

# Scoping Report

Powering Sydney's Future - Potts Hill to Alexandria transmission  
cable project

## Scoping Report

Powering Sydney's Future - Potts Hill to Alexandria transmission cable project

Client: NSW Electricity Networks Operations Pty Limited, as trustee for NSW Electricity Networks Operations Trust (TransGrid)

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## Table of Contents

Executive summary	i
1.0 Introduction and background	1
1.1 Introduction	1
1.2 Network planning criteria	1
1.3 Powering Sydney's Future Project	2
1.3.1 Feasibility Study	2
1.3.2 Route Selection Study	3
1.3.3 Assessment of a Preferred Route Option	3
2.0 The project	5
2.1 Overview of the project	5
2.2 Key components of the project	5
2.2.1 Rookwood Road to Beaconsfield West Transmission Cables	6
2.2.2 Substation upgrades	9
2.2.3 Construction laydown areas	9
2.2.4 Refinements to special crossings	9
2.3 Construction of the project	10
2.4 Operation of the project	11
3.0 Environmental planning considerations	12
3.1 Permissibility	12
3.2 Environmental assessment process	12
3.3 Environmental planning instruments	12
3.4 Other NSW environmental approvals	15
3.5 Commonwealth environmental approvals	16
3.5.1 Environment Protection and Biodiversity Conservation Act 1999	16
4.0 Stakeholder and community engagement	17
4.1 Stakeholder engagement for route selection	17
4.2 Consultation during the development of the EIS (original route)	17
4.3 Engagement on the revised project route	18
4.4 Future consultation during the development of the EIS (revised route)	19
5.0 Identification of key assessment issues	20
5.1 Approach to identification of key assessment issues	20
5.2 Identification of key environmental assessment issues	20
6.0 Key environmental issues	22
6.1 Traffic and transport	22
6.1.1 Existing environment	22
6.1.2 Issues for consideration	22
6.1.3 Method of assessment	22
6.2 Noise and vibration	25
6.2.1 Existing environment	25
6.2.2 Issues for consideration	25
6.2.3 Method of assessment	25
6.3 Air quality	26
6.3.1 Existing environment	26
6.3.2 Issues for consideration	26
6.3.3 Method of assessment	26
6.4 Electric and magnetic fields	26
6.4.1 Existing environment	26
6.4.2 Issues for consideration	27
6.4.3 Method of assessment	27
6.5 Landscape character and visual amenity	27
6.5.1 Existing environment	27
6.5.2 Issues for consideration	27
6.5.3 Method of assessment	27
6.6 Soils and contamination	28
6.6.1 Existing environment	28

	6.6.2	Issues for consideration	28
	6.6.3	Method of assessment	29
7.0		Other environmental issues	32
	7.1	Surface water and groundwater	32
	7.1.1	Existing environment	32
	7.1.2	Issues for consideration	32
	7.1.3	Method of assessment	33
	7.2	Land use and property	33
	7.2.1	Existing environment	33
	7.2.2	Issues for consideration	33
	7.2.3	Method of assessment	33
	7.3	Waste management	33
	7.3.1	Existing environment	33
	7.3.2	Issues for consideration	34
	7.3.3	Method of assessment	34
	7.4	Socio-economics	34
	7.4.1	Existing environment	34
	7.4.2	Issues for consideration	34
	7.4.3	Method of assessment	35
	7.5	Biodiversity	35
	7.5.1	Existing environment	35
	7.5.2	Issues for consideration	36
	7.5.3	Method of assessment	36
	7.6	Hazards and risk	38
	7.6.1	Background	38
	7.6.2	Issues for consideration	38
	7.6.3	Method of assessment	38
	7.7	Heritage	38
	7.7.1	Existing environment	38
	7.7.2	Issues for consideration	39
	7.7.3	Method of assessment	39
8.0		Cumulative impacts	41
	8.1.1	Background	41
	8.1.2	Issues for consideration	41
	8.1.3	Method of assessment	42
10.0		Conclusion	43
11.0		References	44

## List of Figures

Figure 1 – Original and revised project route	4
Figure 2 – Project route	8
Figure 3 – Indicative schematic for directional drilling and thrust boring methods	10
Figure 4 – Transport infrastructure	24
Figure 5 – Soil landscapes	30
Figure 6 – Acid sulfate soils	31
Figure 7 – Threatened biodiversity	37
Figure 8 – Non-Aboriginal heritage	40

## List of Tables

Table 1 – EPI consistency assessment	13
Table 2 – Other environmental approvals	15
Table 3 – Identification of key and other assessment issues	21



## Executive summary

### Introduction

This Scoping Report is submitted on behalf of TransGrid in support of an application for the construction and operation of the Potts Hill to Alexandria transmission cable project.

TransGrid is the operator and manager of the main high voltage transmission network in NSW and the ACT, enabling more than 3 million homes and businesses to access a safe, reliable and affordable supply of electricity.

TransGrid's transmission network transports electricity from sources of generation including wind, coal, solar, gas and hydro to large industrial customers and to the distribution networks. Comprising 111 substations and more than 13,000 kilometres of high voltage transmission lines, cables, and interconnections with Queensland and Victoria, its grid plays a crucial role in supporting the economic growth of NSW and the ACT.

A reliable, affordable and sustainable electricity supply is essential for our way of life. Serving more than 500,000 large industrial, commercial and residential consumers, the inner Sydney area electricity network includes the Central Business District (CBD), which is a hub for economic activity, major transport infrastructure, industry and tourism. These entities require a high level of electricity reliability and security to maintain services required for Sydney to operate as a major international city.

Parts of the transmission and distribution networks which supply electricity to the inner Sydney area were built in the 1960s and 1970s. Some of those assets are approaching the end of their serviceable lives. To secure a reliable electricity supply to the inner Sydney area, TransGrid and Ausgrid have been working together to identify the most economically viable solution, through the Powering Sydney's Future program.

As part of Powering Sydney's Future, TransGrid has proceeded with preliminary investigations into a potential new network supply connection to support the inner Sydney area. From these investigations, TransGrid has identified that a preferred network option includes an underground transmission supply connection between the Rookwood Road substation in Potts Hill and the Beaconsfield West substation in Alexandria, with some minor conversion works at the Sydney South substation (the project).

In 2017 and 2018, TransGrid progressed a preferred route and prepared a Preliminary Environmental Assessment (PEA), received Secretary's Environmental Assessment Requirements (SEARs) and commenced an environmental assessment including the drafting of an Environmental Impact Statement (EIS). Based on several changes and challenges identified during the EIS process including potential impacts to sensitive receivers, discussions with Roads and Maritime Services and the Transport for NSW Transport Management Centre and design integration with surrounding land uses/projects, the preferred route was modified. A revised route has now been identified, herein referred to as the project route.

This Scoping Report has been prepared to support an amended State Significant Infrastructure application for the Potts Hill to Alexandria transmission cable project under Division 5.2 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This Scoping Report is intended to inform the update of the previously issued SEARs for an EIS for the project.

### The project

Key components of the project include:

- cable works (underground transmission cable conduits, joint bays and link and sensor boxes) connecting Rookwood Road substation with the Beaconsfield West substation;
- up to seven special crossings (cable bridges and underboring) of infrastructure or watercourses;
- upgrade works at the Rookwood Road and Beaconsfield West substations to facilitate the new 330 kV transmission cable circuit;

- conversion works at the Beaconsfield West and Sydney South substations to transition the existing Cable 41<sup>1</sup> from a 330 kV connection to a 132 kV connection; and
- five temporary construction laydown areas to facilitate construction of the project such as for the storage of materials, spoil and equipment as well as provide space for other ancillary facilities such as site offices.

The project is subject to assessment and determination by the Minister for Planning under Division 5.2 of the EP&A Act because it meets the requirements for State Significant Infrastructure declaration under clause 14 of *State Environmental Planning Policy (State and Regional Development) 2011*. Specifically, the project involves development for the purpose of electricity transmission infrastructure for which TransGrid has formed the opinion that an EIS under Division 5.2 of the EP&A Act would have ordinarily been required. The project is wholly permissible without development consent under clause 41 of *State Environmental Planning Policy (Infrastructure) 2007*.

### Key environmental issues

Based on the assessment presented in this Scoping Report, the key environmental assessment issues identified for the project, and which would be assessed in more detail during the preparation of the EIS are:

- traffic and access impacts during construction;
- noise and vibration impacts during construction;
- air quality impacts during construction;
- electric and magnetic field impacts during operation, particularly in the context of community concerns around public health;
- landscape character and visual amenity impacts during construction and operation; and
- soil and contamination impacts, including potential erosion and sedimentation, and management of contaminated spoil.

Other environmental issues that would be considered in the EIS but are not considered to be key issues include:

- surface water and groundwater impacts, including potential pollution of waterways and potential interception and drawdown of groundwater;
- land use and property implications, particularly the need for the acquisition of easements and any temporary occupation of public land;
- waste generation and management;
- social and economic impacts and benefits;
- biodiversity impacts, including around riparian areas and potential impacts to threatened species and habitat;
- hazards and risks including potential impacts on utilities; and
- heritage impacts, particularly potential indirect impacts during construction (such as temporary visual and amenity impacts, and potential temporary encroachment into curtilage areas).

As part of the preparation of the EIS, further assessments would be carried out in conjunction with the further development of the project design. In assessing the project, the key focus would be avoidance and minimisation of impacts on the environment and local communities, where reasonable and feasible, when taking into consideration engineering constraints and cost implications. The assessment would also identify mitigation and management measures to minimise impacts on the environment during construction and operation of the project.

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<sup>1</sup> Cable 41 is an existing cable between the Beaconsfield West and Sydney South substations which is being converted from a 330 kV connection to a 132 kV connection as part of the project.

Consultation with affected property owners, stakeholders and the local community will continue throughout the project assessment, design and construction phases.

## 1.0 Introduction and background

### 1.1 Introduction

TransGrid's transmission network transports electricity from sources of generation including wind, coal, solar, gas and hydro to large industrial customers and to the distribution networks. Comprising 111 substations and more than 13,000 kilometres of high voltage transmission lines, cables, and interconnections with Queensland and Victoria, its grid plays a crucial role in supporting the economic growth of NSW and the ACT.

A reliable, affordable and sustainable electricity supply is essential for our way of life. Serving more than 500,000 large industrial, commercial and residential consumers, the inner Sydney area electricity network includes the Central Business District (CBD), which is a hub for economic activity, major transport infrastructure, industry and tourism. These entities require a high level of electricity reliability and security to maintain services required for Sydney to operate as a major international city.

Parts of the transmission and distribution networks which supply electricity to the inner Sydney area were built in the 1960s and 1970s. Some of those assets are ageing and approaching the end of their serviceable lives. TransGrid and Ausgrid have been working together to identify the most economically viable solutions that will secure an ongoing reliable electricity supply to the inner Sydney area.

There are four key drivers for this project:

- the deteriorating condition of ageing fluid-filled underground cables in the existing network and the derating of 330 kV Cable 41 operated by TransGrid and the derating of a number of existing 132 kV cables operated by Ausgrid;
- Ausgrid's planned retirement of three 132kV fluid-filled underground cables in inner Sydney;
- the age related deteriorating condition of a further eight 132kV fluid-filled Ausgrid underground cables in inner Sydney; and
- renewed economic activity within inner Sydney which has forecast an increase in customer demand.

Investigations have shown a solution will need to be in place by 2021-2022 to address these drivers and secure an ongoing reliable electricity supply.

Since July 2013, TransGrid has been investigating options to establish a new transmission supply connection between the Rookwood Road substation in Potts Hill and the Beaconsfield West substation in Alexandria. These investigations are detailed in *Route Selection Report: Powering Sydney's Future – Rookwood Road to Beaconsfield West* (AECOM, 2017a) and *Powering Sydney's Future – Rookwood Road to Beaconsfield West Preliminary Environmental Assessment* (PEA) (AECOM, 2017b), which identified a preferred connection option.

In 2018 and 2019, several project changes, including design considerations, feedback from stakeholders and the community, and the opportunity to reduce potential impacts on sensitive receivers, resulted in the modification of the preferred connection option.

This Scoping Report has been prepared to support an amended State Significant Infrastructure application for a revised route for the Potts Hill to Alexandria transmission cable project (the project) under Division 5.2 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This Scoping Report is intended to inform the update of the previously issued Secretary's Environmental Assessment Requirements (SEARs) for an Environmental Impact Statement (EIS) for the project.

### 1.2 Network planning criteria

TransGrid's current planning criteria (reliability of supply) were set out by the Independent Pricing and Regulatory Tribunal (IPART) in December 2016 and took effect on 1 July 2018. Both the previous planning criteria and the new IPART reliability standard afford special consideration to high density and central business district areas. They specify planning requirements to be applied to the Sydney CBD which cover defined, credible contingencies in the event of a simultaneous outage of two

elements in the electricity supply network servicing the CBD, one each in the 330 kV and 132 kV networks. Referred to as the 'modified n-2 criteria' these comprise:

- a simultaneous outage of a 330 kV transmission cable and any other 132 kV feeder or 330/132 kV transformer; or
- an outage of any section of 132 kV busbar.

The current criteria requires electricity supply to the inner Sydney area (including the Sydney CBD) to be maintained with no interruption to supply at maximum demand following a modified n-2 event. The new reliability standard provides allowance for around half a minute a year of expected unserved energy at average demand following a modified n-2 event.

Demand forecasts compiled by Ausgrid in 2016 identified several factors that contribute to a forecast shortfall in the capability of the electricity supply network to achieve the criteria specified in the reliability standards for the inner Sydney area. These factors are the drivers for the project (refer to **Section 1.1** for drivers).

Depending on the timing and magnitude of each of these factors, and any additional interim actions taken by TransGrid and/or Ausgrid to improve the capacity of the network, to manage demand growth, and/or to improve the reliability of the network, there is a risk of the electricity supply to the inner Sydney area of Sydney not achieving the required planning criteria at some point beyond 2021-2022 (TransGrid, 2016). The most recent forecasts suggest that actions need to be taken in 2020 to ensure a reliable and safe supply of electricity to the inner Sydney area beyond that date.

### 1.3 Powering Sydney's Future Project

TransGrid has developed and is currently implementing Powering Sydney's Future— a program to investigate all feasible options to address the anticipated risk of not achieving current network planning criteria for the inner Sydney area. The investigations currently being completed include consideration of reliability standards, the approach to demand response, energy efficiency initiatives, longer term urban planning and demographics, as well as investment in new or upgraded transmission infrastructure. The project forms one component of Powering Sydney's Future.

As part of the Powering Sydney's Future program, TransGrid proceeded with preliminary investigations into a potential new network supply connection to support the inner Sydney area, to ensure that such an option is ready for implementation. To date, these preliminary investigations have included:

- an initial feasibility study which considered the feasibility of options to provide a new transmission supply connection from an existing bulk supply point;
- a route selection study into potential route options to provide a new transmission supply connection consistent with the recommendations in the feasibility study; and
- an environmental assessment of a preferred route, including consultation and detailed technical investigations.

A summary of the approach and outcomes from these studies is provided in the following sections.

#### 1.3.1 Feasibility Study

In the early planning stages, the feasibility of options to improve the transmission network servicing the inner Sydney area was investigated. This analysis presented potential transmission supply options from Sydney East substation, Sydney South substation, Sydney North substation and Rookwood Road substation into the inner Sydney area. The feasibility study took into account environmental, engineering, social and cost implications at a high level and considered various supply modes (trenched, tunnel and overhead modes for transmission infrastructure). Several preliminary route and mode options were identified and it was determined that supply from the Rookwood Road substation to the Beaconsfield West substation was the most feasible in terms of relative benefit and cost.

Following on from the outcomes of the feasibility study, TransGrid undertook further investigations at a greater level of detail into options for supply from the Rookwood Road substation in Potts Hill to the Beaconsfield West substation in Alexandria.

### 1.3.2 Route Selection Study

Following on from the feasibility study, TransGrid commissioned the preparation of a route selection study. For the purpose of the route selection study, the project involved:

- two new 330 kV transmission supply connections between the existing Rookwood Road substation and the existing Beaconsfield West substation;
- a new single 330 kV transmission supply connection from the existing Beaconsfield West substation to the existing Sydney Park Adit and then to the Haymarket substation via an existing tunnel; and
- ancillary infrastructure and works as required to enable the above developments, including construction of joint bays and maintenance pits, construction management, etc.

The route selection study considered four key components of the project:

- options for providing a transmission supply connection employing trenched, overhead or tunnel connection modes (or a combination of these). A total of 31 options were considered to connect the Rookwood Road substation and the Beaconsfield West substation;
- options for exiting the Rookwood Road substation with either a trenched, overhead or tunnel exit mode. Four exit mode options were considered, all of which involved a trenched exit mode;
- options for entering the Beaconsfield West substation with either a trenched, overhead or tunnel entry mode. Five entry mode options were considered, all of which involved a trenched entry mode; and
- options for connecting the Beaconsfield West substation and the Sydney Park Adit with either a trenched, overhead or tunnel connection mode. Six connection mode options were considered, all of which involved a trenched connection mode.

Consultation for the route selection study was undertaken over a period of time between 2013 and 2017. Stakeholders consulted included local councils, government agencies, local utility providers, and other private entities. A full list and summary of consultation activities undertaken for the project can be found in **Section 4.0**.

The outcomes of the route selection report formed the basis of the preferred route option.

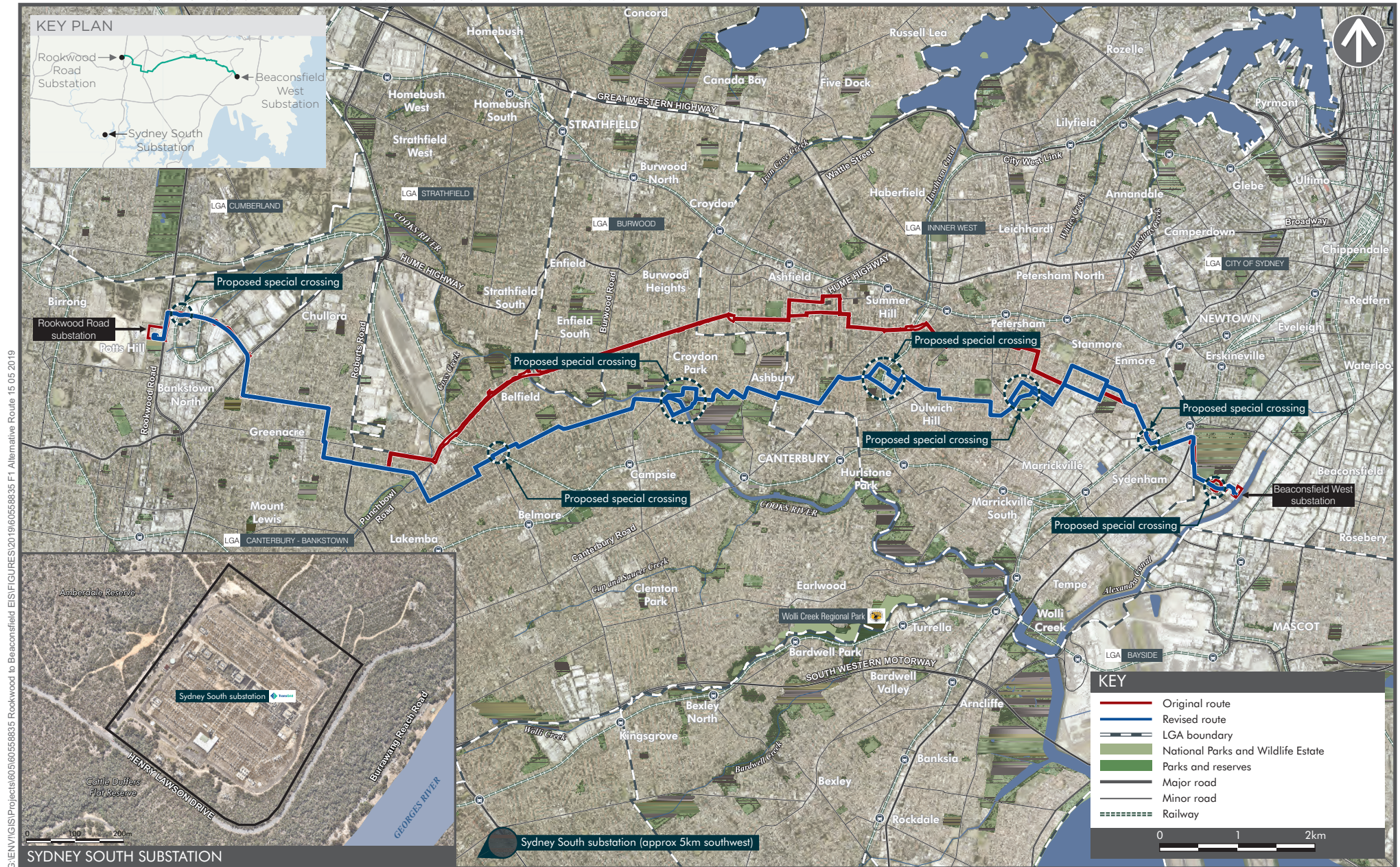
### 1.3.3 Assessment of a Preferred Route Option

In 2017 and 2018, TransGrid progressed the preferred route (with some design modification) from the Route Selection Report, submitted a PEA, received SEARs and undertook environmental assessment and development of an EIS.

Based on several changes and challenges identified during the EIS process including potential impacts to sensitive receivers, discussions with Roads and Maritime Services and the Transport for NSW Transport Management Centre and design integration with surrounding land uses/projects, the route was modified. A revised route, (which is reflected in this Scoping Report and referred to as the project route), is now the subject of the amended State Significant Infrastructure application for the project. **Figure 1** shows the difference between the original route and the project route.



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## 2.0 The project

### 2.1 Overview of the project

TransGrid proposes to establish an approximate 20 kilometre new underground transmission supply connection between its existing Rookwood Road and Beaconsfield West substations. The project would involve the following key components:

- cable works (underground transmission cable conduits, joint bays and link and sensor boxes) connecting Rookwood Road substation with the Beaconsfield West substation;
- up to seven special crossings (cable bridges and underboring) of infrastructure or watercourses;
- upgrade works at the Rookwood Road and Beaconsfield West substations to facilitate the new 330 kV transmission cable circuit;
- conversion works at the Beaconsfield West and Sydney South substations to transition the existing Cable 41<sup>2</sup> from a 330 kV connection to a 132 kV connection; and
- five temporary construction laydown areas to facilitate construction of the project such as for the storage of materials, spoil and equipment as well as provide space for other ancillary facilities such as site offices.

The new transmission cables would be installed predominately in trenches within road reserves or in public open space. However, the crossing of select railway lines, watercourses, major roads or major utilities may require special crossings, proposed in the form of cable bridges or underboring. Trenching and excavation would progress at a rate of around 20 metres per day depending on local conditions.

While two sets of conduits would be installed with the capacity to accommodate two 330kV cable circuits, only one circuit would be installed as part of this project. The second conduit would cater for future upgrades to capacity as required.

As with the original route, a series of joint bays would be required along the transmission cable circuit. Joint bays are concrete lined pits, generally located every 600-800 metres along the transmission cable route, where sections of the transmission cable are connected. Additionally, to enable access and routine maintenance on the cable, link boxes and sensor boxes would be installed near each joint bay. The link box is used to manage the cable earthing system and for future maintenance and testing of the transmission cables, while the sensor boxes are required to test the integrity of the insulation on the cables.

The project area comprises the overall potential area of direct disturbance by the project, which may be temporary (for construction) or permanent (for operational infrastructure) and extend below the ground surface. While the boundaries of the project area represent the physical extent of where project infrastructure may be located or construction works undertaken, it does not mean that this entire area would be physically disturbed or that indirect impacts would not be experienced beyond this area. The project area would be refined further in the EIS.

### 2.2 Key components of the project

This section details key components of the project, including:

- transmission cable circuits between the Rookwood Road substation and the Beaconsfield West substation (refer to **Section 2.2.1**);
- upgrades to existing substations (refer to **Section 2.2.2**);
- construction laydown areas (refer to **Section 2.2.3**); and
- special crossings (refer to **Section 2.2.4**).

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<sup>2</sup> Cable 41 is an existing cable between the Beaconsfield West and Sydney South substations which is being converted from a 330 kV connection to a 132 kV connection as part of the project.



### 2.2.1 Rookwood Road to Beaconsfield West Transmission Cables

The concept design for the project is subject to ongoing engineering investigation and design refinement. At some locations along the route, more than one option is under consideration for the route alignment and/or the type of crossing (i.e. cable bridge or underbore) and these would be further refined during preparation of the EIS. The key features of the project route are shown in **Figure 2** and described below:

- beginning at Rookwood Road substation, the project route follows the original route along Rookwood Road, Muir Road, Hillcrest Avenue, Rawson Road, Maiden Street, Juno Parade, Acacia Avenue and Wangee Road;
- from this point, instead of turning northeast up Georges River Road/Punchbowl Road (via Skyline Street and Juno Parade), the route:
  - continues southeast along Wangee Road;
  - travels northeast along Yangoora Road;
  - north on Neale Street;
  - east on Lucerne Street;
  - north on Knox Street;
  - continues northeast across the rail corridor along Walker Street, Carter Street and Burwood Road;
  - southeast on Bruce Avenue;
  - northeast on Omaha Street;
  - continue along Seventh Avenue;
  - north on Beamish Street;
  - east on Byron Street;
  - the route has three options at the Cooks River:
    - crossing through Mildura Reserve, under the Cooks River and travelling north on Croydon Avenue, east on Dunstan Street and south on Hay Street;
    - crossing the Cooks River through Mildura Reserve, then across Lindsay Street (on a new bridge) and through Lees Park; or
    - south on Cowper Street, east on Lindsay Street, then under the Cooks River into Lees Park;
  - continue east on Harmony Street;
  - north on Malleny Street;
  - southeast on Cheviot Street;
  - southeast on Roslyn Street;
  - north on King Street;
  - east on Second Street;
  - north on Holden Street;
  - east on Hanks Street;
  - northeast on Old Canterbury Road;
  - east on Arlington Street;
  - the route has two options for the light rail crossing:

- along Windsor Road, Terry Road (including crossing the rail line) and Hill Street; or
    - along Constitution Road, under the rail line and then north along Denison Road;
  - southeast along Pigott Street;
  - east along Herbert Street crossing New Canterbury Road;
  - south on Fairfowl Street;
  - east on Pile Street;
  - south on Livingston Road;
  - east on Hawkhurst Street;
  - northeast on Centennial Street;
  - the route then has two options:
    - continuing on Centennial Street through to Amy Street before turning east onto Horton Street; or
    - north on Sydenham Road and then onto Neville Street, then southeast on Surrey Street and Charles Street;
  - north on Illawarra Road;
  - the route then has two options:
    - continuing onto Agar Street, then east onto Newington Road and south down Enmore Road; or
    - a split circuit with one circuit east on Addison Road, then north up Enmore Road, and the second circuit on Agar Street, then east onto Newington Road and south down Enmore Road;
  - east on Scouller Street;
  - south on Juliatt Street;
  - east on Llewellyn Street;
  - south on Edgeware Road; and
- from this point to the terminus at the Beaconsfield West substation, the transmission cable route follows the original route across the rail corridor on Bedwin Road, cutting through Camdenville Park, east on May Street, south along Barwon Park Road, into Sydney Park paralleling Campbell Road and ultimately into the substation. Where the transmission cable route crosses Burrows Road, the circuit splits (one across to the east and the other to the south) allowing for shorter crossings to the respective connections inside the Beaconsfield West substation.

The project traverses the City of Canterbury-Bankstown, Strathfield, Inner West and City of Sydney local government areas (LGAs), generally following road corridors and other public land. Some private properties may be temporarily impacted during construction. However, easements for the transmission cable circuit would only be required over two private commercial properties, near the Muir Road cable bridge crossing and near the Beaconsfield West substation.



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### 2.2.2 Substation upgrades

As described in the PEA for the original route, some upgrade works are proposed within the boundaries of the existing Rookwood Road, Beaconsfield West and Sydney South substations to facilitate the construction and operation of the new transmission cable circuit.

These works generally include the installation of new underground cable connections and modifications to or replacement of existing infrastructure and equipment.

### 2.2.3 Construction laydown areas

While nine construction laydown areas were identified for the original route, this has been refined to five for the project route and includes the following locations:

- 12 Muir Road, Chullora;
- Cooke Park, Belfield;
- Peace Park, Ashbury;
- Camdenville Park, St Peters; and
- Beaconsfield West substation, Alexandria.

All of the above locations have been investigated as part of the assessment of the original route.

These temporary laydown areas would be required to store materials, spoil and equipment as well as provide space for other ancillary facilities such as site offices.

### 2.2.4 Refinements to special crossings

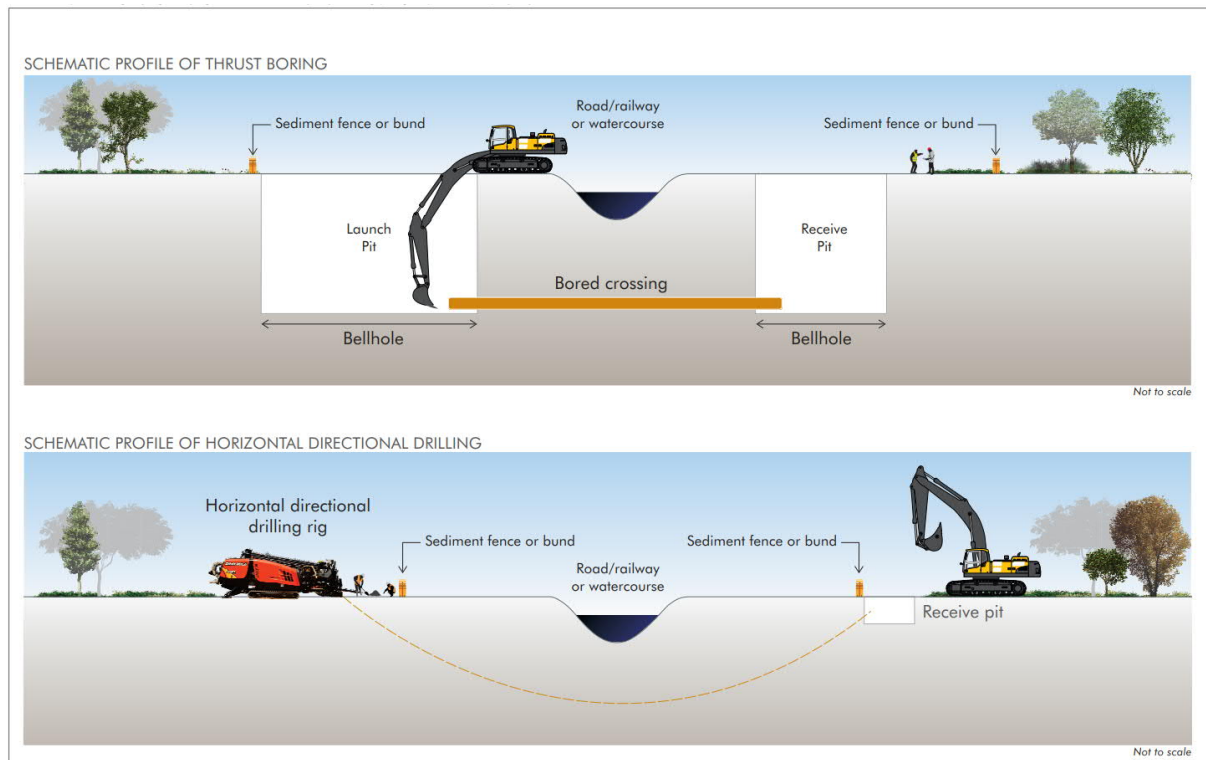
As part of the project route, seven crossings are proposed, which would consist of a mix of cable bridges and underboring. Of the six original crossings, the cable bridge crossings at Muir Road and Bedwin Road remain unchanged. Additional crossings are proposed as follows:

- underbore of the Enfield Intermodal Terminal rail lines at Carter Street;
- underbore or cable bridge crossing of the Cooks River at Campsie/Croydon Park;
- underbore at Arlington Station or the light rail line;
- underbore of the playground at Amy Street at Henson Park (if this option is selected); and
- underbore of the southern wetland at Sydney Park.

Different methods of underboring exist, including thrust boring and horizontal directional drilling.

Horizontal directional drilling involves drilling a pilot bore under the crossing location and passing the conduits through the bore hole while thrust boring involves forcing a concrete type carrier pipe containing the conduits through the section of substrate under the crossing location.

An indicative schematic for directional drilling and thrust boring site is shown in **Figure 3**.



**Figure 3 – Indicative schematic for directional drilling and thrust boring methods**

The final proposed crossing method will be decided pending a review of key constraints including geotechnical conditions, confirmation of utilities, proximity to sensitive receivers, discussions with property owners and general engineering constructability.

## 2.3 Construction of the project

Trenching and excavation is expected to occur at a rate of about 20 metres per day with multiple construction crews working at the same time along different sections of the route. Work required at each substation may occur in parallel in order to coordinate the substation works to ensure completion to allow connection and commissioning of the cable once installed.

While most works would be undertaken during standard construction work hours as specified in the *Interim Construction Noise Guideline* (DECC, 2009), some work would be required outside of these hours including at night-time. Night-works may be required for trenching along State and regional roads, during substation upgrades or during construction of the special crossings. Night-works along State and regional roads is expected to reduce the rate of progress to about nine metres per day, depending on Road Occupancy Licence allowances.

Construction laydown areas would be operated 24/7 during the construction period. Construction of the project is expected to commence in 2020 and take up to 24 months to complete. Construction activities would include:

- site preparation;
- trenching and excavation;
- relocation of minor utilities/services;
- conduit installation and backfilling;
- excavation and establishment of joint bays;
- cable pulling and jointing;
- permanent road restoration;

- installation of cable markers;
- construction of special crossings; and
- substation upgrades.

## **2.4 Operation of the project**

The construction of the transmission cable circuit is expected to be completed and commissioned in 2022/23. Once the transmission cables have been installed, the project is likely to have negligible impact on the surrounding environment. In most cases, only visual inspections of the project infrastructure (such as cables and joint bays) would be required during routine maintenance activities. Ongoing physical access to the transmission cables is not anticipated. Routine maintenance would be through access to the link and sensor boxes located near the joint bays.

## 3.0 Environmental planning considerations

### 3.1 Permissibility

The project is permissible without development consent on any land pursuant to clause 41 of *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP) because it comprises "development for the purpose of an electricity transmission or distribution network...carried out by or on behalf of an electricity supply authority or public authority" and comprises "an electricity work to which section 53 of the *Electricity Supply Act 1995* applies" for the purposes land reserved under the *National Parks and Wildlife Act 1974* (NPW Act). (It is noted that no part of the project would be located on land reserved under the NPW Act).

Relevantly, the project is characterised as an electricity transmission network under the Infrastructure SEPP which defines an "electricity transmission or distribution network" to include:

- a) above or below ground electricity transmission or distribution lines (including related bridges, cables, conductors, conduits, poles, towers, trenches, tunnels, access structures, access tracks and ventilation structures); and
- b) above or below ground electricity switching stations or electricity substations, feeder pillars or transformer housing, substation yards or substation buildings.

Further, TransGrid is defined as an electricity supply authority under the Infrastructure SEPP because it is both an energy services corporation under the *Energy Services Corporations Act 1995* and also a transmission operator under the *Electricity Supply Act 1995*.

TransGrid, is an Authorised Network Operator (ANO) under the *Electricity Network Assets (Authorised Transactions) Act 2015*, and the carrying out of development by or on behalf of an ANO for the purpose of an electricity transmission or distribution network, constitutes the carrying out of that development as an electricity supply authority and public authority (Clause 41 (2) of the *Electricity Network Assets (Authorised Transactions) Act 2015*).

### 3.2 Environmental assessment process

Under clause 14 of *State Environmental Planning Policy (State and Regional Development) 2011* (State and Regional Development SEPP), the project is declared to be State Significant Infrastructure (SSI) because it is permissible without development consent and is a type of development listed in Schedule 3 of that SEPP. Specifically, the project meets the requirement of clause 1(1) of Schedule 3 of the SEPP, being an activity for which the Proponent (TransGrid) would be the determining authority and would, in TransGrid's opinion, require an EIS to be obtained under Division 5.2 of the EP&A Act.

The project would therefore be assessed and determined as State Significant Infrastructure by the Minister for Planning under Division 5.2 of the EP&A Act.

### 3.3 Environmental planning instruments

There are no Environmental Planning Instruments (EPI) that substantially govern the carrying out of the project. However, the following instruments include provisions relating to issues that would or may be relevant to the environmental impact assessment of the project and relevant provisions would therefore be considered in the EIS. A consistency assessment of the project route against relevant EPIs has been undertaken and provided in **Table 1**.

Table 1 – EPI consistency assessment

Environmental Planning Instrument	Consistent (Yes / No)	Comment
<i>State Environmental Planning Policy No. 19 – Bushland in Urban Areas</i>	Yes	<p>The project route is likely to affect several parks and reserves zoned as RE1 (Public recreation).</p> <p>Parks along the route are currently characterised with limited remnant native vegetation, and it is likely that the project could be designed to avoid most if not all direct impacts on this vegetation. Some Estuarine Mangroves vegetation around the Cooks River may be impacted. The aims of <i>State Environmental Planning Policy No. 19 – Bushland in Urban Areas</i> will be taken into account during further development of the project design and as part of the EIS for the project, with the aim of avoiding or otherwise minimising impacts on native vegetation, ecological values, public recreation potential and the general amenity of parks along the project route.</p> <p>Clause 9 of <i>State Environmental Planning Policy No. 19 – Bushland in Urban Areas</i> also requires consideration of urban bushland areas in undertaking development works on land adjacent to land zoned or reserved for public open space purposes.</p> <p>The project route has been designed to avoid public recreation areas wherever possible, however, as with the original route, the project route traverses Camdenville Park and Sydney Park. The following areas of open space would also be affected by the project:</p> <ul style="list-style-type: none"> <li>• Cooks River foreshore, Campsie/Croydon Park;</li> <li>• Lees Park, Ashbury;</li> <li>• Peace Park, Ashbury;</li> <li>• Henson Park, Marrickville; and</li> <li>• Cooke Park, Belfield.</li> </ul> <p>There are also other reserves adjacent or in proximity to the project that will not be directly affected. The potential direct and indirect impacts of the project on these sites, and other areas of remnant native vegetation in and around the project route, will be considered during development of the project design. Refer to <b>Section 7.0</b> for further information on areas of open space that would be affected by the project.</p>
<i>State Environmental Planning Policy No. 55 – Remediation of Land</i>	Yes	<p>The project traverses a small section of Sydney Park, which as of February 2019<sup>3</sup>, is listed on the NSW Environment Protection Authority's (EPA) register of regulated contaminated sites. Several other sites are located in proximity to the project including:</p>

<sup>3</sup> <https://apps.epa.nsw.gov.au/resources/clm/docs/html/n20181108.htm>



Environmental Planning Instrument	Consistent (Yes / No)	Comment
		<ul style="list-style-type: none"> <li>the sediments of the entire Alexandra Canal, adjacent to the Beaconsfield West substation;</li> <li>the Tempe Tip, to the south-west of the Beaconsfield West substation; and</li> <li>the Galvanising Services site, immediately across Rookwood Road from the Rookwood Road substation.</li> </ul> <p>It is intended that known contaminated land would be avoided where possible as the design of the project develops.</p> <p>Parts of Sydney Park were formerly an industrial site once used for a landfill and several brick pits and there is likely to be residual contamination within Sydney Park. This contamination is unlikely to be in conflict with the proposed use of the land for the purpose of transmission cables, however, the appropriate management of contaminated materials would need to be considered during construction of the project.</p> <p>Similarly, there is potential for currently unknown contamination to be encountered along the project route. Based on a current understanding of land use zonings and historical uses of land likely to be affected by the project, there is limited potential for contamination to preclude or otherwise be incompatible with the development of transmission cables. This would be confirmed through further assessments to be conducted as part of the EIS, including an assessment consistent with a Phase 1 analysis under <i>Managing Land Contamination – Planning Guidelines: SEPP 55 – Remediation of Land</i> (DUAP &amp; EPA, 1998).</p>
<i>Bankstown Local Environmental Plan 2015</i>	Yes	The project route is unlikely to be inconsistent with or to conflict with permissible uses within relevant local zones or existing development on affected land (being primarily within road reserves), as the project would provide for the orderly provision of services and utilities to service the community which is consistent with the broad objectives of the local environmental plans and is unlikely to preclude future development in any of the underlying zones. A detailed assessment of the project against relevant zoning provisions would be provided in the EIS.
<i>Canterbury Local Environmental Plan 2012</i>	Yes	
<i>Ashfield Local Environmental Plan 2013</i>	Yes	
<i>Marrickville Local Environmental Plan 2011</i>	Yes	
<i>Sydney Local Environmental Plan 2012</i>	Yes	
<i>Strathfield Local Environmental Plan 2012</i>	Yes	

### 3.4 Other NSW environmental approvals

Under sections 5.23 and 5.24 of the EP&A Act, certain separate environmental approvals would not be required for the project or would be required to be issued consistent with the planning approval granted for the project. Each of these separate environmental approvals is considered in **Table 2**. Other environmental approvals that may be required in addition to those referred to under section 5.23 and 5.24 of the EP&A Act are also identified in **Table 2** and would be further considered and outlined where relevant to the assessment of the project as part of the EIS.

**Table 2 – Other environmental approvals**

Approval	Relevant to the project?	Comment
<b>Approvals not required under section 5.23</b>		
Concurrence under Part 3 of the <i>Coastal Protection Act 1979</i>	No	Repealed
A permit under section 201, 205 or 219 of the <i>Fisheries Management Act 1994</i>	No	The project would not involve dredging or reclamation works, would not result in harm to marine vegetation and would not block fish passage. Works within waterways are not proposed. Waterways would be crossed via underboring.
An approval under Part 4 or an excavation permit under section 139 of the <i>Heritage Act 1977</i>	No	The project would not impact a place, building, work, relic, moveable object, precinct, or land, that is subject to an interim heritage order or that is listed on the State Heritage Register. An excavation permit would not be required.
An Aboriginal heritage impact permit under section 90 of the <i>National Parks and Wildlife Act 1974</i>	No	The project would not affect any known Aboriginal object, place, land, activity or person. Given the highly disturbed, urbanised nature of land along the project route, the potential for discovering new Aboriginal heritage items would be low.
An authorisation to clear native vegetation or State protected land under section 12 of the <i>Native Vegetation Act 2003</i>	No	Repealed
A bushfire safety authority under section 100B of the <i>Rural Fires Act 1997</i>	No	The project would not involve subdivision or development of bushfire prone land.
A water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of the <i>Water Management Act 2000</i>	No	The project is unlikely to require the taking of surface or groundwater, and would not involve water supply, drainage works or flood works within the meaning of the <i>Water Management Act 2000</i> . As a public authority, TransGrid is exempt from the need to obtain approval for works on waterfront land (clause 41 of the <i>Water Management (General) Regulation 2018</i> ).
<b>Approvals required to be issued consistently under section 5.24</b>		
An aquaculture permit under section 114 of the <i>Fisheries Management Act 1994</i>	No	The project would not involve aquaculture.
An approval under section 15 of the <i>Mine Subsidence</i>	No	The project would not be located within a mine

Approval	Relevant to the project?	Comment
<i>Compensation Act 1961</i>		subsidence district.
A mining lease under the <i>Mining Act 1992</i>	No	The project would not involve mining.
A production lease under the <i>Petroleum (Onshore) Act 1991</i>	No	The project would not involve petroleum production.
An environment protection licence under Chapter 3 of the <i>Protection of the Environment Operations Act 1997</i>	No	The project would not fall within one of the scheduled development categories listed in Schedule 1 of the <i>Protection of the Environment Operations Act 1997</i> .
A consent under section 138 of the <i>Roads Act 1993</i>	Yes	The project would involve works within several road reserves.
A licence under the <i>Pipelines Act 1967</i>	No	The project would not involve the operation of a pipeline requiring a licence under the <i>Pipelines Act 1967</i> .
<b>Other notifications</b>		
Issuing of authorisations under section 45 and section 54 of the <i>Electricity Supply Act 1995</i>	Yes	The project would involve the use of Public Land to accommodate the transmission cable route. TransGrid would issue relevant notifications as required.

### 3.5 Commonwealth environmental approvals

#### 3.5.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) requires approval from the Commonwealth Minister for the Environment where an action has or would have a significant impact on a Matter of National Environmental Significance.

A preliminary assessment of potential impacts on Matters of National Environmental Significance indicates that the project is unlikely to affect any of these matters. On this basis, referral and approval of the project under the EPBC Act is unlikely to be necessary. This would be confirmed as the design of the project develops, and as part of the preparation of the EIS for the project.

Furthermore, under Section 26 of the EPBC Act, approval is required for:

1. Actions on Commonwealth land; *a person must not take on Commonwealth land an action that has, will have or is likely to have a significant impact on the environment; and or*
2. Actions outside Commonwealth land affecting that land; *a person must not take outside Commonwealth land an action that (a) has or will have a significant impact on the environment on Commonwealth land; or (b) is likely to have a significant impact on the environment on Commonwealth land.*

A preliminary assessment of potential impacts on Commonwealth land indicates that the project is unlikely to significantly impact any Commonwealth land and as such, referral and approval of the project under the EPBC Act is unlikely to be necessary.

## 4.0 Stakeholder and community engagement

Stakeholder consultation and community engagement has been an important part of the planning process to date for Powering Sydney's Future. TransGrid is committed to a stakeholder and community engagement process that is proactive, transparent and represents a genuine desire to inform and consult.

### 4.1 Stakeholder engagement for route selection

TransGrid commissioned a route selection study for Powering Sydney's Future in 2013. This study included extensive stakeholder consultation on the route selection study area. A number of key stakeholders (consisting of state government regulatory authorities, local government, and infrastructure providers) were consulted between 2013 and mid-2017 as part of the route selection process:

- councils in the LGAs of Sydney, Canterbury-Bankstown, Inner West, Burwood, and Strathfield;
- government authorities including Roads and Maritime Services, NSW EPA, NSW Office of Environment and Heritage (OEH), Department of Industry (DI) – Water, Water NSW, Transport for NSW, Greater Sydney Commission, Sydney Coordination Office, and Department of Education NSW;
- major development proponents/operators including Sydney Motorway Corporation, Sydney Metro, Sydney Light Rail, and Sydney Trains; and
- utility providers including Sydney Water, Telstra, Optus, Jemena, Viva Energy, and Sydney Metropolitan Pipeline.

Key stakeholder engagement for route selection consisted of telephone and email correspondence as well as face-to-face meetings.

TransGrid's objective for consulting with these key stakeholders was identifying:

- environmental and land use constraints and opportunities that may influence the location and modes of transmission supply infrastructure;
- existing and proposed infrastructure/ developments that may be incompatible with, or otherwise influence the location and modes of transmission supply infrastructure;
- land and/ or development within the stakeholders' control that may have associated requirements or constraints relevant to the location of transmission supply infrastructure;
- initiatives undertaken by the stakeholder or associated third parties which may influence the location and modes of transmission supply infrastructure; and
- any interest the stakeholder may have in future engagement and consultation regarding Powering Sydney's Future.

### 4.2 Consultation during the development of the EIS (original route)

TransGrid continued its consultation as part of the EIS development phase for the original route, as identified through the route selection process and subsequent refinements. This consultation consisted of key stakeholder groups but was also expanded to include other community and stakeholder groups such as schools and businesses. In addition to the stakeholders listed above, the following were also consulted:

- directly impacted and adjacent stakeholders including schools, child care centres, businesses, property/landowners, residents, hospitals and healthcare providers, community groups and places of worship;
- Aboriginal stakeholders, including Local Aboriginal Land Councils (LALCs);
- wider community including local environment groups, resident action groups, pedestrian and bicycle safety groups, precinct committees, and Chambers of Commerce; and

- elected government officials.

Consultation tools and activities that were utilised as part of the EIS development for the original route included:

- toll free community inquiry number – 1800 222 537;
- dedicated project email address – [psf@transgrid.com.au](mailto:psf@transgrid.com.au);
- 'Let's Connect' website - <https://www.transgrid.com.au/psf>;
- eNewsletter and print newsletter;
- notifications;
- frequently asked questions (FAQs)
- stakeholder and community information sessions and briefings;
- media releases;
- invitation postcards;
- newspaper advertisements; and
- social media.

In addition to these activities, TransGrid continued its correspondence with key stakeholders by way of telephone and email correspondence as well as face-to-face meetings. This ensured continuity of feedback as the project progressed.

### 4.3 Engagement on the revised project route

In January 2019, TransGrid decided to consider a revised route and since then has undertaken further investigations to understand the feasibility of this route. As the investigations demonstrated reasonable feasibility, stakeholder engagement began in April 2019 to consult the following key stakeholders about this revised route:

- councils in the LGAs of Sydney, Canterbury-Bankstown, Inner West, Burwood, and Strathfield;
- government authorities including Roads and Maritime Services, Traffic Management Centre, Transport for NSW, and Sydney Coordination Office;
- major development proponents/operators including WestConnex (formerly managed by Sydney Motorway Corporation, now RMS Motorways division), Sydney Metro, Sydney Light Rail, Sydney Trains, Australian Rail Track Corporation (ARTC), ALTRAC, and Transdev; and
- utility providers including Sydney Water, Ausgrid, Telstra, Optus, Jemena, Viva Energy, and Sydney Metropolitan Pipeline.

The objective of this consultation was to identify:

- environmental and land use constraints and opportunities that may influence the location of the project;
- existing and proposed infrastructure/developments that may be incompatible with, or otherwise influence the location of the project;
- land and/ or development within the stakeholders' control that may have associated requirements or constraints relevant to the location of the project;
- initiatives undertaken by the stakeholder or associated third parties which may influence the location of the project; and
- any interest the stakeholder may have in future engagement and consultation regarding the project.

#### 4.4 Future consultation during the development of the EIS (revised route)

In mid to late 2019, TransGrid will consult the following stakeholder groups to obtain further feedback on the project changes:

- councils in the LGAs of Sydney, Canterbury-Bankstown, Strathfield and Inner West;
- government authorities including Roads and Maritime Services, NSW EPA, OEH, DI – Water, Water NSW, Transport for NSW, Greater Sydney Commission, Sydney Coordination Office, and Department of Education NSW;
- major development proponents/operators including WestConnex (formerly managed by Sydney Motorway Corporation, now Roads and Maritime Motorways division), Sydney Metro, Sydney Light Rail, Sydney Trains; ARTC, ALTRAC, and Transdev;
- utility providers including Sydney Water, Telstra, Optus, Jemena, Viva Energy, and Sydney Metropolitan Pipeline;
- directly impacted and adjacent stakeholders including schools, child care centres, businesses, property/landowners, residents, hospitals and healthcare providers, community groups and places of worship;
- Aboriginal stakeholders, including LALCs;
- wider community including local environment groups, resident action groups, pedestrian and bicycle safety groups, precinct committees, and Chambers of Commerce; and
- elected government officials.

Consultation will be focused on providing potentially affected and interested communities and other stakeholders with information about the project, and also an opportunity to provide feedback to inform the project design as it continues to progress. Key community and stakeholder issues and concerns raised during this process will be addressed in the EIS, where relevant, or during future design development.

The following community and stakeholder engagement tools and activities would continue to be delivered during future EIS consultation for the project, consistent with EIS engagement for the previous route (see **Section 4.2**):

- toll free community inquiry number – 1800 222 537;
- dedicated project email address – [psf@transgrid.com.au](mailto:psf@transgrid.com.au);
- 'Let's Connect' website - <https://www.transgrid.com.au/psf>;
- eNewsletter and print newsletter;
- notifications;
- fact sheets;
- frequently asked questions (FAQs)
- stakeholder and community information sessions and briefings;
- media releases;
- invitation postcards;
- newspaper advertisements; and
- social media.

## 5.0 Identification of key assessment issues

TransGrid recognises the need to carefully consider potential impacts on the environment and local communities, and to minimise these impacts wherever reasonable and feasible to do so. In taking this approach, the benefits of the project can be realised with the least net cost to the environment and the public.

### 5.1 Approach to identification of key assessment issues

The methodology used to determine the likely key assessment issues and the associated level of assessment required to adequately and appropriately address each issue for the project route is consistent with that outlined in the PEA (AECOM, 2017b). In summary this included:

- an initial environmental risk screening of potential issues for consideration in the EIS including consideration of the likely **significance** of each potential environmental impact. Impact **significance** was determined by assessing both the **likelihood** of a potential impact occurring and the likely **consequence** of that impact; and
- determination of the expected level of stakeholder interest in each potential environmental impact, as derived from the outcomes of stakeholder consultation undertaken to date for the project and a review of issues raised on other comparable utility projects in Sydney.

A description of the initial environmental risk screening process and ratings used, along with the screening results, are outlined in the PEA (AECOM, 2017b).

This Scoping Report should be read in conjunction with the PEA (AECOM, 2017b) for general project background and development information.

### 5.2 Identification of key environmental assessment issues

In reviewing the risk screening process and ratings for the revised project route, two additional issues have been identified and one of the issues has now been refined.

The additional issues are cumulative impacts and hazards and risk. The soil and water issue has been refined and separated into soils and contamination, surface water, and groundwater.

Cumulative impacts are not considered a key or other issue but a standalone issue for consideration and has therefore not been subjected to the risk screening process.

The project issues are summarised in **Table 3** and considered in further detail in **Section 6.0** and **Section 7.0** of this Scoping Report.

Environmental assessment issues considered to have a **high** significance and level of stakeholder interest were determined to constitute 'key issues' which would be the focus of the assessment in the EIS for the project route.

Environmental assessment issues considered to have a **medium** or **low** significance and level of stakeholder interest were determined to constitute 'other issues' which would not be subject to a detailed assessment in the EIS, however subject to consideration and identification of appropriate mitigation measures to control impacts.

Table 3 – Identification of key and other assessment issues

Issue	Environmental Assessment Significance	Key Issues/Other Issue
Traffic and transport	High	Key issues (refer to <b>Section 6.0</b> )
Noise and vibration	High	
Air quality	High	
Electric and magnetic fields	High	
Landscape character and visual amenity	High	
Soils and contamination	High	
Surface water and groundwater	Medium	Other issues (refer to <b>Section 7.0</b> )
Land use and property	Medium	
Waste management	Medium	
Socio-economics	Medium	
Biodiversity	Medium	
Hazards and risks	Medium	
Heritage	Low	
Cumulative impacts	n/a	Refer to <b>Section 8.0</b>



## 6.0 Key environmental issues

This section considers the key environmental assessment issues for the project. Throughout the development of the project, the key focus has been and would continue to be avoidance of impacts, with residual implications for the environment and local communities mitigated and managed to ensure minimisation of impacts wherever reasonable and feasible.

### 6.1 Traffic and transport

#### 6.1.1 Existing environment

The majority of the project is proposed to be located within existing road reserves of local roads within the study area (refer to **Figure 4**). These local roads serve local or neighbourhood receivers and facilities and their primary purpose is to provide for local circulation and access to property, provide connection to State and regional roads, and support the living environment in which they are located. Local roads are generally controlled by the local council. In some locations, the project route would traverse the following major arterial roads:

- Rookwood Road;
- Hume Highway;
- Punchbowl Road;
- Old Canterbury Road;
- New Canterbury Road;
- Princes Highway; and
- Burrows Road.

Public transport (bus, rail and light rail stations and services) and active transport (pedestrian and cycle paths) networks are also located within the study area.

#### 6.1.2 Issues for consideration

Construction would generate the temporary movements of heavy vehicles and machinery to and from construction work sites and laydown areas, via the local road network. This would include heavy vehicles used for equipment and the transport of materials, excavators, concrete trucks, and light vehicles used by personnel.

The project would also have temporary impacts on the local road network as a result of traffic management measures implemented during construction. Potential impacts include lane closures (or complete road closure, if required), detours and temporary loss of on-street parking.

Traffic impacts during operation of the project would be minor and limited to impacts from infrequent maintenance or inspection activities.

Where the project route crosses public or active transport routes (such as the Sydney Trains rail network as shown on **Figure 4**), options for minimising disruption to existing infrastructure, including potential use of existing bridging structures or underboring rail infrastructure, would be considered as part of the design development of the project.

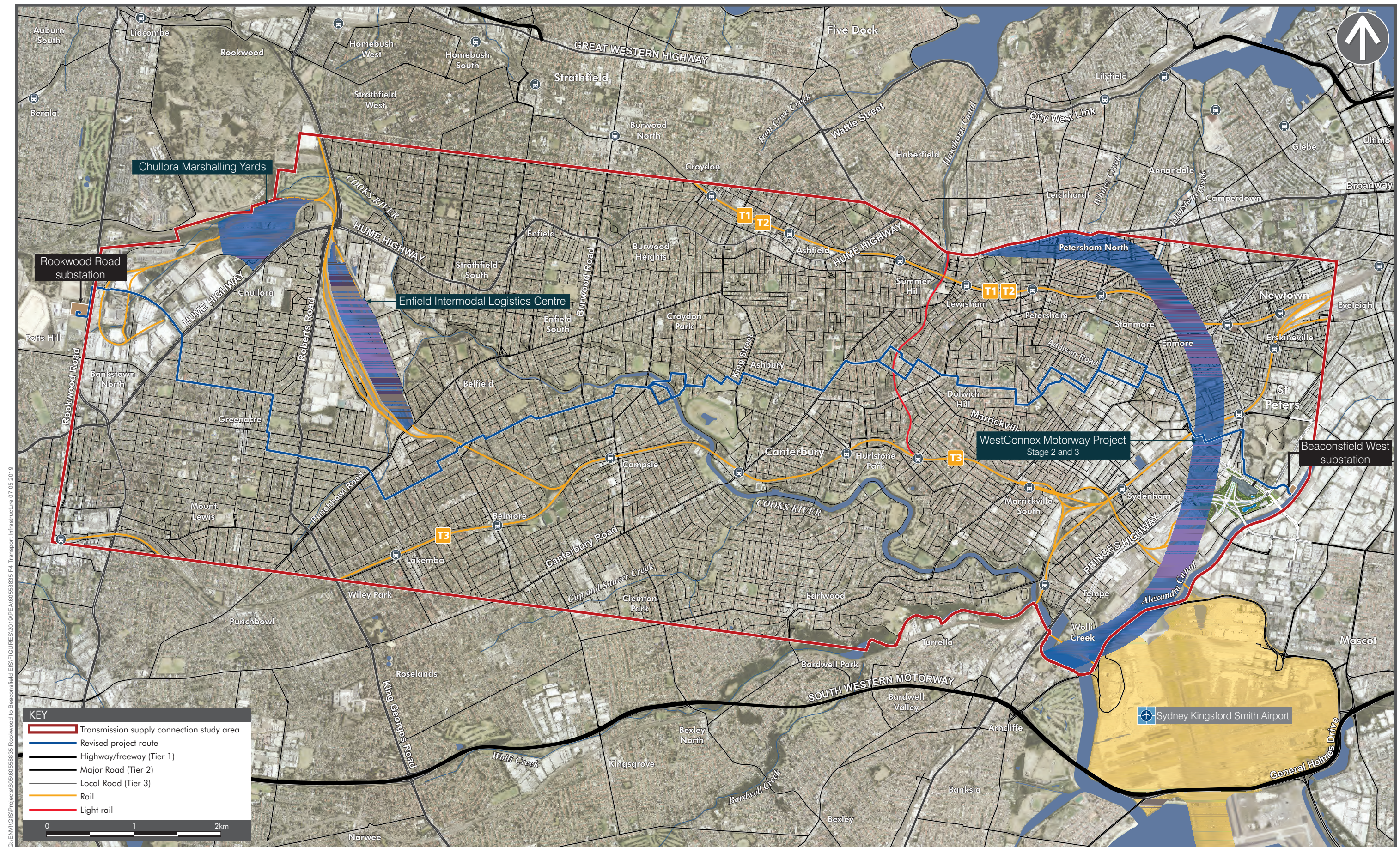
#### 6.1.3 Method of assessment

A qualitative construction traffic and transport assessment would be undertaken for the project. This assessment would include:

- identification and detailed description of the roads impacted by the project;
- assessment of potential impacts to road traffic including consideration of lane or road closures, bus route diversions and on-street parking;
- assessment of potential impacts to public transport and active transport networks affected (e.g. bus stops, cycle lanes);

- assessment of potential rail and light rail impacts with regard to bridge crossings or underboring of commuter and freight rail lines; and
- identification of appropriate mitigation and traffic management measures to minimise impacts.





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## 6.2 Noise and vibration

### 6.2.1 Existing environment

The study area is highly urbanised with the existing noise environment largely dominated by road traffic. Significant areas of industrial development around suburbs such as Potts Hill, Chullora, Greenacre, Marrickville and St Peters also contribute to the daytime noise environment in those areas.

### 6.2.2 Issues for consideration

Noise impacts associated with the project would occur during the construction period. These impacts would be associated with excavation and trenching activities, operation of plant and equipment (excavators, graders, etc), vehicle movements and the 24/7 operation of construction laydown areas.

Given the urban nature of the study area, construction activities would result in temporary and localised increases in noise levels for residential and other sensitive receivers. It is intended that the majority of construction activities would be scheduled during standard construction hours as specified in the *Interim Construction Noise Guideline* (DECC, 2009) where reasonable and feasible to do so. Some works may need to be conducted outside of these hours for safety and traffic management reasons particularly where works intersect State or regional roads.

The construction of the special crossings may involve construction outside of standard construction hours including night-time works. Construction laydown areas, which would also be used for spoil stockpiling, would be operational 24/7 and are likely to contribute to increased noise levels.

The linear nature of the transmission cable route means that individual receivers would only be exposed to construction noise for a relatively short duration while construction activities are conducted nearby. Impacts from night-time works, where these cannot be avoided, would be investigated and mitigation measures recommended to minimise impacts.

Minor upgrade works at the Rookwood Road and Beaconsfield West substations, and to a lesser extent at the Sydney South substation, would generate noise during construction, however these locations are not surrounded by sensitive receivers.

### 6.2.3 Method of assessment

Impacts of the project on the surrounding environment would be assessed in a noise and vibration impact assessment to be included in the EIS. The assessment would be conducted in accordance with the *Road Noise Policy* (DECCW, 2011) (for construction traffic), *Interim Construction Noise Guideline* (DECC, 2009) and *Assessing Vibration: A Technical Guideline* (DEC, 2006), and would include:

- identification of sensitive receivers that may be affected by noise and vibration impacts and identification of background noise levels;
- identification of construction noise and vibration goals;
- predictions of noise and vibration emission levels from construction activities;
- assessment of potential noise and vibration impacts; and
- recommendation of mitigation measures to minimise construction noise and vibration impacts, where reasonable and feasible.

The construction noise and vibration impact assessment would consider potential impacts during works outside of standard construction hours, and the potential impacts of construction related traffic. A quantitative construction noise impact assessment would be conducted, based on typical construction scenarios expected along the project route.

The project is not anticipated to be a significant source of operational vibration.

Changes in operational noise sources at the Rookwood Road and Beaconsfield West substations, and where relevant the Sydney South substation, would be assessed in accordance with the *NSW Noise Policy for Industry* (NSW EPA, 2017).

## **6.3 Air quality**

### **6.3.1 Existing environment**

The study area is highly urbanised, consisting primarily of residential land use interspersed with pockets of industrial, commercial and recreational uses. Background air quality is variable across the study area, and generally typical of an urban environment. Higher than average background concentrations of air pollutants may exist along the project due to their proximity to existing road corridors. Sensitive land uses in the study area include residences, places of worship, schools, child care facilities and recreational facilities such as parks.

### **6.3.2 Issues for consideration**

The principal air emissions generated by the project would be during trenching and excavation of the transmission cable route. During construction, ground disturbance from construction and stockpiling of spoil would generate dust. Construction plant and equipment, including vehicles required to transport staff and materials to site would also contribute combustion-related pollutants including oxides of nitrogen, sulfur oxides, volatile organic compounds and suspended particulates.

There is also potential that landfill gas may be encountered during excavation in Camdenville Park and Sydney Park. Odour from hydrogen sulfide therefore has the potential to impact on nearby receptors if landfill gas is encountered during excavation activities.

With the exception of minor and occasional vehicle and potential plant emissions associated with maintenance and inspection of project infrastructure, air quality impacts during operation of the project are expected to be minimal.

### **6.3.3 Method of assessment**

The EIS would include an assessment of air quality impacts during construction in accordance with the most appropriate guideline for a project of this nature (i.e. not a stationary industrial emission source with construction activities generally occurring in a progressive linear manner). The EIS would also recommend mitigation and management measures to reduce construction emissions and associated impacts, where reasonable and feasible.

A qualitative assessment of potential odour impacts associated with the project will be included in the EIS.

As the project is unlikely to generate significant air quality impacts during operation, an operational air quality impact assessment would not be required.

## **6.4 Electric and magnetic fields**

### **6.4.1 Existing environment**

The highly urbanised study area includes significant existing electrical infrastructure, including major transmission supply infrastructure operated by TransGrid, in addition to distribution infrastructure operated by Ausgrid. Electrical infrastructure ranges from major 330 kV transmission supply connections and associated substations down to individual connections to homes, businesses and industry.

In addition to electricity transmission and distribution infrastructure, natural and other anthropogenic sources of magnetic and electric fields are common across the study area. Examples of natural fields include those associated with lightning, solar activity and the earth's magnetic field. Anthropogenic fields exist wherever electricity is used, including common household appliances and mobile phones.

While the project route traverses road reserves and public open space, in some locations, the transmission cable circuit would be in close proximity to residential receivers. As part of the design development for the project, consideration would be given to relevant guidelines and standards to ensure that exposure levels remain below the recommended levels, thus minimising the risk of electric and magnetic fields (EMF) exposure. These guidelines are prescribed by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), which is the Federal Government agency responsible for providing public health recommendations to the government on matters relating to EMF.

#### **6.4.2 Issues for consideration**

There is likely to be community concern in relation to the potential impacts of EMF on human health as a consequence of the project, particularly where the transmission cables are located in relatively close proximity to habitable areas (including individual residences) and areas where people congregate including public open spaces. These concerns are likely to be raised despite magnetic and electric fields naturally occurring in the environment and being present from other anthropogenic sources in and around the home.

#### **6.4.3 Method of assessment**

As electric fields generated by the transmission cables would be shielded by a metallic sheath surrounding the conductor, external electric fields would be negligible. The focus of the assessment would therefore be on the generation of magnetic fields, which are associated with potential health effects.

Magnetic fields generated by the transmission cables would be modelled using commercially available software. The modelling would use established engineering techniques, which are used internationally and are known to produce accurate results.

The modelling would assess the time weighted average load and maximum load for magnetic fields above the trench as well as near the special crossings with consideration to ARPANSA recommended limits.

### **6.5 Landscape character and visual amenity**

#### **6.5.1 Existing environment**

The character of the landscape within the study area is primarily urban, with the project traversing some areas of scenic value including the Cooks River, Sydney Park, and other areas of open space.

#### **6.5.2 Issues for consideration**

The key visual elements that would be introduced to the study area as a result of the project would be for the above ground cable crossings of infrastructure or watercourses.

Minor upgrade works at the Rookwood Road, Beaconsfield West and Sydney South substations would also introduce new structural elements into the landscape. However, based on the existing use of both of these sites and the industrial nature of surrounding developments, potential visual amenity and landscape impacts are anticipated to be minor.

Due to the majority of transmission cables being proposed to be located below the surface of the ground (except for above ground cable bridges), the transmission cables are not anticipated to significantly alter the visual character of the study area following the reinstatement of disturbed areas.

The potential removal of trees to enable construction would have potential visual amenity and landscape impacts during construction and operation. This would depend on the number, area and type of trees removed. Tree removal will be avoided wherever possible. Where avoidance is not possible, a tree replanting strategy/landscape plan will be agreed with the relevant local council. Tree replanting, where possible, would help to mitigate these impacts.

There would also be a temporary impact to visual amenity during construction from the presence of construction laydown areas and associated personnel, equipment and machinery for road users and sensitive visual receivers along the project. Clearing of vegetation and potential disturbance of areas of rehabilitation along the Cooks River to facilitate cable bridges may result in temporary localised visual impacts.

#### **6.5.3 Method of assessment**

The EIS would include an assessment of visual impacts during construction and operation, including a description of existing landscape character zones and sensitive visual receivers, and identification of measures to be used to minimise potential visual impacts.

## 6.6 Soils and contamination

### 6.6.1 Existing environment

#### Soil landscapes

The *Soil Landscapes of the Sydney 1:100 000 Sheet* (Chapman and Murphy, 1989) characterises soil landscapes across the study area. The project would traverse four soil landscapes as shown in **Figure 5**:

- Blacktown (bt) – a residual landscape generally characterised by poor drainage and low soil fertility. Most of this soil landscape is covered at the surface by tiles, concrete, bitumen or turf;
- Birrong (bg) – a fluvial landscape generally characterised by localised flooding, high soil erosion potential, saline subsoil, seasonal waterlogging and very low soil fertility. Most drainage lines of this landscape have been artificially lined with concrete;
- Tuggerah (tg) – an aeolian landscape generally characterised by extreme wind erosion potential, highly permeable soils, very low soil fertility, localised flooding and permanently high water tables; and
- Disturbed Terrain (xx) – generally characterised by poor drainage and the potential for sedimentation and groundwater contamination and mass movement hazard.

#### Acid sulfate soils

The Cooks River corridor is mapped as having potential for acid sulfate soils as shown in **Figure 6**. The project route would cross the Cooks River at Croydon in the vicinity of Lees Park and Mildura Reserve, an area mapped as having a high and low probability of potential acid sulfate soil occurrence. Potential acid sulfate soils are mapped as being between either two to four metres depth and greater than four metres depth in this area.

#### Contaminated land

Soils in proximity to the Beaconsfield West substation and the crossing of Cooks River at Campsie/Croydon Park are mapped as disturbed terrain and may contain some contaminated soils as a result of historical land uses. A number of industrial and/or former industrial sites are located throughout the study area which also have the potential to contain contaminated soils.

Sydney Park was formerly an industrial site once used for landfill and several brick pits. Sydney Park currently comprises over 40 hectares of landscaped gardens, hills, wetlands and public recreational and picnic areas.

On 28 February 2019, Sydney Park was declared significantly contaminated land by the NSW EPA, warranting regulation under the *Contaminated Land Management Act 1997* (CLM Act). Contaminants at the site include methane and carbon dioxide from gases from old landfill material. The contamination declaration also states that further investigation would be undertaken and a management order may follow if required (NSW EPA).

City of Sydney Council also owns and operates a leachate treatment plant in Sydney Park.

Alexandra Canal (adjacent to the Beaconsfield West substation) receives runoff/effluent discharge from a well-established and heavily industrialised catchment area. 'Alexandra Canal sediments' is registered as a contaminated site under the CLM Act and is regulated by the NSW EPA.

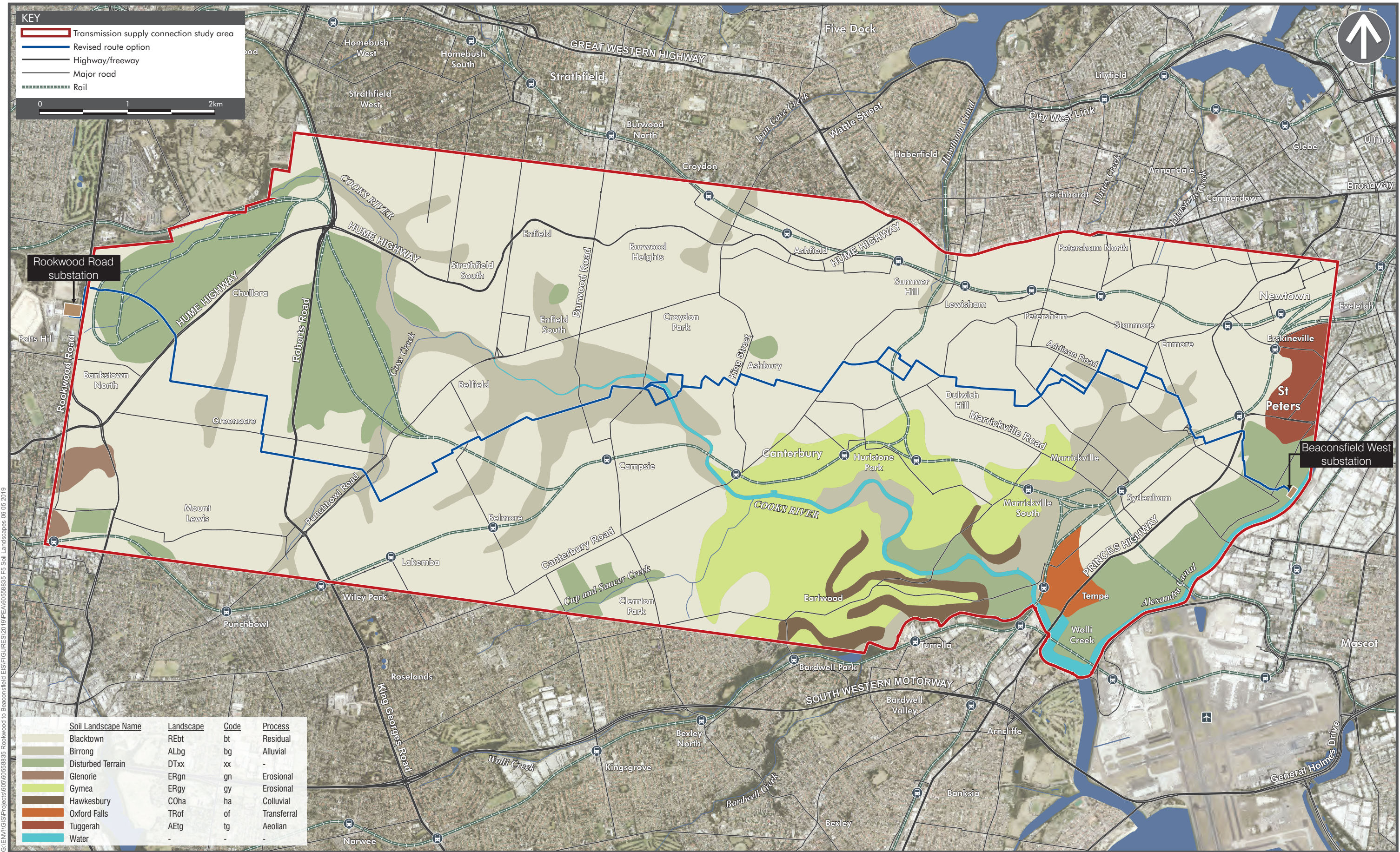
### 6.6.2 Issues for consideration

Given the highly urbanised and developed nature of the study area, there is a high likelihood that surface soil profiles have been modified from natural conditions as a result of filling, reclamation and/or grading activities. Trenching or underboring through unstable, potentially contaminated or highly erodible soils (such as those along the Cooks River) would require adequate construction management and mitigation measures to ensure erosion and contamination potential in these areas is controlled.

### **6.6.3 Method of assessment**

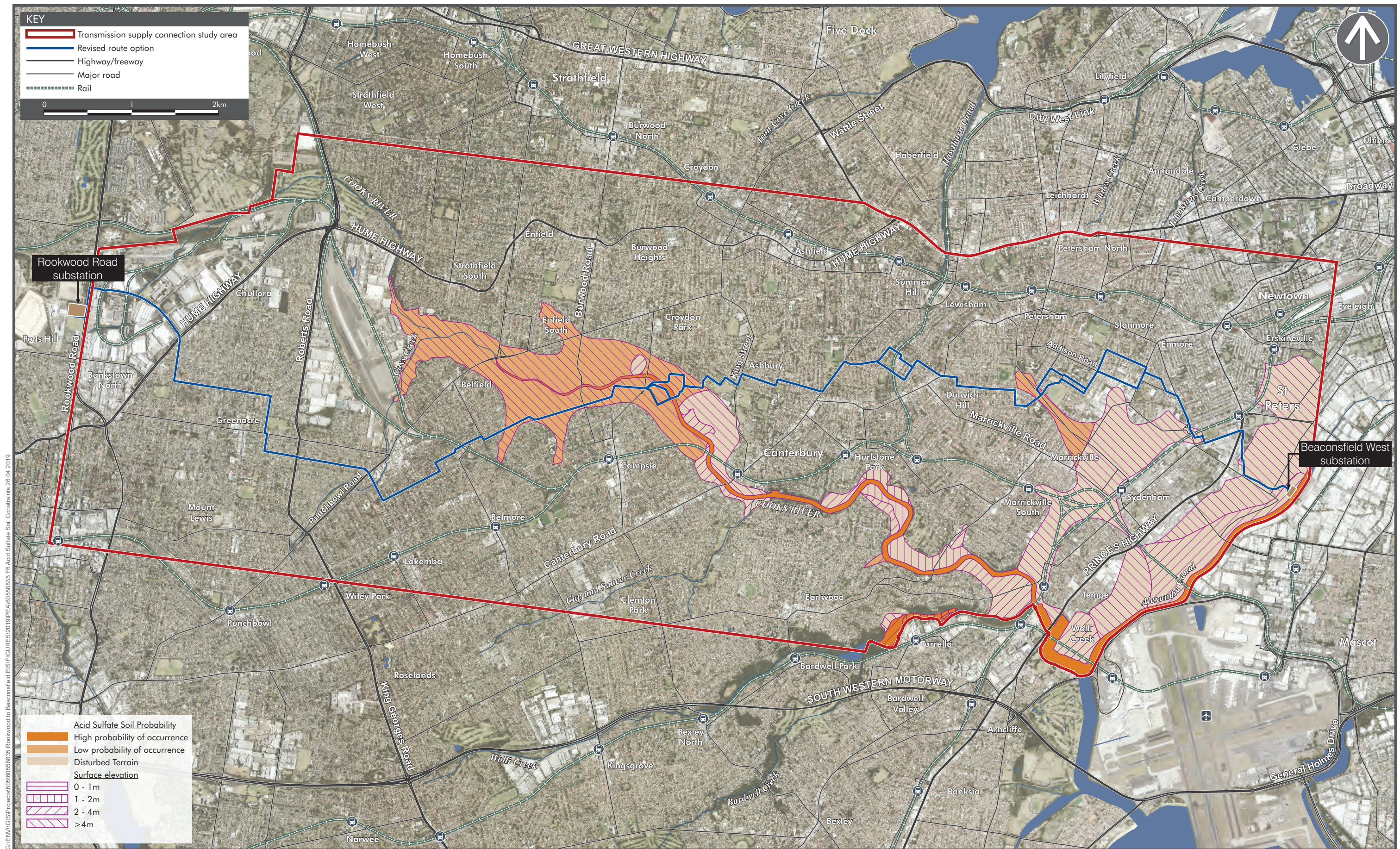
More detailed investigations would be conducted to assess potential impacts on soil conditions. Further geotechnical assessment would be undertaken to inform development of the project and would identify any necessary management measures or remediation requirements for potentially contaminated land including at Sydney Park. This would include consideration of potential historical soil contamination and management of acid sulfate soils.





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## 7.0 Other environmental issues

This section considers the other (non-key) environmental assessment issues for the project.

### 7.1 Surface water and groundwater

#### 7.1.1 Existing environment

##### Hydrology and flooding

The project would cross the Cooks River, the main hydrological feature within the study area. Cocks Creek, a primary tributary of the Cooks River, would also be crossed by the project in the western portion of the study area. The Cooks River has the greatest potential for potential flood impacts.

The Beaconsfield West substation is located adjacent to the Alexandria Canal, a highly modified waterway which also flows into the Cooks River.

Drainage from the majority of land traversed by the project drains into these watercourses via local piped urban stormwater networks. Localised flooding is known to occur in some local government areas as a result of overflow to these networks.

The Cooks River and its tributaries comprise highly modified urban waterways which predominantly take the form of concrete lined channels to the west of Canterbury and forms part of the urban stormwater network. To the east of Canterbury, while influenced by urban development, the Cooks River widens and exhibits more natural stream characteristics, including a mix of native and exotic riparian vegetation.

Several areas along the Cooks River have been or are subject to active rehabilitation initiatives by local councils and community groups, and have previously been naturalised through Sydney Water's Cooks River Bank Naturalisation Project. The project route would cross the Cooks River where it has natural stream characteristics.

##### Groundwater

Groundwater is present across the study area and is generally recharged by infiltration of rainfall and runoff. Groundwater flow typically follows the surface topography but is also influenced by a number of factors such as groundwater extraction.

Groundwater levels vary across the study area with elevated groundwater levels potentially present where the watertable is perched, especially within the residual clay of the Wianamatta Shale.

Sydney Park is a known area of groundwater contamination within the study area.

#### 7.1.2 Issued for consideration

If not adequately managed, the project may impact local surface water and existing groundwater resources. Specifically impacts may relate to:

- erosion and sedimentation of waterways resulting from ground disturbance during trenching and underbore activities;
- in-stream disturbance to sediments and mobilisation of potentially contaminated sediments for the cable bridge or underbore crossing of Cooks River (depending on detailed design of the watercourse crossing);
- accidental spills of fuels, oils, chemicals or construction materials that may enter surface water or infiltrate to groundwater;
- poor construction management during flooding events;
- permanent changes to surface water flows and/or the flooding regime with the introduction of above ground infrastructure (such as cable bridges); and
- interception of perched groundwater and potential groundwater drawdown.

### 7.1.3 Method of assessment

A qualitative assessment would be undertaken to address the potential impacts to surface water, flooding and groundwater resources that may result from the project, including from the construction of the transmission cable circuit, construction laydown areas and substations. The EIS would also identify a suite of effective and practical mitigation measures to be applied to works to manage these potential impacts.

## 7.2 Land use and property

### 7.2.1 Existing environment

The project route would be located primarily within existing local road reserves. Land outside of the road reserves would only be affected for short sections in some locations. The detailed alignment of the route within these road reserves would be subject to more detailed design analysis (which would continue in parallel to the EIS).

In most cases, land uses adjacent to the road reserves in which the project would be located are residential, with relatively short sections of commercial development around Ashfield and Dulwich Hill. The project would be located in proximity to industrial land uses towards the western and eastern portion of the study area, surrounding the Rookwood Road and Beaconsfield West substations.

The majority of the project route avoids the need to acquire or establish easements across private land. The project route would affect two private commercial properties where the route traverses a private driveway connecting Burrows Road and Euston Road and where the cable bridge crosses Muir Road. TransGrid would seek to negotiate acquisition of easements on private land. All easement acquisition would be conducted in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*.

The project route has been designed to avoid public recreation areas wherever possible, however, as with the original route, the project route traverses Camdenville Park and Sydney Park. Other areas of open space that would be affected by the route include the Cooks River foreshore at Campsie/Croydon Park, Lees Park at Ashbury and Henson Park at Marrickville. There are also other reserves adjacent or in proximity to the project that will not be directly affected.

Construction laydown areas would also be required within Cooke Park at Belfield and Peace Park at Ashbury. Temporary use of these areas would aim to minimise disruption to users and to avoid impacts to vegetation, public safety and amenity. All construction areas would be reinstated and rehabilitated following the completion of construction.

### 7.2.2 Issues for consideration

Key land use issues relevant to the project relate to:

- potential impacts to sensitive land uses, such as private residences, businesses and public recreational areas (both adjacent to and traversed by the project route) during construction; and
- the compatibility of the transmission cables with other infrastructure, land use and utilities that may be crossed or located in proximity to the project route, including for example, crossings of rail corridors and locations close to other electricity infrastructure.

### 7.2.3 Method of assessment

The EIS would assess potential impacts of the project on existing and future land use including consideration of consistency with zone objectives for directly affected land and adjacent land uses, compatibility with permissible development types, consistency with existing and permissible development patterns, and potential implications for easements.

## 7.3 Waste management

### 7.3.1 Existing environment

The study area, and the Sydney region more broadly, has well developed waste management infrastructure. This includes waste treatment, recycling and disposal (including landfill) facilities with the capacity to receive most types of wastes.

### 7.3.2 Issues for consideration

Construction of the project has the potential to generate waste materials including construction materials, domestic (employee related) wastes, and spoil (including potentially contaminated spoil). There is potential for the project to result in adverse impacts to the local environment if waste is not managed appropriately. Inappropriately managed waste may result in impacts to visual amenity, risks to health and safety of construction workers and members of the public, contribution to landfill, and pollution caused by release of chemical waste.

Significant volumes of waste materials are not expected to be generated during operation of the project, beyond occasional minor waste streams associated with infrequent maintenance activities. These waste streams would be typical of maintenance wastes generated across TransGrid's existing transmission supply network.

### 7.3.3 Method of assessment

The EIS would identify potential waste streams associated with construction of the project, and would include standard management practices compliant with the *Waste Avoidance and Resource Recovery Act 2001* and other relevant policies and guidelines.

## 7.4 Socio-economics

### 7.4.1 Existing environment

The study area spans portions of the City of Canterbury-Bankstown, Strathfield, Inner West and City of Sydney LGAs. Sensitive land uses in the study area include residences, places of worship, schools, child care facilities and recreational facilities such as parks. Key community facilities and open space areas in the study area include Sydney Park and the Cooks River corridor. A number of sporting fields are located throughout the study area.

Given the urban nature of the study area, significant existing road and rail infrastructure, as well as gas, electricity, water and sewerage services exist.

Local employment includes small businesses in neighbourhood centres and employment in large industrial and commercial areas in and around Alexandria and St Peters, Enmore, Hurlstone Park, Chullora, Potts Hill and Bankstown. In addition to the use of private vehicles, public transport such as buses and trains are highly utilised with many key routes to the Sydney CBD located through the study area as well as a number of bicycle routes.

### 7.4.2 Issues for consideration

Construction activities in proximity to residential areas have the potential to result in amenity impacts to the local community through potential noise and vibration impacts, traffic impacts, and air quality and visual impacts. Potential impacts to the local community or businesses may also occur as a result of traffic lane closures and detours during construction.

The majority of the revised route is within local road corridors which would result in potential impacts to general traffic movement and access to property along affected roads. Working mostly within local road corridors would mean that the majority of construction works would be undertaken during standard construction work hours as specified in the *Interim Construction Noise Guideline* (DECC, 2009) (as described in **Section 2.3**). Less construction work would be required at night when compared to the original route.

The project is likely to impact on existing infrastructure and services, including potential relocation of minor utilities. Where the transmission cables are to be installed within road corridors or across rail corridors, consideration would need to be given to potential disruptions to and/or interactions with that transport infrastructure.

The project would provide security to the existing transmission network during operation as described in **Section 1.0**. This security and reliability of supply would have social and economic benefits to consumers and the local community.

### 7.4.3 Method of assessment

An assessment of the potential social and economic impacts and benefits of the project would be included in the EIS. The assessment would include an assessment of potential social and economic impacts on both a broader regional and local scale, and would include a summary of project benefits. Measures to mitigate localised amenity impacts would also be identified in the EIS for noise and vibration, traffic, air quality and visual impacts.

Consultation with infrastructure and service providers has been conducted as part of the route selection process for the project and would continue during preparation of the EIS to ensure that mutually acceptable design outcomes are achieved where reasonable and feasible.

## 7.5 Biodiversity

### 7.5.1 Existing environment

Several vegetation communities have been mapped within the study area (refer to **Figure 7**), however those in proximity to the project route include:

- urban vegetation (native and exotic) located sporadically along the project;
- weed species; and
- Castlereagh Ironbark Forest located between Rookwood Road and Muir Road.

Castlereagh Ironbark Forest is listed as an Endangered Ecological Community (EEC) but is unlikely to be impacted by the project.

A search of relevant ecological databases, including the BioNet Wildlife Atlas of NSW (16 April 2019) and a Protected Matters Search (16 April 2019), was undertaken for the study area.

A number of threatened flora species have been identified as having the potential to occur in locations that may be affected by the project, including the Downy Wattle (*Acacia pubescens*) and Magenta Lily Pilly (*Syzygium paniculatum*). The Downy Wattle is known to occur in areas of disturbed vegetation, and may occur in locations not otherwise considered to represent high ecological values.

A number of threatened fauna species have been identified as having the potential to occur in areas likely to be affected by the project, including the Green and Golden Bell Frog (*Litoria aurea*) listed as endangered under the *Biodiversity Conservation Act 2016* (NSW) (BC Act) and vulnerable under the EPBC Act, as well as the Grey-headed Flying Fox (*Pteropus poliocephalus*) listed as vulnerable under the BC Act and EPBC Act. Other protected species previously identified within proximity of the project route include the Powerful Owl (*Ninox strenua*), listed as vulnerable under the BC Act, Long-nosed Bandicoot (*Perameles nasuta*), listed as endangered under the BC Act, and Eastern Bentwing-bat (*Miniopterus schreibersii oceanensis*), listed as vulnerable under the BC Act.

The *Draft Recovery Plan for Green and Golden Bell Frog* (DEC, 2005b) classified 'key populations' of Green and Golden Bell Frog as populations considered to have significant measures of viability and/or have regional distribution considered essential to the Statewide conservation of the species. Two key populations are in proximity to the project: Greenacre and Arncliffe (Lower Cooks River population) (refer to **Figure 7**). Although the project route passes through two areas mapped as 'key populations', the location of the transmission cables principally in existing road reserves reduces the potential for direct impacts on the Green and Golden Bell Frog habitat. Further field investigations would be conducted as part of the ongoing design development for the project, including identification of potential Green and Golden Bell Frog habitat. It is intended to avoid direct or indirect impacts on this species and its habitat where reasonable and feasible through design measures (including location of the transmission cables) and construction environmental management measures (such as those relating to surface water runoff, erosion and sedimentation control).

Although highly modified and impacted by past industrial activity, the Cooks River contains important terrestrial and aquatic habitat value. In addition, recent efforts and initiatives to rehabilitate the Cooks River corridor by the Cooks River have led to significant improvements to sections of the river.

### **7.5.2 Issues for consideration**

Potential ecological issues relevant to the project include:

- direct impacts to native vegetation and habitat values through vegetation clearing and indirect impacts through fragmentation, isolation and edge effects;
- disruptions to threatened fauna movements and removal of threatened fauna habitat, in particular the Green and Golden Bell Frog;
- disturbance of the aquatic environment and species for the cable bridge or underbore crossing of the Cooks River; and
- direct and indirect impacts to riparian areas particularly rehabilitated areas along the Cooks River.

### **7.5.3 Method of assessment**

A Biodiversity Development Assessment Report (BDAR) would be prepared that would consider the impacts of the project on the local and regional terrestrial and aquatic ecology. The assessment would include a field survey of the project route, focusing on areas of proposed riparian and vegetation disturbance and potential habitat for threatened species. It would identify potential impacts on vegetation communities, flora and fauna, and potential habitat for species and communities identified as vulnerable, threatened or endangered under the BC Act and EPBC Act.



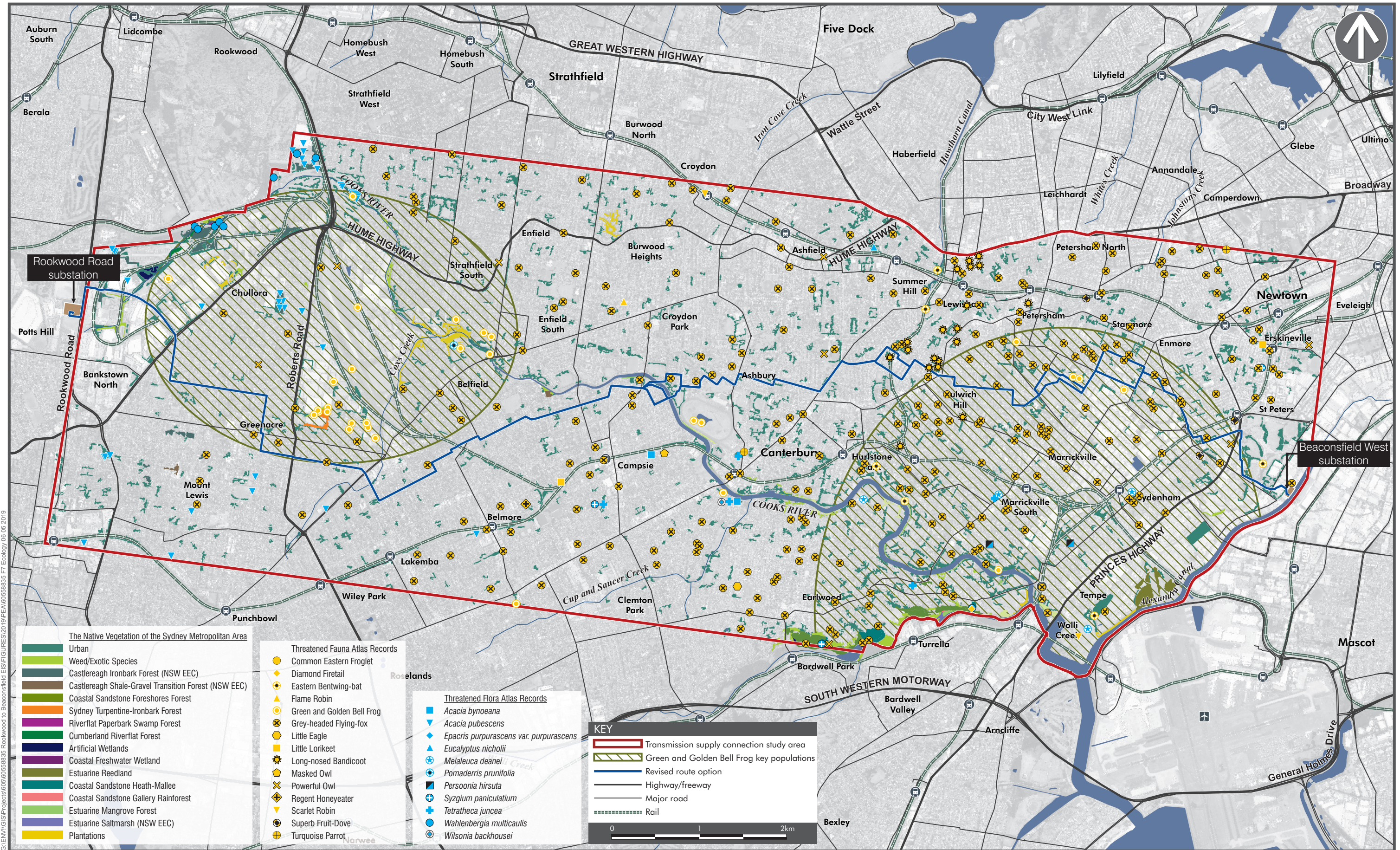


FIGURE 7



## 7.6 Hazards and risk

### 7.6.1 Background

Hazards and risks are identified as potential hazards and risks to public safety that may occur during construction and operation of the project.

### 7.6.2 Issues for consideration

Potential hazards and risks across the study area that are associated with the project include but are not limited to:

- below and above ground utilities present within the road reserve, substations and private and public properties, including, but not limited to electricity, water, gas and telecommunications;
- traffic hazards associated with the movement of vehicles along existing roads;
- railway hazards associated with the rail corridors that the project crosses;
- electrical safety hazards at the existing substations (Rookwood Road, Beaconsfield West and Sydney South);
- storage of hazardous materials and dangerous goods at the existing substation sites; and
- subsidence and frac-out associated with underboring.

### 7.6.3 Method of assessment

The EIS would include a qualitative assessment of hazards and risks to public using the following methodology:

- identification of existing hazards across the study area;
- identification of potential hazards resulting from the construction and operation of the project;
- review of existing background information for the existing substations; and
- identification of controls required to minimise the likelihood of hazardous events.

## 7.7 Heritage

### 7.7.1 Existing environment

#### Non-Aboriginal heritage

Searches of the relevant heritage inventories were undertaken on 18 April 2019 to identify non-Aboriginal heritage items within the study area (refer to **Figure 8**). Results of these searches include:

- one item on the Commonwealth Heritage List (the Marrickville Post Office);
- a total of 49 items on the State Heritage Register; and
- more than 1,450 items listed under local environmental plans (including heritage conservation areas).

These items are shown on **Figure 8**. Direct impacts to all heritage items would be avoided. The route would traverse a number of unavoidable heritage conservation areas listed under local environmental plans.

#### Aboriginal heritage

A search of the NSW Aboriginal Heritage Information Management System (AHIMS) was undertaken on 17 April 2019 and indicated that one registered archaeological site occurs within the study area (500 metre buffer around the project route). The site is located at the eastern end of the project route in the area of the Alexandria Landfill south of Campbell Road. It is outside the project area. It is registered on the AHIMS database as a midden but 'not a site' and is likely no longer classified as a site as result of past development associated with the landfill and construction associated with the WestConnex project. Registered sites typically comprise discrete, relatively small-scale items: rockshelters, middens, artefact scatters, and/or a potential archaeological deposit. The project route is

predominantly confined to highly urbanised and previously modified landscapes with low potential for uncovering unmodified in-situ Aboriginal heritage sites.

#### **7.7.2 Issues for consideration**

Key heritage issues relevant to the project relate to:

- direct and indirect impacts on listed non-Aboriginal heritage items of local, State and Commonwealth significance; and
- direct and indirect impacts on known and potential Aboriginal heritage items and sites.

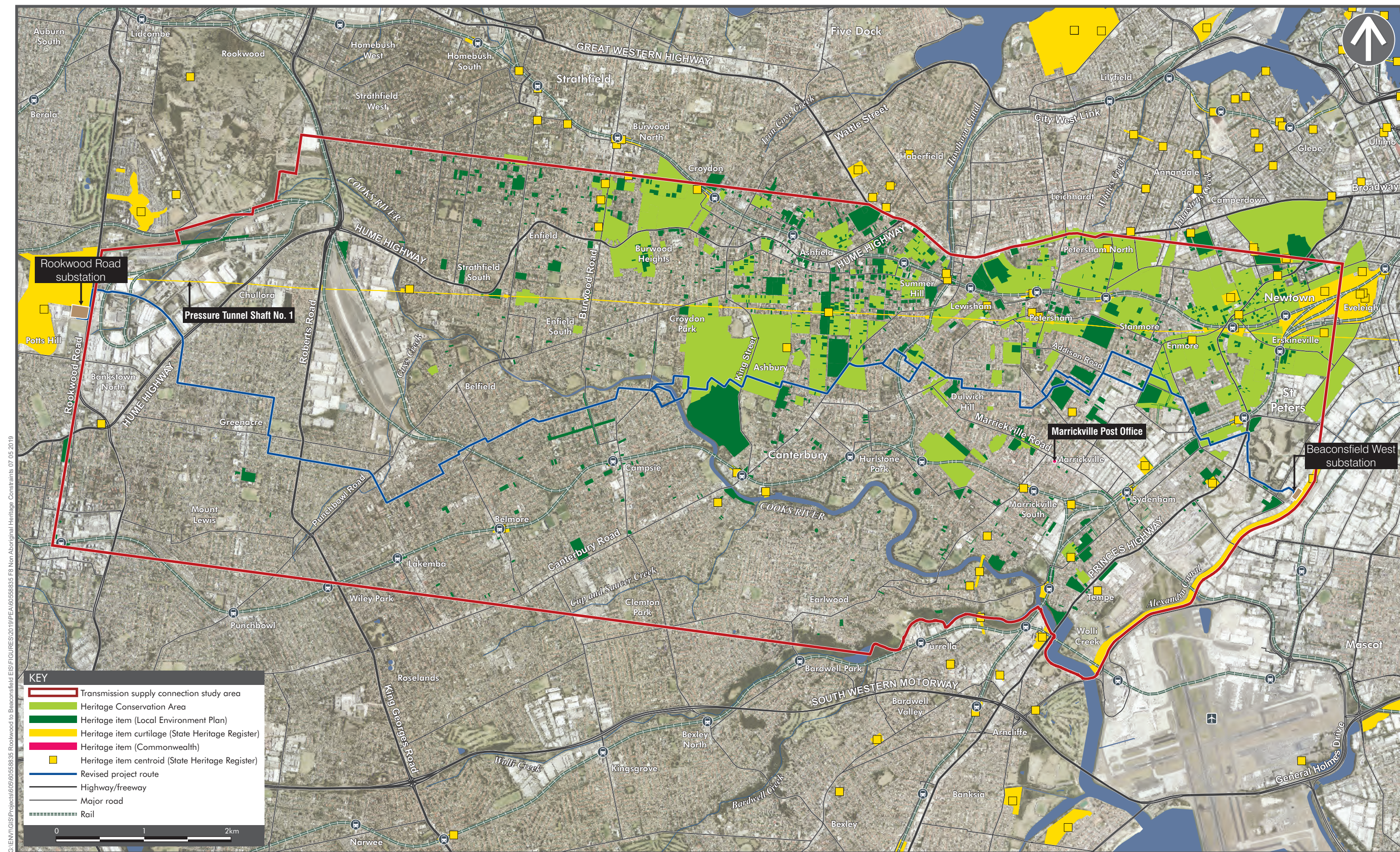
Given that the project route is predominantly confined to highly urbanised and previously modified landscapes, the risk of encountering unknown in-situ Aboriginal heritage sites is considered to be low. The registered AHIMS site identified within the study area is not within the project area and is likely to have been completely removed due to previous disturbance.

Temporary impacts to heritage conservation areas are likely during construction. However as noted above, known heritage items would be avoided by the project. Disturbed areas would be rehabilitated consistent with existing conditions to ensure no long-term changes to heritage values.

#### **7.7.3 Method of assessment**

Risks to Aboriginal and non-Aboriginal heritage would be qualitatively assessed in the EIS, with potential indirect impacts during construction of the project (such as potential vibration impacts, temporary visual impacts, and potential encroachment into curtilage areas/ identified heritage sites) considered and appropriate environmental management measures developed to manage these potential risks.





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## 8.0 Cumulative impacts

Cumulative impacts have been identified as an additional environmental assessment issue that was not considered in the PEA (AECOM, 2017b).

### 8.1.1 Background

Cumulative impacts are impacts that, when considered together, have different and/or more substantial impacts than a single impact assessed on its own. Cumulative impacts can result from the successive, incremental, and/or combined effects of an activity or project when added to other development activities, or concurrent activities associated with the project.

The extent to which another development or activity could interact with the construction and/or operation of the project would depend on its scale, location and/or timing of construction. Generally, the largest cumulative impacts would be expected to occur in situations where multiple long-duration construction activities are undertaken close to, and over a similar timescale to, construction activities for another project.

### 8.1.2 Issues for consideration

There are currently a number of large-scale transport and other infrastructure projects under construction or proposed across the study area which are in close proximity to the project. An initial review of these projects includes the following:

- Sydney Metro City & Southwest Sydenham to Bankstown Upgrade (Chatswood to Sydenham);
- Alexandria Park Community School Redevelopment;
- WestConnex M4-M5 Link;
- WestConnex New M5;
- Enfield Intermodal Logistics Centre modification;
- St Peters concrete batching plant and quarry materials handling facility upgrade and expansion; and
- University of Sydney Camperdown Campus Health Precinct Stage 1 Building.

The WestConnex New M5 project (currently under construction) includes a number of surface road upgrades that would interact with the project, specifically around Euston Road and Campbell Road at St Peters which are being widened as part of the New M5 project. The New M5 project also involves the construction of St Peters interchange to the south of Campbell Road.

The Sydney Metro City & Southwest (Sydenham to Bankstown) rail project would upgrade and convert a number of stations and railway lines that interact with the project. Specifically, construction works between Sydenham and St Peters stations may overlap with construction of the project, particularly in the vicinity of Bedwin Road.

Cumulative impacts of the project would be primarily associated with the construction phase. Key environmental issues with the potential to result in cumulative impacts (i.e. affect the same receivers as other relevant projects) include traffic and transport, noise and vibration and social and economic considerations. Generally, other major projects proposed in the same area as outlined above are likely to primarily impact arterial roads and would generally avoid local roads for activities such as spoil haulage. The project route would be located primarily along local roads which would likely alleviate potential cumulative impacts.

Construction fatigue is also a potential cumulative impact that may affect receivers within the study area, whereby the same sensitive receivers experience construction impacts from consecutive developments over a long period of time with few or no breaks between construction activities. Construction fatigue would be further assessed in the EIS, which would also outline management measures.

### **8.1.3 Method of assessment**

The cumulative impact assessment would screen identified developments based on whether they overlap with the project area and whether they would occur concurrently with the construction of the project. The focus would be on developments of a similar scale and nature including other State significant development or infrastructure projects. For the developments included in the cumulative impact assessment, the EIS would consider potential interaction of the project's potential impacts with the identified relevant developments.



## 10.0 Conclusion

The key environmental assessment issues identified for the project, and which would be assessed in more detail during the preparation of the EIS are:

- traffic and access impacts during construction;
- noise and vibration impacts during construction;
- air quality impacts during construction;
- electric and magnetic field impacts during operation, particularly in the context of community concerns around public health;
- landscape character and visual amenity impacts during construction and operation; and
- soil and contamination impacts, including potential erosion and sedimentation, and management of contaminated spoil.

Other environmental issues that would be considered in the EIS but are not considered key issues include:

- surface water and groundwater impacts, including pollution of waterways and potential interception and drawdown of groundwater;
- land use and property implications, particularly the need for the acquisition of easements and any temporary occupation of public land;
- waste generation and management;
- social and economic impacts and benefits;
- biodiversity impacts, including around riparian areas and potential impacts to threatened species and habitat;
- hazards and risk including potential impacts on utilities; and
- heritage impacts, particularly potential indirect impacts during construction (such as temporary visual and amenity impacts, and potential temporary encroachment into curtilage areas).

Cumulative impacts are also identified as an environmental assessment issue that would be assessed in further detail in the EIS.

As part of the preparation of the EIS, further assessments (as proposed in **Section 6.0**, **Section 7.0** and **Section 8.0** of this Scoping Report) would be carried out in conjunction with the further development of the project design. In assessing the project, the key focus would be avoidance and minimisation of impacts on the environment and local communities, where reasonable and feasible, when taking into consideration engineering constraints and cost implications. The assessment would also identify mitigation and management measures to minimise impacts on the environment during the construction and operation of the project.

Consultation with affected property owners, stakeholders and the local community will continue throughout the project assessment, design and construction phases and the outcomes of such consultation where relevant to the assessment would be detailed in the EIS.

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