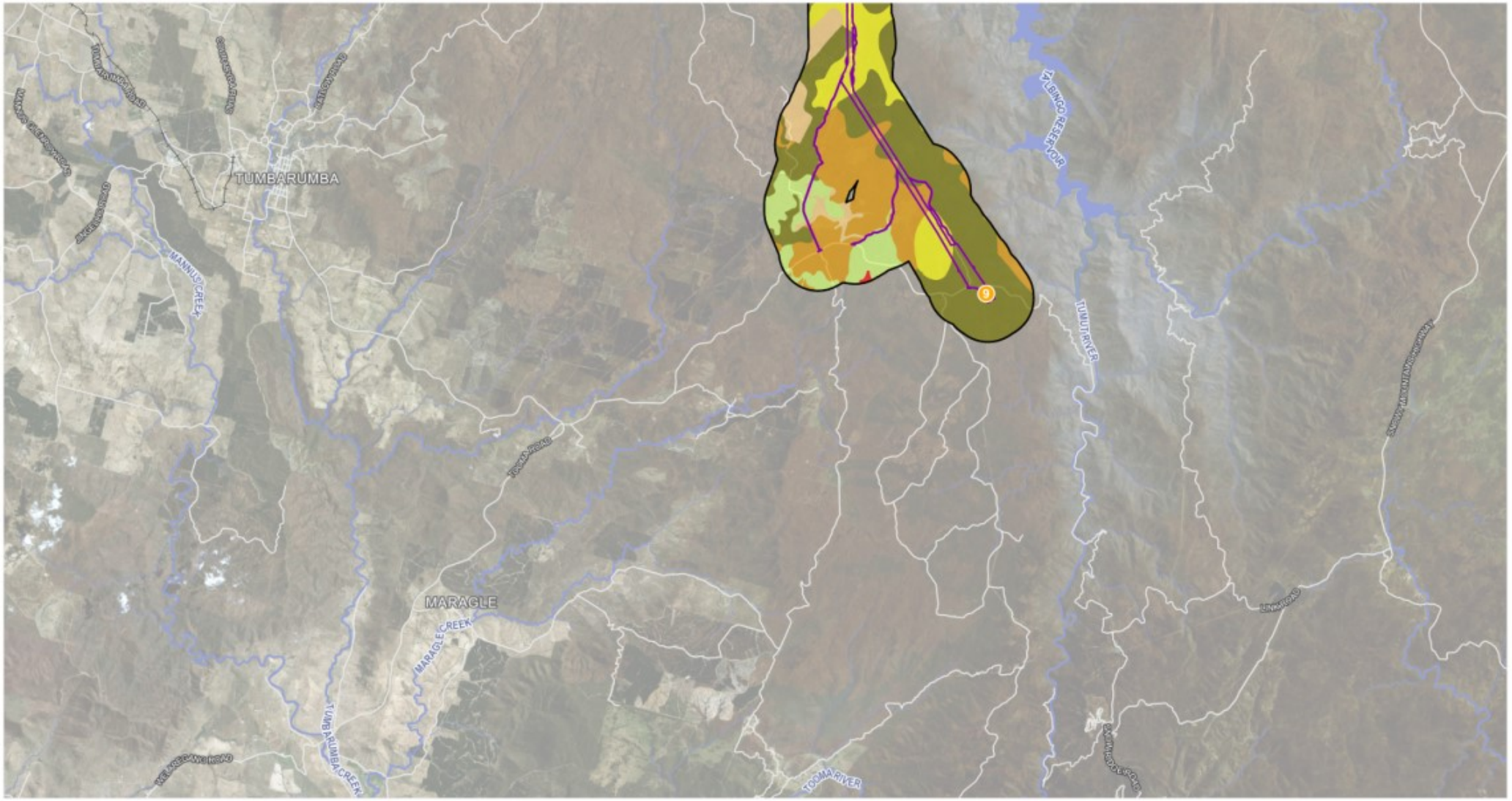


Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000

0 3 6km

Projection: GDA 1994 MGA Zone 55



C:\Users\Virgil Robinson\Aurecon Group\507179 - HumeLink Project Development Suppor - EIS\ArcPro\507179_HumeLink_AIA_AR.aprx18-01-24\Virgil Robinson

Amended project footprint

Amended agricultural study area

Waterbody

Waterway

Railway

Construction ancillary facilities

9 Maragle 500 kV substation compound (C05)

Most limiting land and soil capability

3 - Moderate limitations

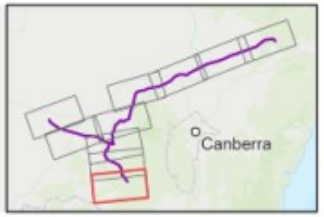
4 - Moderate to severe limitations

5 - Severe limitations

6 - Very severe limitations

7 - Extremely severe limitations

8 - Extreme limitations

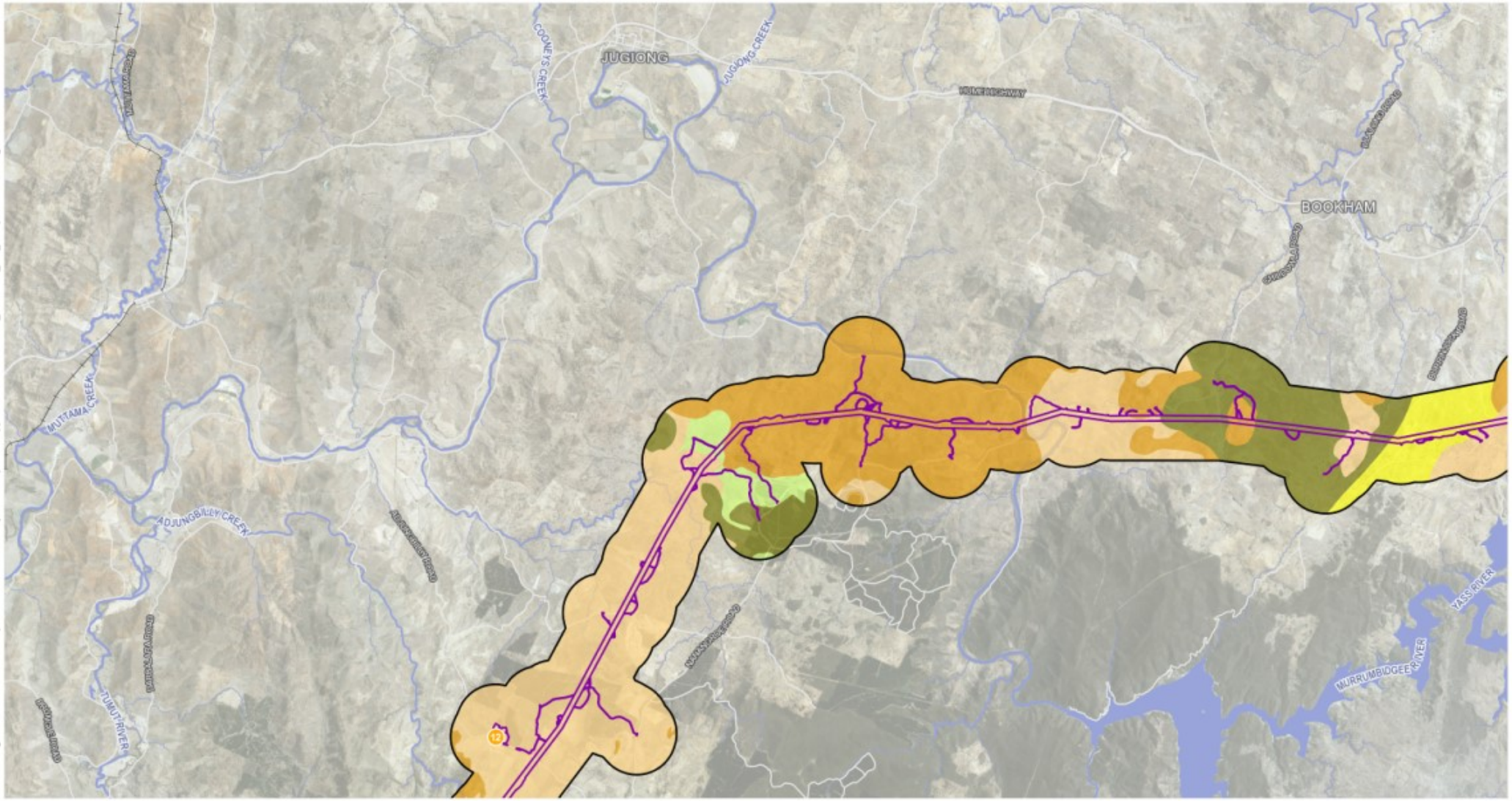


Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000

0 3 6 km

Projection: GDA 1994 MGA Zone 55



Amended project footprint
Amended agricultural study area
Waterbody
Waterway
Railway

Construction ancillary facilities

12 Adjungbilly accommodation facility and compound (AC04)

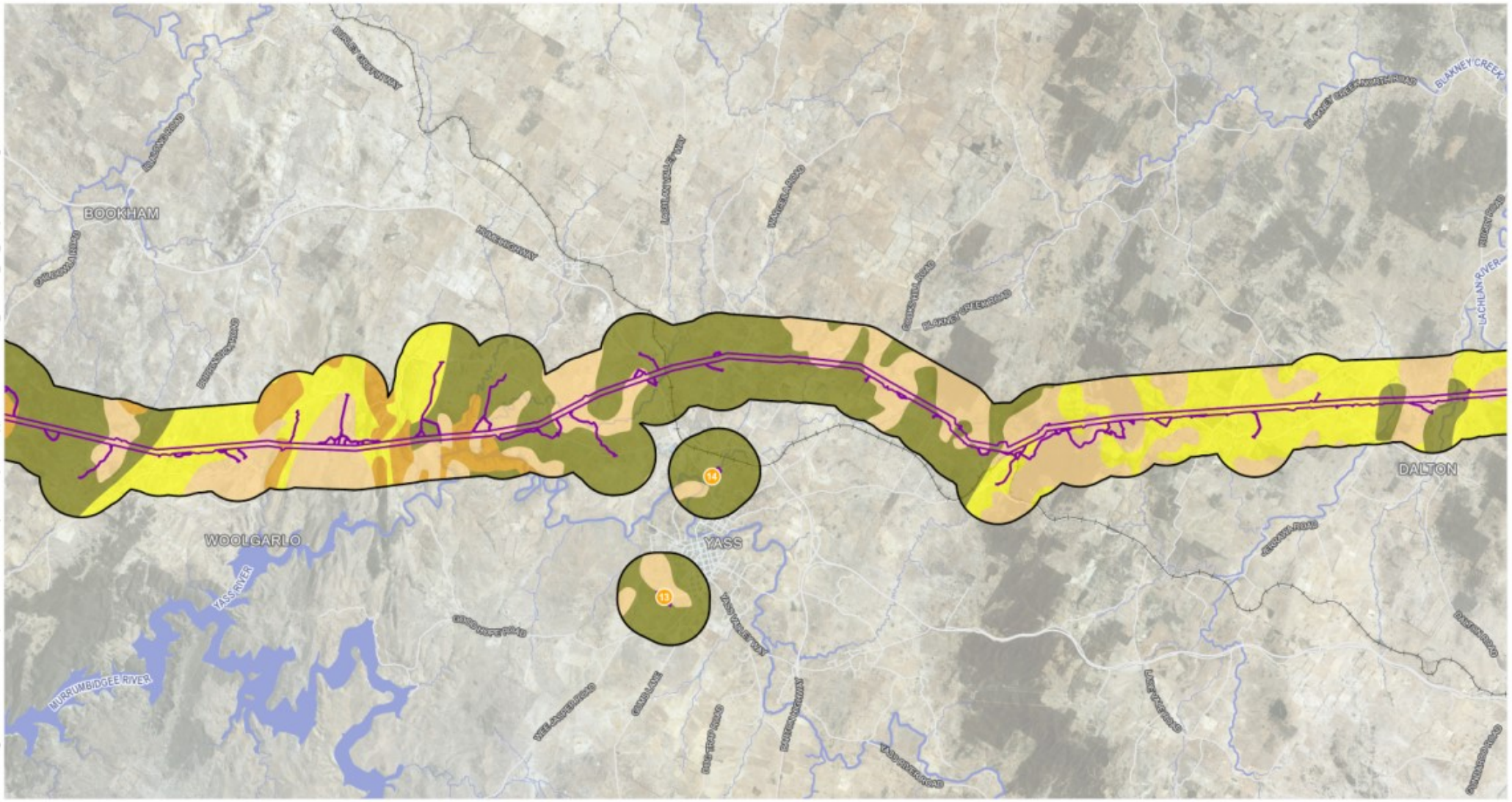
Most limiting land and soil capability

3 - Moderate limitations
4 - Moderate to severe limitations
5 - Severe limitations
6 - Very severe limitations
7 - Extremely severe limitations

Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000
0 3 6 km

Projection: GDA 1994 MGA Zone 55



Amended project footprint
Amended agricultural study area
Waterbody
Waterway
Railway

Construction ancillary facilities

13 Yass substation compound (C10)
14 Yass accommodation facility and compound (AC05)

Most limiting land and soil capability

4 - Moderate to severe limitations
5 - Severe limitations
6 - Very severe limitations
7 - Extremely severe limitations

Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000
0 3 6km

Projection: GDA 1994 MGA Zone 55

C:\Users\Virgil Robinson\Aurecon Group\5071179 - HumeLink Project Development Suppor - EIS\ArcPro\5071179_HumeLink_AIA_AR.aprx\18-01-24\Virgil Robinson

Amended project footprint

Amended agricultural study area

Waterway

Railway

Construction ancillary facilities

15 Crookwell accommodation facility and compound (AC06)

Most limiting land and soil capability

3 - Moderate limitations

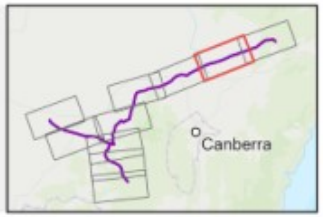
4 - Moderate to severe limitations

5 - Severe limitations

6 - Very severe limitations

7 - Extremely severe limitations

Water

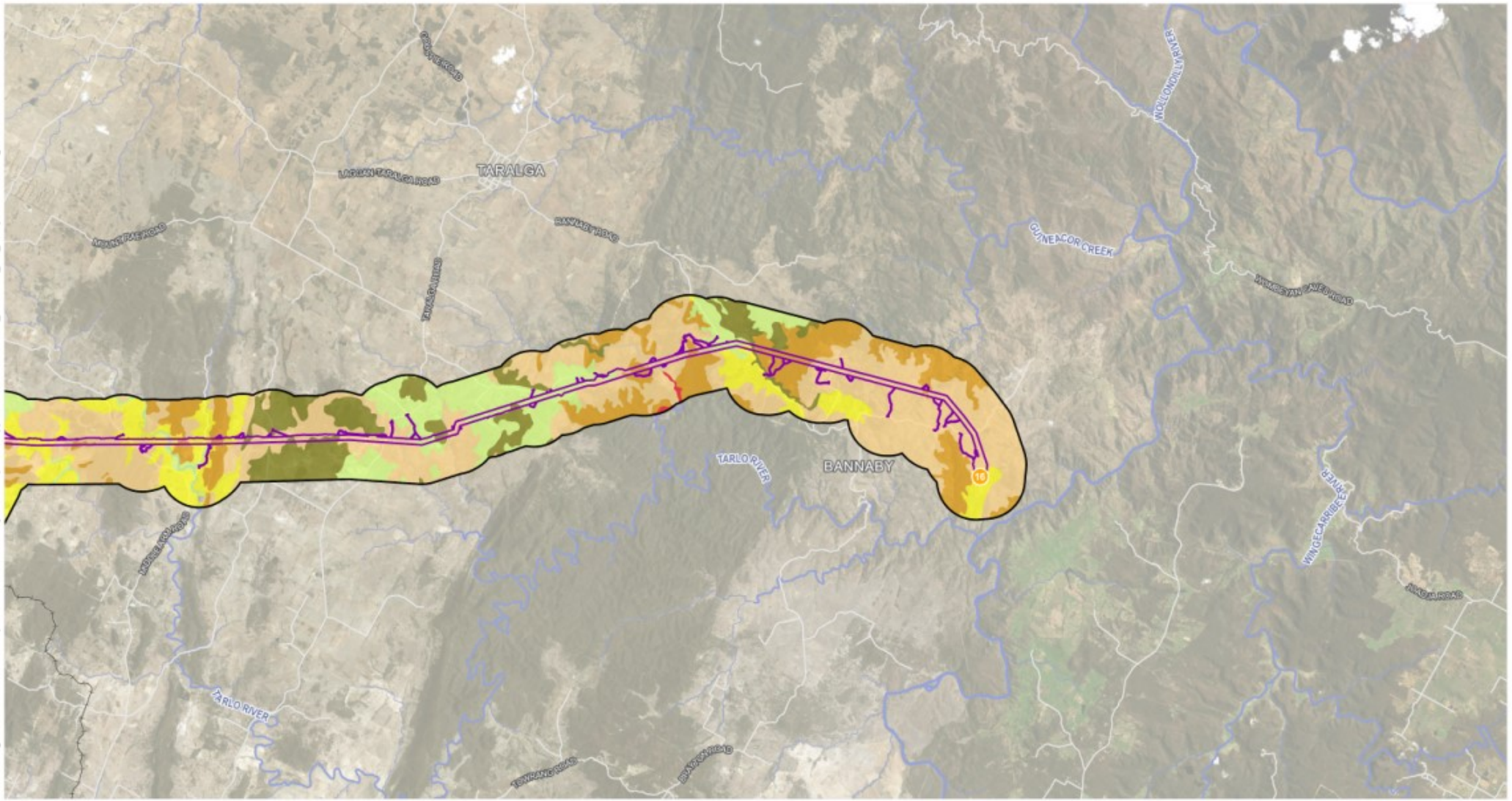


Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000

0 3 6 km

Projection: GDA 1994 MGA Zone 55



C:\Users\Virgil Robinson\Aurecon Group\507179 - HumeLink Project Development Suppor - EIS\ArcPro\507179_HumeLink_AIA_AR.aprx\18-01-24\Virgil Robinson

Amended project footprint

Amended agricultural study area

Waterway

Railway

Construction ancillary facilities

10 Amended Bannaby 500 kV substation compound (C12)

Most limiting land and soil capability

3 - Moderate limitations

4 - Moderate to severe limitations

5 - Severe limitations

6 - Very severe limitations

7 - Extremely severe limitations

8 - Extreme limitations

Source: *Aurecon, Transgrid, DPE, Spatial Services (DCS), ESRI Basemap*

1:150,000

0 3 6 km

Projection: GDA 1994 MGA Zone 55