Belrose cable replacement project

Social Impact Assessment

Ausgrid

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Acronyms

Acronym	Definition
ABS	Australian Bureau of Statistics
DPE	Department of Planning and Environment
LGA	Local Government Area
MLALC	Metropolitan Local Aboriginal Land Council
NBC	Northern Beaches Council
PSA	Primary Study Area
SA1	ABS Statistical Area Level 1
SA2	ABS Statistical Area Level 2
SER	Summary Environmental Report
SIA	Social Impact Assessment
SSA	Secondary Study Area
TSA	Tertiary Study Area

Definitions

Word or phrase	Definition
ABS Statistical Area Level 1 (SA1)	SA1s are the smallest output area for ABS census data and are designed to optimise the balance between spatial detail and the ability to cross-classify Census variables. Their purpose is to represent a community that interacts together socially and economically.
ABS Statistical Area Level 2 (SA2)	SA2s are medium-sized general-purpose areas built from whole Statistical Areas Level 1 (SA1s).
Sensitive receiver	Stakeholders, facilities, locations where land use is sensitive, or where there may be a particular focus on protecting land use for human health and wellbeing, local amenity, and aesthetic enjoyment. Sensitive receivers include, but are not limited to, educational facilities, health and community facilities, public facilities and services, and recreational areas. Sensitivity is determined by their capacity to adapt to changes brought about by a project or adverse impacts caused by the project. Adverse impacts could include environmental or amenity nuisance issues such as noise, vibration, dust, light and odour, access impacts, and parking areas impacts, potentially impacting the traders, business staff or visitors to the establishment or how the business operates.
Social impact	Intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions. Social impacts vary in nature and can be positive or negative, tangible, or intangible, physically observable, or psychological - including fears and aspirations. Social impacts can be quantifiable, partly quantifiable, or qualitative. They can also be experienced or perceived differently by different people and groups within a community or over time.
Social impact assessment	A Social Impact Assessment (SIA) involves analysing social changes and impacts on communities likely to occur because of a particular development, planning scheme, or government policy decision.
Study area	Custom geographies that align with the identified project footprint/area and likely construction and operation impact zone. These custom geographies provide context about the local community, liveability, and characteristics of the local environment within the immediate area of the project, which is likely to experience some of the localised social impacts or changes to existing conditions. The selection of these study areas facilitated comprehensive data collection from the ABS 2021 Census.
The project	Ausgrid proposes replacing aging fluid-filled 132kV underground cables with overhead wires along Ralston Avenue Belrose from the main gates near Elm Avenue towards the Western Lookout. The existing underground cables are nearing the end of their serviceable life and require replacement with new poles and overhead wires to ensure Ausgrid maintains a safe and reliable electricity network. The Belrose cable replacement project is intended to support the reliability of the energy network in the district (i.e. Sydney's North Shore area), which supplies 48,000 customers via four zone substations at St Ives, Turramurra, Pymble and Lindfield, New South Wales.

Executive summary

This Social Impact Assessment (SIA) report has been prepared on behalf of Ausgrid to determine the potential social impacts (both positive and negative) associated with the Belrose cable replacement project (the project) and to provide mitigation and enhancement measures in response to each of the identified impacts. This SIA will form part of the documentation accompanying the project's Summary Environmental Report (SER).

This SIA is not a regulatory requirement for the project; however, it demonstrates Ausgrid's commitment to understanding the anticipated project's social impacts and addressing those impacts in a way that maintains Ausgrid's social licence to operate while enabling it to continue with socially responsible operations and delivering social value through its project.

This SIA report has been prepared by Social Value practitioners from Aurecon, aligning with current leading industry practice, as informed by the Social Impact Assessment Guideline from the Department of Planning and Environment (2023).

Proposal overview

The project is intended to support a reliable energy network for Sydney's North Shore area, which supplies 48,000 customers via four zone substations at St Ives, Turramurra, Pymble and Lindfield, New South Wales.

Ausgrid proposes replacing aging fluid-filled 132 kV underground cables with approximately 900 metres of overhead wires along Ralston Avenue Belrose from the main gates near Elm Avenue towards the Western Lookout. The existing underground cables are nearing the end of their serviceable life and require replacement with new poles and overhead wires to ensure Ausgrid maintains a safe and reliable electricity network.

Legislative and policy context

Social impacts from construction and operation of the project have been assessed in accordance with the relevant legislation and guidelines. Key guidelines considered as part of this assessment included:

- Social Impact Assessment Guideline (DPE, 2023)
- Technical Supplement – Social Impact Assessment Guideline for State Significant Projects (DPE, 2023)

Methodology

This Social Impact Assessment (SIA) report has been prepared by Social Value practitioners from Aurecon, aligning with current leading industry practice, as informed by the Social Impact Assessment Guideline from the Department of Planning and Environment (2023).

The SIA assesses the potential positive and negative social impacts of the project across various social factors, including community well-being and amenity impacts. The assessment of potential social impacts arising from the project included the following key steps:

- understanding of project context
- scoping of social issues
- identifying the SIA social locality.
- describing the existing social environment.
- describing community and stakeholder perspectives.
- evaluating identified social impacts.
- identifying recommended management measures.

Existing environment

The SIA social locality is the area expected to experience the most social change due to the project during construction and/or operation. This SIA considers the need to factor in local and broader social impacts. It has relied on ABS Statistical Area Boundaries, Statistical Area 1 (SA1), Statistical Area (SA2) and Local Government Area (LGA) boundaries to define a Primary Study Area (PSA), a Secondary Study Area (SSA), and a Tertiary Study Area (TSA) consolidate data and facilitate the understanding of the social locality's existing environment.

The PSA includes residents, stakeholders, and facilities closest to the project, specifically within 400 metres of the project site, i.e., Ralston Avenue Belrose. The SSA considers two statistical areas surrounding the project site, including the suburb of Belrose, and Frenchs Forest – Oxford Falls area, which the suburb of Davidson falls under. The operational reach of the project defines the TSA as a component of the district's energy infrastructure network. This is defined as the area encompassing 48,000 customers via four zone substations at St Ives, Turramurra, Pymble and Lindfield, New South Wales, in the Ku-ring-gai Local Government Area (LGA).

Key characteristics of the local and regional social locality include:

- An older and ageing population, with 18.8% of the PSA population over 65 years of age compared to 15.2% in Greater Sydney. In 2021, the Primary Study Area (PSA) resident population was 1,327, with a median age of 43. This is higher than the Greater Sydney median age of 37.
- A relatively low Aboriginal and Torres Strait Islander population in the PSA (0.3%) compared to the Secondary Study Area (SSA) (3.0%). Additionally, the overseas population is smaller in the PSA (28.3%) compared to the SSA (33.4%). This may indicate a lower degree of cultural diversity when compared to the broader SSA and Greater Sydney region.
- Separate houses, as the dominant housing type, account for 92.8% of households in the PSA and 80.2% of households in the SSA. This is significantly higher when compared to Greater Sydney (55.8%). In both the PSA and SSA, the largest share of households is owned by a mortgage (44.1% and 39.1%, respectively). In the PSA, there is a higher proportion of outright home ownership (39.4%) compared to the SSA (26.8%). Conversely, there is a lower proportion of renters in the PSA (15.6%) compared to the SSA (31.0%).
- A median weekly household income is relatively high in the PSA ($2,781) and SSA ($2,952) compared to Greater Sydney ($2,077). While the median weekly household income is similar across the PSA and SSA, there is a significant difference in median mortgage repayments, with median monthly mortgage repayments at $824 in the PSA compared to $3,422 in the SSA. This may indicate a higher incidence of financial stress in the SSA.
- The community of the Belrose area values the natural environment of the Northern Beaches and unfettered access to nature and the abundance of space[1].

Potential negative social impacts

The project is expected to have a small number of adverse impacts during the construction and operational phase, including:

- Changes to the natural environment surroundings, due to vegetation clearing and installation of new overhead poles may temporarily impact the experience of local bushwalks during the construction phase of the project and increased construction activities may temporarily impact local amenity.
- During construction, there may be vehicles and trucks delivering materials to site, and closures to the Ralston Avenue pathway may be required. However, this pathway is not available for public access at present, therefore access impacts affecting sensitive receivers would be negligible. Parking along the non-council managed section of Ralston Avenue may be possible for most of the time for those cars that park there to go for a walk/walk dog.

[1] Northern Beaches Resilience Strategy, Northern Beaches Council, June 2022

- There is potential for fear regarding the scale of the visual impacts as there will be poles that may stand out above the treeline, and in front of the view to the west from the rock outcropping lookout. Overhead poles may also change the visual outlook of residents living in the Davidson area. However, the Visual Impact Assessment for this project considered visual impacts for these residents as minor. There are aboveground poles and wires in the first section of road/pathway into this area, and one resident along Ralston Avenue (at the southern end) would be affected. Ausgrid has proactively engaged the resident on Ralston Avenue and concerns about visual impacts have not been raised by this stakeholder. Visual impacts for other residents along Ralston Avenue and Elm Avenue will be negligible. Mitigations are being proposed, and Ausgrid have started community engagement and proposed to use slim poles instead of steel towers. Further modelling of a view from Davidson has indicated the bushland in front and behind would reduce the visual impact.
- Community concerns related to bushfire risks, as well as electromagnetic field emissions (EMF) and perceived overhead line noise, may contribute to a negative perception and community sentiment towards the project.
- Ongoing issues with trespassing, 4WD driving, rubbish dumping, and fire lighting have affected residents' and visitors' experiences of the natural environment. MLALC is responsible for the area's management; however, there may be a perception that Ausgrid has the influence and ability to address these concerns. Unmet stakeholder expectations may contribute to negative sentiment towards the project.
- There is a high level of community organisation around local environmental values and preserving and enhancing the Northern Beaches bushlands. Specific community groups like 'Save the Northern Beaches Bushlands' oppose development in the area and therefore may oppose any project changing the local amenity. This may increase the potential for negative impacts to decision-making systems if there is a perception of unmet expectations. This would include the perception that residents cannot participate in decisions affecting their lives or are not receiving procedural fairness.

Potential positive social impacts

The project is expected to have positive impacts during the operational phase, including:

- The removal of the brick enclosure at the Western Lookout may provide residents and visitors with a less interrupted view across the gully as well as minimising opportunities for graffiti and vandalism, which may result in a more enjoyable experience of the natural environment. This enhancement would benefit residents opposite the Western Lookout who look towards the existing brick enclosure.
- Overhead lines can be installed relatively quickly, reducing construction periods and potential disruptions. Moreover, the cost of installing underground lines is more significant compared to overhead lines, which translates to cheaper network fees for Ausgrid’s customers.
- Overall, the project would indirectly improve the liveability of Ausgrid’s customers in Sydney’s North Shore area (including businesses) by delivering affordable energy transmission infrastructure which increases service reliability.

Recommended management measures

Overall, the potential adverse impacts arising from the construction and operation of the project can be well managed and mitigated through robust stakeholder engagement, timely communications, and construction management plans, as suitable for construction activities. Ausgrid has a communication and stakeholder engagement strategy in place for the project. Ongoing consultation with the local community and key stakeholders would facilitate impact mitigation.

1 Introduction

This report has been prepared on behalf of Ausgrid to support the upcoming Summary Environmental Report (SER) to determine the potential social impacts of the Belrose Cable Replacement Project (the project).

1.1 Project overview

Ausgrid proposes replacing aging fluid-filled 132 kV underground cables with overhead wires along Ralston Avenue Belrose from the main gates near Elm Avenue towards the Western Lookout. The project includes short sections of underground cable from Ralston Avenue to the substation.

The existing underground cables are nearing the end of their serviceable life and require replacement with new poles and overhead wires to ensure Ausgrid maintains a safe and reliable electricity network.

The project is intended to support the reliability of Ausgrid's energy network, which supplies 48,000 customers via four zone substations at St Ives, Turramurra, Pymble and Lindfield, New South Wales. It is intended to ensure that the existing electricity supply is maintained.

The new installation will follow an existing route with the existing transmission lines currently 6.5 km long and 5.5 km of these already overhead lines. Within this 1 km section of aged underground cables, Ausgrid is preparing to install overhead poles, wires on both sides of Ralston Avenue Belrose. Some vegetation will need to be removed for the project between Transgrid's Substation and the Western Lookout.

Installing new poles and overhead wires will provide a cost-efficient solution to minimise customer costs. The overhead design also simplifies the installation.

Ausgrid plans to remove the existing brick enclosure at the Western Lookout, which is expected to improve visual amenity towards Garigal National Park.

1.2 Project description

The project involves replacing underground 132 kV lines with twin overhead 132 kV lines and a short section of an underground replacement links. The replaced underground lines will extend south from Trangrid's Sydney East Substation along Ralston Avenue towards the Western Lookout. The replacement 132 kV overhead lines will extend approximately 900 m westwards along each side of a part-sealed, part-unformed extension of Ralston Avenue to the Belrose brick enclosure.

Construction activities are expected to take approximately 6-8 months, including the installation period of around six months, and a further two months for testing and commissioning of the new system, with a small workforce of ~6-17 workers. It will include:

- 13 new poles on the southern feeder (9E2)
- 12 new poles on the northern feeder (9E1)
- Approximately 900 m of 132kV overhead line on each feeder and a short section (approximately 100 m) of underground cables on both sides.

Figure 1 Ralston Avenue before works

Figure 2 Artist's impression of Ralston Avenue after works

Figure 3 Western Lookout before works works

Figure 4 Artist's impression of Western Lookout after

1.3 Project location

The proposed replacement 132 kV lines will extend underground for approximately 100m from Sydney East Substation south to Ralston Avenue. The lines will then extend westwards as twin 132 kV lines over each side of Ralston Avenue to the Belrose switching station brick enclosure.

A short section of Ralston Avenue is unsealed road, with the remaining section as a private sealed road mostly behind a locked gate. The first 200 m of the eastern extent of the project area includes an 11 kV distribution line located on the southern side of Ralston Avenue to service the residence and various customers on the nearby communications tower.

The project area is at the top of a westerly and southerly slope, with its northern boundary adjoining a slight hill. The north-eastern part of the easement adjoins Transgrid's East Substation, a communications tower, and a private residence. The north-western through to the southern boundary adjoins forested vegetation owned by the Metropolitan Local Aboriginal Land Council (MLALC). A residential property is located to the southeast and east. Refer to Figure 6 for project location.

1.4 Purpose of this report

This Social Impact Assessment (SIA) report has been prepared on behalf of Ausgrid to determine the potential social impacts (both positive and negative) associated with the Belrose cable replacement project (the project) and to provide mitigation and enhancement measures in response to each of the identified impacts. This SIA will form part of the documentation accompanying the project's Summary Environmental Report (SER).

2 Methodology

This Social Impact Assessment (SIA) report has been prepared on behalf of Ausgrid to determine the potential social impacts (both positive and negative) associated with the Belrose cable replacement project (the project) and to provide mitigation and enhancement measures in response to each of the identified impacts. This SIA will form part of the documentation accompanying the project's Summary Environmental Report (SER).

This SIA report has been prepared by Social Value practitioners from Aurecon, aligning with current leading industry practice, as informed by the Social Impact Assessment Guideline from the Department of Planning and Environment (2023) (SIA Guideline).

2.1 Stages of assessment

The methodology employed in preparing this SIA ensures that the social environment of communities potentially impacted by the project is correctly accounted for and recorded. Anticipated impacts are adequately considered and assessed.

This SIA adheres to leading practice guideline and the principles set out in the NSW SIA Guideline. Key steps in undertaking the assessment included:

- Baseline analysis of the social locality, i.e., the study area, including current and forecast population profile, population health profile, and existing social infrastructure networks.
- Review of the strategic policy context, including relevant state and local government drivers
- Analysis of social issues and trends relevant to the proposal
- Identification of community perspectives of relevance to the proposal
- Prediction of social impacts of the proposal, along with recommendation of mitigation and enhancement measures.

2.2 Technical assessment framework

The SIA Guideline sets out a structured technical assessment framework and considers information gathered through the social baseline analysis, along with community perspectives gained through consultation and other evidence, to assess the relative impacts of the project according to specified social categories.

Key stakeholders and sensitive receivers

The SIA evaluates impacts for those individuals, households, and communities likely to experience social impacts associated with the project. Key stakeholders and sensitive receivers within the PSA and SSA affected by the project are listed below:

- Residents
- Resident action groups/ community representatives
- Visitors to the area and surrounding bushlands
- Rural Fire Service, NSW Fire and Rescue
- Local Council and Local Members of Parliament (MP)
- Metropolitan Local Aboriginal Land Council (MLALC) – the Traditional Owners of the land on which the project is located.
- Other service providers, including TransGrid, Telstra and Sydney Water.

Study area definition: the social locality

The SIA considers the need to factor in local and broader social impacts. To this end, the SIA has relied on ABS Statistical Area Boundaries (SA1 or SA2 boundaries) to define Primary and Secondary Study areas.

The selected Primary Study Area and Secondary Study Area for this assessment are shown in Figure 7

- The Primary Study Area (PSA) applied to this SIA covers a 400m radius surrounding the subject site – noting that a significant proportion is bushland. This area covers direct impacts likely experienced by sensitive receivers near the project site, both during construction and operational phases. The PSA includes four SA1s: 12203169201, 12203169202, 12203169216 and 12203169212.
- The Secondary Study Area (SSA) applied to this SIA covers two SA2s: Belrose (122031692) and Frenchs Forest – Oxford Falls (122031696), which includes the suburb of Davidson. This area covers indirect impacts likely experienced by those within the project site's broader locality during construction and operation – including visual impacts and main roads and vehicle access points.
- The operational reach of the project defines the Tertiary Study Area (TSA) as a component of the district's energy infrastructure network. This is defined as the area encompassing 48,000 customers via four zone substations at St Ives, Turramurra, Pymble and Lindfield, New South Wales, in the Ku-ring-gai Local Government Area (LGA) (LGA14500) – as shown in Figure 8.

Social categories for assessment

The following suite of social categories[2] form the core basis of the SIA. Refer to Section 2.25 for a detailed assessment.

- **Way of life:** how people live, get around, work, play and interact with one another on a day-to-day basis
- **Community:** its composition, cohesion, character, how it functions, and sense of place
- **Accessibility:** how people access and use infrastructure, services, and facilities
- **Culture:** people's shared beliefs, customs, values and stories, and connections to Country, land, water, places, and buildings
- **Health and well-being:** people's physical, mental, social, and spiritual wellbeing
- **Surroundings:** access to and use of natural and built environment, including ecosystem services, public safety, and security, as well as aesthetic value and amenity
- **Livelihoods:** including impacts on employment or business, experience of personal breach or disadvantage, and the distributive equity of impacts and benefits
- **Decision-making systems:** the extent to which people are able to participate in decisions that affect their lives, procedural fairness, and the resources provided for this purpose.

Each of these categories is assessed based on tangible observable impacts and the fears and aspirations of the communities impacted.

Social impact significance rating

The Social Impact Assessment results in a Social Significance Rating for each social category, as per the matrix set out within the NSW SIA Guideline, see Table 1. This is based on the consideration of the likelihood (see Table 2) of the impact occurring, and the magnitude of impact (see Table 3 and

Table 4), should the impact occur.

[2] NSW Department of Planning and Environment 2023, *Social Impact Assessment Guideline*, viewed 10 January 2024, <https://www.planningportal.nsw.gov.au/sites/default/files/documents/2023/GD1944%20SIA%20Guideline_NEW%20VI_14_02_23.pdf>

Table 1 Social impact significance matrix

		Magnitude level				
		1	2	3	4	5
Likelihood level		Minimal	Minor	Moderate	Major	Transformational
A	Almost certain	Low	Medium	High	Very high	Very high
B	Likely	Low	Medium	High	High	Very high
C	Possible	Low	Medium	Medium	High	High
D	Unlikely	Low	Low	Medium	Medium	High
E	Very unlikely	Low	Low	Low	Medium	Medium

Source: NSW DPE, 2023, Technical Supplement - Social Impact Assessment Guideline for State Significant Projects.

This rating encompasses a detailed mapping the magnitude and likelihood of impacts, as described below.

Likelihood

The likelihood of each impact category is assessed as follows:

Table 2 Likelihood levels of social impacts

Likelihood level	Meaning
Almost certain	Definite or almost definitely expected (e.g., has happened on similar projects)
Likely	High probability
Possible	Medium probability
Unlikely	Low probability
Very unlikely	Improbable or remote probability

Magnitude

The magnitude of each impact category considers the following dimensions of impact:

Table 3 Dimensions of social impact magnitude

Dimension		Detail
Magnitude	**Extent**	▪ Who specifically is expected to be affected (directly, indirectly, and/or cumulatively), including any vulnerable people? ▪ Which location(s) and people are affected? (e.g., near neighbours, local, regional, and future generations).
	Duration	▪ Who specifically is expected to be affected (directly, indirectly, and/or cumulatively), including any vulnerable people? ▪ Which location(s) and people are affected? (e.g., near neighbours, local, regional, and future generations).
	Severity or scale	▪ What is the likely scale or degree of change? (e.g., mild, moderate, severe)
	Intensity or importance	▪ How sensitive/vulnerable (or how adaptable/resilient) are affected people to the impact, or (for positive impacts) how important is it to them? ▪ This might depend on the value they attach to the matter. – whether it is rare/unique or replaceable. – the extent to which it is tied to their identity; and – their capacity to cope with or adapt to change.
	Level of concern/interest	▪ How concerned/interested are people? Sometimes, concerns may be disproportionate to findings from technical assessments of likelihood, duration and/or intensity.

Table 4 Magnitude levels for social impacts

Magnitude level	Meaning

Transformational	Substantial change experienced in community wellbeing, livelihood, infrastructure, services, health, and/or heritage values; permanent displacement or addition of at least 20% of a community.
Major	Substantial deterioration/ Improvement to something people value highly, either lasting indefinitely or affecting many people in a widespread area.
Moderate	Noticeable deterioration/ improvement to something people value highly, either lasting for an extended time or affecting a group.
Minor	Mild deterioration/improvement, for a reasonably short time, for a small number of people who are generally adaptable and not vulnerable.
Minimal	Little noticeable change experienced by people in the locality.

2.3 Author qualifications

Social Impact Assessments must be completed by individuals with qualifications in relevant social science disciplines, proven experience over multiple years, and competence in social science research methods (DPE, 2023).

Table 5 SIA author's qualifications and experience

Team member	Experience
Allison Heller Principal, Aurecon Qualifications: Bachelor of Town Planning, BTP (Hons 1) PGDipHistArch MPIA	**Project Director** Allison is a leading industry professional with over 20 years of experience in urban and social planning/ policy across the private and public sectors. Allison is a leading SIA practitioner, having led SIAs for major government and private sector projects, including a range of state-significant health, education, transport, and cultural infrastructure projects. Allison brings deep expertise in leading Social Strategy and multidisciplinary teams to work constructively with clients in identifying, analysing, and advising on social impacts to optimise social outcomes. Allison has demonstrated excellence in interpreting and applying DPE's Social Impact Assessment requirements, including the most recent updates published in 2023.
Liliana Peña Manager, Aurecon Qualifications: Certificate in Engagement (IAP2) BSW(Hons) MAURP	**Project Manager** Liliana contributes over 15 years of domestic and international experience in social impact assessment, social research, stakeholder and community engagement, and urban planning. She has worked on large-scale infrastructure projects across various sectors in Australia and overseas. Liliana is one of Aurecon's SMEs for Social Impact Assessments and Social Factors Research. She has a rich background in social research, communications and delivery of stakeholder and community engagement activities from project inception to construction. Liliana has delivered Social Impact Assessment reports for several government and private projects in NSW and VIC. Liliana works around various authority standards and best practice guidelines for social impact assessment and stakeholder engagement, including the International Association for Impact Assessment Guidelines and Principles for Social Impact Assessment, the NSW DPE Social Impact Assessment Guideline 2023, and the International Association for Public Participation IAP2.

2.4 Assumptions

The key data sources and policy documents used to prepare this SIA have been outlined in Appendix A.

Assumptions applied to complete this SIA include:

- The project Bushfire and Visual Impact Assessment (VIA) reports have informed the description of existing conditions and sensitive receivers.

- The key findings of technical assessments including Bushfire (Aurecon, 2023) and Visual Impact Assessment (Aurecon, 2023) reports are accurate.
- Socio-economic data for each study area accurately reflects the community demographic profile.
- The community consultation and engagement outcomes to date accurately reflect community views.
- Ausgrid has reached out to various community groups within the study area, e.g., walking groups, scout groups, and provided reports on stakeholder sentiment. All potential social impacts to the local community and special interest groups that can reasonably be identified have been included in this SIA report.

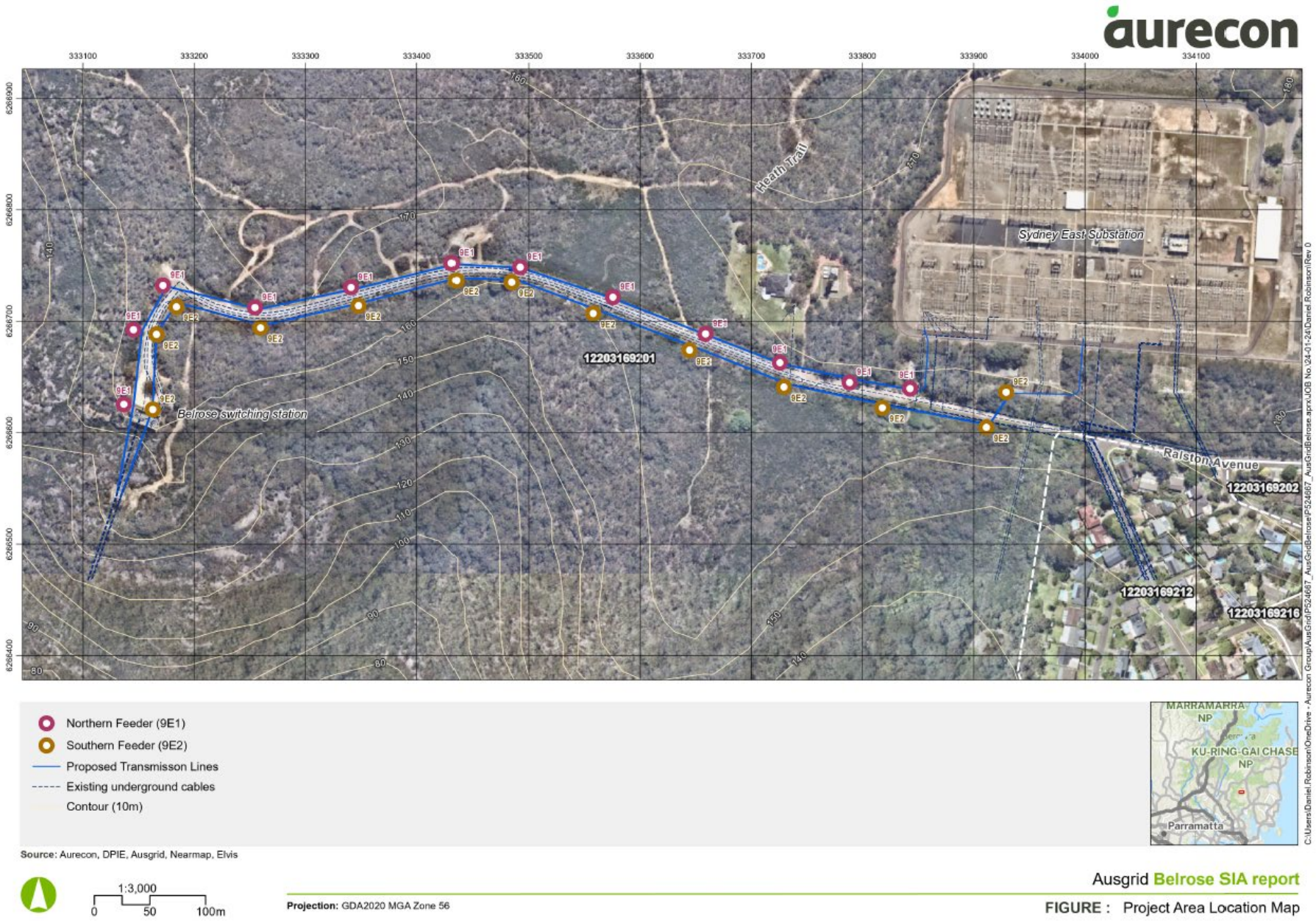

Figure 5 Project area – site and surrounds

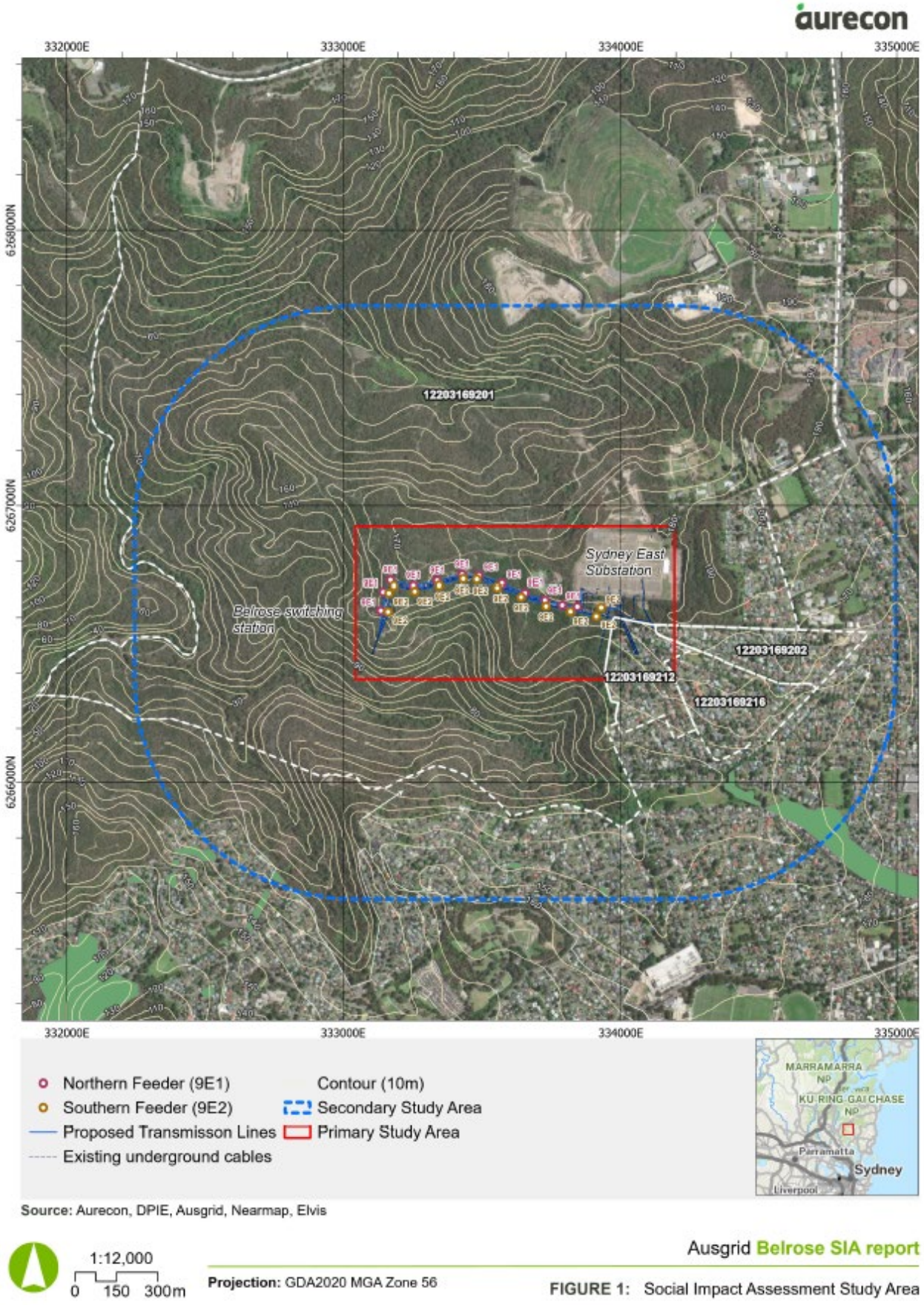

Figure 6 SIA Primary and Secondary study area

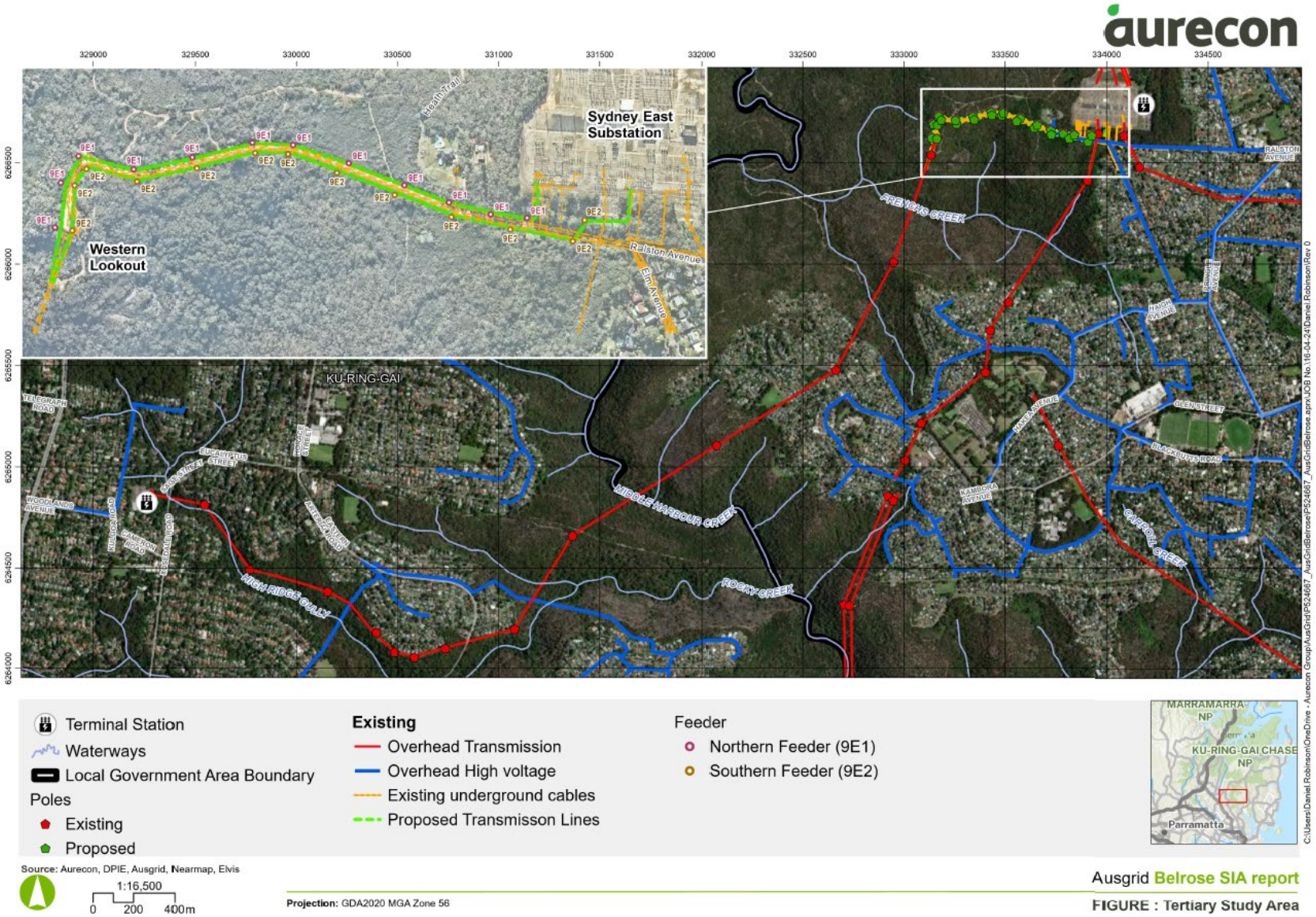

Figure 7 Tertiary Study Areas (Ausgrid coverage area, 2024) – Overhead power lines and underground cables

3 Existing environment

This section provides an overview of the site and the existing social context surrounding the project area, detailing the analysis of current social characteristics of the community within the identified study areas (primary, secondary, and tertiary) that has been undertaken to understand the potential social impacts of the proposed infrastructure effectively.

3.1 Community profile

The SIA has assessed the existing social characteristics of the community, including resident population projections within the identified primary and secondary study areas, to create a comprehensive profile of individuals, families, and communities that the project may impact.

The following section describes the community profile of the primary and secondary study areas (PSA and SSA).

A detailed population profile is provided in **Appendix C.**

Current resident population

An overview of the PSA, SSA, and TSA residents' demographic profile has been compared to the Greater Sydney benchmark. This is based on the 2021 ABS Census of Population and Housing data[3].

Key findings related to the PSA and SSA are highlighted below:

- The PSA resident population is 1,327 and has a median age of 43. This median age is the same as in the SSA and similar to the TSA (42). However, it is higher than the Greater Sydney median age of 37. This may indicate an older and ageing population, with 18.8% of the PSA population over 65 years of age compared to 15.2% in Greater Sydney.
- There is a relatively low Aboriginal and Torres Strait Islander population in the PSA (0.3%) compared to the SSA (3.0%). Additionally, the overseas population is smaller in the PSA (28.3%) compared to the SSA (33.4%). This may indicate lower cultural diversity than the broader SSA and Greater Sydney region. In the PSA, the top five languages spoken besides English are Armenian, Mandarin, Cantonese, German and Greek.
- A small population (4.0%) requires assistance in the PSA due to a disability. In the PSA, 28.9% of the population has a long-term health condition, with the most common conditions including Arthritis, Asthma, Mental Health Conditions, Heart Disease and Diabetes. This is similar in the SSA, with 25.5% of the population experiencing a long-term health condition.
- The dominant housing type is separate houses, accounting for 92.8% of households in the PSA and 80.2% of households in the SSA. This is significantly higher when compared to Greater Sydney (55.8%). In both the PSA and SSA, the largest share of households is owned by a mortgage (44.1% and 39.1%, respectively). In the PSA, there is a higher proportion of outright home ownership (39.4%) compared to the SSA (26.8%). Conversely, there is a lower proportion of renters in the PSA (15.6%) compared to the SSA (31.0%).
- There are a total of 41,864 households in the TSA. The dominant housing type in the TSA is also separate houses (68.6%), although these account for a smaller percentage than in the PSA and SSA. There are significantly more apartments, flats and units in the TSA (27.1%) compared to the PSA and SSA, more closely reflecting the Greater Sydney area (30.7%). In the TSA, housing tenure is similar to the PSA, with 40.2% owning outright, 37.2% owning with a mortgage, and 19.8% renting.

[3] Australian Bureau of Statistics 2021, *Census data 2021*, viewed 23 January 2024, <https://abs.gov.au/census/find-census-data/search-by-area>

- The median weekly household income is relatively high in the PSA ($2,781), SSA ($2,952) and TSA ($3,038) compared to Greater Sydney ($2,077). While the median weekly household income is similar across the PSA, SSA and TSA, there is a significant difference in median mortgage repayments, with median monthly mortgage repayments at $824 in the PSA compared to $3,422 in the SSA and $3,500 in the TSA. This may indicate a higher incidence of financial stress in the SSA and TSA.
- The median weekly rental payment is relatively high in the PSA ($775) and the SSA ($848) compared to Greater Sydney ($470). This may indicate a higher incidence of rental stress in the PSA and SSA.
- In the PSA, there is a lower rate of unemployment (3.7%) compared to the SSA (5.4%) and Greater Sydney (5.1%). Approximately 26 people are unemployed in the PSA. The top three industries of employment in both the PSA and SSA are (1) Health Care and Social Assistance, (2) Professional, Scientific and Technical Services, and (3) Education and Training.
- The dominant method of travel to work is by car, with 38.8% of employed workers in the PSA travelling by car (either as a driver or passenger) and 36.0% in the SSA. This suggests a heavy reliance on cars in the study area.

Forecast resident population

For this analysis, population projections from the NSW Population Projections[4] have been sourced and rebased on the latest ABS estimated resident population figure. Table 6 illustrates the historical and projected population from 2016-2036.

Key findings are as follows:

- Population growth from 2021 to 2041 is projected to be similar across the PSA, SSA and Greater Sydney, with an annual growth rate of 0.8-0.9%. The TSA is expected to have a lower annual growth rate of 0.5%.
- The PSA and SSA are projected to experience the most significant growth between 2026-2031 and 2031-2036, with annual growth rates between 1.1-1.5%. Population growth is projected to grow at a slower rate of 0.2% in the short term between 2021 and 2026 and in the long term after 2036.
- 215 residents are projected to move to the PSA between 2021 and 2041.

Table 6 Population projections

Population	2021	2026	2031	2036	2041	-
PSA	1,327	1,338	1,415	1,523	1,542	-
SSA	25,827	26,050	27,546	29,639	30,005	-
TSA	124,076	127,134	131,313	135,319	137,085	-
Greater Sydney	5,231,147	5,169,245	5,489,148	5,814,649	6,142,275	-
Growth	**2016-21**	**2021-26**	**2026-31**	**2031-36**	**2036-41**	**2021-2041**
PSA	+17	+11	+77	+108	+19	+215
SSA	+336	+223	+1,496	+2,093	+365	+4,178
TSA	+6,023	+3,058	+4,179	+4,006	+1,767	+13,009
Greater Sydney	+407,156	-61,902	+319,903	+325,501	+327,626	+911,128

[4] NSW Department of Planning and Environment 2023, *Population projections*, viewed 10 January 2024, <https://www.planning.nsw.gov.au/research-and-demography/population-projections>

Annual Growth Rate	2016-21	2021-26	2026-31	2031-36	2036-41	2021-2041
PSA	0.3%	0.2%	1.1%	1.5%	0.2%	0.8%
SSA	0.3%	0.2%	1.1%	1.5%	0.2%	0.8%
TSA	1.0%	0.5%	0.7%	0.6%	0.3%	0.5%
Greater Sydney	1.7%	-0.2%	1.2%	1.2%	1.1%	0.9%

Source: NSW population projections (DPE, 2022).
Note: The 2021 projections include the impact of the COVID-19 pandemic on population change across NSW.

3.2 Land use

Ralston Avenue is in the suburb of Belrose, in Sydney's Northern Beaches, 19 km northeast of Sydney CBD, in the local government area of Northern Beaches Council. Belrose constitutes the lands of the Gurangai Aboriginal people. Formerly Crown Land, the surrounding area around Ralston Ave is mostly owned and governed by the MLALC.

Ralston Avenue is primarily surrounded by bushland and near Garigal National Park. Along Ralston Avenue is Transgrid's electricity substation with the Western Lookout at the end of the road, providing views across Davidson, St Ives, and Garigal National Park.

Land use zones of areas surrounding the project site are dominated by National Parks and Nature Reserves (C1) in all directions except the east which is dominated by Low density residential (R2) with pockets of Public Recreation (RE1) (see Figure 8). The project site is located within the C8 Belrose North Locality pursuant to the (repealed) Warringah Local Environmental Plan 2000 (WLEP 2000).

The C8 Belrose North Locality was deferred from the current Warringah Local Environmental Plan 2011 (WLEP 2011) and the Site is zoned DM (Deferred matter) under the WLEP 2011(see Figure 8). Therefore, planning controls under WLEP 2000 continue to apply to this land (NSW Government 2013).

Planned significant developments on or around the project site are summarised below:

- The Patyegarang planning proposal (formerly known as Lizard Rock)[5] - Metropolitan Local Aboriginal Land Council (MLALC) proposes to develop 71 hectares of Belrose bushland and build 450 houses adjacent to Lizard Rock (an Aboriginal rock engraving site) on Morgan Road. To date, there has been strong community opposition to this proposal, including from Northern Beaches Council, local MPs. The Patyegarang planning proposal was available for public feedback from Tuesday 26 September to Tuesday 7 November 2023. It is expected that in mid-2024 the Sydney North Strategic Planning Panel will provide a recommendation to the department on whether the proposal should be finalised and if so in what form. The Minister, or the department as the Minister's delegate, will make the final determination for the planning proposal.
- Ralston Avenue: A 16-unit senior retirement housing development to be built on Lot 11 DP 565686 at 16 Ralston Avenue and Lot 10 DP 565686 at 18 Ralston Avenue. Plans were amended and approved by the NSW Land and Environment Court in June 2023.

The land use and immediate site and surroundings are shown in Figure 8 over the page.

[5] Although this proposal has not been approved another MLAC proposal for Ralston Avenue was rejected in 2013. There has been confusion in the community linking the Ausgrid's cable replacement project to MLALC's proposed development. Ausgrid is aware of these misconceptions and regularly monitor and address community feedback. Further to this, Ausgrid continues to have ongoing consultation with MLALC to relay such concerns.

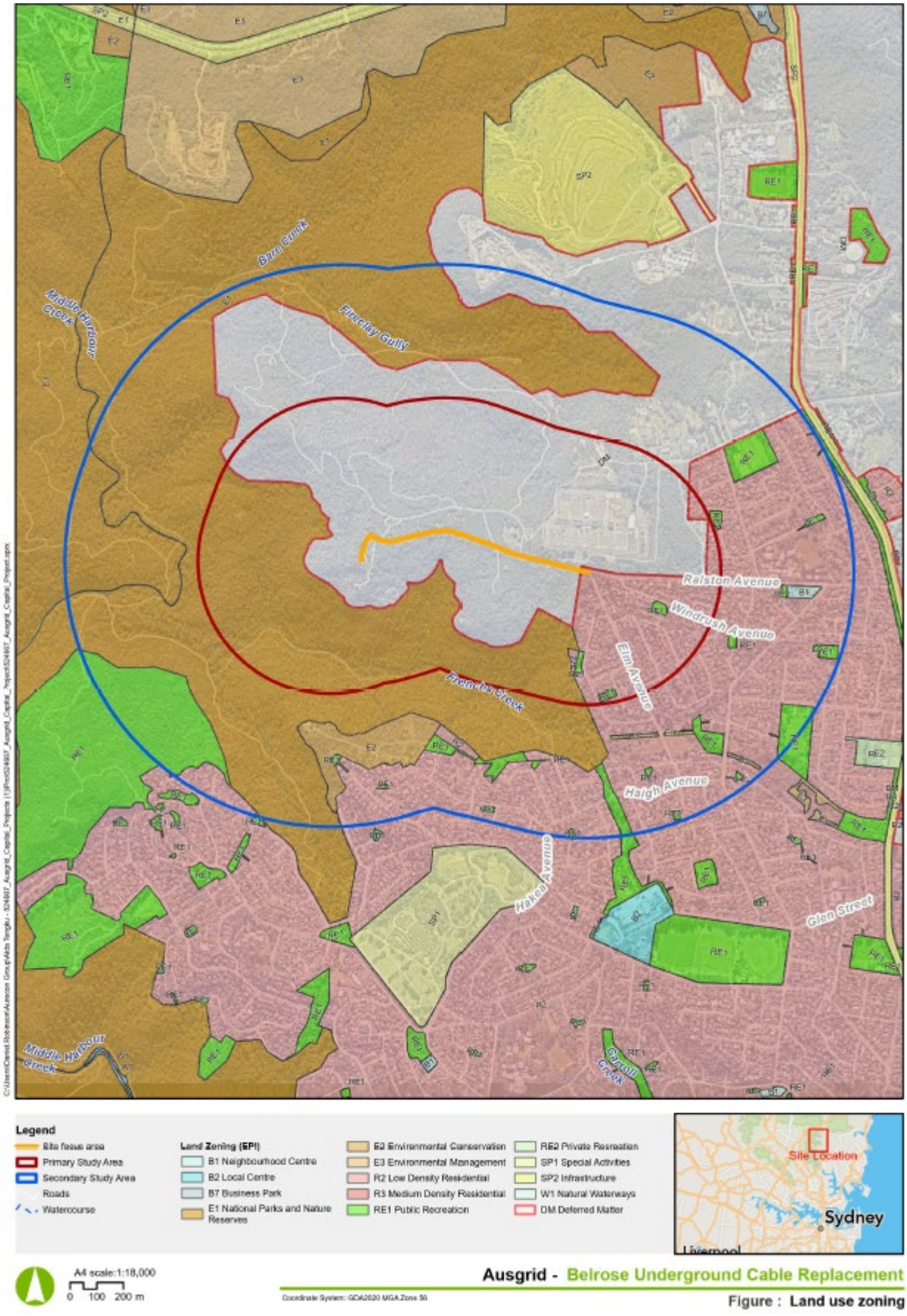

Figure 8 Land use in the study area

3.3 Strategic policy context

This SIA considers a range of state and local government documents to identify the strategic social drivers for the project and associated areas of impact.

Key considerations arising from this policy review include:

- **Ensuring a secure and reliable power system**: Ausgrid's existing power supply is maintained by replacing the ageing underground cables with above-ground poles and wires. The current underground cables located at Ralston Avenue Belrose have reached the end of its serviceable life. This replacement will reduce the power outage risk and provide Ausgrid's operating communities with a safe and reliable energy source. The current underground power lines service approximately 48,000 customers in the Ku-ring-gai council area. This includes three hospitals and over 20 schools.
- **Minimising energy bill price rise**: According to the 'NSW Electricity Strategy'[6], the NSW Government's plan for a reliable, affordable, and sustainable electricity system is deemed a priority area. Rising electricity prices are putting pressure on households and businesses. The cost of installing above-ground lines is significantly lower than underground; hence, it will ultimately reduce the cost to the end-user, allowing communities – particularly low-income households – to continue access to affordable electricity.
- **Elements of the project align with the state-focused goals and strategic plan accountabilities**. The project's goals would support the delivery of a safe and reliable electricity network that improves or maintains the area's liveability.

Appendix B lists the National, State, and local plans, policies and strategies that are relevant to the project's strategic drivers.

3.4 Social issues and trends

This section outlines social issues and trends with a bearing on the project.

Ausgrid's responsibility to maintain energy infrastructure

Ausgrid is the largest distributor of energy on Australia's east coast, owning and operating the network of substations, powerlines, underground cables, and power poles that deliver power to communities across large parts of Greater Sydney, the Central Coast, and the Hunter. Ausgrid builds, operates, and maintains this distribution network, focusing on providing a safe and reliable energy supply.

Over four million customers and users from diverse demographic backgrounds rely on their services. These customers include urban residents and businesses in New South Wales and those in rural areas across the Central Coast and Hunter Valley. In addition to these customers, their communities include delivery partners such as energy retailers, local councils, accredited service providers (ASPs), customer advocates, and government agencies. Ausgrid also plays a vital role in servicing critical infrastructure within its network footprint, including schools and hospitals. Ausgrid's operations include infrastructure construction and maintenance, customer connections, street lighting and telecommunications.

The project is part of Ausgrid's commitment to maintain existing networks to ensure a safe and reliable electricity network and minimise negative long-term community and environmental impacts. This project aims to replace underground cables that are approximately 50 years old. Ausgrid has completed 75% of its fluid filled cable replacement program and the Belrose project is part of this effort.

6 Department of Planning, Industry & Environment 2019, *NSW Electricity Strategy*, viewed 20 January 2024, <https://www.energy.nsw.gov.au/sites/default/files/2022-08/2019_11_NSW_ElectricityStrategyOverview.pdf>

Five-year plan for Ausgrid's customers

Every five years, Ausgrid must submit a plan to the Australian Energy Regulator (AER) detailing a proposed plan for serving its operating communities in the five years ahead, including planned expenditures and pricing. Ausgrid's regulatory proposal covers 1 July 2024 to 30 June 2029. The AER reviews this proposal to ensure it reflects the services Ausgrid customers value at the lowest sustainable cost. It then determines how much revenue Ausgrid can recover from their customers over the 5-year period. This process is known as a 'regulatory reset'.

After extensive community and customer consultation in 2022, Ausgrid revised its proposal to reflect customer feedback. In Ausgrid's 2023-2029 Revised Proposal, customers required Ausgrid to be mindful of increasing cost of living concerns, partly due to external factors such as rising interest rates and insurance premiums, which inevitably increases Ausgrid's network costs and a rise in customer energy bills.

Some of the materials Ausgrid uses to build and maintain the network are increasing by rates much higher than headline inflation. Currently, Ausgrid is absorbing some of these costs. As a result, project costs and the impact of the network's electricity costs on customers energy bills was a critical factor in Ausgrid's decision to replace the existing underground cables with a predominantly overhead system. It is estimated for this project that approximately $5.5m is required to build overhead, while underground costs to be around $10m.

Ultimately, this approach will align with AER's expectations of transmission service providers reducing the end cost for consumers.

Consideration of costs and social impacts

Installation of overhead transmission infrastructure causes less disruption and lower impact on landowners and the community.

Due to large excavation and backfill requirements the underground installation process takes longer, and it is more costly. The installation of underground infrastructure has a longer-term impact and disruption to the community due to re-excavating and difficulty in finding faults.

Even though overhead lines are deemed to have an ongoing visual impact compared to underground, the relative degree of disruption to the landowner/community is considered minimal. The time it takes to locate and fix faults/repairs is shorter for overhead maintenance than for underground maintenance, which results in lower disruption to the community's daily activities. When installing high-voltage overhead transmission infrastructure compared to underground, a significant contributing factor is cost, with overhead lines typically 8 - 10 times less expensive than underground cable infrastructure.

Community values in Belrose

Based on feedback from Ausgrid community engagement events and other published external reports[7] the Belrose community highly values its area's sensitive ecosystems, endangered species, and local wildlife.

The Save the Northern Beaches Bushlands (SNBB) group was formed to 'protect and preserve our bushlands and wildlife on the Northern Beaches and around NSW'. SNBB's perceived impacts from Ausgrid's Belrose project include ongoing environmental impacts that are considered irreversible, the visual impact of concrete poles in bushland area, and tree clearing and habitat for native wildlife and bird life in the area.

The Metropolitan Local Aboriginal Land Council (MLALC) was granted more than 136 hectares off Ralston Avenue Belrose in 2006. Part of their role is to protect the interests of Aboriginal persons in their area about the acquisition, management, use, control, and disposal of land. Currently, the proposed site is mostly bushland and

[7] JOC Consulting for the NSW Department of Planning, Industry and Environment 2021, *Parks for People Phase 1 Engagement Outcomes Report – Belrose and Frenchs Forest, Northern Beaches*, viewed 20 January 2024, <https://www.planning.nsw.gov.au/sites/default/files/2023-06/phase-1-engagement-outcomes-report-belrose-frenchs-forest-northern-beaches.pdf>

overgrown vegetation with regularly reported cases of trespassing, rubbish dumping, 4WD drive access, and fire lighting.

During Ausgrid's community consultation for this project, common feedback was that MLALC is not properly managing its land. This has resulted in the local community managing and cleaning, which they consider not their responsibility. Even though Ausgrid has no authority to combat these land management issues, in 2021, Ausgrid cleared away rubbish left in the bushland near their assets, resulting in eight truckloads of rubbish removed. Ausgrid continues to maintain the area that directly surrounds their assets.

Figure 10 Trail near the project site – View from Ralston Avenue

Figure 9 Surrounding area of Belrose

4 Community and stakeholder perspectives

Outcomes from previous community engagement have informed the preparation of this SIA report to ensure it understands, respects, and documents the perspectives of all likely affected people. Stakeholder engagement provides first-hand insights into what project stakeholders value and how they expect the project to affect them.

Ausgrid adopted the project's early communication and consultation approach by involving the community and key stakeholders during the development and detailed planning stages.

The below section summarises the outcomes of stakeholder engagement to date and highlights the identified social impacts from a community perspective. Key stakeholders for the project are identified in **Section 0**.

4.1 Community and stakeholder matters of interest

Ausgrid is a self-determining authority, however it engages with the community on all its major projects. The following key matters of interest relating to social impacts have been captured during stakeholder engagement on the project.

- Community members raised concerns about the negative visual impact of the Project. Specifically, the transmission poles would stand out above the tree line, and the Project would require the removal of existing trees. Residents in the Davidson area, notably on Ashworth Avenue, were also concerned that the aboveground transmission lines would visually impact the view from their properties, approximately 800m across the valley of Garigal National Park.
- Community members were concerned about the environmental impact of aboveground transmission lines, including the loss of established trees through vegetation clearing and impacts on wildlife and their local habitats.
- Community members and stakeholders were concerned that overhead poles and wires are at high risk of fire damage as the site is in a bushfire-prone area with high winds.
- Community members believed the site's landowner, MLALC had purposely neglected to address the current antisocial behaviour, trespassing, fire-starting, vandalism, and rubbish dumping on the site. The community believed the condition of the land was being deliberately neglected to support future development applications/proposals such as the project.
- The community was concerned the project may exacerbate antisocial behaviour, specifically vandalism and fire starting, damaging transmission line poles, and causing a bushfire.
- Northern Beaches Council indicated that the proposed construction site is Crown land and not managed by the Northern Beaches Council. A primary concern was the location of the overhead poles may potentially restrict any road widening in the future. Northern Beaches Council enquired whether underground cabling would be considered.
- Community members were concerned about the associated health impacts from increased exposure to Electric Magnetic Fields (EMF) from aboveground transmission lines.
- Community members were concerned about the perceived noise generated from overhead transmission poles and wires.
- Community members were concerned that the Project may potentially impact pedestrian access to Ralston Avenue and the Western Lookout during construction and operation.
- Community members were concerned about the long-term maintenance cost of above-ground transmission lines. They believe underground transmission lines would have lower costs.

5 Social Impact Assessment

The following table provides a preliminary assessment of social impacts across the social factors and dimensions described in the NSW SIA Guideline 2023 (refer to Section 2) to give an overall Social Significance Rating for each identified impact.

This assessment was informed by the stakeholder engagement conducted to date by Ausgrid (see Section 4) and the social impacts workshop with a project team member (see Appendix D).

5.1 Potential positive impacts

Table 7 Positive social impacts

Social factor	Impact	Timing	Likelihood	Magnitude	Social Significance rating
Community	The project would increase the reliability and efficiency of energy transmission for Ausgrid customers. Overhead transmission lines are more affordable to maintain and less expensive to repair and upgrade than underground transmission lines, reducing the time spent fixing and maintaining transmission infrastructure.	Operation	Almost certain	Major	Very High
Accessibility	The existing brick building will be replaced by two slim overhead poles in front of the Western Lookout. This may improve residents and visitors' access, enjoyment, and experience of the natural environment.	Operation	Likely	Minor	Medium
Surroundings	By removing the brick enclosure at the Western Lookout, residents and visitors would have a less interrupted view across the gully, which may result in a more enjoyable experience of the natural environment.	Operation	Likely	Minor	Medium
Livelihoods	Positive impacts are associated with increased service reliability and reduced construction periods. Overhead lines can be installed relatively quickly, reducing construction periods and potential disruptions. Moreover, the cost of laying or burying underground lines is more significant compared to overhead lines.	Construction	Almost certain	Moderate	High
	Installing overhead poles and wires instead of underground cables will likely have a long-term favourable cost-of-living impact on Ausgrid's customers. This is due to reduced network fees associated with choosing overhead over underground.	Operation	Likely	Major	High
	The project would indirectly improve the liveability of Ausgrid's customers (including businesses) by delivering affordable energy transmission infrastructure which increases service reliability. This would also allow businesses to undertake activities more efficiently and without disruptions.	Operation	Almost certain	Moderate	High

5.2 Potential negative impacts

Table 8 Negative social impacts

Social factor	Impact	Timing	Likelihood	Magnitude	Social Significance rating
Community	Potential cumulative impacts due to other proposed developments in the area, including the possible future MLALC development. Cumulative impacts would occur if there were an overlap of construction activities for different projects at the same time in the study area. However, since the construction activities would be contained within the existing asset footprint it is expected cumulative impacts would be negligible.	Construction	Unlikely	Minor	Low
Accessibility	There will be a demountable storage site in Northern Beaches in the TSA. Construction materials would be transported between this location and the project site. This is not expected to occur often or for long durations. However, construction vehicles driving through residential areas to transport construction materials may increase risks of noise pollution and cause temporary traffic impacts. These changed conditions could cause frustration to local residents using these local streets.	Construction	Possible	Moderate	Medium
	There would be construction vehicles accessing the site via Ralston Ave during the construction phase. This is not expected to occur often or for long durations. These changed conditions may increase the potential for temporary traffic impacts for Ralston Avenue and Elm Avenue residents and visitors, who may encounter some minor traffic delays or reduced mobility around the project site access point.	Construction	Possible	Minor	Medium
	Workers or visitors may park near the construction site on Ralston Ave along the non-residential section during construction. This would potentially impact one residential house along this section of Ralston Avenue. However, there is ample parking in the area therefore impacts are unlikely.	Construction	Unlikely	Minor	Low
	Potential temporary access impacts may occur to the nearby unofficial walking tracks which are used by visitors. However, it is anticipated that minimal access to the construction site will be	Construction	Unlikely	Minor	Low

Social factor	Impact	Timing	Likelihood	Magnitude	Social Significance rating
	required via Wyatt Avenue. Some stakeholders may be concerned about access impacts to the walking tracks, and the Western Lookout due to the installation of the poles near the project Transition Point.				
Health and wellbeing	Some community members have shared concerns about the overhead option which is perceived as a high risk to cause bushfires. Community members were concerned that antisocial behaviour (such as vandalism and fire starting) may damage transmission line poles and cause a bushfire. The design by Ausgrid has utilised solid concrete poles for high strength and is not susceptible to bushfire damage. The network is designed to detect for abnormal situations such as fallen wires and automatically shuts off the supply.	Operation	Unlikely	Moderate	Medium
	Some stakeholders shared concerns about impacts of electromagnetic field emissions (EMF) and overhead line noise. Scientific evidence does not demonstrate a causal link between typical exposures to EMF and adverse health effects. Ausgrid aims for prudent avoidance when designing its network and complies with ARPASNA and ICNIRP guidelines.	Operation	Unlikely	Moderate	Medium
Surroundings	Residents in the Davidson area perceive a visual impact and are concerned about the look of additional overhead lines and poles. However, residents already view the existing section of this overhead transmission line from across the valley. The visual impact assessment for the project concluded that these residents will only see a portion of the new overhead poles due to the existing tree canopy. Visual impacts in the aesthetic value and amenity are considered minor.	Operation	Unlikely	Minor	Low
	Negative community sentiment towards the project due to unmet stakeholder expectations. Ongoing issues with trespassing, 4WD driving, rubbish dumping, and fire lighting have affected residents' and visitors' experiences of the natural environment. MLALC is responsible for the area's management; however, there may be a perception that Ausgrid has the influence and ability to address these concerns.	Operation	Likely	Minor	Medium
	Community perceptions that construction activities and overhead	Construction	Unlikely	Moderate	Medium

Social factor	Impact	Timing	Likelihood	Magnitude	Social Significance rating
	transmission lines may negatively impact wildlife.	and Operation			
	Construction activities may impact the area's ecology through vegetation clearing, noise, and dust. The loss of established trees may impact wildlife and their local habitats. Vegetation removal may cause negative community sentiments towards the project.	Construction and Operation	Possible	Moderate	Medium
Decision-making systems	Local community groups, e.g., 'Save the Northern Beaches Bushlands' group have expressed their preference to have underground cables instead. Since this alternative has technical constraints, this community group may be dissatisfied with the project solution and consequently may perceive negative impacts to decision-making systems as their expectations would be unmet. This includes the perception that residents are unable to participate in decisions affecting their lives and are not receiving procedural fairness.	Construction	Likely	Minor	Medium

6 Monitoring and management framework

The following framework is recommended to monitor and measure the ongoing impact of the project on relevant stakeholders and the surrounding community. Some of these measures are currently being implemented by Ausgrid. Therefore, some identified social impacts are being proactively addressed by Ausgrid.

Table 9 Summary recommended mitigation measures and indicative timing

Mitigation measure	Indicative timing
Collaborate with Northen Beaches Council, adjacent residents, and other key stakeholders to coordinate works to minimise impacts and cumulative impacts.	*Design phase and Construction*
Communicate the costs to install underground vs. overhead transmission infrastructure for this project, and how the cost reduction of overhead lines will reduce the cost burden to Ausgrid's customers – via regularly updating the project's key messages, webpage, project engagement collateral.	*Design phase and Construction*
Develop and implement a construction phase Communications and Engagement Plan to inform, stakeholders and community members, including residents and key stakeholder such as MLALC, about the timing and likely impacts during the construction phase. Communicate anticipated dates/times of road and path closures with residents. Advertise this on signage before the closures so visitors plan accordingly.	*Construction*
Ensure recommendations from the Visual Impact Assessment are implemented.	*Design phase*
Continue stakeholder engagement to communicate the minimal visual impact and project design refinements that have incorporated stakeholder feedback. Project messaging on Ausgrid project webpage, social media channels, stakeholder engagement materials should include reference to: ■ The project design has considered mitigations to reduce visual impacts (i.e., using slim modern poles instead of steel lattice towers like the rest of the line) ■ The design has purposely been in previously disturbed areas to minimise the impact on the local natural environment.	*Construction*
Ensure communication channels and materials are regularly updated to minimise misinformation and avoid misconceptions that Ausgrid's project is associated with other proposed developments in the area.	*Construction*
Explore opportunities to distribute summarised versions of the Visual Impact Assessment and Bushfire Assessment report outcomes to interested stakeholders.	*Construction*
Asses if there is a requirement for a Construction Traffic Management and Pedestrian Management Plan, to outline matters such as parking, pedestrian movements around the project site.	*Construction*
Maintain residents living close to the intersection of Elm and Ralston Avenues and the resident of 56 Ralston Avenue, as relevant, ahead of impactful work to allow them to plan around construction work as necessary. Should work need to occur outside standard construction hours due to network security requirements, provide adequate notice to residents in the area to mitigate these impacts.	*Construction*
Ausgrid considers bushfires in the transmission lines' design, construction, and maintenance, as specified in the Energy Networks Australia ENA Doc 01-2019 National Electricity Network Safety Code (ENA 2019). This will include a range of ongoing inspections, vegetation clearance practices, fault protection systems and concrete poles. Note: These two transmission lines already pass overhead through the same bushland along the existing steel towers from Gordon.	*Construction & Operation*
Work with a local wildlife organisation to assess existence of wildlife that could be impacted by the electricity network.	*Construction*

Mitigation measure	Indicative timing
Continue stakeholder engagement to communicate what are Ausgrid's areas of jurisdiction and responsibilities for this project to minimise misinformation.	*Construction*
Continue stakeholder engagement to communicate (via project newsletters, stakeholder meeting materials and Ausgrid webpage) the reasons why Ausgrid has chosen the overhead option – including reference to cost comparisons and how these costs will impact Ausgrid customers, mitigation measures Ausgrid is doing to ensure a safe and reliable electricity network.	*Construction*
Maintain records of stakeholder consultation outcomes to demonstrate project efforts to engage the community in the decision-making process. Provide the relevant communication channels for stakeholders to share complaints or feedback.	*Construction & Operation*

Appendix A. Information sources

The following sources of information have been referenced for this assessment:

Federal

Australian Energy Market Commission n.d., *National Electricity Rules*, viewed 29 January 2024, <https://www.aemc.gov.au/regulation/energy-rules/national-electricity-rules>

Australian Energy Market Commission 2023, *Proposed rule change to maintain reliability during the energy transition*, viewed 30 January 2024, <https://www.aemc.gov.au/news-centre/media-releases/proposed-rule-change-maintain-reliability-during-energy-transition>

Australian Energy Regulator & Commonwealth Government 2020, *Strategic Plan*, viewed 30 January 2024, <https://www.aer.gov.au/system/files/AER-Strategic-Plan_2020-2025.pdf>

Australian Bureau of Statistics 2021, *Census data 2021*, viewed 23 January 2024, <https://abs.gov.au/census/find-census-data/search-by-area>

Energy Networks Australia & CSIRO 2017, *Electricity Network Transformation Roadmap*, viewed 30 January 2024, <https://www.energynetworks.com.au/resources/reports/electricity-network-transformation-roadmap-final-report/>

State / regional

Ausgrid 2023, *Ausgrid's 2024-29 Regulatory Proposal*, viewed 30 January 2024, <https://www.aer.gov.au/system/files/Ausgrid%20-%202024-29%20Regulatory%20Proposal%20-%2031%20Jan%202023%20-%20Public_0.pdf>

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NSW Department of Planning, Industry & Environment 2019, *NSW Electricity Strategy*, viewed 20 January 2024, <https://www.energy.nsw.gov.au/sites/default/files/2022-08/2019_11_NSW_ElectricityStrategyOverview.pdf>

NSW Department of Planning and Environment 2023, *Population projections*, viewed 10 January 2024, <https://www.planning.nsw.gov.au/research-and-demography/population-projections>

NSW Department of Planning and Environment 2023, *Social Impact Assessment Guideline*, viewed 10 January 2024, <https://www.planningportal.nsw.gov.au/sites/default/files/documents/2023/GD1944%20SIA%20Guideline_NEW%20VI_14_02_23.pdf>

NSW Government 2020, *NSW Electricity Infrastructure Roadmap*, viewed 30 January 2024, <https://www.energy.nsw.gov.au/sites/default/files/2022-08/NSW%20Electricity%20Infrastructure%20Roadmap%20-%20Detailed%20Report.pdf>

NSW Legislative Council 2023, *Feasibility of undergrounding the transmission infrastructure for renewable energy projects*, viewed 30 January 2024, <https://www.parliament.nsw.gov.au/lcdocs/inquiries/2966/Report%20No.%2051%20-%20Standing%20Committee%20on%20State%20Development%20-%20Undergrounding.pdf>

Local

Greater Cities Commission 2018, *North District Plan*, viewed 30 January 2024, <https://greatercities.au/sites/default/files/2023-07/North%20District%20Plan_March2018.pdf>

Northern Beaches City Council n.d., *Resilience Strategy*, viewed 29 January 2024, <https://files-preprod-d9.northernbeaches.nsw.gov.au/nbc-prod-files/documents/policies-register/resilience/resilience/northern-beaches-resilience-strategy-adopted-jul22.pdf?1706503816>

Northern Beaches City Council 2020, *Towards 2040 Local Strategic Planning Statement*, viewed 29 January 2024, <https://eservices.northernbeaches.nsw.gov.au/ePlanning/live/Common/Output/LoadGenWebDoc.ashx?id=z8E8mSOvjKAV0A60ki4OEg%3d%3d>

Appendix B. Policy review

Table 10 Policies relevant to the project at the national level

Policy	Details	Strategic drivers
Australian Energy Market Commission's (AEMC) National Electricity Rules[8]	The National Electricity Rules govern the operation of the national electricity market and are enforced by law. The Rules are made by the AEMC. The Rules exist so market participants understand their responsibilities and rights and ensure that consumers do not pay more than necessary for electricity. As of September 2023, the rules associated with Market Price Cap, Cumulative Price Threshold and Administered Price Cap have changed. The increase in price aims to maintain the network's reliability and allow for more scope for investors to deliver emerging technologies for the transition to net zero[9].	The Rules govern the economic regulation of the services provided by monopoly transmission and distribution networks and are thus more broadly relevant to Augsrid. Specifically, it regulates the revenue transmission network service providers may earn, sets out the procedure and approach to approval of transmission determination, and the consultation procedure.
Australian Energy Regulator (AER) Strategic Plan 2020-2025[10]	The AER regulates Australia's wholesale electricity and gas markets, which form part of the Australian Competition and Consumer Commission (ACCC). This Strategic Plan sets out priorities to achieve four key objectives over the next five years, which are: ■ Protect vulnerable consumers while enabling consumers to participate in energy markets. ■ Effectively regulate competitive markets primarily through monitoring, reporting, enforcement, and compliance. ■ Deliver efficient regulation of monopoly infrastructure while incentivising networks to become platforms for energy services. ■ Use AER's expertise to inform the debate about Australia's energy future and support the energy transition.	As a transmission infrastructure project, The Project aligns with Objective Three: 'deliver efficient regulation of monopoly infrastructure while incentivising networks to become platforms for energy services'. The Project will improve the existing network's efficiency by replacing the fluid-filled cables approaching the end of their life. The Project will also contribute to several key outcomes that the AER aims to achieve, including an affordable, secure, and reliable energy supply. Ultimately, the Project will improve the lives of people who work and live in the Northern Sydney region.

8 Australian Energy Market Commission n.d., *National Electricity Rules*, viewed 29 January 2024, <https://www.aemc.gov.au/regulation/energy-rules/national-electricity-rules>

9 Australian Energy Market Commission 2023, *Proposed rule change to maintain reliability during the energy transition*, viewed 30 January 2024, <https://www.aemc.gov.au/news-centre/media-releases/proposed-rule-change-maintain-reliability-during-energy-transition>

10 Australian Energy Regulator & Commonwealth Government 2020, *Strategic Plan*, viewed 30 January 2024, <https://www.aer.gov.au/system/files/AER-Strategic-Plan_2020-2025.pdf>

Table 11 Policies relevant to the project at the state level

Policy	Details	Strategic drivers
NSW Government's Electricity Infrastructure Roadmap[11]	The Roadmap sets out an investment framework to coordinate the replacement of coal-fired power stations and transition the electricity sector to a clean, affordable, and reliable system. The Roadmap was legislated under the *Electricity Infrastructure Investment Act 2020*. The document aims to deliver this infrastructure in a timely and coordinated manner to maintain a reliable, secure, and affordable supply. The plan is expected to reduce household energy bills by $130 annually.	The project is indirectly relevant to the NSW Energy Infrastructure Roadmap. The project addresses challenges outlined in the Roadmap, including transforming NSW's electricity system into one that is cheap, clean and reliable. Delivering the new above-ground transmission infrastructure as part of the project will maximise NSW's electricity supply's affordability, reliability, and security, ultimately delivering social and economic benefits to local communities and businesses.
NSW Legislative Council's Feasibility of undergrounding the transmission infrastructure for renewable energy projects[12]	The NSW Legislative Council's parliamentary inquiry focuses on the transmission network. Specifically, it investigates the national 10,000 km of transmission lines required to accommodate the energy industry's transition to net zero. The inquiry looks at the case studies of HumeLink and VNIWest. Both projects were proposed to be built as overhead transmission lines but received community backlash and support for undergrounding options.	The inquiry concluded undergrounding would result in substantial additional costs and lengthy delays to meet the government's renewable energy targets, therefore, the most viable option is to install overhead transmission lines The State and Commonwealth Governments agree that replacing and expanding transition line network is critical to avoiding power shortages and meeting the country's renewable energy targets. While this project is not linked to new renewable resources, Ausgrid's decision process to proceed with the overhead option reflects this inquiry's findings. That is, cost comparison and comparison of benefits with overhead versus underground.
Energy Networks Australia and CSIRO's Electricity Network Transformation Roadmap[13]	The Roadmap was developed to provide detailed milestones and actions to achieve efficient and timely energy industry transformation over ten years from 2017-2027. The Roadmap was guided by the 'Balanced Scorecard of Customer Outcomes', which aims to: ■ Provide clean energy transmission. ■ Lower bills for valued services. ■ Deliver fairness and incentives.	The Project is directly relevant and contributes to the goals of the Roadmap. The Project aligns with the 'customer-centric' focus of the roadmap by delivering overhead transmission lines instead of underground transmission lines. The over-head option will reduce the project's overall cost, thus reducing the cost inherited by consumers' energy bills. Replacing the existing fluid-filled cables would align with the Roadmap by

11 NSW Government 2020, *NSW Electricity Infrastructure Roadmap*, viewed 30 January 2024, <https://www.energy.nsw.gov.au/sites/default/files/2022-08/NSW%20Electricity%20Infrastructure%20Roadmap%20-%20Detailed%20Report.pdf>

12 NSW Legislative Council 2023, *Feasibility of undergrounding the transmission infrastructure for renewable energy projects*, viewed 30 January 2024, <https://www.parliament.nsw.gov.au/lcdocs/inquiries/2966/Report%20No.%2051%20-%20Standing%20Committee%20on%20State%20Development%20-%20Undergrounding.pdf>

13 Energy Networks Australia & CSIRO 2017, *Electricity Network Transformation Roadmap*, viewed 30 January 2024, <https://www.energynetworks.com.au/resources/reports/electricity-network-transformation-roadmap-final-report/>

Policy	Details	Strategic drivers
	▪ It is safe, reliable and secure. The document also states that by 2050, customers will generate 40 per cent of all electricity onsite.	delivering transmission infrastructure that is safe, reliable, and efficient in distributing energy. Also, the project will maintain a stable energy supply until the transition to 40 per cent onsite generation is complete.
Greater Cities Commission's North District Plan[14]	The North District covers Hornsby, Hunter's Hill, Ku-ring-gai, Lane Cove, Mosman, North Sydney, Northern Beaches, Ryde, and Willoughby NSW local government areas. The Greater Cities Commission's North District Plan sets out a 20-year plan to manage economic, social, and environmental growth and achieve Greater Sydney's 40-year vision. The vision describes a future state where residents have quicker and easier access to housing, activities, and jobs with improved lifestyles and environmental resources.	The Project would directly and indirectly enable the vision outlined in the North District Plan. The Project aligns with the Plan's goal of delivering efficient energy infrastructure. The Project would indirectly impact business productivity by delivering reliable and efficient energy to businesses within the Northern District. The Project would indirectly improve the area's liveability by delivering affordable energy transmission infrastructure, reducing the cost-of-living pressures, and therefore increasing residents' well-being.
Ausgrid's 2024-29 Revised Proposal to the Energy Market Regulator[15]	Ausgrid's Revised Proposal is an updated version of their Initial Proposal to AER with further justification for proposed investments. The proposal highlights the organisation's intent to deliver a network that: ▪ Enables and accelerates the energy transition. ▪ Facilitates electrification. ▪ Connects new renewables and CER. Enables greater accessibility in the transition at the lowest cost for our customers.	The Project as it is an existing part of Ausgrid's transmission infrastructure. The Project would align with the replacement expenditure outlined in the Revised Proposal.

Table 12 Policies relevant to the project at the local level

Policy	Details	Strategic drivers
Northern Beaches City Council's Towards 2040 Local Strategic Planning Statement[16]	Towards 2040 outlines a 20-year roadmap to sustainably managing the growth of the Northern Beaches City Council area. Towards 2040 provides nine strategic directions:	A key strategic consideration is 'infrastructure and collaboration' to provide new and upgraded infrastructure. This direction is underpinned by the

14 Greater Cities Commission 2018, *North District Plan*, viewed 30 January 2024, https://greatercities.au/sites/default/files/2023-07/North%20District%20Plan_March2018.pdf.

15 Ausgrid 2023, *Ausgrid's 2024-29 Regulatory Proposal*, viewed 30 January 2024, <https://www.aer.gov.au/system/files/Ausgrid%20-%202024-29%20Regulatory%20Proposal%20-%2031%20Jan%202023%20-%20Public_0.pdf>

16 Northern Beaches Council 2020, *Towards 2040 Local Strategic Planning Statement*, viewed 29 January 2024, <https://eservices.northernbeaches.nsw.gov.au/ePlanning/live/Common/Output/LoadGenWebDoc.ashx?id=z8E8mSOvjKAV0A60ki4OEg%3d%3d>

Policy	Details	Strategic drivers
	▪ Landscape. ▪ Efficiency. ▪ Resilience. ▪ Infrastructure and collaboration. ▪ People. ▪ Housing. ▪ Great places. ▪ Connectivity. ▪ Jobs and skills. The document also outlines: ▪ Planning priorities that will guide local land use and future developments. ▪ Principles that underpin planning priorities and action. ▪ Actions to achieve said priorities. ▪ Measures of success to determine whether the priorities were achieved.	principle "Ensure new and upgraded infrastructure contributes to the circular economy, considers whole of life cycle costs, is efficient and flexible to adapt to long-term needs". As the existing underground transmission cables is nearing its serviceable life, Ausgrid is required to plan for this infrastructure's future by replacing ageing equipment to avoid power outages and decreased service level outcomes.
Northern Beaches City Council's Resilience Strategy[17]	The Strategy is the Northern Beaches Council's plan to address future challenges holistically and collaboratively. It provides a vision for a resilient northern beach area. The Strategy establishes seven strategic directions to address said challenges. The directions also identify critical priorities and actions for the Government and various stakeholders. The Directions are: ▪ Planning for our future. ▪ Get ready, Northern Beaches. ▪ Connect for Strength. ▪ A strong, dynamic local economy ▪ Adaptive services, assets, and infrastructure. ▪ A resilient natural and built environment. ▪ Activates places and spaces.	The Project directly supports direction one, 'planning for our future', specifically, key priority six, 'increase the resilience of infrastructure to support current and future communities'. The Project will improve the reliability of transmission infrastructure. The project also aligns with direction four, ' a solid and dynamic local economy, ' specifically the priority to 'increase the resilience of infrastructure that supports our local businesses, particularly telecommunications and energy supply'. The Project will improve the reliability and efficiency of energy supply to businesses, ultimately maintaining business efficiency and productivity.

17 Northern Beaches Council n.d., *Resilience Strategy*, viewed 29 January 2024, <https://files-preprod-d9.northernbeaches.nsw.gov.au/nbc-prod-files/documents/policies-register/resilience/resilience/northern-beaches-resilience-strategy-adopted-jul22.pdf?1706503816>

Appendix C. Resident demographic profile

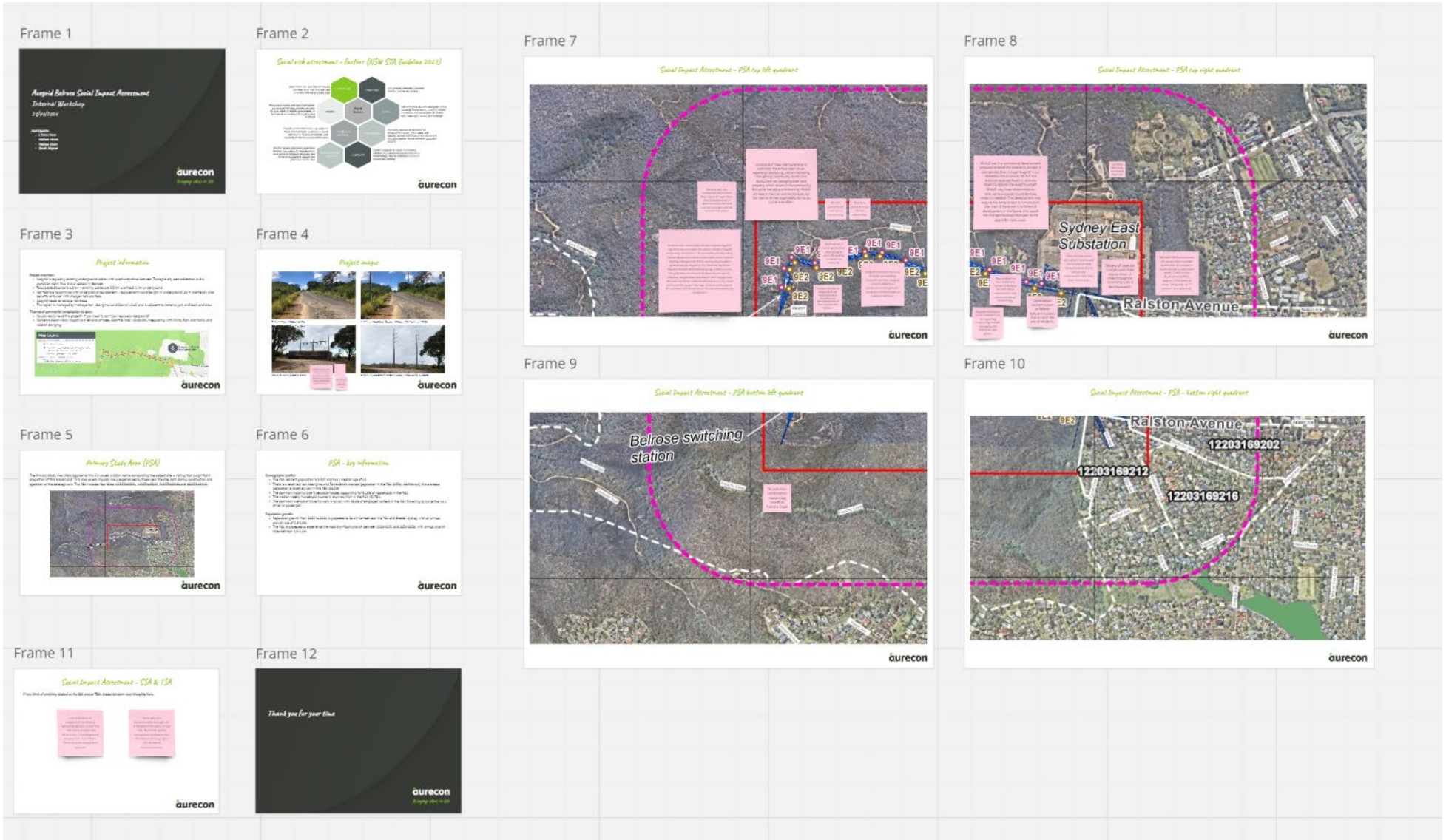
Table 13 Resident demographic profile (ABS 2021)

Location	PRIMARY STUDY AREA		SECONDARY STUDY AREA		TERTIARY STUDY AREA		Greater Sydney (1GSYD)	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Population, growth and projections								
Resident population (2021)	1,327	-	25,827	-	124,076	-	5,231,147	-
Past resident population (2016)	1,310	-	25,491	-	118,053	-	4,823,991	-
Average annual growth (2016-2021)	3	0.3%	67	0.3%	1,205	1.0%	81,431	1.7%
Projected resident population (2041)	1,542	-	30,005	-	140,760	-	6,142,275	-
Projected average annual growth (2021-2041)	11	0.8%	209	0.8%	834	0.7%	45,556	0.9%
Age and projections								
Median age	43	-	43	-	42	-	37	-
Projected median age (2041)	N/A	-	47	-	46	-	39	-
0-4 years	54	4.1%	1,291	6.9%	5,602	4.5%	312,364	6.0%
5-14 years	192	14.5%	4,026	14.1%	18,548	14.9%	650,843	12.4%
15-19 years	99	7.5%	1,937	6.5%	9,124	7.4%	294,764	5.6%
20-24 years	73	5.5%	1,396	6.5%	6,968	5.6%	343,064	6.6%
25-34 years	102	7.7%	1,648	13.9%	9,330	7.5%	811,314	15.5%
35-44 years	182	13.7%	3,208	13.9%	16,439	13.2%	777,748	14.9%
45-54 years	230	17.3%	4,311	12.6%	18,833	15.2%	667,167	12.8%
55-64 years	125	9.4%	2,892	11.5%	15,230	12.3%	579,166	11.1%
65-74 years	124	9.3%	2,365	8.5%	11,713	9.4%	439,467	8.4%
75-84 years	104	7.8%	2,022	4.1%	8,150	6.6%	249,517	4.8%
85+ years	22	1.7%	731	1.5%	4,138	3.3%	105,729	2.0%
Cultural diversity								
Aboriginal and Torres Strait Islander population	4	0.3%	134	3.0%	299	0.2%	90,939	1.7%
Overseas born	375	28.3%	7,518	33.4%	52,848	42.6%	2,021,079	38.6%
Speaks language other than English	250	18.8%	2,908	25.5%	31,822	25.6%	1,438,287	27.5%
Top five languages other than English	Armenian, Mandarin, Cantonese, Italian, Greek		Mandarin, Cantonese, French, Italian, Spanish		Mandarin, Cantonese, Korean, Persian (excluding Dari), Hindi		Mandarin, Arabic, Cantonese, Vietnamese, Hindi	
Need for assistance								
People with a need for assistance	53	4.0%	1,248	6.4%	4,834	3.9%	270,665	5.2%
Health								
People with long-term health conditions (all ages)	383	28.9%	6,780	25.5%	28,435	22.9%	1,232,535	23.6%

Location	PRIMARY STUDY AREA		SECONDARY STUDY AREA		TERTIARY STUDY AREA		Greater Sydney (1GSYD)	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Top five long-term health conditions	Arthritis , Asthma , Mental health conditions (including depression or anxiety), Heart disease (including heart attack or angina), Diabetes (excluding gestational diabetes)		Asthma , Arthritis , Mental health conditions (including depression or anxiety), Heart disease (including heart attack or angina), Diabetes (excluding gestational diabetes)		Asthma , Arthritis , Mental health conditions (including depression or anxiety), Heart disease (including heart attack or angina), Diabetes (excluding gestational diabetes)		Asthma , Arthritis , Mental health conditions (including depression or anxiety), Diabetes (excluding gestational diabetes), Heart disease (including heart attack or angina)	
Families and households								
Total households / occupied private dwellings	442	-	8,206	-	41,864	93.0%	1,828,859	-
Group households	3	0.7%	101	2.2%	569	1.4%	76,558	4.2%
Lone person households	65	14.7%	1,172	19.3%	7,065	16.9%	424,713	23.2%
Couple family with no children	106	24.0%	2,182	29.3%	11,493	32.5%	480,444	34.8%
Couple family with children	226	51.1%	4,209	50.6%	19,610	55.5%	667,760	48.4%
One-parent family	34	7.7%	756	18.6%	3,914	11.1%	208,478	15.1%
Housing								
Separate house	410	92.8%	7,280	80.2%	28,718	68.6%	1,020,631	55.8%
Semi-detached, row or terrace house, townhouse etc	18	4.1%	473	10.5%	1,624	3.9%	234,000	12.8%
Apartment, flat or unit	33	7.5%	432	8.9%	11,365	27.1%	561,988	30.7%
Owned outright	174	39.4%	3,295	26.8%	16,829	40.2%	507,635	27.8%
Owned with a mortgage	195	44.1%	3,625	39.1%	15,594	37.2%	608,735	33.3%
Rented	69	15.6%	1,068	31.0%	8,275	19.8%	657,317	35.9%
Median mortgage repayment ($/monthly)	$824	-	$3,422	-	$3,500	-	$2,427	-
Median rent ($/weekly)	$775	-	$848	-	$630	-	$470	-
People mobility								
Lived at a different address five years before the 2021 Census	339	25.5%	7,157	34.0%	44,589	35.9%	2,016,262	38.5%
Education								
University qualification	341	32.1%	9,717	47.4%	62,926	63.0%	1,836,097	43.0%
Trade qualification	187	17.6%	3,276	19.7%	7,088	7.1%	629,524	14.8%
Income and employment								
Labour force	699	65.9%	13,136	56.1%	61,155	61.2%	2,560,242	60.0%
Employed workers	673	96.3%	12,729	94.6%	58,583	95.8%	2,430,704	94.9%
Unemployed workers	26	3.7%	407	5.4%	2,572	4.2%	129,539	5.1%
Top three industries of employment	Health Care and Social Assistance, Professional, Scientific and Technical Services, Education and Training		Professional, Scientific and Technical Services, Health Care and Social Assistance, Education and Training		Professional, Scientific and Technical Services, Health Care and Social Assistance, Financial and Insurance Services		Health Care and Social Assistance, Professional, Scientific and Technical Services, Retail Trade	
Median weekly household income	$2,781	-	$2,952	-	$3,038	-	$2,077	-
Vehicles								

Location	PRIMARY STUDY AREA		SECONDARY STUDY AREA		TERTIARY STUDY AREA		Greater Sydney (1GSYD)	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Average motor vehicles per dwelling	2.3	-	2.0	-	1.8	-	1.6	-
Travel to work								
Travelled to work by car	261	38.8%	4,586	36.0%	16,011	27.3%	896,231	36.9%
Travelled to work on public transport	0	0.0%	199	1.6%	1,573	2.7%	91,841	3.8%
Cycled to work	0	0.0%	28	0.2%	107	0.2%	8,990	0.4%
Walked to work	3	0.4%	133	1.0%	782	1.3%	56,206	2.3%

Appendix D. Social impacts workshop – Miro board



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