# Appendix O
# Social

# Great Western Highway Blackheath to Little Hartley

## Appendix O - Technical report - Social

Client:Transport for NSW

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## Key terms

| Term | Definition |
|---|---|
| Amenity | Refers to the quality of a place, its appearance, feel and sound, and the way the community experiences the place. Amenity contributes to a community's identity and its sense of place. Aesthetic qualities are an important part of amenity, but the broader concept of amenity is determined also by the physical design of a place and the human activity that takes place within it. A place that has 'amenity' is regarded as pleasant and attractive, as well as convenient and comfortable (Handy, 2002) |
| Cumulative impacts | Impacts that, when considered together, have different and/or more substantial impacts than a single impact assessed on its own |
| Residual impacts | Impacts of the project that remain after mitigation measures are implemented |
| Social infrastructure | Infrastructure assets that deliver social services and other community uses, including schools, hospitals, childcare centres, libraries, and sport and recreation facilities. The term can also be used to broadly encompass the networks of facilities, places, spaces, programs, projects, and services that sustain a communities' quality of life and wellbeing |
| SSC (State Suburbs) | State Suburbs are an ABS approximation of localities gazetted by the Geographical Place Name authority in each State and Territory. Gazetted Localities are the officially recognised boundaries of suburbs (in cities and larger towns) and localities (outside cities and larger towns). Gazetted Localities cover most of Australia. |
| Statistical Area Level 2 | Statistical Area Level 2, defined by the ABS, are medium-sized general purpose areas built up from whole Statistical Areas Level 1. Their purpose is to represent a community that interacts together socially and economically |

## Abbreviations

| Abbreviation | Definition |
|---|---|
| ABS | Australian Bureau of Statistics |
| ACHAR | Aboriginal Cultural Heritage Assessment Report |
| AHIMS | Aboriginal Heritage Information Management System |
| BOCSAR | NSW Bureau of Crime Statistics and Research |
| CEMP | Construction Environmental Management Plan |
| CPTED | Crime Prevention Through Environmental Design |
| CSP | Community Strategic Plan |
| CTAMP | Construction Transport and Access Management Plan |
| DIDO | Drive in, drive out |
| DPE | NSW Department of Planning and Environment |
| DPIE | NSW Department of Planning, Industry and Environment (the former NSW Department of Planning and Environment) |
| EIS | Environmental Impact Statement |
| FIFO | Fly in, fly out |
| IRSAD | Index of Relative Socio-economic Advantage and Disadvantage |
| ISLP | Infrastructure Skills Legacy Program |

| Abbreviation | Definition |
|---|---|
| NSW | New South Wales |
| PACHCI | Procedure for Aboriginal Cultural Heritage Consultation and Investigation |
| SA2 | Statistical Area 2 |
| SEARs | Secretary's Environmental Assessment Requirements |
| SEIFA | Socio-Economic Indexes for Areas |
| SIA | Social Impact Assessment |
| SIA Guideline | *Social Impact Assessment Guideline for State Significant Projects* (NSW Department of Planning, Industry and Environment, 2021a) |
| SIMP | Social Impact Management Plan |
| SSC | State Suburbs |
| TBM | Tunnel Boring Machine |

# Executive summary

The Great Western Highway is the key east-west road freight and transport route between Sydney and Central West New South Wales (NSW). Together, the Australian Government and the NSW Government are investing more than $4.5 billion towards upgrading the Great Western Highway between Katoomba and Lithgow (the Upgrade Program). Once upgraded, over 95 kilometres of the Great Western Highway will be two lanes in each direction between Emu Plains and Wallerawang.

As part of the Upgrade Program, Transport for NSW is seeking approval under Division 5.2, Part 5 of the *Environmental Planning and Assessment Act 1979* (NSW) to upgrade the Great Western Highway between Blackheath and Little Hartley (the project). The project would comprise the construction and operation of new twin tunnels around 11 kilometres in length between Blackheath and Little Hartley, and associated surface road upgrade work for tie-ins to the east and west of the proposed tunnel portals.

This technical report comprises the Social Impact Assessment (SIA) for the project and has been prepared to inform the Environmental Impact Statement. The purpose of this report is to assess the potential social impacts (including benefits) of the project and address the relevant Secretary's Environmental Assessment Requirements (SEARs) provided by the NSW Department of Planning and Environment. This SIA has been prepared in accordance with the *Social Impact Assessment Guideline for State Significant Projects* (DPIE, 2021a).

**Social locality**

The social locality for the SIA has been defined using Australian Bureau of Statistics (ABS) state suburb (SSC) boundaries. The following ABS state suburbs were selected as they overlap with the project and its surrounding area:

- Blackheath
- Mount Victoria
- Kanimbla
- Little Hartley.

The social locality has been developed with a view to the likely direct and indirect areas of influence associated with the construction and operation of the project. Within the social locality two sub-areas have been considered, being the primary impact area (primarily residential areas within the immediate vicinity of the tunnel portals and construction sites) and the secondary impact area (the rest of the social locality).

**Consultation**

The assessment has been informed by consultation carried out specifically for the SIA, as well as broader consultation carried out for the project. Residential interviews, business surveys and stopper surveys were conducted for the SIA in April 2022 to better understand the potential social impacts of the project on community members, visitors and businesses.

The residential interviews identified that people have concerns for traffic and other amenity impacts during construction. People also indicated that they thought, when operational, the project would ease traffic congestion in their area, improving their ability to get to work, go shopping and socialise. Businesses raised concerns regarding the potential for noise impacts and traffic congestion to affect business during construction. Businesses also noted that they may be affected by a reduction in passing trade during operation, but would also benefit from a reduction in traffic congestion and improvements to amenity (associated with fewer vehicles travelling along the existing highway). The majority of stoppers (people stopping within the main shopping precincts within the social locality) identified that they would still visit town centres in the social locality if a tunnel bypass were in place.

**Potential impacts and benefits**

Social impacts during construction would relate to temporary changes to local amenity (noise, traffic and visual) causing changes in the quality of people's surroundings. These impacts would generally be limited to areas within the vicinity of the project's construction footprint. Construction noise impacts in

particular could occur, including within the vicinity of the construction footprint during tunnelling, causing disruption and impacting on elements of the community which are highly valued, such as the quiet nature of townships within the social locality. Additionally, while people from the local area would be employed wherever possible, construction workers moving into the region from elsewhere may have an impact upon short and longer-term accommodation availability and affordability if not appropriately planned and managed.

The social benefits during operation would relate to improvements in access and connectivity. The separation of through traffic and local traffic would reduce congestion and improve road safety, enabling people to move around their local area, and access local shops and facilities, with greater ease. This would address community expectations for the project identified in consultation undertaken for the SIA, including residential interviews. The reduction in traffic on existing surface roads would also result in improvements to people's surroundings and sense of place in townships along the Great Western Highway, including Blackheath and Mount Victoria.

Adverse social impacts during operation generally relate to changes in people's surroundings and local amenity in areas which are closest to the project's permanent surface infrastructure, notably around tunnel portals. Additionally, the project, as a bypass, would result in a reduction of passing trade which would affect businesses, and thereby livelihoods, in bypassed areas. This impact would be expected to improve over time, and be partly offset by amenity improvements which would attract visitors to the townships.

**Mitigation and management measures**

Potential social impacts would be largely managed through management frameworks designed to manage construction impacts such as noise and vibration, air quality, landscape and visual impacts and traffic. Adaptive management of impacts is proposed, including through the implementation of a Social Impact Management Plan, to ensure effective mitigation and management that responds directly and in real time to identified impacts to local amenity and the social locality.

# 1 Introduction

## 1.1 Project context and overview

The Great Western Highway is the key east-west road freight and transport route between Sydney and Central West New South Wales (NSW). Together, the Australian Government and the NSW Government are investing more than $4.5 billion towards upgrading the Great Western Highway between Katoomba and Lithgow (the Upgrade Program). Once upgraded, over 95 kilometres of the Great Western Highway will be two lanes in each direction between Emu Plains and Wallerawang.

The Upgrade Program comprises the following components:

- Great Western Highway Upgrade – Medlow Bath (Medlow Bath Upgrade): upgrade and duplication of the existing surface road corridor with intersection improvements and a new pedestrian bridge (approved)
- Great Western Highway East – Katoomba to Blackheath (Katoomba to Blackheath Upgrade): upgrade, duplication and widening of the existing surface road corridor, with connections to the existing Great Western Highway east of Blackheath (approved)
- Great Western Highway Upgrade Program – Little Hartley to Lithgow (West Section) (Little Hartley to Lithgow Upgrade): upgrade, duplication and widening of the existing surface road corridor, with connections to the existing Great Western Highway at Little Hartley (approved)
- Great Western Highway Blackheath to Little Hartley: construction and operation of a twin tunnel bypass of Blackheath and Mount Victoria and surface road works for tie-ins to the east and west of the tunnel (the project).

The components of the Upgrade Program are shown in Figure 1-1.

Transport for NSW (Transport) is seeking approval under Division 5.2, Part 5 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) to upgrade the Great Western Highway between Blackheath and Little Hartley (the project).

The project would comprise the construction and operation of new twin tunnels around 11 kilometres in length between Blackheath and Little Hartley, and associated surface road upgrade work for tie-ins to the east and west of the proposed tunnel portals.

The project would be located around 90 kilometres northwest of the Sydney CBD and located within the Blue Mountains and Lithgow Local Government Areas (LGA).

The majority of the project would be located below ground generally along or adjacent to the west of the existing Great Western Highway between around Blackheath and Little Hartley.

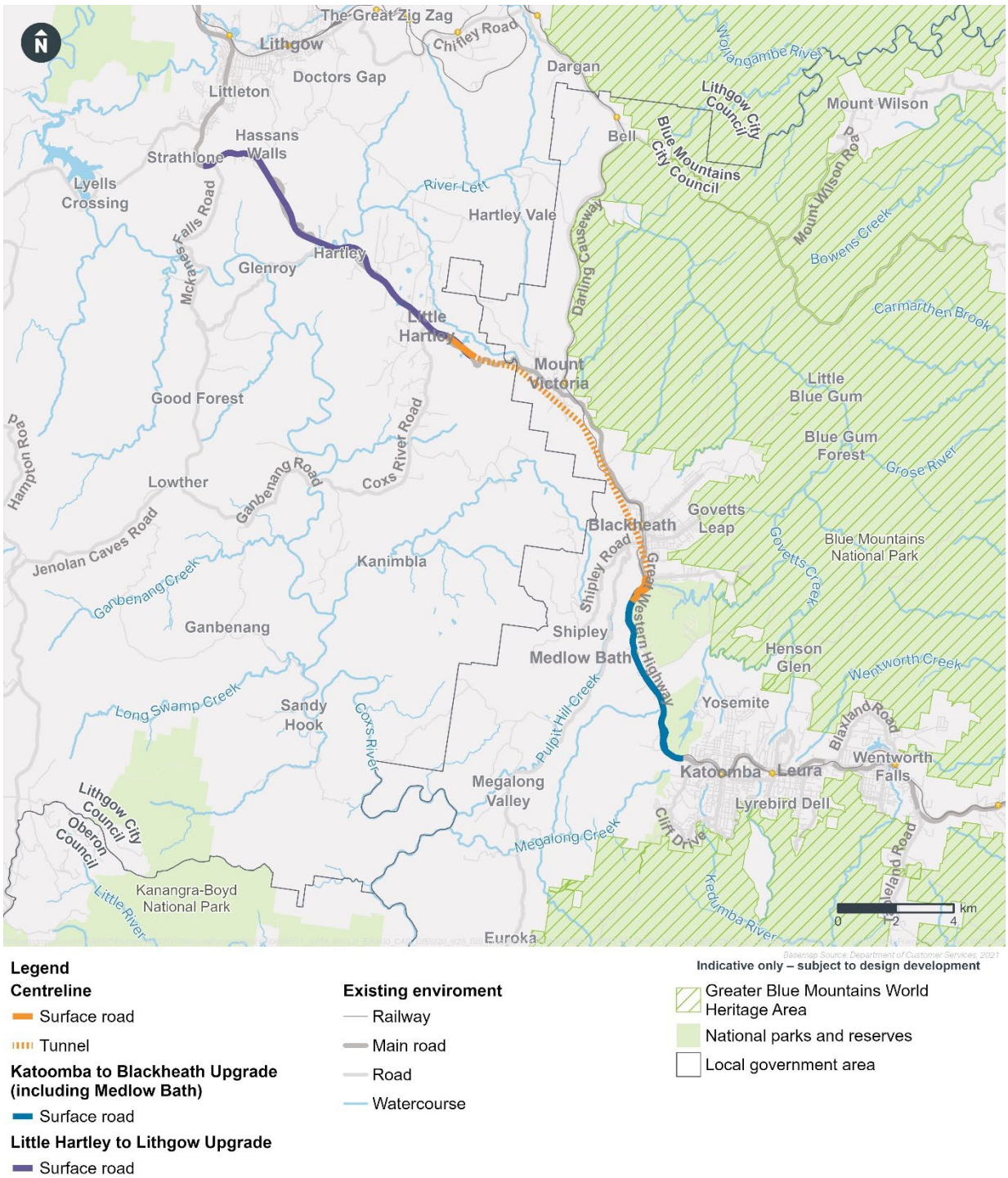



**Figure 1-1 The Great Western Highway Upgrade Program**

## 1.2 The project

### 1.2.1 Key components of the project

Key components of the project are summarised in Table 1-1 and shown in Figure 1-2. These components are described in more detail in Chapter 4 (Project description) of the environmental impact statement (EIS).

The indicative operational configuration of the surface road network at Blackheath and Little Hartley is shown in Figure 1-3 and Figure 1-4.

Subject to approval, the project is anticipated to be open to traffic in 2030.

**Table 1-1 Key components of the project**

| Key project component | Summary |
|---|---|
| Tunnels | Twin tunnels around 11 kilometres in length between Blackheath and Little Hartley, connecting to the upgraded Great Western Highway at both ends. Each tunnel would include two lanes of traffic and road shoulders and would range in depth from just below the surface near the tunnel portals, to up to around 200 metres underground at Mount Victoria. |
| Surface work | Surface road upgrade work would be required to connect the tunnels and surface road networks south of Blackheath and at Little Hartley. The twin tunnels would connect to the surface road networks via:<br>• mainline carriage ways and on- and off-ramps at the Blackheath portal, located adjacent to the existing Great Western Highway and south of Evans Lookout Road<br>• mainline carriageways at the Little Hartley portal, located adjacent to the existing Great Western Highway at the base of the western escarpment below Victoria Pass and southwest of Butlers Creek. |
| Operational infrastructure | Operational infrastructure that would be provided by the project includes:<br>• a tunnel operations facility adjacent to the Blackheath portal<br>• in-tunnel ventilation systems including jet fans and ventilation ducts connecting to the ventilation facilities<br>• one of two potential options for tunnel ventilation currently being investigated, being:<br>- ventilation design to support emissions via ventilation outlets; or<br>- ventilation design to support emissions via portals<br>• water quality infrastructure including sediment and water quality basins, an onsite detention tank at Blackheath and a water treatment plant at Little Hartley<br>• fire and life safety systems, emergency evacuation and ventilation infrastructure and Closed Circuit Television<br>• lighting and signage including variable message signs and associated infrastructure such as overhead gantries. |
| Utilities | Key utilities required for the project would include:<br>• a new electricity substation at Little Hartley to facilitate construction and operational power supply<br>• a new pipeline between Little Hartley and Lithgow to facilities construction and operational water supply<br>• other utility connections and modifications, including electricity substations in the tunnel |
| Other project elements | The project would also include:<br>• integrated urban design initiatives<br>• landscape planting. |

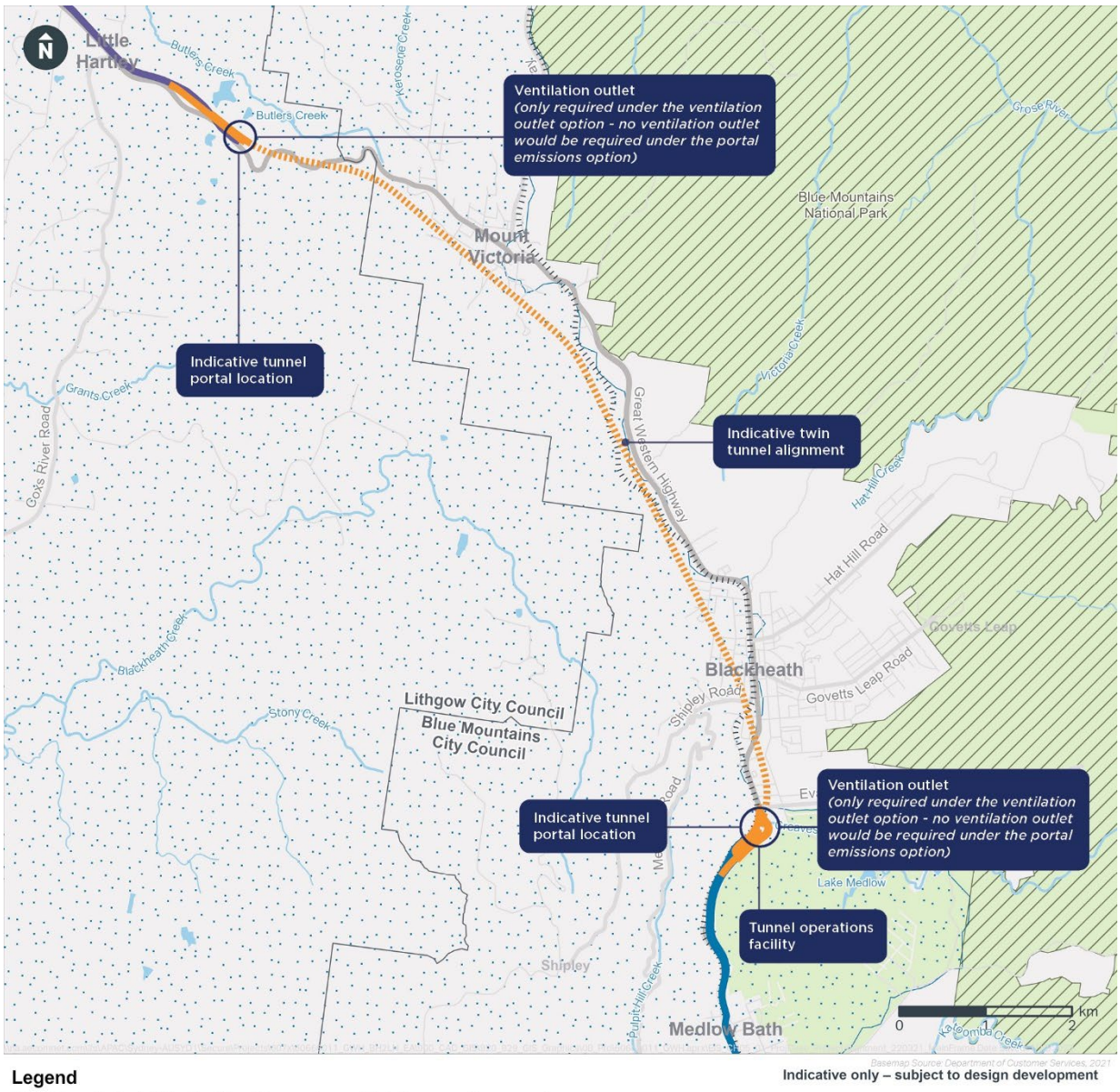



**Figure 1-2 Overview of the project**


**Figure 1-3 Indicative operational configuration at Blackheath**

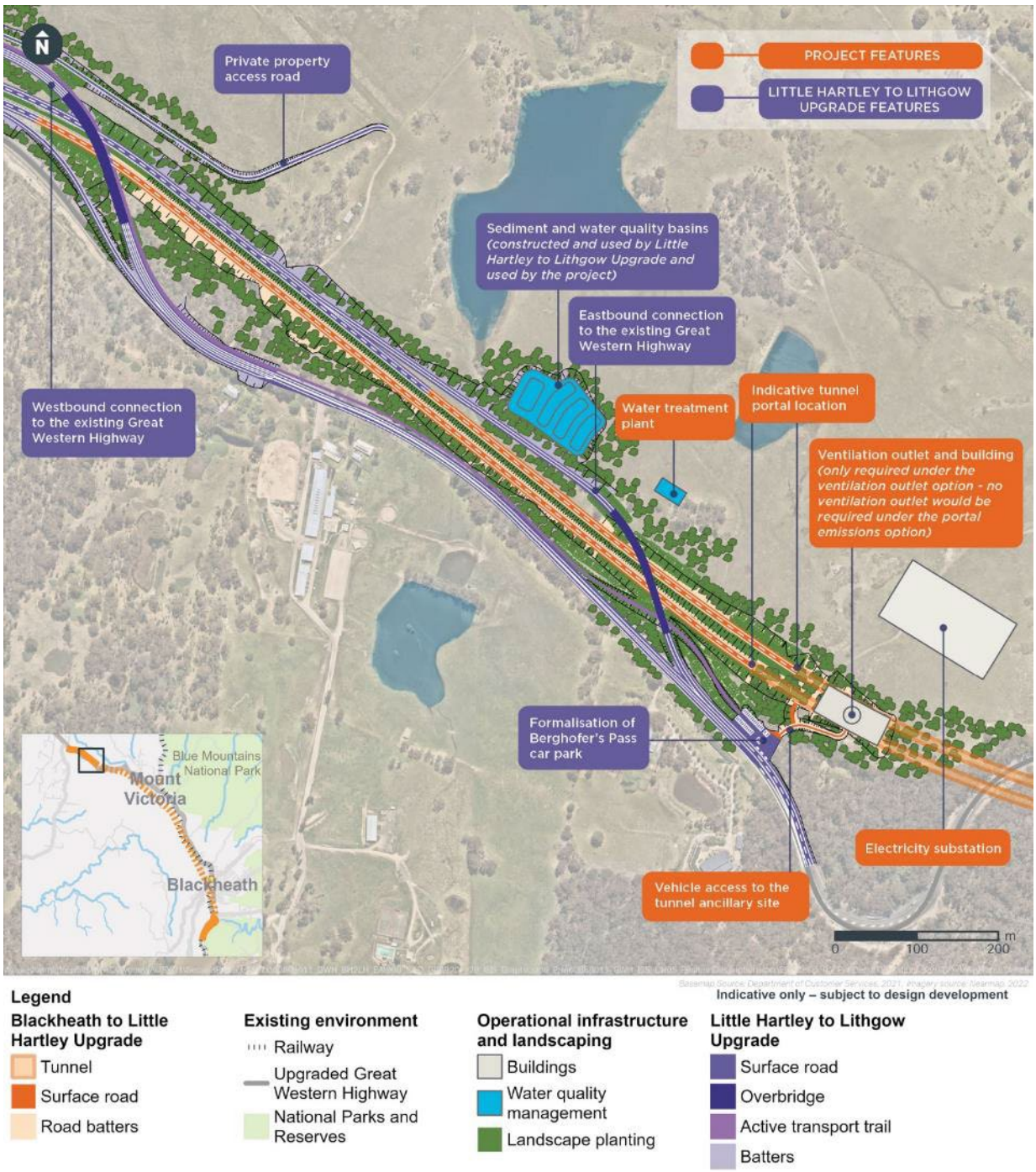



**Figure 1-4 Indicative operational configuration at Little Hartley**

### 1.2.2 Project construction

Construction of the project would include:

- site establishment and enabling works
- tunnel portal construction
- tunnelling and associated works
- surface road upgrade works
- operational infrastructure construction and fit-out, including construction of operational environmental controls
- finishing works, testing, and commissioning.

These activities are described in more detail in Chapter 5 (Construction) of the EIS.

The indicative construction footprint for the project is shown in Figure 1-5 to Figure 1-7, including construction site layout and access arrangements.

Construction of the project is expected to take around eight years. Subject to planning approval, construction is planned to commence in 2024 and be completed by late 2031; however, the project would be open to traffic by 2030.


**Figure 1-5 Indicative construction footprint at Blackheath**

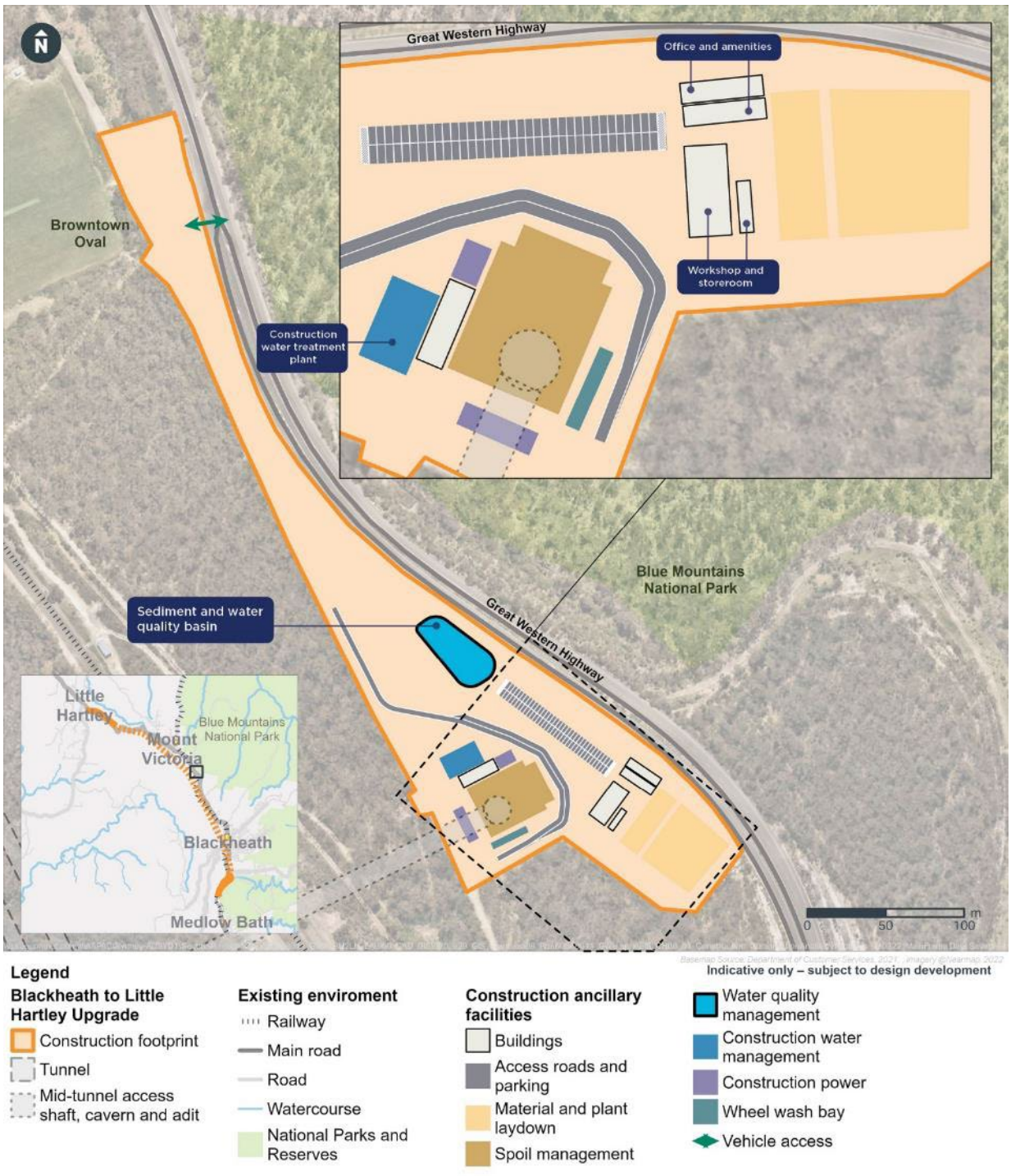



**Figure 1-6 Indicative construction footprint at Soldiers Pinch**

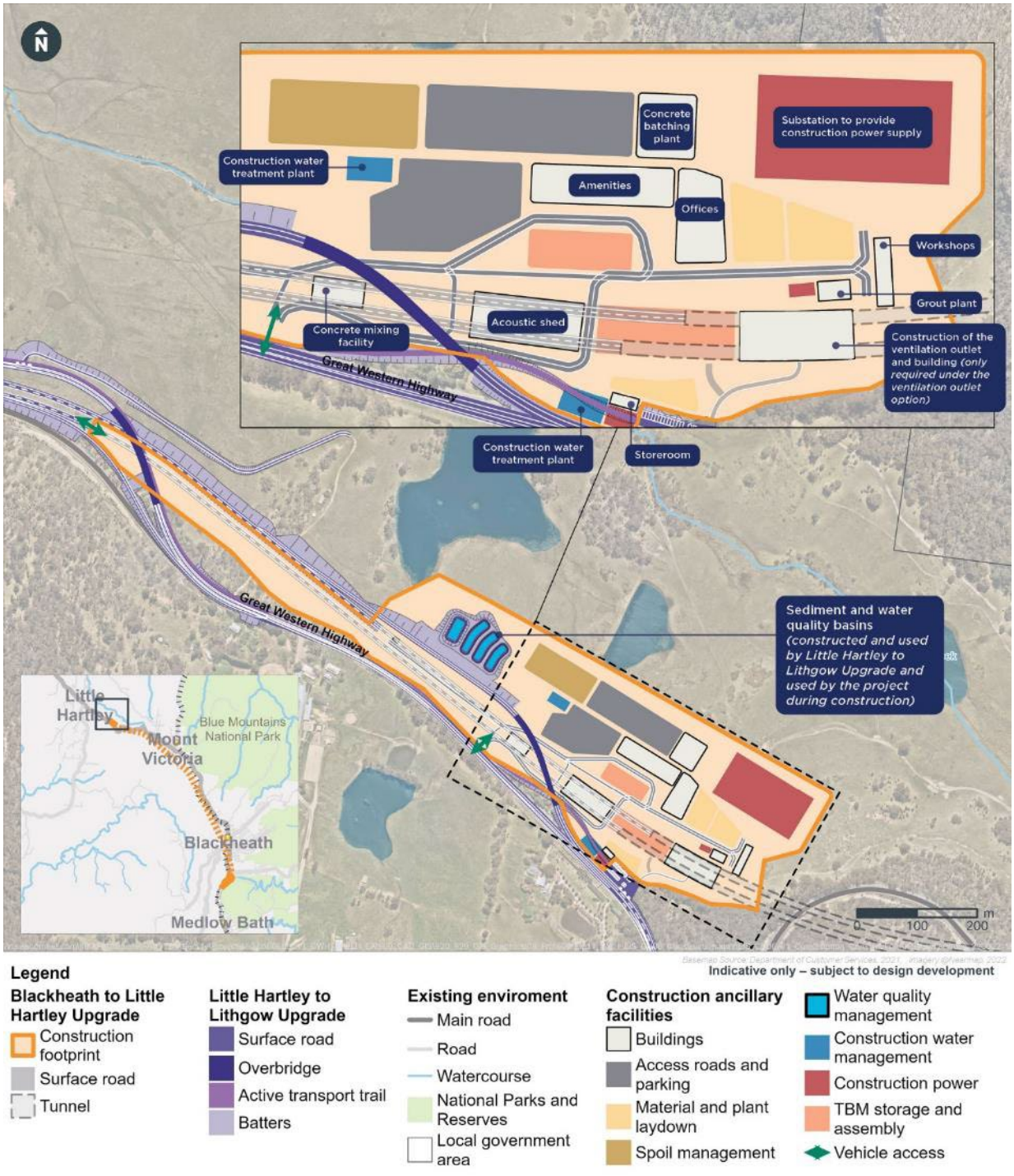



**Figure 1-7 Indicative construction footprint at Little Hartley**

### 1.2.3 Baseline environment

The Katoomba to Blackheath and Little Hartley to Lithgow Upgrades adjoining the project to the east and west respectively would be under construction when construction of the project commences (refer to Figure 1-8). To minimise environmental impacts, parts of the Katoomba to Blackheath Upgrade and Little Hartley to Lithgow Upgrade construction footprints would be used to support construction of the project.

As a result, the following activities will be undertaken at the construction sites as part of the Katoomba to Blackheath and Little Hartley to Lithgow Upgrades:

- vegetation would be cleared
- topsoil would be levelled and compacted
- site access tracks would be established
- water quality controls such as water quality and sediment basins would be installed.

The environmental impacts associated with these works have been assessed as part of the Katoomba to Blackheath Upgrade and the Little Hartley to Lithgow Upgrade.

The construction footprint for these projects are shown in Figure 1-9 and Figure 1-10 and form the baseline environment considered at Blackheath and Little Hartley for this EIS.

No work is proposed at Soldiers Pinch as part of the Katoomba to Blackheath Upgrade or the Little Hartley to Lithgow Upgrade and therefore the existing environment forms the baseline environment for this EIS.

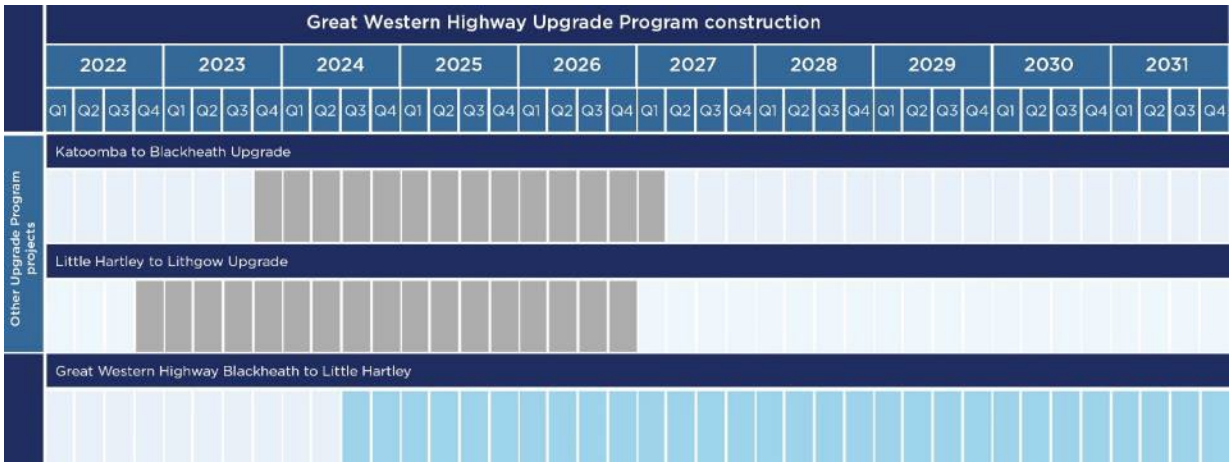



**Figure 1-8 Great Western Highway Upgrade Program construction**

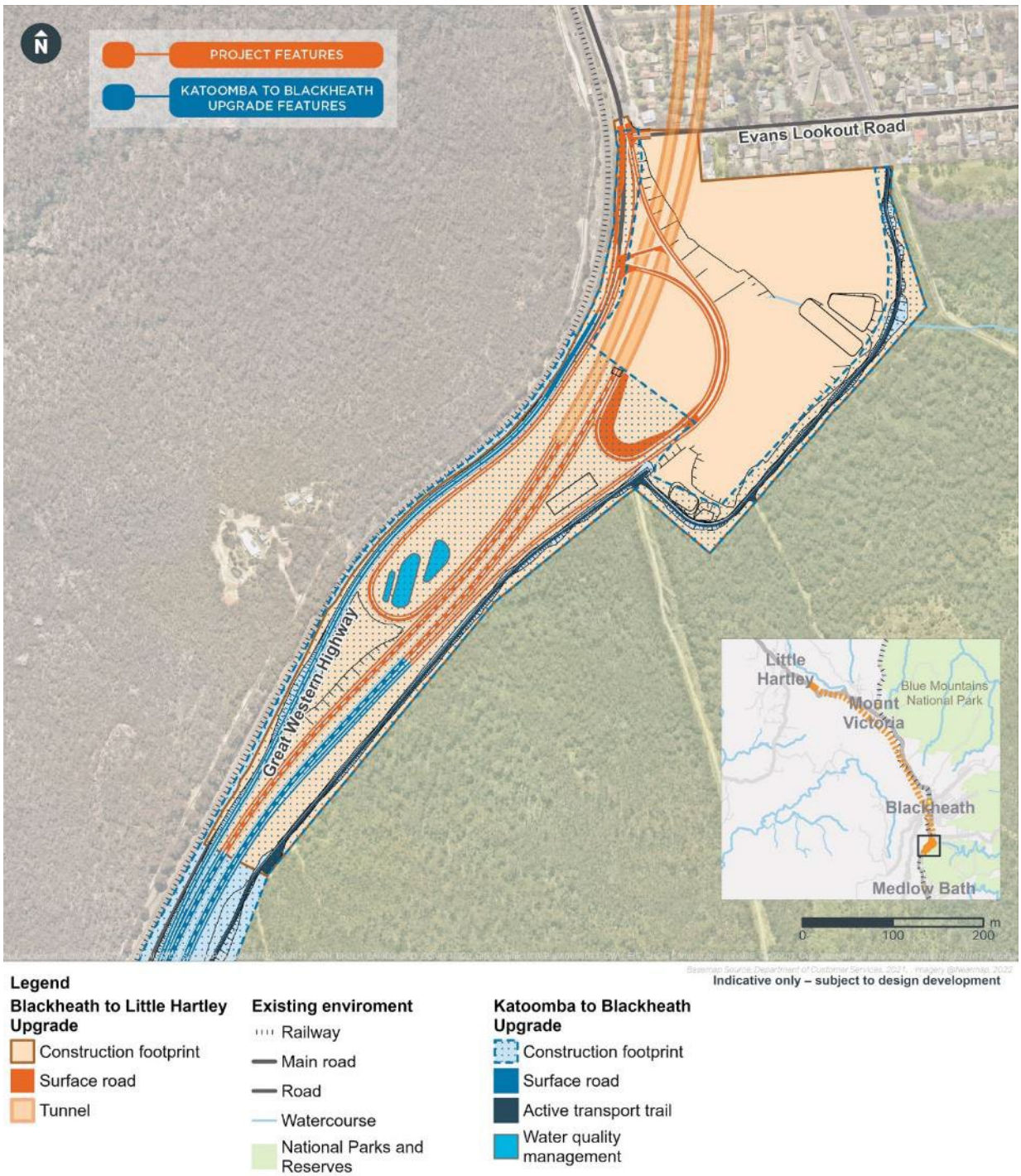



**Figure 1-9 Baseline environment at Blackheath**

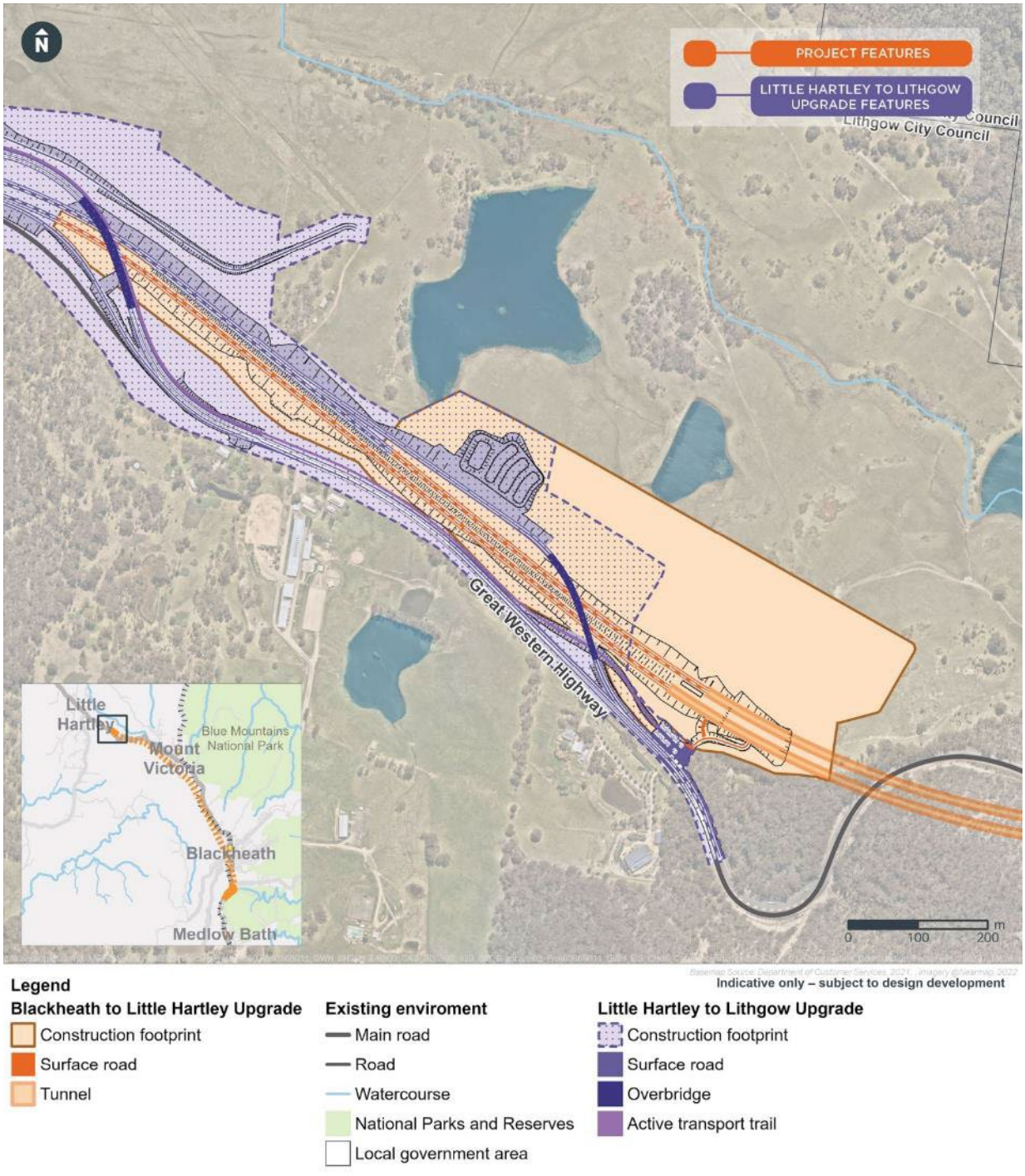



**Figure 1-10 Baseline environment at Little Hartley**

### 1.2.4 Other project specific aspects

Chapter 3 (Project alternatives and options) of the EIS includes further detail on the project development and options assessment process for the project. Of relevance to the SIA, design development has sought to respond to community feedback and avoid potential social impacts, where feasible and reasonable.

The design and construction methodology aimed to avoid or minimise potential social impacts as follows:

- selection of the Blackheath to Little Hartley tunnel option for the project (a single tunnel option, as an alternative to a two-tunnel option (the Blackheath and Mount Victoria tunnel bypasses). This was selected to respond to community and stakeholder preferences (described in Chapter 7 (Community and stakeholder engagement) of the EIS), and would offer the following advantages:
  - reduced construction footprint with more of the project being underground, resulting in less disruption to the community arising from surface works
  - minimised noise, vibration, visual and general amenity impacts to local communities during operation by locating more of the project underground
  - minimised property acquisition
- selection of Tunnel Boring Machines (TBMs) to excavate the mainline tunnels, which would offer the following advantages
  - minimised construction duration due to faster rate of excavation (compared to roadheaders), therefore minimising the potential duration of impacts to the community
  - minimised construction footprint and spoil haulage route given reduced number of access points required compared with using roadheaders entirely for tunnel excavation, thereby minimising the potential for disruption and amenity impacts to the community associated with surface construction
  - ability to install precast structural, waterproof tunnel lining progressively to minimise potential impacts on groundwater dependent ecosystems, thereby ensuring that tunnel construction is sensitive to the unique environmental and cultural surroundings of the Blue Mountains
- using two TBMs launched from Little Hartley rather than four to construct the tunnels, to minimise the construction footprint required at Blackheath, and reduce spoil haulage through Blackheath and Mount Victoria (and associated construction and amenity impacts to the community). Under this option, heavy vehicle traffic relating to tunnelling activities would be largely confined to the western end of the project (Little Hartley), minimising construction related impacts for Mount Victoria and Blackheath communities. Reduced spoil haulage through Blackheath and Mount Victoria would also reduce the potential for impacts to daily routines and to tourism through increased congestion
- refinement of the construction methodology to remove the potential requirement for a construction footprint at Browntown Oval, which would avoid potential impacts to social infrastructure and enable the oval to continue to be used for recreational purposes
- reduction in the operational footprint at the Blackheath portal through design development, to minimise visual impacts on the surroundings of nearby road users, residents and tourists.

Ongoing design development would continue to avoid and minimise potential negative social impacts, where possible.

## 1.3 Purpose of this report

This Social Impact Assessment (SIA) is one of a number of technical documents that forms part of the EIS. The purpose of this SIA is to identify and assess the potential social impacts (both adverse and positive) that may arise from the project during construction and operation. This report considers the direct, indirect and cumulative social impacts that may affect residents, businesses and other key stakeholders, as well as users of roads, public open space and social infrastructure. This report considers the potential impacts in detail and identifies strategies to minimise adverse outcomes and

enhance the benefits of the project. In doing so, the report addresses the Secretary's Environmental Assessment Requirements (SEARs) as outlined in Section 1.3.1.

Details of the relevant qualifications and experience of the authors are included in Annexure A (Certification page).

### 1.3.1 Assessment requirements

The SEARs issued by the NSW Department of Planning and Environment (DPE), relating to Social impacts arising from the project and where these requirements are addressed in this SIA are outlined in Table 1-2.

The *Social Impact Assessment Guideline for State Significant Projects* (Department of Planning, Industry and Environment, 2021a) (SIA Guideline) is identified in the SEARs as the current guidelines. This SIA has been prepared in accordance with the SIA Guideline.

**Table 1-2 Relevant SEARs addressed in this report**

| SEARs | | |
|---|---|---|
| **Social** | | |
| **Desired performance outcome** | **Requirement** | **Section where addressed in report** |
| The project is designed to provide socially sustainable outcomes.<br>The project will maximise the social and economic welfare of the community.<br>The project will deliver better development outcomes by minimising negative social impacts and enhancing positive social impacts on affected communities | 1. Potential social impacts of the project from the points of view of the affected community/ies and other relevant stakeholders (i.e. how they expect to experience the project) | Section 5<br>Section 6<br>Section 7 |
| | 2. How project activities, and environmental changes and impacts arising from the construction and operation of the project may affect:<br>a. health and wellbeing; | Section 5.4<br>Section 6.4 |
| | b. people's way of life and livelihoods, including those who work in tourism; | Section 5.1<br>Section 6.1<br>Section 5.7<br>Section 6.7 |
| | c. people's surroundings (including natural values) and culture, including the connection and value placed on the land by local Aboriginal communities; | Section 5.5<br>Section 5.6<br>Section 6.5<br>Section 6.6 |
| | d. affected community, including composition, cohesion and people's sense of place; | Section 5.2<br>Section 6.2 |
| | e. access to and use of infrastructure, local services, and facilities, including accommodation and cumulative impacts on tourism; | Section 5.3<br>Section 6.3 |
| | f. personal and property rights; | Section 5.8<br>Section 6.8 |
| | g. fears and aspirations, as relevant; and | Section 5<br>Section 6<br>Section 7 |
| | h. distributive equity i.e. the different ways in which people in different places, social and demographic groups and generations may experience the positive and negative impacts from the project and be disproportionately affected. | Section 5.9<br>Section 6.9<br>Section 7<br>Throughout this SIA[1]. |

1. *Note: Primary research and the assessment of impacts in this SIA has been undertaken with view to understanding and properly considering people from a broad range of backgrounds. The assessment sections identify, as relevant, where different groups within the community may be disproportionately affected.*

### 1.3.2 Agency engagement

During preparation of the EIS, consultation was carried out with the NSW DPE, including social impact assessment specialists. This included a briefing on 6 of April 2022 to provide an overview of the project, the approach and scope of the SIA, and proposed stakeholder and community consultation. The approach discussed in this meeting has been adopted in this SIA.

Key feedback in the briefing, and where it has been addressed in the SIA, includes the following:

- general agreement on the approach to defining the social locality (refer to Section 2.4)
- general agreement on the consultation activities for the SIA (refer to Section 2.7)
- noted that vulnerable and marginalised groups should be identified and their views should be considered throughout the SIA (discussed in Section 3.1.6 and considered throughout the SIA)
- noted that consideration should also be given to where the workers are being sourced and housed (discussed in Section 5.3.3)
- noted that positive impacts with regards to increased network resilience (in response to natural disasters) could be considered (discussed in Section 6.3).

# 2 Assessment methodology

## 2.1 Relevant guidelines and policies

### 2.1.1 Legislative context

The assessment of social impacts is a key element of environmental impact assessment under both Commonwealth and NSW environmental planning legislation, whereby 'environment' is defined to include the social environment.

The statutory definition of the environment at both Commonwealth and State level is provided in the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the *Environmental Planning and Assessment Act 1979* (EP&A Act) respectively. Section 528 of the EPBC Act defines the environment as including:

*a. ecosystems and their constituent parts, including people and communities; and*

*b. natural and physical resources; and*

*c. the qualities and characteristics of locations, places and areas; and*

*d. heritage values of places; and*

*e. the social, economic and cultural aspects of a thing mentioned in paragraph (a), (b), (c) or (d).*

Similarly, Part 1 of Section 1.4 of the NSW EP&A Act defines the environment as "all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings." In addition, the *Environmental Planning and Assessment Regulation 2021*, Section 171, requires the consideration of environmental issues that comprise both direct and indirect social impacts.

Direct and indirect social impacts of the project, including those relating to amenity, the aesthetic qualities of the local environment, and local heritage values, are assessed in Section 5 (Assessment of construction impacts) and Section 6 (Assessment of operational impacts).

### 2.1.2 Relevant guidelines

The SIA Guideline seeks to provide a consistent framework and approach to the assessment of social impacts associated with state-significant projects in NSW. This report has been prepared with reference to guiding principles detailed in the SIA Guideline, as well as the following categories:

- **way of life**, including how people live, how they get around, how they work, how they play, and how they interact each day
- **community**, including composition, cohesion, character, how the community functions, resilience, and people's sense of place
- **accessibility**, including how people access and use infrastructure, services and facilities, whether provided by a public, private, or not-for-profit organisation
- **culture**, both Aboriginal and non-Aboriginal, including shared beliefs, customs, practices, obligations, values and stories, and connections to Country, land, waterways, places and buildings
- **health and wellbeing**, including physical and mental health especially for people vulnerable to social exclusion or substantial change, psychological stress resulting from financial or other pressures, access to open space and effects on public health
- **surroundings**, including ecosystem services such as shade, pollution control, erosion control, public safety and security, access to and use of the natural and built environment, and aesthetic value and amenity
- **livelihoods**, including people's capacity to sustain themselves through employment or business
- **decision-making systems**, including the extent to which people can have a say in decisions that affect their lives, and have access to complaint, remedy and grievance mechanisms.

These categories have been considered throughout the assessment of social impacts of the project, in Section 5 (Assessment of construction impacts) and Section 6 (Assessment of operational impacts).

The SIA Guideline also sets out principles to guide an evidence-based approach to the SIA. An overview of these principles and how they have been considered in this SIA is provided in Table 2-1.

**Table 2-1 Principles to guide the SIA (identified in the SIA Guideline)**

| Principle and description | Consideration in this SIA |
|---|---|
| **Action-oriented** – defines specific actions to deliver practical, achievable and effective outcomes for people | Section 8 (Management of impacts) of this SIA identifies the mitigation and management measures proposed to address potential social impacts of the project. These measures have been developed to be action-oriented, consistent with best practice and achievable. |
| **Adaptive** – establishes systems to respond to new or different circumstances to support continuous improvement | The mitigation and management measures proposed in Section 8 (Management of impacts) have been developed to respond to differing circumstances as the project progresses, and to support continuous improvement in community outcomes. |
| **Culturally responsive** – develops culturally informed approaches and methodologies to ensure Aboriginal and culturally diverse communities are engaged appropriately, and their perspectives, insights and feedback are valued | The SIA has assessed potential social impacts in relation to the connection and value placed on the land by local Aboriginal people in Section 5.6 and Section 6.6. |
| **Distributive equity** – Considers how different groups will experience social impacts differently (particularly vulnerable and marginalised groups, future generations compared with current generations, and differences by gender, age and cultural group) | Primary research and the assessment of impacts in this SIA has been undertaken with view to understanding and properly considering people from a broad range of backgrounds. Potentially vulnerable and marginalised groups have been identified and considered as part of this assessment (refer to Section 3.1.6). Residential interviews undertaken for the SIA sought to gain a cross section of groups within the community who are likely to be most directly affected by the construction and operation of the project, with proportionate representation of potentially vulnerable and marginalised groups, for example through approaching a range of residences (detached houses, units, and mobile homes) and seeking feedback from respondents on how the project could help address the needs of vulnerable groups. Distributive equity is discussed further in Section 5.9 and Section 6.9, in regard to the potential construction and operational impacts of the project, respectively. |
| **Impartial** – Uses fair, unbiased research methods and follows relevant ethical standards | The methodology and execution of primary research and impact assessment has been undertaken with view to the SIA Guidelines and in consultation with relevant topic leads from both the NSW DPE and Transport. Care has been taken to avoid bias, particularly during community consultation. This report has been prepared by appropriately qualified environmental impact assessment and SIA practitioners (see Annexure C (Assessment review questions)). |
| **Inclusive** – Seeks to hear, understand, respect and document the perspectives of all likely affected people. Uses respectful, meaningful and effective engagement activities tailored to | A range of engagement techniques have been employed to canvass the views of a wide range of affected people within the community, as identified in Section 4 (Consultation). These techniques have sought to reach people from a diversity of backgrounds and have been implemented in a manner sensitive to people's circumstances. |

| Principle and description | Consideration in this SIA |
|---|---|
| the needs of those being engaged (e.g. being culturally sensitive and accessible) | |
| **Integrated** – Uses and references relevant information and analysis from other assessments to avoid duplication. Supports effective integration of social, economic and environmental considerations in decision-making | The SIA has referenced inputs from technical assessments prepared for other key issues as part of the EIS, as well as relevant data and information from the Australian Bureau of Statistics and local councils to identify and assess social impacts of the project (refer to Section 3 (Social baseline)). The assessment of impacts to livelihoods in the SIA has also been informed by the business and economic assessment undertaken in Appendix P (Technical report – Economics and business) of the EIS. |
| **Life-cycle focus** – Seeks to understand likely impacts (including cumulative impacts) at all project stages, from pre-construction to post closure/operation commencement | Relevant social impacts have been assessed for construction (including prior to the commencement of construction, where relevant) and operational phases of the project. The assessment has also included consideration of cumulative impacts (refer to Section 7 (Assessment of cumulative impacts)) and has identified mitigation and management measures with respect to the relevant project phase. |
| **Material** – identifies which likely social impacts matter the most for people and/or pose the greatest risk/opportunity to those expected to be affected | The assessment of impacts has used the methodology specified by the SIA Guideline to consider the likelihood and magnitude of impacts. By definition, only impacts that are likely to occur (and hence are material and/or pose the greatest risk/opportunity) have been included in the assessment. |
| **Precautionary** – if there are risks of serious or irreversible environmental damage (including harm to people), avoids using any limits on full scientific certainty as a reason for postponing measures to prevent environmental (including social) degradation | Section 8 (Management of impacts) of this SIA identifies the mitigation and management measures proposed to address potential social impacts of the project. These measures have been developed to be precautionary based on the technical assessment presented, and are consistent with current best practice measures for similar projects. |
| **Proportionate** – ensures the scope and scale of the SIA corresponds to the scope and scale of the likely social impacts | This SIA has been prepared as a 'detailed' scale assessment. This is based upon the large scale of the project, as well as its potential to result in broad social impacts, both positive and negative, both within and beyond the social locality (refer to Section 2.4 for discussion on social locality). |
| **Rigorous** – uses appropriate, accepted social science methods and robust evidence from authoritative and trustworthy sources | This SIA has been prepared using data from the ABS, local councils, and directly derived from the community through interviews and surveys. Data gathering from these sources has used accepted social science methods. Additional inputs have been derived from other technical assessments within the EIS. All of these sources are considered to be trustworthy and authoritative. |
| **Transparent** – explains, justifies and makes available information, methods and assumptions so that people can see how their input has been considered | The impact assessment methodology, baseline data and other information sources considered in the SIA have been clearly detailed in Section 2 (Assessment methodology) and Section 3 (Social baseline) with impacts discussed in detail in Section 5 (Assessment of construction impacts) and Section 6 (Assessment of operational impacts). The results of community inputs, as outlined in Annexure D (SIA Consultation analysis report), have directly informed the assessment of impacts. |

### 2.1.3 Strategic context

The project is broadly consistent with a number of Australian and NSW strategic plans for improving transport, placemaking, and freight efficiency. Key strategies, policies, and plans have also informed and influenced the objectives and design development of the project.

The Future Transport Strategy (Transport for NSW, 2022a) sets Transport's vision for safe, healthy, sustainable, accessible and integrated passenger and freight journeys in NSW. The project aligns with the following Future Transport Strategy outcomes:

- **Transport outcome: successful places for communities** – by contributing to improvements in local amenity of the bypassed towns adjoining the surface road network through the Blue Mountains
- **Transport outcome: enabling economic activity** – by enabling growth in economic activity, including freight movement
- **Strategic direction C1: Connectivity is improved across NSW** – supporting centres with appropriate transport services and infrastructure. The project would support access between Sydney and Central West NSW, including access to the local towns of Blackheath and Mount Victoria
- **Strategic direction C4: Our transport networks are safe** – by improving road safety. The project would improve safety by separating carriageways, providing a low-grade alternative to the existing Great Western Highway alignment, and implementing contemporary safety in design standards
- **Strategic direction P2: Transport infrastructure makes a tangible improvement to places** – The project would provide opportunities for placemaking initiatives by reducing through traffic, including freight vehicles, at key locations along the Great Western Highway, particularly at Blackheath and Mount Victoria.

Further detail on the relevant strategies, policies and plans, and their alignment with the project is included in Chapter 2 (Strategic context and project need) of the EIS.

At a local setting, Community Strategic Plans (CSPs) identify the main priorities and aspirations for the future of local government areas, for a period of 10 or more years. An overview of the CSPs relevant to the social locality (refer to Section 2.4), and their relevance to the social outcomes of the project, is included in Table 2-2.

**Table 2-2 Community strategic plans**

| Strategy / plan | Overview |
|---|---|
| **Blue Mountains Community Strategic Plan 2035** | The Blue Mountains City Council CSP (BMCC, 2017) identifies the need to improve accessible pathways of travel leading to accessible places and spaces and to create a more vibrant city which encourages and facilitates a variety of sustainable industries, enterprises and businesses. Six primary directions are identified in the CSP:<br>• lead - Inspiring Leadership<br>• protect - An Environmentally Responsible City<br>• care - An Inclusive, Healthy and Vibrant City<br>• live - A Liveable City<br>• move - An Accessible City<br>• thrive - An Economically Sustainable City.<br>The project would involve investment in infrastructure to service the growing population and would therefore support several of these directions. A key strategy to meet the 'move' direction is to 'complete the upgrade and widening of the Great Western Highway west of Katoomba so that it delivers improved safety, accessibility and amenity. This Project would directly support this objective by upgrading the Great Western Highway between Blackheath and Little Hartley. |

| Strategy / plan | Overview |
|---|---|
| **Lithgow City Council – Our Place, Our Future: Community Strategic Plan 2035** | The Lithgow Council CSP (Lithgow City Council, 2022) is divided into five key themes to address to address social, environmental, economic and civic leadership issues in the LGA. These include:<br>• caring for the community<br>• strengthening our economy<br>• developing our built environment<br>• enhancing our natural environment<br>• responsible governance and civic leadership.<br>The project would support several of these themes. An objective for the project and Upgrade Program is to improve economic development, productivity and freight accessibility in and through the Blue Mountains, Central West and Orana regions, which would support the theme of 'Strengthening the economy'. The project would also contribute to 'developing our built environment' by substantially improving transport connectivity to the area. Urban design objectives have been identified to drive the ongoing design development outcomes for the project to ensure that key project elements, such as the tunnel portals, integrate into the surrounding environment and are sympathetic to the natural setting of the Blue Mountains. As such the project would also contribute to 'enhancing our natural environment.' |

## 2.2 Limitations and assumptions

Key assumptions applied to this SIA include the following:

- socio-economic data available for each suburb within the social locality (refer to Section 2.4) accurately reflects the community's demographic profile
- consultation to inform SIA has been based on targeted, random sampling, as well as ongoing project-wide consultation, which has been assumed to provide a representative overview of the broader community's attitudes
- the assessment includes inputs from the findings of other technical studies undertaken for the EIS.

Community consultation and feedback is an integral input into the SIA. However, it should be acknowledged that views within the community can differ and are subject to change over time. Perceived and intangible impacts can therefore be challenging to quantify. Notwithstanding, this SIA has been informed by targeted consultation undertaken to understand the current views of the community likely to be most affected by the project and has been carried out in accordance with the SIA Guideline.

Further detail on specific limitations of the consultation activity carried out for the SIA is provided in Section 2.7.

## 2.3 Approach to SIA

This SIA has been prepared to understand the social environment and context within and around the project's social locality (refer to Section 2.4), and consider its impacts in a broad, inclusive and culturally sensitive manner. In doing so, the requirements of the SIA Guideline have been closely integrated throughout. The main phases of the assessment and their constituent components are outlined below:

- **phase 1: scoping and initial assessment,** which involved:
  - defining the social locality of the project and gaining an understanding of the characteristics of the communities within (refer to Section 2.4)
  - undertaking an initial scoping assessment to identify the key social impacts to be considered in the SIA, and the level to which these need to be assessed (refer to Section 2.5)

- **phase 2: social impact assessment,** which involved:
  - development of a social baseline study to understand the social context of the area without the project, based on the ABS 2021 and 2016 Census[1] and other relevant data (refer to Section 2.6)
    - use of consultation feedback to further understand the social context of the area, including community values and interests. This included:
    - review of consultation previously undertaken for the project to provide insight into the social context of the area, as well as community identity, values, fears and aspirations.
    - undertaking further consultation targeted to the SIA, including residential interviews, stopper surveys and business surveys (refer to Section 2.7). The aim of this consultation was to further understand key values, aspirations and concerns of the community; as well as the potential for impacts to livelihood associated with impacts to businesses
  - predicting and analysing potential social impacts and benefits of the project, within each social impact category identified in the SIA Guideline (refer to Section 2.1.2 for an overview of these categories). This has been informed by other technical assessments including air quality; traffic and transport; noise and vibration; economic impacts; human health; heritage; and landscape and visual impacts
  - evaluating the potential significance of social impacts, through a risk-based assessment which involves defining the likelihood and magnitude of each impact (refer to Section 2.8)
  - identification and assessment of potential cumulative social impacts
  - development of mitigation measures for identified negative social impacts, and opportunities to enhance social benefits
  - evaluation of the potential residual social impacts, following the application of proposed mitigation measures.

Further detail on key aspects of the methodology is provided in the following sections.

This SIA has been undertaken with consideration of the multiple demographic, cultural and social groups which exist within the social locality (refer to Section 2.4). The impact assessment has been informed by community feedback and consultation both for the project generally, as well as specific to the SIA (detailed in Section 4 (Consultation)). The potential for different groups to experience different impacts has been considered throughout.

## 2.4 Social locality

The social locality for the project has been developed with view to the likely direct and indirect areas of influence associated with the construction and operation of the project.

Noting the potential for multiple and/or overlapping impacts, this assessment has considered the following sub-categories of the social locality:

- **primary impact areas:** primarily residential areas within the immediate vicinity of the tunnel portals and construction sites. These are the areas which would be most likely to experience major and/or multiple impacts (see Figure 2-2 and Figure 2-3)
- **secondary impact areas:** these are places that are popular with people outside their home and that would be expected to experience a minor to moderate level of social impact (see Figure 2-2 and Figure 2-3)

[1] Some 2021 Census data required for the SIA was not available during preparation of the report (including, data relating to employment status, industry of employment, method of travel to work, and Socio-economic indexes for areas (SEIFA)). In these instances, 2016 data has to develop the social baseline. The SIA has also used more recent consultation results, including SIA-specific consultation undertaken in April 2022 to inform the social baseline.

- **region:** this is defined by the overall study area for this report and takes in the ABS State Suburbs (SSCs; referred to hereafter as 'suburbs') of Blackheath, Mount Victoria, Little Hartley and Kanimbla. Of these suburbs, Blackheath and Mount Victoria are located in the Blue Mountains City Council LGA; and Little Hartley and Kanimbla are located in the Lithgow City Council LGA. The region represents the place where the majority of the social impacts of the project are most likely to be experienced (see Figure 2-1).

The identified sub-categories within the social locality are approximate and based on a conservative consideration of potential social impacts. Data for the social locality has been collected at the level of ABS suburb. This was done to allow for the assessment to be targeted towards the communities mostly likely to be directly affected by the project.

While Statistical Area Level 2 (SA2) data are often analysed in social impact assessments, the SA2s in which the project is located extend across large areas. As such, the use of SA2s in this case would result in the analysis taking in people and businesses who would not be directly affected by the project. For this reason, SA2s were not used for this assessment.

Demographic data for both LGAs, as well as NSW as a whole, has been provided for context and comparison against that of the social locality, where relevant. See Annexure B (Social baseline data) for the data used.

Despite the limits of the defined social locality, data for social infrastructure has been collated from within a two-kilometre radius of each relevant part of the project footprint (e.g. construction footprint and surface infrastructure).

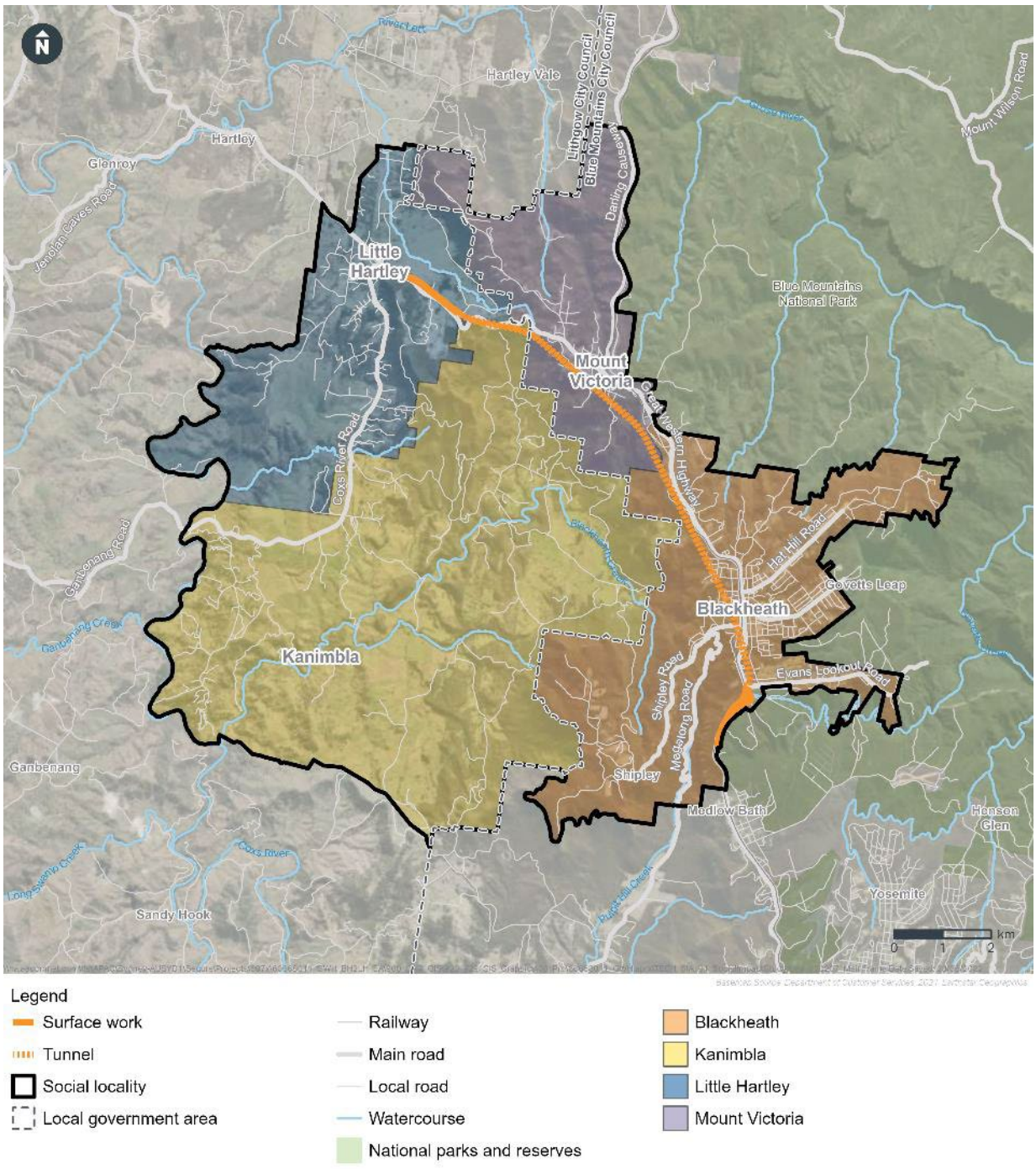



**Figure 2-1 Region and suburbs in the project's social locality**

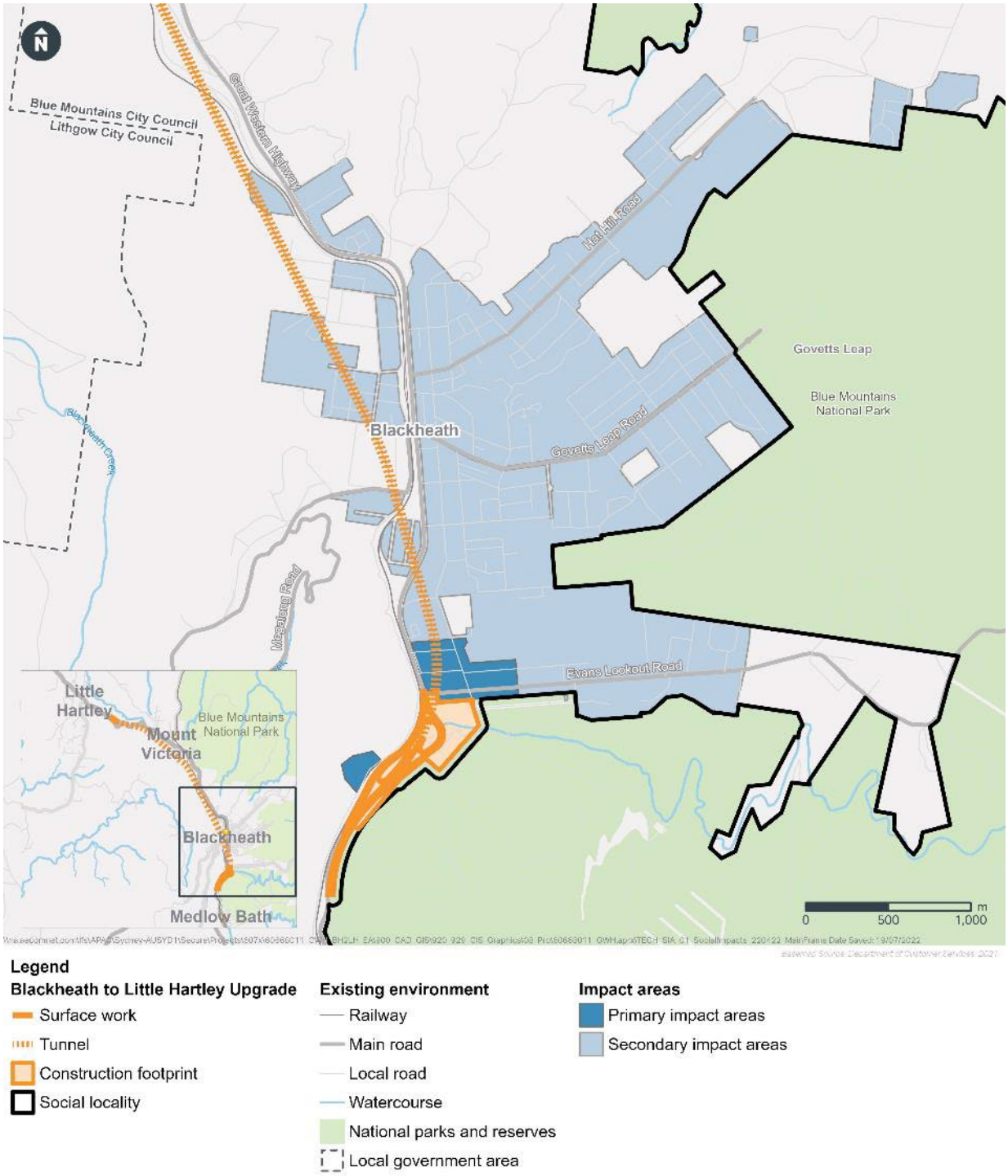



**Figure 2-2 Primary and secondary impact areas within the project's social locality (Figure 1 of 2)**

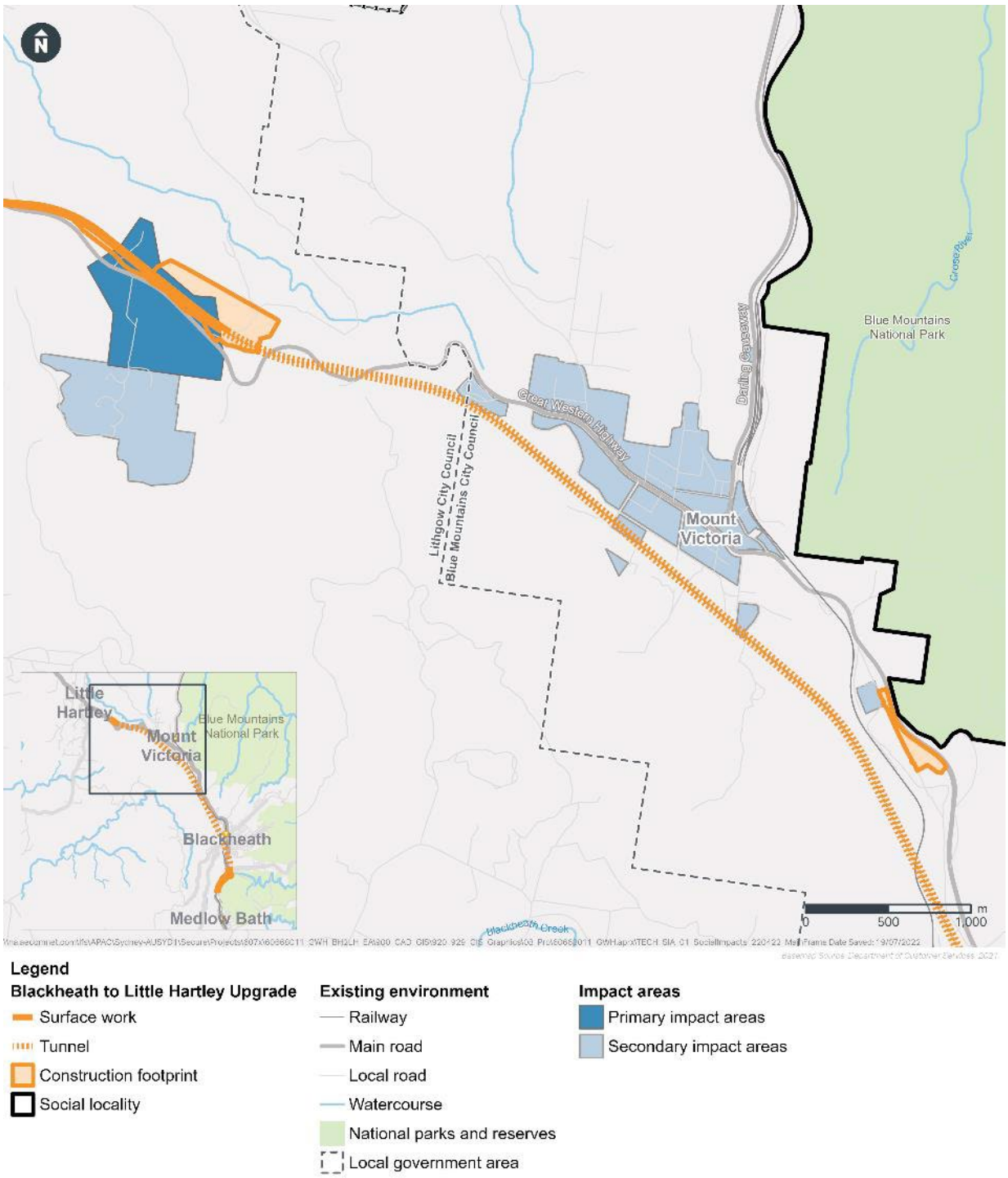



**Figure 2-3 Primary and secondary impact areas within the project's social locality (Figure 2 of 2)**

## 2.5 Scoping and initial assessment

An initial scoping assessment was undertaken at the commencement of this SIA to identify the key social impacts to be considered in the SIA, and the key methods and data sources to investigate these impacts. This also involved determining the level of assessment required for the SIA with reference to the SIA Guideline.

Identification of the potential social impacts involved:

- a review of the project's Scoping Report. It is noted that the Scoping Report was lodged in June 2021, before the SIA Guideline came into effect (October 2021). As such a scoping and initial assessment for the SIA was not undertaken during the preparation of the Scoping Report. Notwithstanding, the Scoping Report outlined an initial understanding of the project's potential social impacts and proposed a commensurate scope for the EIS
- review of previous consultation undertaken for the project to provide insight into potential concerns and perceived impacts
- identification of the likely construction and operational activities associated with the project with the potential to result in social impacts
- consideration of potential social impacts in relation to the categories of social impact identified in the SIA Guideline
- consideration of social impacts assessed on other comparable projects (such as road bypass and road tunnel projects).

Given the scale of the project and its potential to result in a range of social impacts, both positive and negative, a detailed SIA report was identified as being required.

Key impacts and research methods identified through the scoping process are outlined in Table 2-3.

Opportunities for refinements to avoid and minimise potential environmental impacts, including social impacts, have also been identified during project development, taking into account community and stakeholder feedback. These refinements are detailed in Section 1.2.4.

**Table 2-3 Key impacts identified for further assessment in the SIA**

| Key project activities with potential to produce social impacts | Key scoped impacts (positive and negative) | Proposed methods and data sources to investigate impacts |
|---|---|---|
| **Construction** | | |
| • property acquisition<br>• site establishment and enabling works<br>• tunnel portal construction<br>• tunnelling and associated works<br>• surface road upgrade works<br>• operational infrastructure construction and fit-out<br>• traffic diversions<br>• footpath diversions (if required)<br>• presence of construction traffic (heavy and light vehicles) | **Way of life**<br>• potential disruptions to way of life for individuals and the community, caused by temporary disruptions to road users (including pedestrians and cyclists), and potential changes to access for private properties, businesses and social infrastructure (negative)<br>• impacts associated with property acquisition for affected residents and businesses, including uncertainty for these stakeholders about the property acquisition process and potential need to relocate (negative)<br>**Community**<br>• potential temporary changes to community composition associated with presence of construction workers, which may impact the identity of the existing community (negative or positive)<br>• potential barriers to community cohesion associated with the presence of construction footprint/sites and changes in accessibility which may limit community members opportunities to socialise within the community (negative)<br>**Accessibility**<br>• potential changes to access arrangements across the highway for community members to reach services and facilities (negative)<br>**Culture**<br>• potential for minor changes to connections to Country for Aboriginal communities, natural values or heritage items, resulting in impacts to cultural elements which are valued by the community, partly depending on the location of construction facilities (negative)<br>**Health and wellbeing**<br>• potential temporary health and wellbeing impacts for those who live or use areas within the vicinity of the construction footprint, such as direct impacts to health associated with dust or ongoing construction noise, or stress from ongoing amenity impacts (negative) | • use of secondary data, including ABS Census data for key social indicators, DPE population growth data and NSW Bureau of Crime Statistics and Research (BOCSAR) data to inform the social baseline for the project (refer to Section 2.6)<br>• use of ongoing broad consultation for Great Western Highway Blackheath to Little Hartley to understand key perceived impacts and potential impacts of importance to the community<br>• targeted research, including residential interviews to better understand the potential social impacts of the project on community members who are likely to be directly affected (refer to Section 2.7)<br>• business surveys to understand the potential impacts of the project on local businesses likely to be directly or indirectly affected (refer to Section 2.7)<br>• stopper surveys to understand the demographics, travel patterns and spending habits |

| Key project activities with potential to produce social impacts | Key scoped impacts (positive and negative) | Proposed methods and data sources to investigate impacts |
|---|---|---|
| | **Surroundings**<br>• adverse impacts to community members and visitors' sense of place in areas subject to amenity impacts (generally within the vicinity of the construction footprint) (negative)<br>• potential impacts on the Blue Mountains National Park, which is highly valued by the community, including the need for some national park revocation in the southern part of Blackheath (negative)<br>• potential impacts on residents and users of community facilities located close to the construction work due to increased noise and vibration, dust and construction traffic (negative)<br>**Livelihoods**<br>• potential impacts on local businesses located close to the construction footprint due to increased noise and vibration, dust and construction traffic (negative)<br>• potential benefits to businesses, including benefit from a net gain in passing trade (depending on the business location) during construction owing to the presence of construction workers or changes to pedestrian traffic and vehicle access (positive)<br>• potential benefits for local construction related businesses, such as construction recruitment agencies, construction companies and resource suppliers (positive)<br>• direct and indirect employment opportunities in the area, for example to supply goods, services and materials to the project's construction, which can positively influence the local community's capacity to earn an income in the area (positive)<br>**Decision-making systems**<br>• community members may express dissatisfaction with their ability to influence the strategic decision making and construction methodology or planning for the project<br>**Cumulative impacts**<br>• potential for combined and consecutive social impacts on the community with other components of the Upgrade Program | of people stopping within the main shopping precincts within the social locality (refer to Section 2.7). |
| **Operation** | | |
| • operation of the tunnels and anticipated diversion of traffic | **Way of life**<br>• improvements to people's ability to get around their local area due to decreased traffic volumes on the existing surface road (positive) | As above. |

| Key project activities with potential to produce social impacts | Key scoped impacts (positive and negative) | Proposed methods and data sources to investigate impacts |
|---|---|---|
| from the surface highway into tunnels<br>• operation of surface infrastructure e.g. tunnel operations facility<br>• operation of ventilation facilities | **Community**<br>• improved amenity for residents and visitors within Blackheath and Mount Victoria and opportunities to reduce severance created by the existing Great Western Highway, enhancing community cohesion (positive)<br>• potential reductions in amenity within proximity to surface infrastructure, such as visual impacts of tunnel portals in Little Hartley and Blackheath, which could contribute to community severance in these locations (negative)<br>**Accessibility**<br>• improved connectivity between Sydney and the Central West for road users, facilitating better access to goods, employment and services (positive)<br>• potential improvements in local connectivity for road users as through traffic would predominantly utilise the project, reducing traffic volumes and travel times for those using the surface roads within the local area (positive)<br>**Health and wellbeing**<br>• potential reductions in stress and anxiety for community members associated with reduced congestion, improved travel times and amenity of bypassed towns (positive)<br>• potential air quality improvements (i.e a reduction in emissions) and associated health and wellbeing impacts for community members in bypassed areas, due toa reduction in vehicles on the surface highway (positive)potential health and wellbeing impacts for community members associated with air quality and other amenity-related impacts, if not properly managed (negative)<br>**Surroundings**<br>• improvements in amenity associated with decreased traffic on the surface roads in bypassed towns, including Blackheath and Mount Victoria, positively impacting the surroundings of community members (positive)<br>**Culture**<br>• potential for minor changes to connections to Country for Aboriginal communities, natural values or heritage items, resulting in impacts to cultural elements which are valued by the community, partly depending on the location of operational surface infrastructure (negative)<br>**Livelihoods**<br>• potential benefits for businesses and community member's livelihoods, such as benefits to destination-based businesses in Blackheath and Mount Victoria associated with improved amenity (positive) | |

| Key project activities with potential to produce social impacts | Key scoped impacts (positive and negative) | Proposed methods and data sources to investigate impacts |
|---|---|---|
| | • potential adverse impacts on businesses in Blackheath and Mount Victoria which currently rely on passing trade (due to the bypass effect of the tunnel(s)) (negative)<br>**Decision making systems**<br>• once operational, the project would have limited impact upon people's ability to interact in decisions that affect them<br>**Cumulative impacts**<br>• the completion and operation of other components of the Upgrade Program would contribute to the realisation of positive social impacts on the community. | |

## 2.6 Social baseline study

The social baseline describes the social context without the project. It profiles the existing social characteristics, conditions and trends relevant to the potential social impacts of the project. For the purposes of this assessment the social baseline considered local demographics, potential vulnerable and marginalised groups, social infrastructure, business and transport services and community values within the social locality.

Preparation of the social baseline study involved the following:

- establishing the strategic context of the social locality, as set out in relevant plans and strategies (refer to Section 2.1.3)
- collating ABS data for relevant social indicators from the 2021 and 2016 Censuses. These have been analysed at the suburb level and compared to statistics at an LGA and state level, where relevant
- review of available accommodation (including short-term accommodation and rental market conditions) within the social locality
- identification of potentially vulnerable groups in the community, based on ABS data
- review of DPE population growth data and NSW BOCSAR data to provide insight into population growth and crime, respectively
- review of existing construction skillsets in the social locality and surrounding commutable area, and local construction workforce outcomes on other regional infrastructure projects.

## 2.7 Community and stakeholder consultation for the SIA

**Residential interviews**

Residential interviews were undertaken to better understand the potential social impacts of the project on community members. The key aims of these interviews were to:

- identify features of the community, the social locality and/or landscape which people value
- understand the way of life of the community, including what a typical day includes, what community facilities are utilised, and modes of transport used within the local area
- seek input from the community on how the construction and operation of the Project might affect their lives (both positively and negatively)
- seek input on how the project may most appropriately manage impacts.

Interview questions also sought to obtain additional location-specific demographic detail.

The interviews were carried out using a stratified random approach where residents were randomly door-knocked on selected streets. The selection of streets took into account the primary and secondary impact areas identified in the social locality. The following areas were targeted:

- residential streets in Blackheath, including Evans Lookout Road, Brightlands Avenue, Chelmsford Avenue, Govetts Leap Road, Wentworth Street, Hillier Avenue, Valley View Road, Station Street, Railway Street, Lookout Street, Jellicoe Street, Bundarra Street and Everleigh Street
- residential streets in Mount Victoria, including Victoria Street, Kanimbla Valley Road, Grandview Road, Harley Avenue, Mt York Road and Sylvania Street
- residences in Little Hartley, including residences along the Great Western Highway and Browns Gap Road
- other residences along the Great Western Highway within the social locality.

The interviews were undertaken between 26 April and 29 April 2022, between 10am and 6pm. A total of 119 residences were approached, from which 46 respondents participated in the survey. This included 30 respondents in Blackheath, 10 respondents in Mount Victoria and six in Little Hartley.

The interview approach sought to gain a cross section of groups within the community who are likely to be most directly affected by the construction and operation of the project, with proportionate representation of potentially vulnerable and marginalised groups. To achieve representation of a diversity of groups within the community, a range of residences were approached, including detached houses, units, and mobile homes. As part of the interviews, respondents were also asked to identify if they felt they were part of a group that experiences a degree of disadvantage or exclusion in the local area or more broadly. Anecdotal information was sought from respondents on how the project can address the needs of these groups within the community. Further detail is included in Section 2.14 of Annexure D (SIA Consultation analysis report).

An overview of the results of the interviews are included in Section 4 (Consultation), with results presented in Annexure D (SIA Consultation analysis report). Results of the interviews have been taken into account in the assessment of social impacts.

**Business surveys**

Surveys were undertaken to understand the potential impacts of the project on local businesses. The operation of local businesses is a key element of sustaining people's livelihoods and way of life, including their capacity to sustain themselves through employment and businesses.

A desktop study was undertaken to identify businesses within the social locality. Businesses were selected that were considered likely to be dependent on passing trade, and the surveys targeted those businesses. A range of business types considered dependent on passing trade were selected, including retail, food/beverage, grocery, automotive services etc.

Business survey questions were developed to understand the respondent's level of knowledge about the project, their customer base and dependency on passing trade (i.e. customers who visit because they are passing through), and their perception as to how the business may be affected (both positively and negatively) by the project.

Businesses were selected across the following areas for survey:

- Blackheath town centre
- Mount Victoria town centre
- key businesses within Little Hartley and Hartley
- other businesses along the Great Western Highway.

The business surveys were undertaken between 12 April and 14 April 2022; and between 26 April and 29 April 2022. Surveys were undertaken between 9am and 5pm on these days. A total of 45 businesses were approached to participate in the survey, of which 35 businesses participated (including 22 in Blackheath, nine in Mount Victoria and four in Little Hartley).

Information gathered by the business surveys was collated and analysed. An overview of the results of the surveys are included in Section 4 (Consultation), with results presented in Annexure D (SIA Consultation analysis report). Results of the surveys have been taken into account throughout the assessment of social impacts.

**Stopper surveys**

Stopper surveys were carried out to supplement the findings of the business surveys and to better understand the demographics, travel patterns and spending habits of people stopping within the main shopping precincts within the social locality (referred to as 'stoppers').

The surveys aimed to find out if, or how, stoppers might change their behaviour during construction and operation of the project. This information has been used to further inform the consideration of business impacts throughout the assessment.

The surveys aimed to capture information from stoppers such as:

- demographic and geographic information (e.g. age, gender, place of residence)
- origin and destination
- method of travel to the area and number of passengers

- level of knowledge about the project
- reasons for stopping in the area
- approximate duration of their stop
- activities carried out during the stop
- approximate spend during the stop
- how often they currently visit the area and likelihood of returning if the project was operational.

The locations for the survey were determined through desktop analysis of town centres and local businesses in the social locality that were anticipated to have high numbers of stoppers. Stoppers were approached by members of the project team and asked to complete the survey. Stoppers were generally surveyed at the following locations:

- **Blackheath:** around the intersection of Govetts Leap Road and Great Western Highway, Blackheath
- **Mount Victoria:** outside Ampol Foodary Mount Victoria (36A Great Western Highway, Mount Victoria) and Mount Victoria General Store & Newsagency (109 Great Western Highway, Mount Victoria)
- **Hartley/Little Hartley:** outside Hartley Fresh (2430 Great Western Highway, Hartley).

The stopper surveys were carried during the NSW school holidays between 12 April and 14 April 2022. This period was selected to target a higher volume of potential visitors to the area during the school holidays. Most of the stopper surveys were carried out between 9am and 5pm over these days. 84 stoppers were surveyed overall during this time (including 46 in Blackheath, 21 in Mount Victoria and 17 in Little Hartley).

Findings from the stopper surveys have been analysed and summarised in Section 4 (Consultation) and Annexure D (SIA Consultation analysis report). Results of the surveys have been taken into account throughout the assessment of social impacts.

**Limitations of consultation for the SIA**

The time of day for the interviews and surveys generally ranged from 9am to 6pm, and these were undertaken on weekdays. This may have limited opportunities to interview and/or potential survey participants who were not available in this time (for example, those who work full time outside of their home during the week, or businesses which are open only on weekends). Additionally, for the stopper surveys, while the school holiday period was selected to reach a higher number of potential stoppers, the time of year in which the surveys were undertaken (April) may not have been reflective of the busiest season for tourists and visitors, compared to warmer months.

Consultation to inform the SIA has been based on targeted, random sampling, which has been assumed to provide a representative overview of the broader community's attitudes. However, the volume of people engaged may not reflect the full range of views and attitudes present within the broader community.

Notwithstanding, the SIA-specific consultation captured a range of views within the community and has been considered in the SIA alongside consultation for the broader project. There are opportunities for further community and stakeholder engagement throughout design and construction of the project, including outside of the time periods utilised for SIA-specific consultation.

## 2.8 Evaluation of the significance of social impacts

The potential likelihood and magnitude of each impact has been determined with reference to the definitions in Table 2-4 and Table 2-5. In determining the magnitude of potential impacts, the dimensions of social impact outlined in Table 2-6 have also been taken into consideration.

**Table 2-4 Likelihood level definitions (DPIE, 2021b)**

| Magnitude 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 |

**Table 2-5 Magnitude level definitions (DPIE, 2021b)**

| 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 that people value highly, either lasting for an indefinite time, or affecting many people in a widespread area. |
| Moderate | Noticeable deterioration/improvement to something that people value highly, either lasting for an extensive time, or affecting a group of people. |
| 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. |

**Table 2-6 Dimensions of social impact magnitude (DPIE, 2021b)**

| Dimensions | Details needed to enable assessment |
|---|---|
| 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, future generations). |
| Duration | When is the social impact expected to occur? Will it be time-limited (e.g. over particular project phases) or permanent? |
| Severity or scale | What is the likely scale or degree of change? (e.g. mild, moderate, severe) |
| Sensitivity 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. |

The assessment matrix in Table 2-7 has been used to determine the significance of each social impact, as a function of the potential likelihood and magnitude levels.

**Table 2-7 Social impact significance matrix (DPIE, 2021b)**

| | | Magnitude level | | | | |
|---|---|---|---|---|---|---|
| | | **Minimal** | **Minor** | **Moderate** | **Major** | **Transformational** |
| **Likelihood** | **Almost certain** | Low | Medium | High | Very High | Very High |
| | **Likely** | Low | Medium | High | High | Very High |
| | **Possible** | Low | Medium | Medium | High | High |
| | **Unlikely** | Low | Low | Medium | Medium | High |
| | **Very unlikely** | Low | Low | Low | Medium | Medium |

# 3 Social baseline

This section presents the social baseline for the assessment. The social baseline describes the social context without the project i.e. prior to the commencement of construction or operation. It documents the existing social environment, conditions and trends relevant to the social locality and to the potential social impacts of the project.

Data has been collated for the four suburbs within the social locality. Data for Blackheath and Little Hartley are generally considered to be representative of the social context for the 'primary impact areas' within the social locality (refer to Section 2.4), being the locations of the tunnel portals and construction sites that are likely to experience the greatest impacts during construction and operation. Data for all four suburbs is generally considered representative of the secondary impact area, as residents of the suburbs are likely to use the commercial and residential areas and social infrastructure in the secondary impact area as part of their daily routine.

This project is part of the broader Great Western Highway Upgrade Program, as detailed in Section 1.1. Changes to the existing environment prior to the delivery of this project are outlined in Section 1.2.3. The delivery of other components of the Upgrade Program is not anticipated to alter the social baseline discussed in this section.

## 3.1 Socio-economic profile

### 3.1.1 Population and demographic profile

Key aspects of the population and demographic profile for the suburbs within the social locality is provided in Table 3-1.

**Table 3-1 Population and demographic profile for the social locality**

| Suburb | Overview |
|---|---|
| **Blackheath** | **Population:** In 2021, the total resident population ('population') for the Blackheath SSC (hereafter referred to as Blackheath) was 4,672. By comparison, the Blue Mountains LGA had a population of 78,121, representing about 1% of the overall population of NSW of 8,072,163 people.<br><br>**Age:** The median age of Blackheath was 53, considerably higher than that of the state of NSW (median age of 39). In Blackheath, the younger age group (between 0 – 14 years) made up 13.8% of the population, with NSW being 18.2%. The older age group (over 65 years) made up 29.7% of the population, with NSW being 17.6%.<br><br>**Language:** 87 % of the population spoke English only at home. Within the Blue Mountains LGA, 90.1% of the population spoke English only at home. The proportion of people in the suburb who spoke English only at home was considerably higher than that of NSW (67.6%).<br><br>**Aboriginal and Torres Strait Islander population:** The Aboriginal and Torres Strait Islander population Blackheath in 2021 was 2.2%, slightly lower than that of NSW (3.4%). The Aboriginal and Torres Strait Islander population in the Blue Mountains LGA in 2021 was 2.7%. |
| **Mount Victoria** | **Population:** In 2021, the population of the Mount Victoria SSC (hereafter referred to as Mount Victoria) was 945.<br><br>**Age:** The median age of Mount Victoria was 49, higher than that of the state of NSW (median age of 39). The younger age group (between 0 – 14 years) made up 13.8% of the population. The older age group (over 65 years) made up 26.1% of the population.<br><br>**Language:** 88.8% of the population spoke English only at home. The proportion of people in the suburb who spoke English only at home was considerably higher than that of NSW (68.5%). |

| Suburb | Overview |
|---|---|
| | **Aboriginal and Torres Strait Islander population:** The Aboriginal and Torres Strait Islander population in Mount Victoria was 3.9%, similar to that of NSW (3.4%). |
| **Little Hartley** | **Population:** In 2021, Little Hartley SSC (hereafter referred to as Little Hartley), had a population of 629. By comparison, Lithgow LGA had a resident population of 20,849, representing about 0.26% of the overall population of NSW.<br><br>**Age:** The median age of Little Hartley was 49, considerably higher than that of the state of NSW (median age of 39). The younger age group (between 0 – 14 years) made up 14.5% of the population, and the older age group (over 65 years) made up 21.6% of the population.<br><br>**Language:** In Little Hartley, 84.5% of the population spoke English only at home. Within the Lithgow LGA, 87.3% of the population spoke English only at home. The proportion of people in the suburb who spoke English only at home was higher than that of NSW (67.6%).<br><br>**Aboriginal and Torres Strait Islander population:** The Aboriginal and Torres Strait Islander population in Little Hartley in 2021 was 4.1%, slightly higher than that of NSW (3.4%). By comparison, the Aboriginal and Torres Strait Islander population in the Lithgow LGA in 2021 was 7.8%. |
| **Kanimbla** | **Population:** In 2021, the population of Kanimbla SSC (hereafter referred to as Kanimbla) was 184, representing a small portion of the overall social locality.<br><br>**Age:** The median age of Kanimbla was 54, considerably higher than that of the state of NSW (median age of 39). The younger age group (0-14 years) made up 8.2% of the population, respectively and the older age group (over 65 years) made up 25% of the population respectively.<br><br>**Language:** In Kanimbla, 89.7% of the population spoke English only at home. The proportion of people in the suburb who spoke English only at home was considerably higher than that of NSW (67.6%).<br><br>**Aboriginal and Torres Strait Islander population:** Census results indicate that there were no residents who identified as Aboriginal and Torres Strait Islander population in Kanimbla in 2021. |

### 3.1.2 Housing and tenure types

The majority of the populated dwelling areas within the social locality suburbs, as well as both the Blue Mountains LGA and Lithgow LGA and NSW are separate houses (refer to Annexure B (Social baseline data)). Family households are the dominant household structure in all four suburbs, with the lowest percentage being 59 per cent in Mount Victoria. In NSW, this living arrangement accounts for around 71.2 per cent of the population.

The majority of households in the social locality are owner-occupied, with homes owned outright representing the highest proportion of tenure types in each suburb in the social locality (refer to Annexure B (Social baseline data). Tenure types in each suburb are as follows:

- **Blackheath** – 47.1 per cent of households in Blackheath are owned outright, 29.4 per cent are owned with a mortgage, and 20.7 per cent are rented
- **Mount Victoria** – 46.5 per cent of households in Mount Victoria are owned outright, 34.7 per cent are owned with a mortgage, and 17.4 per cent are rented
- **Little Hartley** – 49.1 per cent of households in Little Hartley are owned outright, 44 per cent are owned with a mortgage, and 5.5 per cent are rented
- **Kanimbla** – 55.3 per cent of households in Kanimbla are owned outright, 28.9 per cent are owned with a mortgage, and 13.2 per cent are rented.

The social locality as a whole has a higher proportion of homes owned outright compared to NSW as a whole, with 47.4 per cent of households owned outright, compared to 31.5 per cent of households in NSW. The social locality also has a much lower proportion of rented households relative to NSW as a whole (18.8 per cent in the social locality, compared to 32.6 per cent in NSW). A similar proportion of households are owned with a mortgage (31.3 per cent in the sociality and 32.5 per cent in NSW).

### 3.1.3 Employment

**Employment status**

In 2016 the workforce in Blackheath and Mount Victoria was mostly employed full time (49.3 per cent and 46.8 per cent respectively). Over a third of the workforce at both locations (41 per cent and 42.4 per cent respectively was employed in part time occupations, compared to 34.9 per cent in the Blue Mountains LGA and 29.7 per cent in NSW. In 2016 the unemployment rate in Blackheath and Mount Victoria was 5.1 per cent and 6.7 per cent respectively, compared to 4.7 per cent in the Blue Mountains LGA and 6.3 per cent in NSW.

In 2016 the workforce in Little Hartley and Kanimbla were also mostly employed full time (55 per cent and 72 per cent respectively). Over a quarter of the workforce at both locations (34.9 per cent and 26.3 per cent respectively was employed in part time occupations, compared to 31.7 per cent in the Lithgow LGA and 29.7 per cent in NSW. In 2016 the unemployment rate in Little Hartley and Kanimbla was four per cent and seven per cent respectively, compared to 7.7 per cent in the Lithgow LGA and 6.3 per cent in NSW.

While not available at a suburb level, data for the March quarter 2022 (National Skills Commission, 2022) indicates relatively low rates of unemployment in the Blue Mountains and Lithgow LGAs. The Blue Mountains and Lithgow LGAs had unemployment rates of 3.1 per cent and 2.9 per cent respectively, compared to 4.6 per cent in NSW as a whole. This may suggest a general decline in unemployment levels since 2016.

**Employment by industry sector**

In 2016, the most common industries of employment in each social locality were as follows:

- **Blackheath** – 62.5 per cent of jobs in the suburb of Blackheath are concentrated in retail, accommodation, food services, construction, professional services, education and healthcare
- **Mount Victoria** – 49.5 per cent of jobs in the suburb of Mount Victoria are concentrated in retail, accommodation, food services, transport, public administration, education and healthcare
- **Little Hartley** – 57.3 per cent of jobs in the suburb of Little Hartley are concentrated in construction, retail, accommodation, food services, public administration and healthcare
- **Kanimbla** – 35.7 per cent of jobs in the suburb of Kanimbla are concentrated in arts and recreation, healthcare and agriculture.

**Journey to work**

The majority of the population in the social locality uses a car to travel to work, as is the case with residents of both the Lithgow and Blue Mountains LGA areas and NSW. Of those persons using one mode of transport, about 80 per cent of the population of Blackheath and Mount Victoria drive a car.

In 2016, the population of Little Hartley and Kanimbla who use a car to travel to work was about 85.3 per cent and 82.3 per cent respectively. The use of a car to travel to work is also the most popular method used in NSW at 72 per cent. The small percentage of the remaining transport methods indicate that places of work (such as Health Care and Social Assistance) are not readily connected to public transport routes.

These statistics are broadly consistent with the results of residential interviews undertaken for the SIA in 2022 (refer to Section 4.2). In Blackheath, Mount Victoria and Little Hartley, over 90 per cent of respondents indicated that car/private vehicle was their most commonly used form of transport during a typical weekday.

### 3.1.4 Vehicle ownership

In 2021, just under half of private dwellings in Blackheath and Mount Victoria only had one motor vehicle garaged or parked at their address (47.9 per cent and 47 per cent respectively), compared to 37.1 per cent in the Blue Mountains LGA and 37.8 per cent in NSW.

In 2021, the highest proportion of private dwellings in Little Hartley and Kanimbla had two motor vehicles garaged or parked at their address (45.4 per cent and 35.4 per cent respectively), compared to 32.5 per cent in the Lithgow LGA and 34.1 per cent in NSW.

### 3.1.5 Crime profile

Data on criminal offences has been used for both the Blue Mountains and Lithgow LGAs to provide insight into community wellbeing, potential perceptions of personal safety and the risk of being a victim of crime. BOCSAR data is based on crime reported to or detected by the NSW Police Force. Data has been analysed at an LGA level, as the data at a suburb-level is limited.

Based on the top five crimes in 2020 (refer to Annexure B (Social baseline data)), the Blue Mountains LGA has:

- a higher rate of property damage offences compared to the NSW crime rate (rate of 927.7 per 100,000; compared to 658.3 per 100,000 in NSW). This rate remained stable over the past 24 months and the Blue Mountains LGA is ranked 38 across all 128 LGAs in NSW. The rank system goes from one (the highest incident rate) to 128 (the lowest incident rate).
- a high rate of ‘breach bail conditions’, which had an increased rate of 67.6 per cent over the past 24 months
- while 336 incidents of harassment, threatening behaviour and private nuisance were recorded, this has a stable rate over the past 24-month trend. The same goes for fraud offences with 269 offences recorded
- high rates of ‘other offences’ which had a large increase of 296.6 per cent over the past 24 months.

It should be noted that over the past 24 months there has a been a decreased rate of transport regulatory offences (-59.7 per cent); and offences from stealing from motor vehicles and dwellings (-41.9 per cent and -28.7 per cent respectively). These changes may potentially be associated with the impact of COVID-19 restrictions.

Based on the top five crimes in 2020 (refer to Annexure B (Social baseline data)), the Lithgow LGA has:

- a higher rate of property damage offences compared to the NSW crime rate (rate of 1,087.7 per 100,000; compared to 658.3 per 100,000 in NSW). Lithgow LGA is ranked 25 across all 128 LGAs in NSW for this offence
- higher rates of ‘breach bail conditions’; ‘harassment, threatening behaviour and private nuisance’; and ‘domestic violence related assault’ offences compared to NSW
- a higher rate of ‘non-domestic violence related assault’ offences compared to NSW, and is ranked 14 across all LGAs in NSW for his offence.

BOCSAR data indicates that the rate of crime for the majority of offences has remained stable over the last 24 months in the Lithgow LGA.

### 3.1.6 Vulnerable communities

Population groups within the social locality which are potentially vulnerable or marginalised have been identified in Table 3-2, utilising ABS Census data. Table 3-2 also outlines relevant considerations applied in assessing the potential social impacts of the project to these groups.

**Table 3-2 Potentially vulnerable communities in the social locality**

| Group | Overview |
|---|---|
| **Older and elderly people** | Elderly people can represent potentially vulnerable groups within the community. As of 2021, 28.2% of the population within the social locality are aged 65 years and older, compared to 17.6% in NSW. Within the social locality, this has increased from 24.5% in 2016, which may be reflective of an ageing population. Given the relatively large proportion of residents within this group, this group is considered to be one of the largest potentially vulnerable groups within the social locality.<br><br>Of the suburbs within the social locality, in 2021 Blackheath had the highest percentage of the population aged 65 years or older (29.7%), followed by Mount Victoria (26.1%). 25% and 21.6% of residents within Kanimbla and Little Harley are within this group, respectively. 2.7% of people within the social locality are also aged 85 years and older, with the highest proportion of this group in Blackheath (2.4% of residents aged 85 years or older).<br><br>Considerations for this group in preparing the SIA and proposed mitigation measures include a need for clear communication of proposed activities through diverse engagement materials (for example, less reliance on online materials); consideration of impacts across different times of the day and week (for example, members of this group, if retired, may be more likely to be at home daytime hours); maintaining easy and safe access to properties and local businesses. Impacts which involve changes to the local area may also be more impactful for members of this group where they have been long-term residents in the area. |
| **Need for assistance** | Core activity need for assistance data measures the number of people who need assistance in their day to day lives with any or all core activities, including self-care, mobility or communication because of a disability, long-term health condition (lasting six months or more) or old age. In 2021, 6.3% of people within the social locality are identified as needing assistance with a core activity, which is slightly higher than the overall percentage of people in NSW needing assistance (5.8%).<br><br>Of the suburbs within the social locality, Blackheath had the highest percentage of the population needing help or assistance with a core activity (6.6%), followed by Mount Victoria (5.9%), which may be reflective of an ageing population in these suburbs. Little Hartley and Kanimbla, have relatively smaller populations needing assistance, of 4.8% and 3.3% respectively.<br><br>Considerations for this group in preparing the SIA and proposed mitigation measures include a need for clear communication of proposed activities through diverse engagement materials and maintaining easy and safe access to properties and local businesses. |
| **Socio-economic disadvantage** | The Socio-Economic Index for Areas (SEIFA) (ABS, 2018) is a set of four indexes produced by the ABS as an indicator of relative socio-economic advantage and disadvantage. SEIFA broadly defines relative socio-economic advantage and/or disadvantage in terms of people's access to material and social resources, and their ability to participate in society.<br><br>The Index of Relative Socio-economic Advantage and Disadvantage (IRSAD) has been used for this assessment, based on 2016 Census data. The IRSAD assesses the socio-economic conditions of people and households within an area, including both relative advantage and disadvantage measures. A decile of one (1) indicates high levels of disadvantage and low levels of advantage (representing the bottom 10% of areas). A decile of 10 indicates high levels of advantage and low levels of disadvantage (representing the top 10% of areas).<br><br>The IRSAD indicates the following for each suburb within the social locality: |

| Group | Overview |
|---|---|
| | • Blackheath – a decile of five for both Australian and NSW State rankings, indicating that 50% of suburbs within Australia and NSW are more disadvantaged<br>• Mount Victoria – a decile of four for both Australian and NSW State rankings, indicating that 40% of suburbs within Australia and NSW are more disadvantaged<br>• Little Hartley – a decile of nine for both Australian and NSW State rankings, indicating that 90% of suburbs within Australia and NSW are more disadvantaged<br>• Kanimbla – a decile of nine for both Australian and NSW State rankings, indicating that 90% of suburbs within Australia and NSW are more disadvantaged.<br>Overall, Little Hartley and Kanimbla are reported to experience relatively higher levels of socio-economic advantage, compared to other suburbs within NSW, Australia, and the social locality. IRSAD scores for Blackheath and Mount Victoria indicate that they are close to the median scores for other suburbs in NSW and Australia. Blackheath and Mount Victoria are likely to experience somewhat higher levels of disadvantage compared to Little Hartley and Kanimbla.<br>Income levels can also provide an indicator of socio-economic advantage or disadvantage. Within the social locality, 2021 Census data indicates relatively higher median weekly household income levels in Little Hartley and Kanimbla (of $1,843 per week and $1,625 per week, respectively). Blackheath and Mount Victoria had relatively lower median weekly household incomes of $1,332 and $1,197 respectively. Kanimbla, Blackheath, and Mount Victoria each reported a considerably lower median weekly household income compared to that of NSW ($1,829), which may indicate potential socio-economic disadvantage for households in these suburbs.<br>Key considerations for groups that may experience socio-economic disadvantage in the social locality include the capability of this group to respond to potential property acquisition, business or amenity impacts. |
| **Cultural and linguistic diversity** | Culturally and linguistically diverse groups represent a small proportion of the social locality, particularly relative to NSW as a whole. Census results for 2021 indicate that 87.1% of residents within the social locality speak only English at home, compared to 67.6% of residents in NSW. 6.8% of residents within the social locality identified that they speak a language other than English at home, compared to 26.6% of residents in NSW. Examples of other languages spoken at home in the social locality include German, Spanish, French, Italian, Mandarin, Croatian and Greek, noting these were each spoken at home by fewer than 50 people in the social locality.<br>Key considerations for culturally and linguistically diverse groups include the capability of this group to engage with communications and engagement activities undertaken for the project. Translated communication materials about the project during construction and operation would be available if required. |

## 3.2 Social infrastructure

Social infrastructure comprises social services or facilities that are used for the physical, social, cultural or intellectual development or welfare of the community. Social infrastructure includes educational facilities, childcare centres, hospital and medical facilities, aged care, sporting and recreational facilities, community halls, clubs, and libraries, and services, activities and programs that operate within these

facilities. Open spaces, parks and sporting fields that support sport, recreational and leisure uses are also identified as social infrastructure.

Social infrastructure facilities generally operate at a local, district and/or regional level and are defined by the scale of the population catchment they serve. Social infrastructure can often be classified as a sensitive receiver and may be directly or indirectly affected by the project.

This section provides an overview social infrastructure located within a two-kilometre radius of the project, including the following:

- **educational facilities** – within proximity to the project these generally include primary schools, combined schools (with both primary and secondary students), and childcare centres
- **health, medical and emergency services** – a range of healthcare services are located within the social locality, generally within the Blackheath town centre
- **aged care facilities** – there are limited aged care facilities within the social locality. Several aged care facilities are located further away in regional centres such as Katoomba and Lithgow
- **places of worship** – these generally include churches
- **community service facilities** – within proximity to the project these generally include community centres, public libraries, museums and galleries, community gardens and cemeteries. The majority of community service facilities are located in the Blackheath town centre
- **sporting and recreational facilities** – within proximity to the project these generally include passive and active recreational spaces such as parks and sporting facilities. In addition to these facilities, the Blue Mountains National Park is a regional attractor which provides recreational opportunities, such as walking and mountain biking trails. The national park is generally located to the east of the project.

Social infrastructure is listed in Table 3-3 and shown on Figure 3-1 to Figure 3-4.

Social infrastructure in the social locality is generally clustered around the Blackheath town centre, which includes a range of community and recreational facilities, as well as local medical services. Some social infrastructure is also located around the Mount Victoria town centre, including childcare centres, a school (mixed primary and secondary school) and some local parks. There is limited social infrastructure present within Little Hartley and no social infrastructure identified in Kanimbla. Several recreational trails used by hikers and bicycle users are located within the social locality.

One social infrastructure facility has been identified as being located directly adjacent to the construction footprint – Browntown Oval (CR51), located to the northwest of the Soldiers Pinch construction footprint. This comprises a sportsground available for use by the general public and community groups. The oval includes a cricket pitch used for cricket matches and training in the summer months, and is used for archery practice on Sundays (Mountain Archers, 2022). The oval is also available for one-off events or seasonal bookings. The oval is closed twice each year for maintenance, including Autumn maintenance last two weeks in March, and Spring maintenance in September (Blue Mountains City Council, 2022a).

The audit of social infrastructure facilities listed in this section is based on the data available at the time of preparing this report. The audit has been prepared based on desktop research, including Google Maps and local council social infrastructure lists.

**Table 3-3 Social infrastructure facilities in the vicinity of the project**

| Label | Facility type | Facility name | Location |
|---|---|---|---|
| **Educational facilities** | | | |
| CR01 | Primary school | Mount Victoria Public School | 105-107 Great Western Highway, Mount Victoria (refer to Figure 3-3) |
| CR02 | Primary school | Blackheath Public School | Leichhardt Street, Blackheath (refer to Figure 3-1 and Figure 3-2) |

| Label | Facility type | Facility name | Location |
|---|---|---|---|
| CR03 | Combined school | Blue Mountains Christian School | 60 Thirroul Avenue, Blackheath (refer to Figure 3-2) |
| CR04 | Combined school | One School Global Mount Victoria Campus | 84 Great Western Highway, Mount Victoria (refer to Figure 3-3) |
| CR05 | Childcare centre | Blue Gum Montessori Children's House | 95 Wentworth Street, Blackheath (refer to Figure 3-2) |
| CR06 | Childcare centre | Kookaburra Kindergarten | 9/11 Park Avenue, Blackheath (refer to Figure 3-2) |
| CR07 | Childcare centre | Possum's Patch Child Care Centre | 105-107 Great Western Highway, Mount Victoria (refer to Figure 3-3) |
| **Health, medical and emergency services facilities** | | | |
| CR08 | Medical centres and general practitioners | Balance Healthcare Blackheath (Blackheath Family Medicare Centre) | 108 Wentworth Street, Blackheath (refer to Figure 3-2) |
| CR09 | Medical centres and general practitioners | Blackheath Early Childhood Clinic | Corner of Wentworth and Gardiner Crescent, Blackheath (refer to Figure 3-2) |
| CR10 | Medical centres and general practitioners | Mansfield FM DR (General Practitioner) | 111 Wentworth Street, Blackheath (refer to Figure 3-2) |
| CR11 | Dentists | Blackheath Dental | 3/23/35 Govetts Leap Road, Blackheath (refer to Figure 3-2) |
| CR12 | Psychologists and counselling services | Dr Jennifer Flatt | 3/52 Govetts Leap Road, Blackheath (refer to Figure 3-2) |
| CR13 | Psychologists and counselling services | Brighter Pathways Therapy | 111 Wentworth Street, Blackheath (refer to Figure 3-2) |
| CR14 | Psychologists and counselling services | Blue Mountains Counselling | 52 Govetts Leap Road, Blackheath (refer to Figure 3-2) |
| CR15 | Emergency services facility | Shipley Rural Fire Brigade | 121-123 Shipley Road, Blackheath (refer to Figure 3-1) |
| CR16 | Emergency services facility | Blackheath Fire Station | 223-225 Great Western Highway, Blackheath (refer to Figure 3-2) |
| CR17 | Emergency services facility | Blackheath Bushfire Brigade | 139 Station Street, Blackheath (refer to Figure 3-2) |
| CR18 | Emergency services facility | Blackheath Police Station | 119 Wentworth Street, Blackheath (refer to Figure 3-2) |
| CR19 | Emergency services facility | Mount Victoria Fire and Rescue | 31-33 Montgomery Street, Mount Victoria (refer to Figure 3-3) |
| CR20 | Emergency services facility | Mount Victoria Police Station | 32 Station Street, Mount Victoria (refer to Figure 3-3) |

| Label | Facility type | Facility name | Location |
|---|---|---|---|
| **Places of worship** | | | |
| CR21 | Church | St Aidan's Anglican Church | 2 Hat Hill Road, Blackheath (refer to Figure 3-2) |
| CR22 | Church | Blackheath Presbyterian Church | 123-125 Wentworth Road, Blackheath (refer to Figure 3-2) |
| CR23 | Church | Blackheath Baptist Church | 6 Bundarra Street, Blackheath (refer to Figure 3-2) |
| CR24 | Church | Blackheath Uniting Church | 43 Govetts Leap Road, Blackheath (refer to Figure 3-2) |
| CR25 | Church | Sacred Heart Catholic Church | 18 Inconstant Street, Blackheath (refer to Figure 3-2) |
| CR26 | Church | St Peter's Anglican Church | 79 Great Western Highway, Mount Victoria (refer to Figure 3-3) |
| CR27 | Church | St Paul's Catholic Church | 65 Great Western Highway, Mount Victoria (refer to Figure 3-3) |
| **Community service facilities** | | | |
| CR28 | Community centres/ halls | 1st Blackheath Scout Hall | 2 Park Lane, Blackheath (refer to Figure 3-1) |
| CR29 | Community centres/ halls | Blackheath Area Neighbourhood Centre | 41 Gardiner Crescent, Blackheath (refer to Figure 3-2) |
| CR30 | Community centres/ halls | Blackheath Community Centre | Corner Gardiner Crescent and Great Western Highway, Blackheath (refer to Figure 3-2) |
| CR31 | Community centres/ halls | RSL Sub Branch, Blackheath/Mount Victoria | 2 Bundarra Street, Blackheath (refer to Figure 3-2) |
| CR32 | Community centres/ halls | Blackheath Masonic Centre Inc | 95 Wentworth Street, Blackheath (refer to Figure 3-2) |
| CR33 | Library | Blackheath Library | Corner Gardiner Crescent and Great Western Highway, Blackheath (refer to Figure 3-2) |
| CR34 | Community farm | Blackheath Community Farm | 60 Thirroul Avenue, Blackheath (refer to Figure 3-2) |
| CR35 | Museums and galleries | Blackheath Art Society | 139A Station Street, Blackheath (refer to Figure 3-2) |
| CR36 | Museums and galleries | Day Gallery | 27-29 Govetts Leap Road, Blackheath (refer to Figure 3-2) |
| CR37 | Museums and galleries | Waragil Studios Fine Art Gallery | 8 Govetts Leap Road, Blackheath (refer to Figure 3-2) |
| CR38 | Museums and galleries | Keith Rowe & Kayo Yokoyama Glass Gallery | 7/134 Station Street, Blackheath (refer to Figure 3-2) |

| Label | Facility type | Facility name | Location |
|---|---|---|---|
| CR39 | Museums and galleries | Gary P Hayes Photography & Gallery | 68 Kanimbla Valley Road, Mount Victoria (refer to Figure 3-3) |
| CR40 | Museums and galleries | Hat Hill Gallery | 3 Hat Hill Road, Blackheath (refer to Figure 3-2) |
| CR41 | Museums and galleries | Mount Victoria Museum | 35A Station Street, Mount Victoria (refer to Figure 3-3) |
| CR42 | Cemeteries | Blackheath Cemetery | 322-331 Great Western Highway, Blackheath (refer to Figure 3-2) |
| CR43 | Cemeteries | Mount Victoria Cemetery | 10 Victoria Falls Road, Mount Victoria (refer to Figure 3-3) |
| **Sporting and recreational facilities** | | | |
| CR44 | Sporting club or facility | Blackheath Golf and Community Club | Brightlands Ave, Blackheath (refer to Figure 3-1) |
| CR45 | Sporting club or facility | Blackheath Pool | Prince Edward Street, Blackheath (refer to Figure 3-2) |
| CR46 | Sporting club or facility | Blackheath Tennis Courts | Clanwilliam Street, Blackheath (refer to Figure 3-1) |
| CR47 | Sporting club or facility | Blackheath Oval | Corner of Leichhardt Street and Clanwilliam Street, Blackheath (refer to Figure 3-1) |
| CR48 | Sporting club or facility | Blackheath Fitness Centre | 16-24 Prince George Street, Blackheath (refer to Figure 3-1) |
| CR49 | Sporting club or facility | Blackheath Yoga Studio | 35 Govetts Leap Road, Blackheath (refer to Figure 3-2) |
| CR50 | Sporting club or facility | Medlow Bath Tennis Court | Railway Parade, Medlow Bath (refer to Figure 3-1) |
| CR51 | Sporting club or facility | Browntown Oval | Great Western Highway, Outside Mount Victoria (refer to Figure 3-3) |
| CR52 | Sporting club or facility | Mount Victoria Tennis Court | Memorial Park, Mount Victoria (refer to Figure 3-3) |
| CR53 | Parks and gardens | Blackheath Gardens | 2 Hat Hill Road, Blackheath (refer to Figure 3-2) |
| CR54 | Parks and gardens | Blackheath Soldiers Memorial Park | Blackheath (refer to Figure 3-2) |
| CR55 | Parks and gardens | Sutton Park | 113 Great Western Highway, Blackheath (refer to Figure 3-1) |
| CR56 | Parks and gardens | Jubilee Park | Corner of Leichhardt Street and Clanwilliam Street, Blackheath (refer to Figure 3-2) |

| Label | Facility type | Facility name | Location |
|---|---|---|---|
| CR57 | Parks and gardens | Whitley Park | 66 Wentworth Street, Blackheath (refer to Figure 3-1) |
| CR58 | Parks and gardens | Campbell Rhododendron Gardens | 1 Bacchante Street, Blackheath (refer to Figure 3-2) |
| CR59 | Parks and gardens | Medlow Bath Park | 8 Railway Parade, Medlow Bath (refer to Figure 3-1) |
| CR60 | Parks and gardens | Mount Victoria Memorial Park | 2-14 Station Street, Mount Victoria (refer to Figure 3-3) |
| CR61 | Parks and gardens | Rotunda Park | 17A Station Street, Mount Victoria (refer to Figure 3-3) |
| CR62 | Parks and gardens | Fairy Bower Reserve | 10 Great Western Highway, Mount Victoria (refer to Figure 3-3) |
| CR63 | Parks and gardens | Gory'u Japanese Gardens Japanese Theme Gardens | 85 Baaners Lane, Little Hartley (refer to Figure 3-4) |
| CR64 | Other recreational facilities | Vipassana Meditation Centre | 212 Station Street, Blackheath (refer to Figure 3-2) |

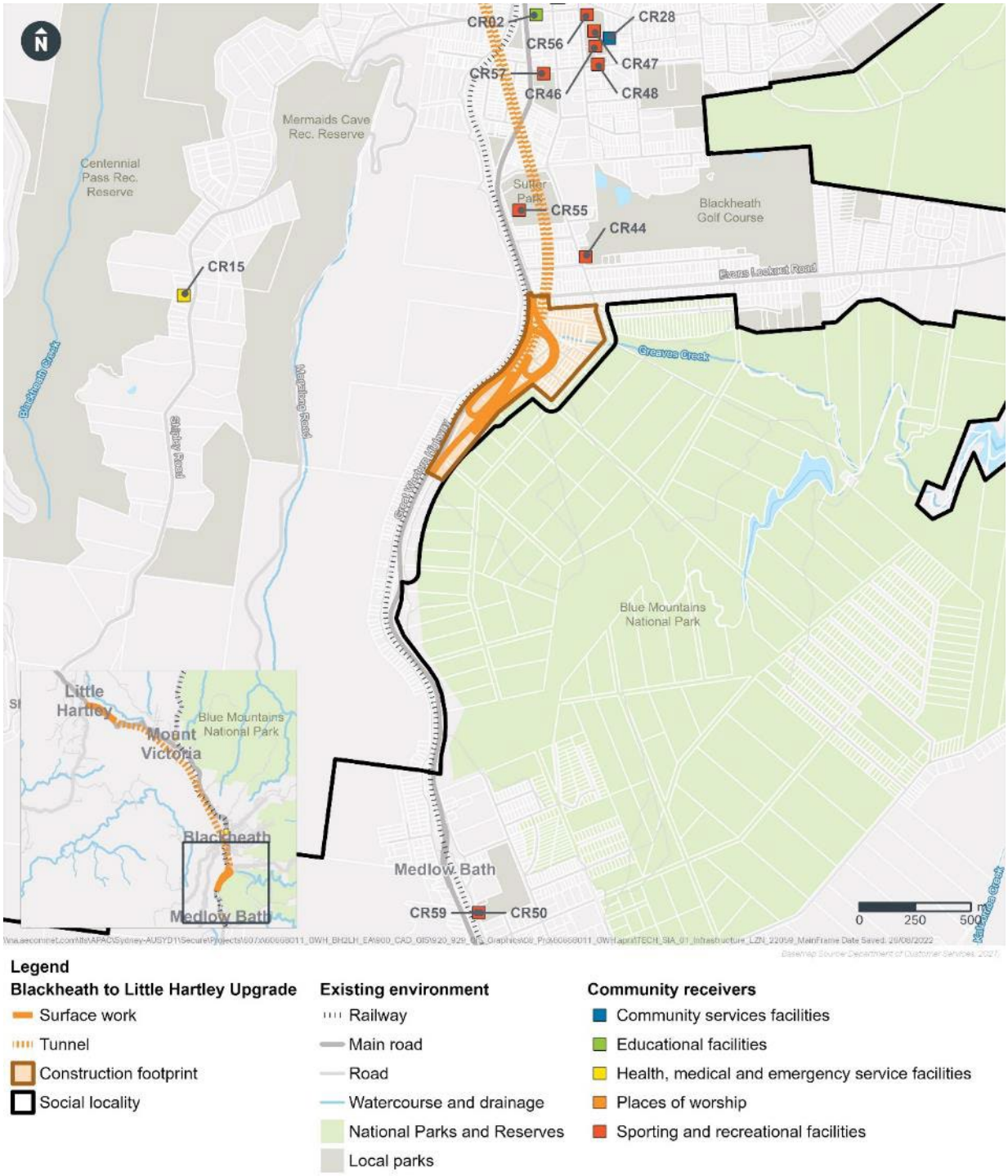
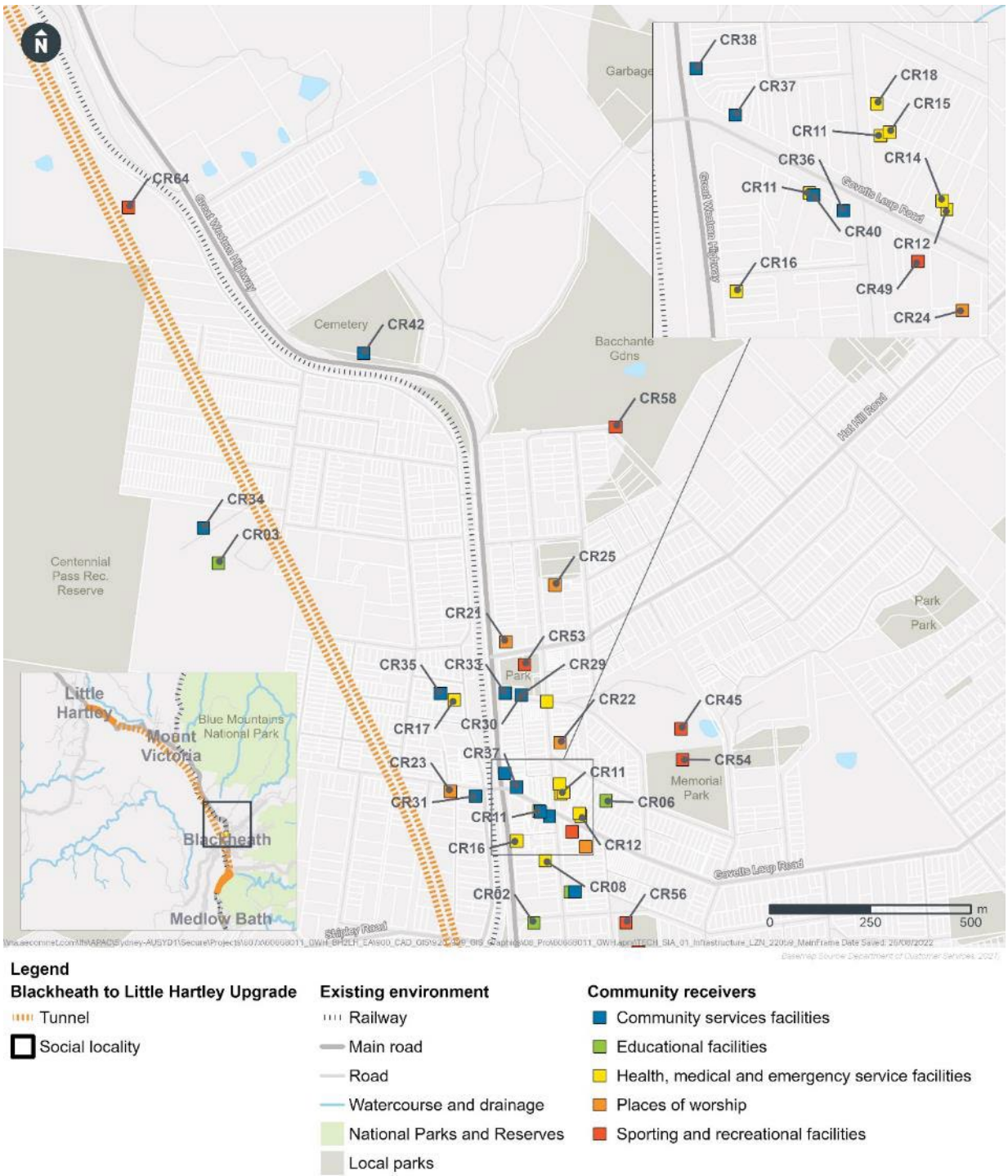



**Figure 3-1 Social infrastructure at Blackheath – map 1**




**Legend**

**Blackheath to Little Hartley Upgrade**
- Tunnel
- Social locality

**Existing environment**
- Railway
- Main road
- Road
- Watercourse and drainage
- National Parks and Reserves
- Local parks

**Community receivers**
- Community services facilities
- Educational facilities
- Health, medical and emergency service facilities
- Places of worship
- Sporting and recreational facilities

**Figure 3-2 Social infrastructure at Blackheath – map 2**

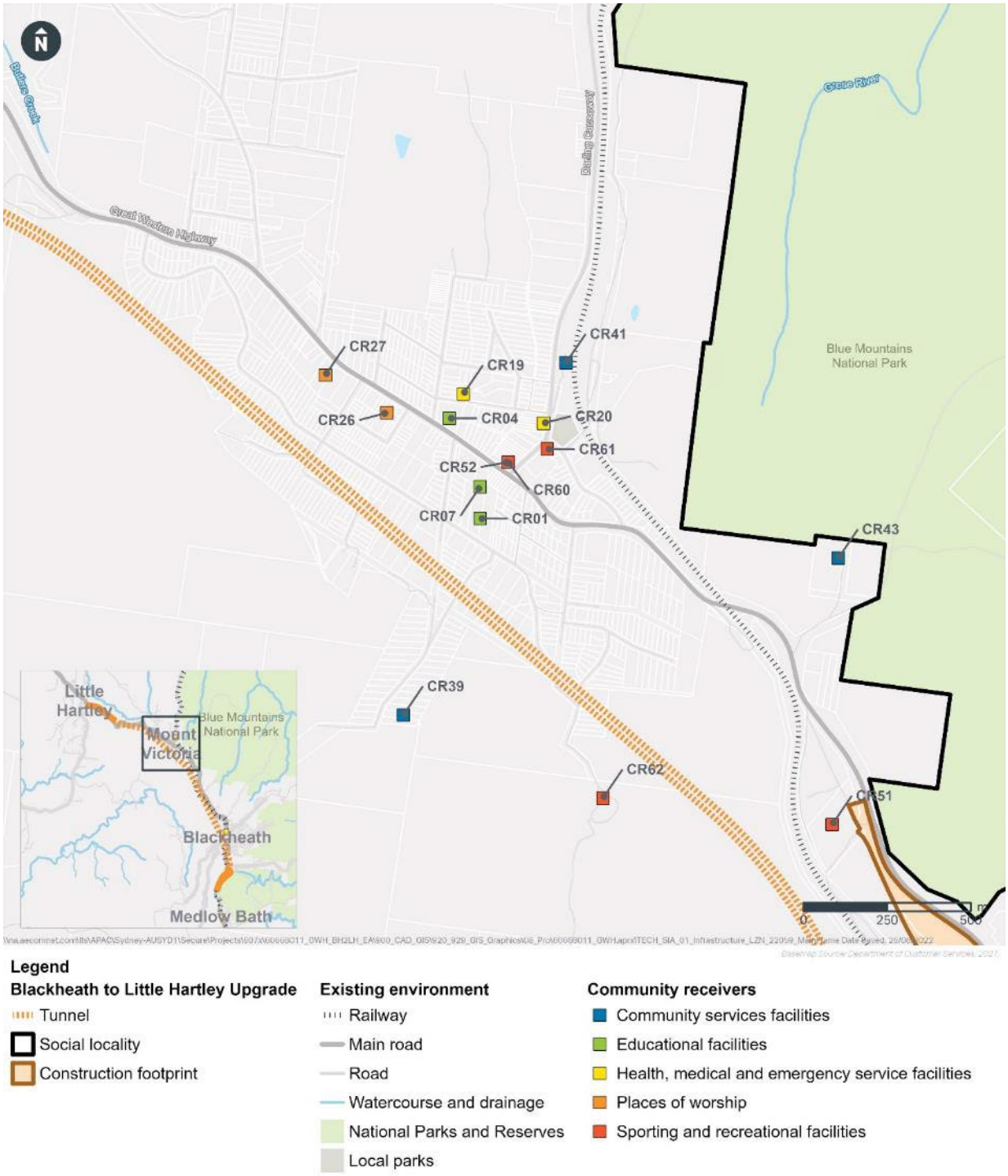



**Figure 3-3 Social infrastructure at Mount Victoria**

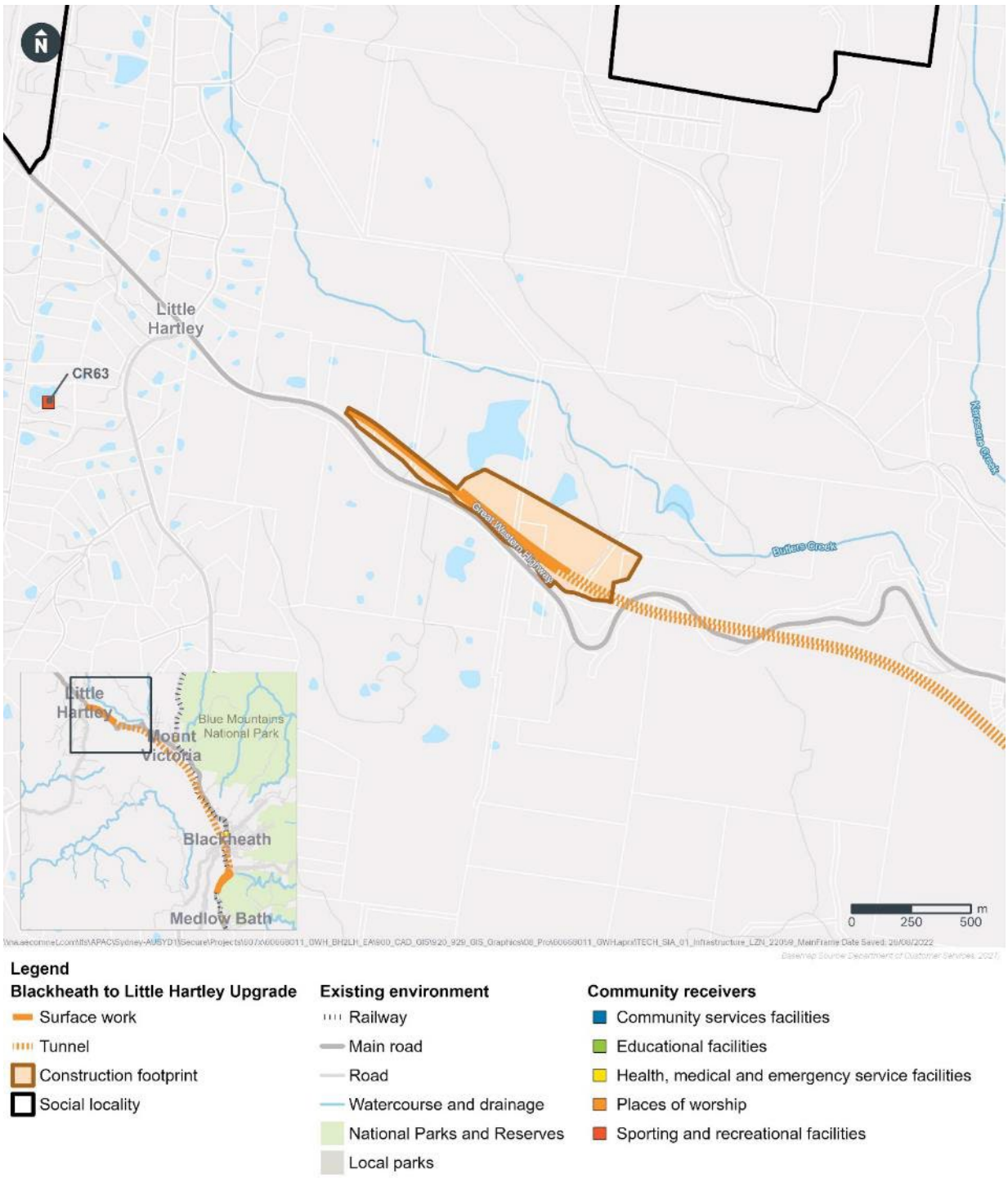



**Figure 3-4 Social infrastructure at Little Hartley**

## 3.3 Aboriginal culture and values

The project travels across the land which has been home to the Dharug, Deerubbin, Gundungurra and Wiradjuri Aboriginal cultural groups for thousands of years and their ongoing living culture and connection to Country.

Based on 2021 ABS data, the current percentage of the population in the suburbs within the social locality who identify as Aboriginal or Torres Strait Islander ranges from zero per cent in Kanimbla to 4.1 per cent in Little Hartley (refer to Annexure B (Social baseline data)).

As part of the Aboriginal heritage impact assessment (refer to Appendix L (Technical report – Aboriginal heritage) of the EIS), Aboriginal community consultation was undertaken with the Bathurst Local Aboriginal Land Council, and the Waawaar Awaaa, Dharug Ngurra and Mingaan Wiradjuri Aboriginal Corporations. The consultation identified the cultural heritage values pertaining to the area, which are of relevance to the project and the SIA. These include:

- **campsites**; which are culturally significant as they provide a link to the ancestral past, and assist in identifying significant resource zones, landscape pathways taken by ancestors and communication between other groups
- **watercourses, waterholes, springs**; permanent water bodies are culturally significant as a central location for the gathering of people, resource collection and camping. Gullies and creeks also provide rich resources for Aboriginal people in the area, as well as provide habitat for platypuses which is a totem within the area
- **transit routes, pathways through the landscape and songlines**; connecting ceremonial and spiritual sites, and key directional markets for entering country. The Blue Mountains is interwoven with songlines, with many knowledge holders believing that the Great Western Highway is built over one of the main songlines of the area connected to other pathways such as Mount York and Bells Line of Road. Songlines are an intangible cultural value as Aboriginal people feel connection to these spiritual pathways
- **rock art carvings at Mount Victoria**; highly significant due to the style incorporated into the art, which could be concerned with Diamond lore associated with identity
- **ceremony or teaching sites in Blackheath**; several likely to be used for ceremonies or teaching on Hat Hill Road, Blackheath.

Chapter 16 (Aboriginal cultural heritage) and Appendix L (Technical report – Aboriginal heritage) of the EIS provides further detail on these elements.

As part of the Aboriginal cultural heritage assessment undertaken for the EIS, representatives from four Registered Aboriginal Parties were engaged during site surveys in 2022. A total of seven registered and five unregistered Aboriginal sites were identified in the study area for the PACHCI Addendum, which incorporates the maximum area that may be disturbed during construction and operation of the Upgrade Program at the Blackheath, Soldiers Pinch and Little Hartley construction footprint. 2022 site surveys confirmed that the study area has been subject to substantial and widespread previous disturbance, with no artefacts found. No sites intersect the construction footprint of the project.

Consultation with Aboriginal stakeholders has been undertaken as part of the design process for the project, which has been reviewed to inform the SIA. This consultation process included one-on-one interviews with locally connected key Aboriginal stakeholders in workshops attended by the Dharug and Wiradjuri communities. The consultation sought to understand the Aboriginal context of the area (such as cultural values) and to discuss what should be considered and integrated into the project. Transport will continue this process throughout the development of the project.

Key feedback received through this consultation has been used to develop Cultural Design Principles, which is intended to guide the interpretation of Aboriginal sensibility in the design (discussed in Appendix N (Technical report – Urban design, landscape and visual). The principles are both specific to the project and are more broadly reflective of universal Aboriginal experience and thinking. The Cultural Design Principles include the following:

- **Connection to Country:** Country always lends its name to the people connected to it and for those who call it home. Connecting through reintroducing native planting, materials and respecting

the earth is significant to the community and will reconnect the site to culture. Country is ever changing and ephemeral

- **Aboriginal Culture is a Living Culture:** the project is located on Country where there are many Songlines and stories. The old and new are deeply intertwined, with Aboriginal history and culture, informing culture today and in the future, developing resilient and thriving communities. The Dharug, Gundungurra and Wiradjuri cultures have thrived despite hardship and wish their stories and connection to Country to be evident in the project's design
- **the Importance of Language:** the use of language is a celebration of people and culture, depicting resilient and vibrant communities. Language promotes understanding and supports the cultural pride of younger members of the Aboriginal communities, feeding learning and culture back into Country
- **Water Country:** Water Country is the 'giver of life', connecting Aboriginal people with each other and showers the land with rain from the sky to the rivers that weave throughout Australia. Its tides and currents connect to Sky Country ensuring an eternal flow to sustain, manage and cleanse all living things
- **Interconnectedness:** The Songline of the Great Western Highway stretches from Sydney Harbour through various Countries along the Blue Mountains. The Songline is a connection for the Dharug, Gundungurra and Wiradjuri but also for numerous other cultural groups who travel to and through these Countries. It is a vehicle for mutual dependence in caring for Country through which stories, knowledge and resources are shared. The Aboriginal groups would like to see this represented in the project to allow non-Aboriginal people to connect to and respect Country as they travel
- **Healing Country:** Country needs to be healed and rehabilitated in site-specific ways. Country is connected by a web of ecosystems that give life to each other. Everyone on Country has a responsibility to care for and heal Country
- **Truth-telling:** truth-telling is the process of looking back and looking forward. It acknowledges the history and ongoing impacts of colonialism and dispossession and the strength of the Aboriginal communities to withstand efforts to disconnect them from their Countries. Looking forward is about reconciliation, celebrating and changing attitudes.

Feedback from Aboriginal stakeholders would continue to inform the design aspirations for the built form outcome and associated theming, in joint consideration of the potential environmental impacts including visual and cumulative impacts on places of Aboriginal heritage significance, objects and cultural protocols.

Further information on Aboriginal stakeholder involvement and its application in the design process is provided in Chapter 4 (Project description) and Appendix N (Technical report – Urban design, landscape and visual) of the EIS.

Some properties required for the project are subject to unresolved Aboriginal Land Claims under the *Aboriginal Land Rights Act 1983* (NSW) (refer to Chapter 20 (Business, land use and property) of the EIS for further detail). The next closest active native title claim is located about five kilometres to the west of the project, in the suburb of Hartley.

## 3.4 Historic heritage values

Historic heritage is likely to hold importance or value for people within the social locality. The following elements of the historical context of the project have been identified as potentially valuable to the community:

- **Greater Blue Mountains Area**, listed on the World Heritage List and National Heritage list, demonstrating the evolution of Australia's unique eucalypt vegetation and its associated communities, plants and animals. Beyond the current curtilage of the item, additional areas of the Greater Blue Mountains Area have also been nominated to be listed on the National Heritage List, referred to as the Greater Blue Mountains Area (Additional Values)
- **Coxs Road**, the first road built through the Blue Mountains in the early 19th century

- **Mitchells Road / the Western Road / Great Western Highway**, established to improve the route through the Blue Mountains. The current Great Western Highway largely follows Mitchells Road
- **Victoria Pass**, a route built to avoid Mount Blaxland and descend Mount York
- **stockades**, built along the alignment of roads such as Coxs Road, Mitchells Road and Victoria Pass to accommodate the convicts who built these roads and their military guards
- **Blackheath**, including a part of Coxs Road, the Scotch Thistle Inn, and the Blackheath stockade
- **Mount Victoria**, including the Toll House and Welcome Inn
- **Little Hartley**, including many early inns which provided refreshments to travellers and their animals
- **historic inns**, spurred by the construction of Coxs Road and other roads through the Blue Mountains. The establishment of townships often followed the development of these inns, including at Blackheath, Mount Victoria and Little Hartley.

These are described in detail in Chapter 17 (Non-Aboriginal heritage) and Appendix M (Technical report – Non-Aboriginal heritage) of the EIS.

## 3.5 Economic characteristics

### 3.5.1 Local businesses / employment centres

Blackheath serves as a local town centre within the social locality, with Mount Victoria being a smaller centre. Within Blackheath and Mount Victoria, commercial uses include cafes, hotels, pubs, a service station and specialty stores. Between Mount Victoria and Little Hartley, commercial uses consist of isolated shops and attractions with a likely high reliance on passing trade.

### 3.5.2 Tourism

Tourism is a key attractor to the social locality. The Great Western Highway also serves as a major route to connect to tourist destinations in the Blue Mountains area and Central West NSW.

The Blue Mountains is a popular region for tourism in NSW, with a number of natural landmarks, walking and mountain biking trails and other destinations for recreational activities within the Blue Mountains National Park. In the year ending September 2021, there were a total of 3.5 million domestic visitors to the region (Destination NSW, n.d. a). The region has a large day trip market, comprising 64 per cent of total visitors in this period. The total tourist expenditure in this period was $598.2 million. COVID-19 restrictions have likely resulted in temporary reductions in domestic tourism from 2020 onward.

The Blue Mountains has also been a destination for international tourism, with 115,200 international visitors in the year ending in December 2018 (Destination NSW, n.d. b). COVID-19 restrictions have resulted in limited international tourism from 2020 onward.

The Lithgow City Council LGA also includes a number of regional tourist attractions, such as the Hartley Historic Site which is located within the vicinity of the social locality. The LGA attracted 235,143 domestic overnight visitors in the 2020/21 financial year (Tourism Research Australia, 2022). COVID-19 restrictions have likely resulted in temporary reductions in both domestic and international tourism to the region from 2020 onward.

Overall, the tourism sector is important to the social locality in terms of economic activity and job creation.

## 3.6 Accommodation

### 3.6.1 Short-term accommodation

The social locality and its surrounding area include a variety of short-term accommodation types that cater to tourists and visitors, such as hotels, motels, holiday homes and guest houses.

Table 3-4 shows the range of short-term accommodation types available in the social locality and surrounding key suburbs which are likely to attract tourists, as of November 2022 based on

booking.com and Airbnb listings. Table 3-5 summarises the number of rooms available in each of these suburbs. The results indicate that Katoomba, Blackheath and Leura have the most short-term accommodation options available by overall numbers.

The most common type of accommodation is holiday homes/apartments/short-term rentals, with a total of 512 properties, many of which comprise Airbnb listings. This type of accommodation accounts for about 90 per cent of the total short-term accommodation options of the suburbs considered, and 57 per cent of the total rooms.

The second most common type of accommodation is hotels/motels/inns, of which there are 38 in the suburbs considered. This type of accommodation accounts for seven per cent of the total accommodation options of the suburbs considered and 38 per cent of the rooms.

**Table 3-4 Short-term accommodation types in the social locality and surrounds**

| Suburb | No. of hotels / motels / inns | No. of lodges / guest houses | No. of holiday homes / apartments / short-term rentals* | No. of other accommodation types | Total |
|---|---|---|---|---|---|
| **Blackheath** | 7 | 4 | 156 | 2 | 169 |
| **Mount Victoria** | 2 | 2 | 31 | - | 35 |
| **Little Hartley** | - | - | 11 | 1 | 12 |
| **Kanimbla** | - | - | 6 | 1 | 7 |
| **Katoomba** | 17 | 5 | 162 | - | 184 |
| **Leura** | 6 | 2 | 121 | - | 129 |
| **Lithgow** | 6 | - | 21 | - | 27 |
| **Hartley** | - | - | 4 | 4 | 8 |
| **Total** | **38** | **13** | **512** | **8** | **571** |

*Includes Airbnb listings

**Table 3-5 Rooms available in the social locality and surrounds**

| Suburb | No. of rooms in hotels / motels / inns | No. of lodges / guest houses | No. of rooms in holiday homes / short-term rentals* | No. of rooms in other accommodation types | Total number of rooms |
|---|---|---|---|---|---|
| **Blackheath** | 131 | 26 | 441 | 6 | 604 |
| **Mount Victoria** | 42 | 15 | 88 | - | 145 |
| **Little Hartley** | - | - | 31 | 4 | 35 |
| **Kanimbla** | - | - | 8 | 6 | 14 |
| **Katoomba** | 402 | 31 | 414 | - | 847 |
| **Leura** | 268 | 16 | 354 | - | 638 |

| Suburb | No. of rooms in hotels / motels / inns | No. of lodges / guest houses | No. of rooms in holiday homes / short-term rentals* | No. of rooms in other accommodation types | Total number of rooms |
|---|---|---|---|---|---|
| **Lithgow** | 103 | - | 62 | - | 165 |
| **Hartley** | - | - | 11 | 7 | 18 |
| **Total** | **946** | **88** | **1,409** | **23** | **2,466** |

*Includes Airbnb listings

Occupancy rates for accommodation in the region vary throughout the year. The NSW Tourist Accommodation Snapshot June Quarter 2022 (Destination NSW, 2022a) shows that hotels and serviced apartments with 10 or more rooms in the Blue Mountains region had an average occupancy rate of 73.1 per cent during the April to June 2022 period. The region had lower average occupancy rates during other times of the year, including 55 per cent during the January to March 2022 period and 47.5 per cent in the October to December 2021 period, which may be partly attributed to the presence of COVID-19 cases during this time (Destination NSW, 2022b; Destination NSW, 2022a). Data is not available at an LGA or suburb level, or for accommodation facilities with fewer than 10 rooms, which comprise a substantial proportion of the available accommodation.

Accommodation providers surveyed as part of the business surveys for the SIA also indicated that their busiest periods are typically weekends and school holidays.

### 3.6.2 Long-term rental accommodation

As discussed in Section 3.1.2, there is a relatively low proportion of households in the social locality which are rented, when compared to NSW generally. The social locality also has relatively low levels of rental vacancy rates. The Blue Mountains region had a residential residency vacancy rate of 1.2 per cent, and estimated 63 vacancies in October 2022 (SQM Research, 2022).

A high volume of short-term rental accommodation and holiday homes in the area are likely to limit the supply of dwellings for the long-term rental market. Blue Mountains City Council have recently encouraged holiday homeowners to consider placing these homes on the long-term rental market, to help address this issue (Blue Mountains City Council, 2022b).

Despite relatively high home ownership rates, LGAs in the region have active rental markets. The 'churn' rate is calculated as the number of bonds lodged in a year over the total number of bonds in the system, and provides an indication of the annual turnover of bonds on rental properties. Churn rates for each LGA are around 30 per cent, as shown in Table 3-6. Data for the Penrith City Council and Bathurst Regional LGAs, which are adjacent to the LGAs which form part of social locality and may be used for worker accommodation, are also included in Table 3-6.

**Table 3-6 Turnover of rental properties (Department of Communities and Justice, 2022)**

| LGA | Bonds lodged over 12 months to September 2022 | Total bonds held at the end of reporting period | Annual turnover / 'churn rate' |
|---|---|---|---|
| **Blue Mountains** | 1,365 | 4,533 | 30% |
| **Lithgow** | 459 | 1,536 | 30% |
| **Total – Blue Mountains and Lithgow** | **1,824** | **6,069** | **30%** |
| **Penrith** | 7,347 | 22,681 | 32% |
| **Bathurst Regional** | 1,341 | 4,179 | 32% |
| **Total – All LGAs** | **10,512** | **32,929** | **32%** |

The Rental Affordability Index developed for the April to June 2022 period (SGS Economics and Planning, 2022) provides insight into the rental affordability of postcode areas by comparing median rents to household incomes. Households paying 30 per cent of income on rent have a Rental Affordability Index score of 100, indicating these households are at the critical threshold level for housing stress. Scores between 121 and 150 indicate an acceptable level of rent, where households typically spend 20-25 per cent of income on rent. A score of 150 or greater indicates that households typically 15 per cent or less of income on rent.

Rental affordability for housing within the social locality is generally considered at an acceptable and relatively affordable level. Index scores for postcodes of relevance to the project include:

- Postcode 2785 (includes Blackheath) – index score of 138, indicating acceptable rents
- Postcode 2790 (includes Little Hartley and Kanimbla) – index score of 136, indicating acceptable rents.

No score was provided for the postcode for Mount Victoria (2786), however it is likely that rental affordability would be similar to that of the surrounding postcodes discussed above.

## 3.7 Access and connectivity

### 3.7.1 Road and freight network

The Great Western Highway is about 200 kilometres long, connecting Bathurst and the Central West and Orana regions to Sydney across the Great Dividing Range via the Blue Mountains.

The main functions of the Great Western Highway, within the social locality, include:

- local access for residents of the adjacent townships and rural destinations located along the Great Western Highway
- major tourist route providing access to key destinations in the NSW Central West region
- major freight route accommodating vehicles carrying freight between Sydney and the Central West.

There are generally higher peaks of traffic on the Great Western highway during the weekends. These weekend peaks are generally early mornings for Saturday westbound traffic and between noon and early evening for Sunday eastbound traffic. This pattern could be indicative of the route used for weekend trips from those leaving and returning to Sydney.

While the Great Western Highway is used by through traffic to and from regions west of Lithgow, a large proportion of heavy vehicle traffic is generated between Katoomba to Lithgow and moves between locations along this section of the Great Western Highway accounting for around 30 per cent of road freight within the Blue Mountains.

Further detail on the existing road and freight network, including traffic volumes and patterns, is included in Chapter 8 (Transport and traffic) of the EIS.

### 3.7.2 Public transport

The social locality includes a section of the Blue Mountains Line, which runs between Sydney to Lithgow / Bathurst via the Intercity Trains Network. Within the social locality, railway stations are provided at Blackheath and Mount Victoria.

The following bus routes service the social locality:

- route 698 – Katoomba to Blackheath
- route 698V – Katoomba to Mount Victoria
- route 690K – Springwood to Katoomba
- route 8710 – Wentworth Falls Public School to Blackheath.

There are no public bus services which travel west of Mount Victoria within the social locality.

Bus stops are located along the existing Great Western Highway, near Blackheath Station, and in Blackheath along Evans Lookout Road, Govetts Leap Road and Hat Hill Road. In Mount Victoria bus stops are located along the existing Great Western Highway, near Mount Victoria Station, on Victoria Street and on Mount York Road.

Further detail on the existing public transport network is included in Chapter 8 (Transport and traffic) of the EIS.

### 3.7.3 Active transport (walking and cycling)

Pedestrian and cyclist facilities are fairly limited in proximity to the Great Western Highway. Basic pedestrian facilities are provided in the Blackheath and Mount Victoria town centres.

Within the Blackheath township, footpaths are generally provided on at least one side of the Great Western Highway, particularly in the higher activity areas. Footpaths are less prevalent in the local street network, particularly on residential streets. In Mount Victoria, footpaths are generally limited to the Great Western Highway and Station Street. There are no footpaths or pedestrian crossings at Little Hartley., which likely indicates that there is low pedestrian demand in this area. Between the townships, pedestrian activity along the Great Western Highway is generally low.

The Great Western Highway is identified by Blue Mountains Council as a regional cycle route. However, dedicated cycle facilities are not provided along the Great Western Highway. Therefore cyclists use the shoulders where they are available, particularly in the Blackheath and Mount Victoria townships. Continuous shoulders are not provided on both sides of the Great Western Highway outside of the townships.

Active transport trails will be provided by the Katoomba to Blackheath Upgrade (near Blackheath) and the Little Hartley to Lithgow Upgrade (near Little Hartley) before construction begins for the project.

Further detail on the existing active transport network, including the location of these active transport trails, is included in Chapter 8 (Transport and traffic) of the EIS.

## 3.8 Construction workforce and industry

To inform the assessment of social impacts associated with the influx of construction workers into the area (for example, on community composition or accommodation), a review has been undertaken of construction workforce outcomes on other regional infrastructure projects, and existing construction skillsets in the social locality and surrounding commutable area. The aim of the review is to understand the likely proportion of the construction workforce that would be employed locally, and the proportion which would be required to relocate from another area.

The Infrastructure Skills Legacy Program (ISLP) is a NSW Government program which aims to address skills shortages and increase diversity in the construction sector. The ISLP is mandatory for NSW Government infrastructure projects and includes requirements for projects with a contract value of over $100 million to report local employment outcomes. Across key ISLP projects, an average of 55 per cent of workers were recorded as people living in the local region (‘local region’ is defined in the relevant contract/s for each project) (NSW Government, 2022).

Local employment outcomes from other completed NSW Government regional infrastructure projects are outlined in Table 3-7. On these projects, the proportion of the workforce employed locally ranged from 30 to 70 per cent.

**Table 3-7 Local employment outcomes on regional infrastructure projects**

| Project | Local employment outcomes |
|---|---|
| **Albion Park Rail Bypass – Princes Highway upgrade (completed 2022)** | On average, 70% of the total workforce were from Wollongong and Shellharbour (local to the project) (Transport for NSW, 2022b). The EIS for the project estimated 550 personnel to be employed over the course of the project (RMS, 2015). |
| **Lismore Base Hospital Redevelopment Stage 3B (completed)** | On average, well over 50% of on site job positions were filled by local regional people (Infrastructure NSW, 2022). There were over 280 construction workers on the project. |

| Project | Local employment outcomes |
|---|---|
| **Batemans Bay Bridge replacement project (completed 2022)** | On average, 43% of workers employed by the project were local workers (Transport for NSW, 2022c). The environmental assessment for the project estimated that up to 650 onsite would be created during construction of the project (RMS, 2017). |
| **Wentworth to Broken Hill Pipeline (completed 2018)** | Over 150 local people contributed to the pipeline workforce which reached a peak of over 500 workers during construction (Water NSW, 2019). This equates to a local workforce of about 30%. |

The following LGAs include areas within a reasonable commutable distance to the project. That is, they are within about an hour from the closest construction footprint:

- Blue Mountains City Council LGA – including larger suburbs/towns such as Katoomba and Blaxland
- Lithgow City Council LGA – including Lithgow itself and surrounding suburbs
- Bathurst Regional Council LGA – including Bathurst itself and surrounding suburbs
- Penrith City Council LGA – including Penrith itself and surrounding major suburbs to the west such as Emu Plains and Jamisontown.

A substantial proportion of the existing workforce in each of these LGAs are employed in the construction industry, ranging from 8.7 per cent to 10.7 per cent (as outlined in Table 3-8). Collectively, 17,829 persons in these LGAs are currently employed in the construction industry. This indicates the presence of existing skills and capabilities in the region that could be utilised on the project.

Additionally, training opportunities would be provided for workers who do not form part of this existing construction workforce. For contracts of over $100 million, the ISLP sets a requirement for 20 per cent of total project workforce to be made up of "learning workers" (defined as trainees and workers who need to update their qualifications to meet requirements of the project).

**Table 3-8 Existing construction workforce (2021) (ABS, 2022)**

| LGA | Number of persons employed in construction | Total workforce | Percentage of workforce employed in construction |
|---|---|---|---|
| **Blue Mountains** | 3,143 | 36,295 | 8.7% |
| **Lithgow** | 613 | 8304 | 7.4% |
| **Bathurst Regional** | 1,844 | 20,457 | 9.0% |
| **Penrith** | 12,229 | 102,094 | 12.0% |
| **Total** | 17,829 | 167,150 | 10.7% |

A Skills, Employment and Industry Development Strategy is being implemented for the Upgrade Program, which includes this project. The strategy aims to maximise outcomes for the local and regional communities and industry and contribute to skills development and diversity within the infrastructure sector. This includes a focus on maximising local employment opportunities. The focus areas of the strategy align with the ISLP.

## 3.9 Stakeholders

A stakeholder is a group, individual or organisation that is interested in, affected by, or has the capacity to influence a project (Brereton, 2005). Stakeholder mapping has been undertaken for the purposes of community and stakeholder engagement for the project. This list has been reviewed and refined to

identify stakeholder groups which are relevant to the SIA. This list of stakeholders identified for the purposes of this SIA is provided in Annexure B (Social baseline data).

Key stakeholders for the project include, but are not limited to:

- residents – including those adjacent to the project, within the social locality, and the broader community
- local businesses
- road users
- vulnerable or marginalised groups, including the elderly, disabled and culturally and linguistically diverse communities
- Local Aboriginal Land Councils and Aboriginal stakeholders
- local community interest groups
- emergency services
- emergency services, utility and service providers
- local government (Blue Mountains City Council and Lithgow City Council)
- State and federal government agencies and elected representatives.

Further detail on engagement with stakeholders is provided in Section 4 and Chapter 7 (Community and stakeholder engagement) of the EIS.

# 4 Consultation

This section summarises the key results of project consultation undertaken for the Great Western Highway upgrade (Blackheath to Little Hartley), which are relevant to the social context for the assessment (referred to as project-wide consultation). The project-wide consultation undertaken to date has informed several design and construction planning refinements which would avoid and minimise potential environmental impacts, including social impacts. These refinements are detailed in Section 1.2.4.

This section also includes a summary of the results of consultation undertaken for the SIA, including residential interviews, business surveys and stopper surveys. Further analysis of the results is included in Annexure D (SIA Consultation analysis report).

## 4.1 Great Western Highway (Blackheath to Little Hartley) project-wide consultation

Transport has carried out various consultation activities to inform the project. Details of engagement activities, and the ongoing and planned consultation activities, are detailed in Chapter 7 (Community and stakeholder engagement) of the EIS.

To inform this SIA, an analysis has been carried out of:

- feedback received during strategic corridor consultation for the Upgrade Program, undertaken in November and December 2019
- key outcomes from the Blackheath Co-Design Committee (formed by Transport in March 2020 to refine potential route options through Blackheath)
- feedback received during route options consultation undertaken in October and November 2020
- feedback received during preferred option announcement engagement in May and June 2022.

An overview of the consultation carried out in each of these events, and a summary of the key issues and values raised, is provided in Table 4-1. The key issues relevant to the SIA raised by the community across all consultation periods are listed in Table 4-2.

An overview of consultation undertaken with Aboriginal stakeholders which has informed this SIA is included in Section 3.3.

**Table 4-1 Consultation undertaken for the project**

| Consultation | Overview |
|---|---|
| **Strategic corridor consultation (November – December 2019)** | In November 2019, the preferred strategic corridor for the project was placed on public display and community feedback was sought. This included the previously reserved corridor from Mount Victoria to Lithgow and a new corridor between Katoomba and Mount Victoria.<br>The aim of this consultation was to gather early feedback from the community on key values and priorities, as well as to address any concerns or questions the community had about the Great Western Highway Upgrade Program, before progressing to the refinement of route options and features within the corridor.<br>Details of the Upgrade Program were placed on public display between 7 November and 16 December 2019 at Katoomba, Oberon, Bathurst and Orange. These locations were advertised locally in advance.<br>Twelve community information sessions were held in Katoomba, Medlow Bath, Blackheath, Mount Victoria, Hartley and Lithgow, and were attended by 1,045 people in total.<br>During this period, Transport received 1,759 pieces of feedback. Of this, 446 were forms, 756 were via email and 557 were pinned comments on the online map.<br>Issues raised by the community fell into the following broad categories:<br>• consideration of other options (raised in 65% of submissions)<br>• environment (raised in 64% of submissions)<br>• road use (raised in 40% of submissions)<br>• property and business<br>• community consultation<br>• budget and costs<br>• construction impacts<br>• requests for information.<br>A Community Consultation Summary Report (Transport for NSW, 2020b) was included as part of the Scoping Report for the project, which summarises and responds to issues raised by the community during this consultation. |
| **The Blackheath Co-Design Committee** | The Blackheath Co-Design Committee (BCC) was formed by Transport in March 2020, following feedback from the community. The committee included stakeholder group representatives, selected community representatives, and representatives from the Blue Mountains City Council and emergency services.<br>After five meetings and additional site tours the BCC assessed six broad route options, including a new tunnel alignment suggested by the Committee. The Committee's unanimously preferred option, of the options available, was for a tunnel bypass of Blackheath.<br>The BCC was not a decision-making body, but the outcome of the BCC is an important input into the Government's decision-making process for determining a preferred route option and design as the program progresses.<br>A consultation outcomes report (KJA, 2020) was included as part of the Scoping Report for the project, which outlines the process followed, key themes and issues discussed, and the outcomes of the BCC. |
| **Route options consultation (October – November 2020)** | In October and November 2020, Transport consulted with the community in Blackheath regarding route options and tunnel portal locations. The consultation also invited suggestions on other improvements that could be |

| Consultation | Overview |
|---|---|
| | made to the existing highway to improve safety, amenity and connectivity in Blackheath.<br>Three consultation sessions were held, attended by 190 participants. These sessions included presentations from the project team on the tunnel portal options and on the impacts of tunnel construction, followed by a question and answer session.<br>The sessions were recorded and posted to a virtual consultation room so that stakeholders who were unable to attend could view the sessions. For those unable to attend the online sessions, phone consultations were offered. Seven phone consultations were conducted.<br>During the consultation period, the project received a total of 2,486 submissions – 1,447 group submissions from various community organisations, 798 through the online form, 146 as pinned comments on the online map, 47 email submissions and 33 postal submissions. An additional 15 submissions were received through a submissions box at the Blackheath Area Neighbourhood Centre. The virtual consultation room had a total of 6,205 unique visitors.<br>A Consultation Summary Report (Transport for NSW, 2021c) was included as part of the Scoping Report for the project. |
| **Preferred option announcement (May – June 2022)** | Following announcement of the preferred option for the project in May 2022, a range of communication and engagement channels were used to raise public awareness on the option. These engagement channels were used to:<br>• maximise the reach of the preferred option announcement<br>• provide more detail about the option selected and why it was selected<br>• provide visual and easy to understand and non-technical information to the community<br>• enable detailed information to be provided on issues that matter to the community<br>• advertise the community drop in and online information sessions<br>• provide information to digital and non-digital communication platform users in the community.<br>In May and June 2022, Transport conducted briefings with key stakeholders and held face to face and online information sessions, before producing a consultation report. These information sessions, along with other engagement strategies in the form of a community update, preferred options summary, adverts, radio announcements and the web portal, conveyed key messages regarding the preferred option selected. The key messages were tailored around why the preferred option was selected based on project objectives, design elements, environmental impacts, road user safety and efficiency, placemaking and community impacts, response to community feedback, future proofing, and cost. |

**Table 4-2 Key items raised during project consultation**

| Topic | Key items raised |
|---|---|
| Traffic and transport | • road user safety, including for cyclists, as a result of a perceived increase in the number of heavy vehicles on the highway and speed limit changes<br>• potential for increased traffic congestion on local roads<br>• the size of freight vehicles moving through communities which want to preserve tranquillity and reduce pollution<br>• considerations to introducing restrictions on road freight using the corridor<br>• interest in active transport improvements for cyclists and pedestrians. |
| Noise and vibration | • anticipated noise impacts to community members along the highway, both during construction and operation, particularly in the vicinity of proposed tunnel portals<br>• several stakeholders in the vicinity of Chelmsford Avenue, Blackheath (within the vicinity of recent highway upgrade work) raised concerns regarding construction noise and disruption. |
| Property | • interest in the property acquisition process and what could be expected<br>• potentially affected property owners noted concern for their homes and businesses and the lack of certainty about route options, particularly in Blackheath<br>• some submissions queried the potential for property damage (such as cracking) from tunnelling. |
| Business and economic impacts | • potential for adverse impacts relating to access to recreational activities which attract tourists to the region and economic benefit to local industry<br>• concerns from business owners that the upgrade could affect their livelihood if their businesses are lost due to acquisition or are affected by a decline in tourism<br>• some interest was raised in the cost benefit analysis and economic impact assessment for the project<br>• interest in opportunities for local employment<br>• some submissions queried potential business and economic impacts on bypassed towns. |
| Heritage | • a desire to protect the cultural and historic heritage of the townships along the Great Western Highway. |
| Visual amenity and surroundings | • potential impacts of the proposed upgrade on the natural surroundings and visual aesthetics of the area. |
| Water quality | • potential impacts of tunnelling on water systems and aquifers<br>• potential impacts of construction on groundwater and the drinking water catchment. |
| Impacts to the Blue Mountains National Park | • some submissions asked for further details regarding the potential impacts on the national park and the process for resumption of national park land. |
| Air quality and ventilation | • anticipated pollution created from the upgrade was raised as a concern by community members living along the highway<br>• several queries were raised regarding the type of ventilation that might be necessary for the safe operation of a tunnel. |
| Design development and alternative options | • community members expressed interest in a co-design process for the project<br>• the outcome of the BCC was a preference for the long tunnel option. Community submissions generally supported the long tunnel option (with tunnel portals located south of Evans Lookout Road and at the Mount Boyce Heavy Vehicle Safety Station), with some expressing interest in the short tunnel option |

| Topic | Key items raised |
|---|---|
| | • the community expressed interest in rail options for freight in place of any investment in the duplication of the highway through the townships and communities in the Blue Mountains; and raised some suggestions for how rail infrastructure could be improved<br>• submissions included suggestions for safety improvements to the existing highway route<br>• some submissions suggested alternative routes or favoured improvements to the existing Great Western Highway, rather than a tunnel, as a viable option<br>• some comments received on consultation of the tunnel route related to the preferred option alignment not resembling the options previously investigated. |
| Consultation approach | In response to the strategic corridor consultation (November – December 2019):<br>• some respondents felt that the four-week consultation period was not long enough and requested consultation to be conducted over six months<br>• some respondents questioned the authenticity of the engagement given the timing was four weeks prior to Christmas<br>• some respondents felt the program had been rushed and were concerned that there had not been enough consultation to develop the options to date<br>• some respondents felt there was not enough detail and information provided on the options presented<br>During the route options consultation (October – November 2020), several submissions were also received regarding engagement with the community, including:<br>• requests for face-to-face consultation methods (rather than online meetings)<br>• requests to extend the consultation period<br>• some comments that the live webinars were very informative, and positive feedback for the co-design process<br>• a request that the level for engagement with the public is changed from 'inform and consult' to at least the 'involve and collaborate' levels on the International Association of Public Participation Spectrum Model (IAP2)<br>• a request for a permanent consultative body for the duration of the Great Western Highway Upgrade Program. |
| Construction methods and impacts | • queries were raised about construction impacts and methods, including the likely construction hours and duration of construction<br>• some comments received on how increased heavy vehicle movements during construction was going to be managed<br>• interest in the process for spoil removal and reuse<br>• some broader concerns were raised about the potential impact of construction on the environment and nearby properties<br>• some comments received on tunnel location related to the proximity of the alignment to the escarpment and potential impacts on groundwater from construction<br>• some comments also related to possible risks of rock falls due to geological disturbance from construction of the tunnel. |
| Other | • some community members shared interest and support for the program, wanting a faster and safer connection through and between the Blue Mountains and Penrith, and onto Sydney<br>• some queries regarding the potential impacts of the project on local native flora and fauna. |

## 4.2 SIA-specific consultation activities

### 4.2.1 Residential interviews

As discussed in Section 2.7, 119 residences across Blackheath, Mount Victoria, Little Hartley, were approached to complete a survey, from which 46 respondents participated. The residential interviews were carried out in April 2022. Results and analysis of the residential interview results including graphs are included in Annexure D (SIA Consultation analysis report).

The selection of streets for residential interviews took into account the primary and secondary impact areas identified in the social locality (refer to Section 2.4). Over half of all respondents were over 55 years old, with a quarter of all respondents indicating that their household was best described as retirees. Most respondents owned their home and had one to two motor vehicles. Seven per cent of the respondents identified as Aboriginal and/or Torres Strait Islander.

Key findings from the interviews were as follows:

**Day-to-day lives**

- the most common activities that respondents in all three suburbs (Blackheath, Mount Victoria, Little Hartley) undertook on a typical weekday included accessing local shops, socialising within the local area, and working/studying from home or staying at home. These results suggest that respondents spend much of their day-to-day lives within the local area, potentially increasing the amount of time exposed to localised impacts
- in all three suburbs, the majority of respondents (over 90 per cent) indicated that car/private vehicle was their most commonly used form of transport during a typical weekday. This suggests that people in the local community may be more affected by changes to the road network (local and arterial)
- in Blackheath and Little Hartley, the most common community facilities and services that were regularly accessed or used by respondents included the Blue Mountains National Park, and local parks and recreational facilities. In Mount Victoria respondents most commonly used health and medical services (60 per cent). These responses indicate that the natural environment is regularly used and valued in the area
- in all three suburbs, the majority of respondents (over 78 per cent) indicated that the existing highway negatively affects their ability to connect with their local community. This view was most commonly held in Mount Victoria and Little Hartley, where 100 per cent of respondents referred to the existing highway's negative effect on community connectivity. These responses indicate that for the majority of respondents, their ability to connect with the community is hindered by the existing Great Western Highway.

**Community values, aspirations and concerns**

- in all three suburbs, the natural environment was a highly valued element of the community among respondents (40 to 63 per cent), with respondents specifically valuing the sense of peace, quiet and relaxation it brought. In Mount Victoria, respondents particularly valued community facilities and services (60 per cent), emphasising the ease of access and self-sustaining village feel this element of the community brought. This suggests that respondents may be sensitive to noise, vibration or other amenity impacts from construction or operation
- in Blackheath and Mount Victoria, respondents most commonly held aspirations related to improvements in local facilities and social infrastructure (40 to 60 per cent). Half of all respondents in Little Hartley indicated that their aspiration related to the preservation of the town's existing character. These results suggest that respondents may be sensitive to impacts that affect community function, resilience, and sense of place
- across all three suburbs respondents were concerned primarily about traffic congestion and travel time, with 44 to 67 per cent of respondents voicing these concerns. Other community concerns of note included road safety, healthcare access and local economy. These results indicate a level of discontent with the state of the existing road network.

**Perceived impacts and benefits**

- across all three suburbs the majority of respondents (50 to 67 per cent) expected construction impacts of the project to negatively affect their day-to-day life. Adverse traffic congestion and travel time impacts were the most commonly perceived impact in Blackheath and Little Hartley, with up to 83 per cent of respondents voicing this concern. In Mount Victoria, 40 per cent of respondents noted that they expected no change to their day-to-day life from construction impacts. This may suggest that respondents near the tunnel portals would be more sensitive to construction traffic impacts
- across all three suburbs, the majority of respondents (63 to 80 per cent) expected operational impacts of the project to positively affect their day-to-day life. Reductions in traffic volumes and congestion on surface roads was one of the most commonly perceived benefits, followed by improvements to access and connectivity. These results reflect general community expectations for traffic improvements arising from the project
- in Blackheath and Little Hartley, the majority of respondents (70 and 100 per cent respectively) indicated that measures aimed at minimising construction traffic impacts were most important to them. In Mount Victoria, respondents most commonly indicated that clear and frequent communication would be most valued in terms of mitigation. Other high priorities for mitigation identified across all three suburbs included minimising construction noise impacts and maintaining access to community infrastructure and businesses. This suggests that the residents of Mount Victoria perceive a greater need to be included in decision-making systems, while respondents across all three suburbs respondents are concerned with accessibility and construction noise and impacts.

### 4.2.2 Business surveys

As discussed in Section 2.7, 45 businesses across Blackheath, Mount Victoria, Little Hartley, and other areas along the Great Western Highway were offered the opportunity to complete a survey, of which 35 businesses participated. The business surveys were carried out in April 2022. Results and analysis of the business survey including graphs are provided in Annexure D (SIA consultation analysis report).

A broad range of businesses were surveyed, with businesses predominantly identifying themselves as retail and food and beverage, with a higher number of recreational and tourism businesses in Little Hartley. With over half of all businesses operating for more than ten years and the majority of their customers being locals, responses indicated that most of the businesses surveyed were long-term, established components of the community.

In Blackheath and Little Hartley, the majority of businesses surveyed were open seven days a week, while a number of businesses in Mount Victoria were only open from Thursday to Sunday. When asked if and how their level of business varies throughout the week, 81 per cent indicated that they were busier on weekends. For the majority of businesses, level of business also varied depending on the season, and especially during school and public holidays. When asked to score their level of dependence on passing trade, most businesses indicated that they were either moderately or highly dependent on passing trade, with 44 per cent of businesses in Mount Victoria indicating they were highly dependent. Visibility to passing traffic and pedestrians was also a dependent factor for businesses, with 69 to 100 per cent stating they were moderately to highly dependent. These responses may suggest that businesses in the area are relatively reliant on both tourism and local trade throughout the year.

The majority of businesses across all three suburbs indicated that they were affected by COVID-19, specifically due to a reduction in trade, forced closure, or staff shortages. According to the survey, roughly half of all businesses in Mount Victoria and Little Hartley either relied on other local businesses or other local businesses relied on them, and roughly the same proportion of businesses indicated that they were a specialty provider of a good or service in their local area. This may indicate a level of dependency on businesses in the community, and a vulnerability to fluctuations in levels of trade.

Most businesses (73 to 100 per cent) indicated that they thought their business might be affected in some way by construction activities. When asked what benefits the project may have on their business during construction, roughly a quarter of all businesses indicated that they would experience improvements in trade from construction workers. When asked about potential negative impacts during

construction, noise impacts, traffic impacts, and business access impacts were among the most common answers.

Businesses also indicated that the project may be beneficial to their business during operation. The most common response from businesses involved improvements to trade by a reduction in traffic caused by the operation of the project. This answer was closely followed by improvements to trade due to the project making the local area a destination. In terms of negative impacts during operation, all businesses who mentioned negative impacts indicated that they would suffer a reduction in passing trade during the operation of the project.

When asked what strategies Transport could consider to encourage people to stop at their business, the most common perception was that tourism signage to advertise the towns on the highway or in the tunnel would be most beneficial. Overall, businesses in all three suburbs appear to have a moderate degree of dependence on highway-related trade.

### 4.2.3 Stopper surveys

As discussed in Section 2.7, 84 stopper surveys were conducted at various locations across Blackheath, Mount Victoria and Little Hartley. The stopper surveys were conducted during the NSW school holidays in April. Further analysis of stopper survey results including graphs are provided in Annexure D (SIA consultation analysis report).

The majority of respondents surveyed indicated that they were aware of the project. When asked about their journey, respondents most commonly indicated that they both began and intended to end their journey in one of the suburbs of Blackheath, Mount Victoria, Little Hartley or Kanimbla. Other common places where respondents began their journey included greater Sydney, elsewhere in NSW, and elsewhere in the Lithgow or Blue Mountains LGAs. The survey revealed that between 68 and 94 per cent of respondents travelled using their car or motorbike, indicating a relatively high reliance on personal motor vehicle use to travel through the area.

Respondents were asked questions that sought to understand travel patterns and motivation for travel. The survey revealed that roughly a third of respondents in Blackheath and Little Hartley visit the area every day, whereas respondents in Mount Victoria indicated that they visit the area less frequently. When asked about their reason for visitation, over half the respondents in Blackheath gave shopping as their reason. In Mount Victoria, holidaying was one of the most common reasons among respondents, and in Little Hartley, 59 per cent of respondents indicated that their stop was simply a rest/meal break while passing through. When non-local residents were asked what influenced their visit to the area, the majority across all suburbs indicated that their visit was a planned stop on their journey. These responses suggest many travellers may depend on the towns and businesses in the area to support or improve their journey.

The survey also aimed to understand spending and visitation habits of respondents. In Blackheath, the majority of respondents indicated that they planned to spend up to three hours in the area, with 60 and 78 per cent of respondents planning to visit retail and food and beverage businesses respectively. In Mount Victoria and Little Hartley, most respondents planned to spend less than one hour in the area, with 40 per cent of respondents in Mount Victoria stopping for petrol. In all three suburbs, the majority of respondents indicated that they planned to spend less than $50 in the area, though Blackheath respondents were inclined to spend more than their Mount Victoria and Little Hartley counterparts.

Respondents were also asked questions aimed at understanding the influence of the project on visitation and perception of the area. The survey revealed that over 76 per cent of respondents in all suburbs indicated that they would still visit the town if a tunnel bypass were in place. Respondents were asked what measures could be put in place to attract future visitors if a tunnel bypass were in place. In Blackheath and Little Hartley, the majority of respondents indicated that existing attractors such as the natural environment and existing businesses would continue to attract visitors, while Mount Victoria respondents emphasised the need for improved attractors in the town. When asked how the project could change the town's character, roughly half of all respondents in Blackheath and Little Hartley noted improvements to traffic. In Mount Victoria, a quarter of respondents thought the project would lead to a return of the local village feel and character.

Overall, businesses in the area indicated that they continue to have a moderate degree of dependence on highway-related trade.

# 5 Assessment of construction impacts

This section assesses the potential social impacts resulting from the construction of the project. Potential cumulative impacts from the construction of this project and other components of the Upgrade Program are discussed in Section 7 (Assessment of cumulative impacts).

As identified in Section 1.2, two options for tunnel ventilation are currently being investigated for the project, with emissions via ventilation outlets or portals. The option selected would not impact on the likelihood or magnitude of social impacts during construction, as both options require the same construction footprint, program, workforce and general magnitude of construction work. The options for tunnel ventilation are further considered in Section 6 (Assessment of operational impacts).

Measures have been identified to mitigate or avoid the potential negative impacts discussed in this section. These mitigation measures and the expected residual impacts following their application are presented in Section 8 (Management of impacts).

## 5.1 Way of life

### 5.1.1 Changes to how people move around

Temporary disruptions in access to work, recreation, local shops, community facilities and essential services may occur due to temporary changes to traffic arrangements during construction. Residential interview responses and ABS Census Data identified a high reliance on private vehicle transport and that measures to manage construction traffic and access impacts were important.

The construction footprint has been located at a distance from townships along the Great Western Highway and residential areas, and is over one kilometre away from town centres in Blackheath and Mount Victoria. This has largely avoided direct impacts to active transport infrastructure (for example, the need for footpath diversions in areas with high pedestrian activity), and in turn would minimise substantial disruption to the way in which people move around their local area.

The existing Great Western Highway would remain open to traffic, recreational cyclists, and pedestrians, with some traffic control measures in place near the construction footprint to maintain safety. Appendix D (Technical report – Transport and traffic) of the EIS identifies the following impacts that may result in potential disruptions to way of life for residents and road users throughout the construction period:

- temporary modifications to the existing road network such as construction site access arrangements, staged works and speed zone changes, which would be required to maintain the functionality of surrounding roads, and to protect the safety of all road users. Temporary traffic modifications would be staged as to not impact traffic movements unnecessarily and to maintain a minimum of one lane in each direction of traffic movement
- the presence of construction traffic, generally on the Great Western Highway where construction haul routes are proposed. Construction haul routes would be along the Great Western Highway, to minimise the presence of heavy vehicles on local roads. Site access for heavy vehicles would also be from the Great Western Highway, rather than local roads
- adjustments to traffic speed zones to enhance safety around the construction work where required. The posted speed limit on the Great Western Highway would be reduced from 80 kilometres per hour to 60 kilometres per hour or lower in the vicinity of the construction footprint to enhance safety around the construction work where required. The full extent and durations of the speed reductions would be confirmed as part of further design development and detailed construction planning
- the combination of reduced speed limits and additional construction traffic volumes would result in a minor increase to weekday peak hour travel times through the study area of about one minute for both directions, which would likely increase during school holidays and major events. Peak traffic generating activities would however be scheduled to avoid peak days such as public holidays and major events
- an increase in the number of heavy vehicles associated with construction may affect pedestrian and cyclist safety near the project, generally near construction footprint access points. There are

also potential risks to pedestrian safety resulting from unauthorised access to construction areas. Removal of spoil in a westbound direction from the Little Hartley construction site would minimise potential impacts to pedestrian and cyclist safety, particularly in and around the Blackheath and Mount Victoria townships. Appropriate fencing and site security would be implemented at construction sites to minimise the risk of unauthorised access, in line with NSW workplace safety laws.

These temporary modifications may result in minor disruptions to elements of the transport network which the community and road users rely on as part of their daily lives. Given the location of the construction footprint, these potential disruptions generally relate to traffic management, rather than the introduction of physical barriers which would restrict movement.

Potential partial road closures may be required for short periods to construct the water supply pipeline between Little Hartley and Lithgow, an area with relatively low pedestrian use, however these would generally be restricted to out of hours works to limit potential impacts on people's movement.

Given that potential impacts to movement would be generally limited to the Great Western Highway corridor, with limited potential for disruptions in areas with high pedestrian activity, the magnitude of impact to different user groups (including pedestrians, cyclists and vehicle users across different age groups) would be **minor**. These impacts would be **likely** to occur. As such, the overall significance of the impact would be **medium** (negative).

These impacts would be managed through the application of mitigation measures outlined in other chapters of the EIS, as well as through the development of a Construction Transport and Access Management Plan (CTAMP) for the project. These would seek to avoid and reduce transport and traffic impacts (and subsequently social impacts).

Impacts to access and connectivity during construction are discussed further in Section 5.3.

### 5.1.2 Acquisition of property

Property impacts, including details of property acquisitions, temporary occupation of land and settlement and subsidence impacts are discussed in Chapter 20 (Business, land use and property) and Chapter 13 (Groundwater and geology) of the EIS. This section considers the social implications of property impacts.

The project would be predominantly underground and has been designed to minimise the need for private property acquisition, including residential acquisition, where possible. This would largely avoid the potential for impacts to way of life associated with property acquisition. There would be no residential property acquisition at Blackheath or Soldiers Pinch. There would be one residential property and land from a second private property acquired at Little Hartley as part of the Little Hartley to Lithgow Upgrade that would also be required for the project.

Social impacts upon way of life for landowners and/or tenants of these properties would occur as part of the Little Hartley to Lithgow Upgrade. Notwithstanding, these landowners and/or tenants may continue to be impacted by stress associated with relocation. This may be more prevalent for people who have been long-term residents in the area, as their location would be an established part of their way of life. Forty-four cent of respondents to the residential interviews have lived in their property for 10 years or greater, indicating that people subject to acquisition may be long-term residents and therefore face a deeper disruption to their lives. Landowners and tenants of landowners affected by acquisition would be supported by access to counselling services throughout the process and a community relations support toll-free telephone line would be established to respond to any community concerns.

Furthermore, some properties required for the project are subject to unresolved Aboriginal Land Claims. The majority of these relate to substratum acquisition, with one unresolved claim over a partial surface construction lease at Soldiers Pinch and one unresolved claim over a partial surface construction lease at Little Hartley (Lot 7313/DP 1162788). This may indicate that the use of this area during construction may temporarily limit access to an area which is of importance to Aboriginal communities and stakeholders in the area. This is considered further in Section 5.6.2.

Overall, the magnitude of impact would be **minimal**. These social impacts would be **unlikely** to occur. The overall significance of the impact would be **low** (negative).

### 5.1.3 Access to and use of social infrastructure

Construction of the project may temporarily affect residents and the local community's ability to use and access social infrastructure. This may include changes to access, or changes in the surrounding amenity arising from construction noise, vibration, visual impacts and/or dust.

Given the limited presence of social infrastructure in Little Hartley (refer to Figure 3-4), impacts to social infrastructure are not anticipated at this location and have not been assessed further.

Social infrastructure that may be more sensitive to changes include educational institutions, health care facilities, religious facilities, childcare centres, and passive and active recreation areas. The sensitivity of social infrastructure users to construction impacts would vary depending on their proximity, the individual's sensitivity of people using the infrastructure (i.e., to noise, dust, vibration) and the duration of the activity. Impacts to social infrastructure which is free to use, such as public recreational facilities, may also disproportionately affect disadvantaged groups such as low-income earners or retirees.

Results from residential interviews undertaken for the SIA indicate that socialising within the local area was a typical activity for many residents. This indicates that residents likely rely on local social infrastructure as part of their daily routines and lifestyle.

At both Blackheath and Mount Victoria, the majority of social infrastructure is concentrated within town centres. These town centres are located at considerable distance (over one kilometre away) from the surface construction footprint. Access to these facilities from areas outside the town may be indirectly affected by temporary increases in travel times due to the presence of construction vehicles along the Great Western Highway.

The northernmost extent of the Soldiers Pinch construction footprint at Mount Victoria would be located immediately to the east of the south-eastern corner of Browntown Oval. The oval would remain open for use throughout the construction period. The project would include upgrade of the Great Western Highway / Browntown Oval access road to establish safe access to the Soldiers Pinch construction footprint. Construction vehicles would enter the site at this location (as shown on Figure 1-6) and generally travel about 300 metres southbound where the majority of construction footprint would be situated, including construction equipment, worker parking and storage.

The distance between the majority of the construction footprint and Browntown Oval would largely avoid impacts that have the potential to affect the enjoyment and use of the oval, such as visual amenity and noise and vibration. The presence of construction vehicles near the entrance of the oval and within the vicinity may somewhat reduce accessibility and result in some indirect amenity-related impacts such as traffic noise. There would also be a negligible to low risk of dust soiling impacts from the construction footprint (refer to Chapter 9 (Air quality) of the EIS for further detail).

An increase in the number of heavy vehicles at the shared access point for the Soldiers Pinch construction site and Browntown Oval may affect pedestrian and cyclist safety for those accessing the oval by these means. These potential risks would be managed through the CTAMP for the project, which would include safety measures for active transport interfaces with construction areas. Intersection improvements and/or traffic controllers could be used by the contractor to manage heavy vehicles turning in and out of the Solders Pinch construction footprint when the oval is in use.

Recreational access to an existing recreational trail for hikers and cyclists near the Browntown Oval intersection would be temporarily affected by activity at the Soldiers Pinch construction footprint for the duration of construction. Access to the trail is provided near the intersection of the Great Western Highway and Browntown Oval. If required, the trail would be temporarily diverted around the Soldiers Pinch construction footprint to maintain public safety, increasing the walking or cycling travel distance by around 150 metres, which is considered to result in a negligible impact to recreational users of the trail. The temporary change would not result in any broader impact to the availability of any other recreational trails for use in the social locality.

Given the proximity of the construction footprint, shared access point and potential for indirect impacts, the magnitude of impacts to users of Browntown Oval for the duration of the construction period is predicted to be **minor**. These social impacts would be **likely** to occur. The overall significance of impact to the access and use of Browntown Oval would be **medium** (negative). Potential impacts on access and the use of Browntown Oval would be managed in consultation with Blue Mountains City Council,

with the aim of minimising potential disruptions to the use of the oval from construction activities (refer to Section 8.2 for further detail).

Other social infrastructure in the social locality would generally be indirectly impacted and still available for use. As such, the overall magnitude of impact within to users of other social infrastructure within social locality as a whole would be **minor**. These social impacts would be **likely** to occur. The overall significance of impact to the access and use of social infrastructure would be **medium** (negative).

## 5.2 Community

### 5.2.1 Demographics and community composition

Construction of the project may influence the demographic profile of the social locality through changes to the social makeup of the area, primarily through employment of the construction workforce.

The project is expected to support an indicative peak construction workforce of up to 1,100 full time equivalent jobs (direct employment) over the duration of construction. The workforce is predicted to peak in size (i.e. reach 1,100 persons) in 2026. The construction workforce would comprise trades and construction personnel, and engineering, functional and administrative staff. The size of the workforce would vary depending on the construction activities being undertaken.

The construction workforce would likely be sourced from across the local area and broader region, with a preference for local employees where practicable. This may include larger towns and centres outside of the social locality, such as Lithgow, Bathurst and Penrith. Some workers may also choose to relocate to the social locality, contributing to an increase in the full time (day and night) population.

Taking into account the capabilities of the existing workforce and local employment outcomes on other regional projects (detailed in Section 3.8), for the purposes of this assessment it has been assumed that:

- 40 per cent of the project's construction workforce would comprise local employees which currently live within a reasonable commutable distance to the project (totalling 440 workers during peak construction)
- 50 per cent of the peak workforce may require requiring longer-term relocation near the project (550 workers in peak). These workers may enter the private rental market or other longer-term accommodation options in the commutable LGAs, including in the Lithgow, Blue Mountains, Penrith and Bathurst Regional LGAs
- 10 per cent of the peak workforce may use FIFO/DIDO practices. These workers would use short-term accommodation options near the project, that are typically also used by tourists and visitors to the area e.g. hotels, motels, bed and breakfast, Airbnb etc.

It is likely that a large proportion of these the construction workforce would comprise young men, noting that 86.6 per cent of employees in the Australian construction industry are male, and the median age for workers in the construction industry is 38 (Back to Basics, 2022). For the remainder of the construction workforce it is likely that some of these workers would relocate.

Table 5-1 shows the potential population increase in each scenario if all of the project's workers who relocated to the area for the longer-term were to relocate to a single LGA, or if workers were distributed across multiple LGAs, based on the projected population for each LGA in 2026. In most instances, a relatively minor increase in population would occur (about 1.5 per cent or less).

**Table 5-1 Potential population increase during construction, assuming all workers move into the nominated single LGA or distributed across all four LGAs (2026)**

| LGA | Projected 2026 population (without the project) (DPE, 2022) | Potential population increase in LGA (with the project) | Potential population increase |
|---|---|---|---|
| Blue Mountains | 80,050 | 80,600 | 0.7% |
| Lithgow | 21,547 | 22,097 | 2.6% |
| Bathurst Regional | 47,187 | 47,737 | 1.2% |
| Penrith | 223,448 | 223,998 | 0.2% |
| **Distributed across all four LGAs** | **372,232** | **372,782** | **0.1%** |

While limited change is anticipated to the overall population of these LGAs, the presence of construction workers at the construction footprint would result in increases in the persons employed and the daytime population within Blackheath, Mount Victoria and Little Hartley.

The indicative construction workforce distribution throughout the program at each site is shown on Figure 5-1. The workforce would be primarily concentrated at the Little Hartley construction footprint. About 900 construction workers would indicatively be required at this construction footprint from mid-2026 to 2028. Less than 100 workers at any one time would indicatively be required at the Blackheath and Soldiers Pinch construction footprints.

At Little Hartley, which has an existing population of 629 persons (refer to Section 3.1.1), the presence of about 900 construction workers would represent a substantial increase in the daytime population. It is recognised that these workers would comprise a mix of local employees and workers who have relocated to the area. The increase in daytime population would be relatively minor at Blackheath and Mount Victoria, given that less than 100 workers would indicatively be required at the Blackheath and Soldiers Pinch construction footprints, and the larger existing population size of these suburbs (refer to Section 3.1.1).

Noticeable increases in population may result in temporary changes to the demographic profile and identity of the community as a whole. Introducing new groups of people to established areas can alter existing values and sense of community. An influx of construction workers, who are not familiar with the local area of the local community and importance of place, may be a potential cause of conflict and dissatisfaction for some local residents.

Research into the impacts of non-resident and FIFO/DIDO workforces on resources (e.g. mining) projects has highlighted potential community concerns associated with the inward movement of a typically young, male workforce into established regional towns. Key issues raised included the development of an ‘us versus them’ attitude within the community, where there is limited integration between resident and non-resident workforces and disproportionate blame is placed on non-resident workers for crime and social issues (The Parliament of the Commonwealth of Australia, 2013). Community members also remarked that FIFO members appeared to have a lack of respect toward the town, for example as properties used by them were not well maintained (The Parliament of the Commonwealth of Australia, 2013). Particular concerns were also raised about worker behaviour, consumption of alcohol, and women’s perception of safety in public areas (The Parliament of the Commonwealth of Australia, 2013). Social impacts associated with people’s perception of safety are considered further in Section 5.5.3.

While there is some potential for similar concerns to arise during construction of the project, there is limited comparable research on this effect for road projects, particularly in semi-urban areas such as this. Relevant construction worker behaviour codes would be implemented to promote respectful and appropriate behaviours in the community, thereby limiting the potential for this impact to occur during construction.

Overall, given the size of the local population and construction workforce, the project may result in temporary impacts to the local demographic profile including an increase in daytime population, which

may raise concerns among community members. The magnitude of this impact is considered to be **moderate**. The likelihood of the project resulting in broader demographic changes during construction would be **possible**. As such the overall significance of the impact would be **medium** (negative).

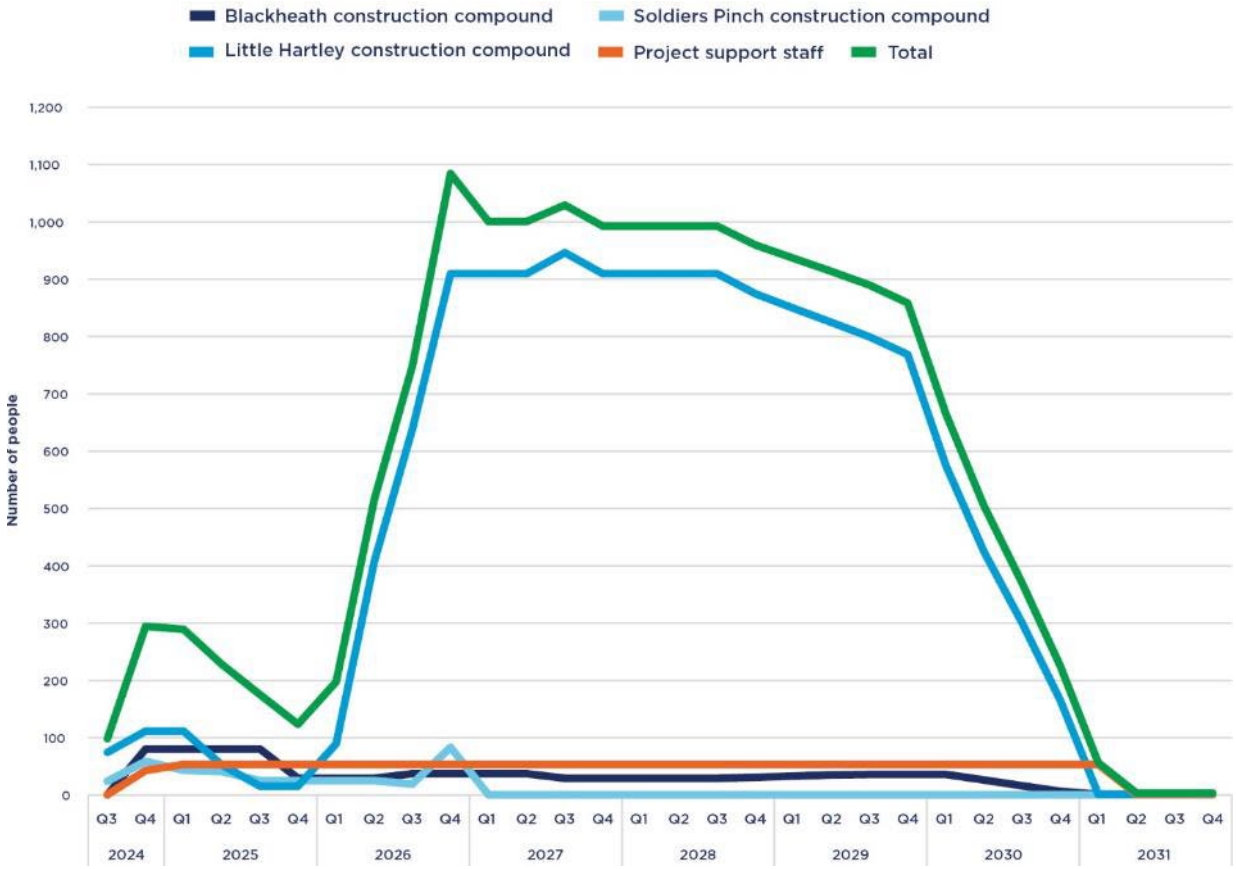



**Figure 5-1 Indicative construction workforce distribution**

### 5.2.2 Social cohesion and sense of place

Social cohesion refers to the connections and relationships between individuals and their community. Activities that create a physical or psychological barrier between communities can reduce social and/or economic interaction, resulting in social isolation and an erosion of the sense of community.

The existing Great Western Highway likely acts as a physical and psychological barrier between people and locations in the social locality. In the residential interviews, a large majority of community members (78 per cent of respondents in Blackheath, and 100 per cent of respondents in Mount Victoria and Little Hartley) noted that the existing highway negatively affects their ability to connect with their broader community.

Changes in access, where required, may somewhat exacerbate the existing barrier associated with the highway. For example, temporary road or footpath detours could reduce the quality of connections for residents in the social locality. These changes would generally be restricted to the construction footprint, away from town centres and therefore substantially minimising the potential for impact.

The presence of construction traffic on the Great Western Highway may also somewhat affect the ability of pedestrians and cyclists to cross roads, or increase travel times for vehicle users. This may somewhat limit people's opportunity to socialise within the community. Construction vehicle volumes would be relatively small (taking into consideration the existing traffic volumes on the Great Western Highway), which would help to minimise this effect.

The presence of construction activity for the water supply pipeline (generally via trenching in the road reserve) along the Great Western Highway may somewhat increase the existing barrier effect presented by the highway for the community. However, these works would move progressively (i.e.

would not be located in a single location for an extended period of time), thereby limiting potential impacts to community cohesion.

Construction of the project would also result in minor changes to local amenity, including for both the community and tourists who visit the area during construction. This would be due to increases noise levels, dust or reduced visual amenity as a result of construction hoarding (refer to Section 5.5.1 for detail on local amenity impacts). These changes would however generally result in limited changes to social cohesion and sense of place as the construction footprints would be located at a distance from town centres or locations where people gather, thereby limiting direct amenity impacts.

Vulnerable groups in the community may have an increased sensitivity to changes in access and amenity which may lead to a degree of self-exclusion from the community.

The magnitude of this impact is considered to be **minor** for groups within the social locality (including vulnerable groups) given that changes to access are limited and the construction footprints are located at a distance from community centres. Overall, the likelihood of this impact occurring would be **possible**. As such the overall social significance in relation to community cohesion and sense of place would be a **medium** (negative) impact.

## 5.3 Accessibility

### 5.3.1 Access and connectivity

Changes to access and transport networks can affect people's ability to get to work, study or visit friends and family.

The project would require local road changes to facilitate construction, such as temporary traffic control, diversions and speed zone changes on the Great Western Highway, and minor alterations to local roads and intersections. Construction of the project would also require the presence of construction vehicles for spoil haulage and the movement of other heavy and light vehicles, mainly along the Great Western Highway west of the project. As identified in Section 1.2.4, tunnelling activities would be largely confined to the western end of the project (Little Hartley), minimising vehicle traffic related to tunnelling activities (such as spoil haulage) through Blackheath and Mount Victoria. Peak traffic generating activities would also be scheduled to avoid peak days such as public holidays and major events such as the Bathurst Super Car event.

These changes to the road network would result in minor increases in travel times on the road network during construction (refer to Appendix D (Technical report – Transport and traffic) of the EIS for further detail). The combination of reduced speed limits and additional construction traffic volumes would result in a minor increase to weekday peak hour travel times of about one minute for both directions along the Great Western Highway (between Katoomba and Lithgow). Similarly, average vehicle speeds would reduce by about one to two kilometres per hour.

Other changes during construction that could affect access and connectivity would include the following (as described in Appendix D (Technical report – Transport and traffic) of the EIS):

- **parking:** on-site parking for workers would be provided at the three construction footprints to minimise workers using the existing on-street parking provisions. Parking provided at each construction site would be sufficient for the associated worker demand, except for during worker shift changeover. During worker shift changeover specific measures would be implemented such as staggering shift start and end times to make parking available for incoming workers. The project would also utilise carpooling and may also consider shuttle bus transfers for workers to and from construction sites. Nevertheless, construction workers may also use available on-street parking, particularly near the Blackheath construction footprint, which may impact the availability of on-street parking of nearby residents and visitors. During construction, informal parking for around a 50-100 metre section of Evans Lookout Road near the Great Western Highway would be removed. This area accommodates space for up to five parked vehicles (not formal car parking spaces). This area would be required to facilitate heavy vehicles turning in and out of the Blackheath construction footprint at the intersection of Evans Lookout Road and the Great Western Highway
- **public transport:** modifications to existing bus stops, bus routes or train services are not required during construction of the project. Buses that travel along the Great Western Highway would be

subject to minor road network impacts that would be experienced by all vehicles on the road network, such as increased traffic volumes, increased travel times and reduced intersection performance. These changes may cause minor disruptions to bus users, which may be particularly felt by vulnerable members of the community who rely on public transport services

- **active transport (walking and cycling):** given that there are limited footpaths along the existing Great Western Highway, outside of the Blackheath and Mount Victoria town centres, there is limited potential to impact upon active transport routes. The existing Great Western Highway would remain open to cyclists and pedestrians, with some traffic control measures in place near the construction footprint to maintain safety. Active transport facilities, to be provided as part of the Katoomba to Blackheath Upgrade and the Little Hartley to Lithgow Upgrade, would be maintained during construction of the project. In instances where modifications to existing pedestrian or cycling facilities are required, such as at the Little Hartley construction footprint where construction vehicles would need to cross over the active transport trail being delivered as part of the Little Hartley to Lithgow Upgrade, impacts would be managed under the CTAMP to maintain the safety of all road users. This would include traffic control to maintain safety when vehicles cross over the trail.

Construction of the project may also result in temporary impacts to access to adjacent private property, which would be managed under the CTAMP.

The Great Western Highway and the surrounding local road network are currently used by emergency services. Construction of the project may require temporary traffic modifications but is unlikely to require full closures of the Great Western Highway. Therefore, emergency services access along the Great Western Highway would be maintained throughout construction. Potential partial road closures may be required for short periods to construct the water supply pipeline between Little Hartley and Lithgow, however these would generally be restricted to out of hours works to limit potential impacts on people's movement. Work would also move progressively along the route, and would not be concentrated in a single location for an extended period of time. Within the social locality changes to access and connectivity are expected to be largely restricted to the Great Western Highway and adjacent roads/intersections. Priority would be given to maintaining traffic accessibility and flow on the Great Western Highway, which would largely mitigate the subsequent social impacts to accessibility. Heavy vehicles for construction would generally not use local roads, as the construction haul routes and site access for heavy vehicles would use the Great Western Highway.

Overall, the changes in transport networks and accessibility may affect residents and the broader community's ability to get to work, study or visit friends and family. The changes may also disproportionately affect people from non-English speaking backgrounds, as they may have difficulty understanding notification of disruptions and changes and signposted diversion routes.

The overall magnitude of the impact on access and connectivity during construction is considered to be **minor** – including for different user groups within the social locality (pedestrians, cyclists, public transport users and private vehicle users). The likelihood of these impacts occurring would be **likely**. As such the overall social significance in relation to access and connectivity would be a **medium** (negative) impact.

### 5.3.2 Utilities and digital access

Residents and businesses are dependent on public utilities, particularly the supply of electricity, telecommunications and water, and sewage infrastructure, for the conduct of a wide variety of daily activities. Temporary disruptions to utilities, whether planned or unplanned, have the potential to adversely affect the ability of the community to access and use infrastructure, which enables access to their communities and beyond.

The project runs parallel to an overhead 132 kV electricity cable (Line 940/941), located about one kilometre from the Great Western Highway. To avoid any disruption or damage to this powerline, or other existing services located in the vicinity of the project, these services would be protected, relocated or removed before construction as outlined in Chapter 5 (Construction) of the EIS.

During construction, public utilities and services may be temporarily disrupted while they are relocated, or for safety reasons. Such disruptions would be planned and notified to affected users in advance, and

their duration would be kept to an absolute minimum. The extent of impact would generally be localised to the area where the disruption occurs.

Impacts associated with utility disruptions could include impacts to businesses due to a temporary loss of operation of business-critical machinery or equipment or impacts upon resident's household routines. Utility disruptions, in particular to telecommunications infrastructure, could also affect a resident's digital access and ability to work or study from home.

Overall, the magnitude of this impact for residents and businesses is considered to be **moderate**. The likelihood of these impacts occurring would be **unlikely**. As such the overall social significance in relation to utilities and digital access would be **medium**.

### 5.3.3 Access to accommodation

Social impacts relating to access to accommodation have been considered in relation to short-term accommodation availability for tourists and visitors to the area, and long-term rental accommodation availability for residents. Impacts to businesses relating to accommodation demand are considered in Section 5.7.2.

The project is expected to support an indicative peak construction workforce of up to 1,100 full time equivalent jobs (direct employment) over the duration of construction. The construction workforce would likely be sourced from across the local area and broader region, with a preference for local employees, where practicable.

As discussed in Section 6.2.1, it has been assumed that 40 per cent of the project's construction workforce would comprise local employees which currently live within commuting distance to the project (totalling 440 workers during peak construction). These workers would not affect access to accommodation as they do not need to relocate to the area.

For the remainder of the construction workforce it is likely that some of these workers would relocate. As identified in Section 6.2.1, for the purposes of the assessment it is assumed that:

- 50 per cent of the peak workforce may require requiring longer-term relocation near the project (550 workers in peak). These workers may enter the private rental market in the commutable LGAs, including in the Lithgow, Blue Mountains, Penrith and Bathurst
- 10 per cent of the peak workforce may use FIFO/DIDO practices. These workers would use short-term accommodation options near the project, that are typically also used by tourists and visitors to the area e.g. hotels, motels, bed and breakfast, Airbnb etc.

Due to the mobile and transient nature of construction work, and limited long term operational employment opportunities on the project, it considered is unlikely that workers would relocate their families to the region (if they are part of a family household).

The specific assumptions outlined above are indicative and based upon professional judgement and data from previous infrastructure projects. Further investigations into construction workforce requirements would occur as part of detailed construction planning.

**Impacts to tourists and visitors – short-term accommodation availability**

The social locality and surrounds include a range of short-term visitor accommodation such as cabins, inns, motels and holiday homes. As detailed in Section 3.6.1, a total of 2,466 existing rooms are available within the social locality and nearby suburbs for the purposes of short-term/tourist accommodation. The highest average occupancy rate in the past 12 months for accommodation in the Blue Mountains region was 73.1 per cent in the April to June 2022 period. Applying this occupancy rate would result in 663 rooms being available for the project workforce, if required. This would provide sufficient capacity for the assumed 10 per cent of the peak workforce (110 workers) to be accommodated in short-term accommodation. As such, tourists and visitors to the area would continue to be able to access hotels and other short-term tourism accommodation.

During peak construction, there is potential for increased demand for this accommodation from the construction workforce to increase prices, which may limit the ability of some tourists/visitors to access affordable accommodation in the area. This demand increase would be temporary, and would occur primarily during peak construction periods where a larger number of workers would seek accommodation (indicatively around 2026 to 2028). During other periods of construction, the workforce

size would be considerably lower. The indicative construction workforce distribution is shown in Figure 5-1.

While this may provide some benefits to local accommodation providers due to a potential upturn in trade, tourists or those wishing to visit the area may experience a negative impact due to lack of availability of accommodation. This may have a flow on effect to other businesses in the area that rely on tourism. The significance of impacts to businesses assessed in Section 5.7 in relation to livelihoods of business owners and employees.

Additionally, given that the potential increase in workers living in the area is likely to be dispersed across multiple urban and semi-urban LGAs, with several health services and social infrastructure, the increase in construction workers is not expected to have an appreciable impact on access to social services.

For tourists and visitors to the area, the magnitude of the impact of the project on accommodation availability is considered to be **minor**. The likelihood would be **possible**, resulting in an overall **medium** (negative) significance for tourists or those wishing to visit the area. This may also result in potential flow on effects to businesses which rely on tourism. Impacts to businesses associated with an influx of construction workers are assessed in Section 6.7.

A construction workforce accommodation strategy would be prepared for the project which would identify measures to reduce impacts to short-term accommodation availability in the area (refer to Section 8.2 for further detail). The need for this accommodation would also be partly addressed through maximising the number of locally based workers who already live in the area, which is a focus area of the Skills, Employment and Industry Development Strategy being implemented by Transport for the Upgrade Program. Additionally, the transition of the workforce across different components of the Upgrade Program as a whole would be encouraged. This would reduce additional accommodation needs and would support the local and regional workforce.

**Impacts to households who rent – long-term rental availability**

Construction workers who enter the private rental market are likely to relocate to LGAs with suburbs located within a commutable distance of the project, such as the Lithgow, Blue Mountains, Penrith and Bathurst Regional LGAs. As detailed in Section 3.6, the annual ‘churn rate’ (which provides an indication of annual turnover of rental properties) in these LGAs combined is about 32 per cent, or about 10,500 rental bonds. Noting that above it is assumed that 40 per cent of the workforce would already live locally, and 10 per cent would fly or drive in and out, it is assumed that 50 per cent of the workforce would relocate to the region and seek long term accommodation, equating to 550 workers at peak construction. Even if all of these workers relocated to the area in the same year, which is unlikely given the length of construction and the worker number profile, this would capture less than six per cent (about 630 properties) in the private long term rental market. Despite the relatively mobile rental market, the social locality (as opposed to the region) experiences relatively low vacancy rates of residential rental properties (refer to Section 3.6). As such, use of the longer term private rental market in the social locality to accommodate workers would likely limit supply for existing residents who rent, and potentially increase prices for rental properties. Low-income households may be particularly sensitive to these changes, as these households may find it difficult to compete with higher-income households in the private rental market. These households would be more likely to experience rental stress and/or be unable to access the private rental market and may be at risk of displacement from the area.

As detailed above, impacts to rental accommodation availability would likely be most prevalent during peak construction periods in which there would be a higher volume of construction workers (generally between 2026 and 2028). However, noting the increase and decrease of workers within the project, and the fact that once accommodated, workers are less likely to look for different accommodation in subsequent years of the project, the specific impact in any one year is likely to be substantially less than the 550 workers identified above.

For households who rent, the potential magnitude of the impact of the project on rental availability and affordability is considered to be **moderate**, as it has the potential to result in a noticeable deterioration in affordable housing. The likelihood would be **possible**, resulting in an overall **medium** (negative) significance.

A construction workforce accommodation strategy would be prepared for the project which would identity measures to reduce impacts upon rental availability and/or affordability in the area (refer to Section 8.2 for further detail). The need for workers to utilise the private rental market would also be partly addressed through maximising the number of locally based workers who already live in the area, which is a focus area of the Skills, Employment and Industry Development Strategy being implemented by Transport for the Upgrade Program.

## 5.4 Health and wellbeing

Construction of the project may affect the health and wellbeing of sensitive receivers, particularly those near the construction footprint. This may include physical and mental health impacts associated with alterations in amenity (e.g. noise or air quality impacts), to the transport environment (e.g. access to care), or personal and property rights.

The sensitivity of an individual to construction impacts would vary depending on their physical or psychological attributes, level of vulnerability, living situation, or how they use their place of residence or surrounding area. As identified in Section 3.1.1, the median age within the social locality is generally higher than that of NSW, indicating a generally older population. Elderly people are, in generally, more vulnerable to social exclusion or change in their community. This may represent a particular sensitivity related to health and wellbeing impacts.

Impacts to the health and wellbeing of people (of all ages) who live, visit and work in the social locality may arise from direct and/or indirect impacts during construction. Direct impacts would include changes to air quality and noise, while indirect impacts may include an increase in stress and anxiety associated with changes to amenity or demographics, or construction fatigue given the duration of the construction program.

Appendix F (Technical report – Human health) provides a detailed assessment of health and wellbeing impacts during construction. The assessment identified the following in relation to potential health and wellbeing impacts:

- the deposition of larger dust during construction can also present a nuisance to the community. Such nuisance impacts can increase levels of stress and anxiety, with the community perceiving the presence of visible amounts of dust may be affecting their health. However, the assessment of impacts during construction presented in Appendix E (Technical report - Air Quality) of the EIS determined that unmitigated dust impacts pose a low risk to community health
- the project has the potential to generate noise at levels that exceed health-based noise criteria during works conducted during standard operating times and for night-time operations. Potential sleep disturbance impacts have been identified during construction with the potential to create annoyances and cause stress (refer to Appendix G (Technical report – Noise and Vibration)). The greatest potential for impact is anticipated during tunnelling and associated work, where around 19 residential receivers are predicted to experience an exceedance of the sleep disturbance screening level, generally at Little Hartley. While, the potential for impacts on health would be variable due to the relative short-term nature of the noise activities, noise mitigation measures are required to be implemented to mitigate noise, particularly adjacent to the construction footprint.

Furthermore, potential changes in safety may arise for pedestrians, cyclists, and vehicle users due to changes to the transport network and presence of construction vehicles, noting that the Great Western Highway currently accommodates a high volume of heavy vehicles. Changes in access also have the potential to result in people feeling disconnected from their community.

Construction activities have the potential to lead to stress or wellbeing impacts, particularly for those in or near primary impact areas which are closest to the construction footprint. There would also be potential for construction fatigue due to ongoing impacts in these areas, as works associated with the Upgrade Program would have previously commenced at the Blackheath construction footprint and Little Hartley construction footprint. It is noted that around 50 per cent or more of respondents to the residential interview in each suburb felt that construction of the project would affect them in a negative way.

It is noted in Appendix F (Technical report – Human health) of the EIS that the surface construction works are located in areas where few people live or work – i.e. in areas between the townships along

the highway, and that the majority of health and wellbeing impacts during construction are not in areas of social disadvantage. Notwithstanding, as identified above certain groups in the community such as the elderly, young children, and individuals with disabilities or pre-existing health conditions may be relatively more sensitive to health and wellbeing impacts.

Groups with pre-existing health conditions (both physical and mental health), or the elderly and young children are likely to experience a heightened sensitivity to health and wellbeing impacts. As such, the magnitude of impact on health and wellbeing during construction for these groups in is considered to be **moderate**. The likelihood of these changes affecting health and wellbeing would be **possible**. The overall significance of the health and wellbeing impacts to these groups throughout the construction period would be **medium** (negative).

The magnitude of impact on health and wellbeing during construction for others in the community who are not part of the groups discussed above is considered to be **minor**. The likelihood of these changes affecting health and wellbeing would also be **possible**. The overall significance of the impact throughout the construction period would be **medium** (negative).

## 5.5 Surroundings

### 5.5.1 Local amenity

Amenity refers to the quality of a place, its appearance, feel and sound, and the way the community experiences the place. Amenity contributes to a community's identity and its sense of place. Aesthetic qualities are an important part of amenity, but the broader concept of amenity is also determined by the physical design of a place and the human activity that takes place within it. A place that has 'amenity' is regarded as pleasant and attractive, as well as convenient and comfortable (Handy, 2002).

Impacts upon amenity include factors that affect the ability of a resident or visitor to enjoy their home and daily activities. For example, noise, vibration, changes to views or changes to air quality would be considered amenity impacts. Changes in amenity may also conflict with community values, contributing to a loss of or change in a community's sense of place, and subsequently a community's perceived identity.

Construction of the project has the potential to affect amenity as a result of changes to traffic; noise and vibration; air quality and odour and landscape and visual amenity. This may occur through temporary changes to the physical design of places or through the introduction of construction workers, vehicles and equipment to the construction footprints.

Feedback during consultation identified a number of sensitivities within the local community regarding impacts to amenity during construction. During residential interviews, traffic and noise were commonly raised as items which the community considered highly important to be appropriately managed.

**Traffic and access**

Temporary road network changes would be required to facilitate the construction of the project. The changes would include reduced speed limits, traffic diversions, lane closures and traffic generation from the delivery of construction materials and for the construction workers to access the construction sites. The change in traffic and access would increase would wait times, levels of stress and anxiety and could lead to people feeling disconnected from their community.

The presence of construction vehicles on the Great Western Highway and accessing the construction footprint may adversely impact upon local amenity, however this is not expected to substantially differ from the existing environment, as the Great Western Highway currently accommodates high volumes of heavy vehicles. Impacts associated with traffic and access are discussed further in Section 5.3.1.

**Noise and vibration**

Exposure to noise and vibration has the potential to contribute to a range of impacts to people's work, recreation, social and home lives.

Appendix G (Technical report – Noise and vibration) of the EIS assesses the potential noise and vibration impacts during construction. This identifies some exceedances of the noise management levels for airborne construction noise at the most affected sensitive receivers (without the implementation of mitigation measures) during the day and night. Tunnelling and associated works are

predicted to result in the greatest number of exceedances, generally around the construction footprint at Blackheath and Little Hartley. The majority of tunnelling works would take place underground, however there are a number of activities above ground within the construction footprint which support the tunnelling works. During tunnelling and associated works:

- up to 171 residential receivers would be noise affected at Blackheath during standard construction hours, and up to 15 would be highly noise affected. No receivers at Blackheath would be noise affected outside of standard construction hours
- up to 37 residential receivers would be noise affected at Little Hartley during standard construction hours, and up to two would be highly noise affected. Up to 37 residential receivers outside standard construction hours may experience noise levels above the relevant noise management levels (noting that night-time surface works would occur at the Little Hartley construction site only). Around 19 residential receivers may also experience sleep disturbance impacts during these works.
- up to five receivers would be noise affected at Mount Victoria would be noise affected, none of which would be highly noise affected
- no receivers would be affected at Kanimbla.

Exceedances of established criteria for noise for extended durations can cause heightened annoyance and stress. This would be particularly felt by people that work from home; shift workers; households with young children; the elderly or other vulnerable communities that are more dependent on quieter environments to work, rest and relax. Reduction in the potential quality of surroundings and disruptions to daily routines could occur for these groups where impacts occur during standard construction hours, as well as outside of standard construction hours.

Airborne construction noise is not expected to exceed the noise management levels at any non-residential receivers, and therefore is not expected to limit people's use of social infrastructure (such as schools), community facilities, or their ability to work at non-residential receivers.

A large number of receivers are predicted to experience ground-borne noise levels which would exceed relevant criteria and impact the quality of surroundings due to tunnelling activities. These receivers are located in Blackheath, between Evans Lookout Road and Radiance Avenue, due to the shallower depth of tunnel portals in this area. These exceedances are temporary in nature and would occur for a few days at each identified receiver as tunnelling progresses at a rate of around 70 to 90 metres per week. The human comfort vibration criteria would also be exceeded at a number of receivers around Blackheath. Structural damage criteria would not be exceeded by tunnelling activities. Ground-borne noise is likely to be masked during the daytime due to higher levels of ambient airborne noise.

Construction traffic noise generated by the project would be generally minimal. Daytime average and peak construction traffic scenario and would not result in relative increases in traffic noise of more than two dB(A). Increases in road traffic noise of greater than two dB(A) have been identified near the Little Hartley construction footprint for the night-time peak construction traffic volume scenario, including at the Great Western Highway east of Coxs River Road and west of Coxs River Road. This represents a worst-case (and unlikely) scenario where peak construction activities across the project occur at the same time. In any such event, it is anticipated that it would be for a short duration. Given the low population density of Little Hartley, with residences and businesses dispersed around the area, a relatively low number of receivers would be affected.

Vibration associated with the use of TBMs would affect a number of properties above the alignment, with several exceedances of human comfort criteria for vibration. This could cause some temporary discomfort for residents, workers and users of social infrastructure above the tunnel alignment. The structural damage criteria would not be exceeded by the tunnelling activities.

Construction work for the water supply pipeline between Little Hartley and Lithgow may result in temporary disruptions to people's surroundings through noise and vibration impacts, however these would be short-term and temporary as construction would move progressively along the road corridor. Work would be managed in accordance with the Construction Noise and Vibration Management Plan, including potential out of hours work (if required).

### Air quality

Construction activities such as demolition and earthworks have the capacity to increase airborne emissions such as dust. This has the potential to affect human health (refer to Section 5.4), reduce the amenity of an area, and generate nuisance dust impacts due to the increase in dust deposition (dust soiling) or odour related impacts. These impacts potentially deterring people from using spaces, visiting businesses or enjoying residential amenity. Impacts associated with dust may particularly affect people who experience allergies, asthma and other respiratory issues.

Appendix E (Technical report – Air quality) of the EIS identifies a high (unmitigated) risk of impacts related to dust soiling near the Blackheath construction footprint. Risk of impacts related to dust soiling would range from negligible to low at the Soldiers Pinch construction footprint and the Little Hartley construction footprint. There would also be a negligible to low risk of impacts to human health near all construction sites. Potential odour impacts from the construction footprint during construction would not be substantial and would be temporary in nature.

On this basis, residents and visitors to the area near the Blackheath construction footprint (including the residential area generally to the north, and part of the Blue Mountains National Park generally to the south) may experience a temporary reduction in surrounding amenity and enjoyment of the area. However, air quality impacts during construction would be less likely to affect the enjoyment of local businesses, social infrastructure and town centres of Blackheath and Mount Victoria.

### Landscape and visual amenity

During construction, landscape and visual amenity in the social locality has the potential to be affected by factors such as the removal of established vegetation, the installation of construction hoardings, installation of acoustic sheds, construction equipment and/or the visual appearance of construction sites. Appendix N (Technical report – Landscape and visual) of the EIS identifies several changes in surroundings that people in the social locality would experience during construction:

- road users on the Great Western Highway, including tourists or those accessing recreational attractions, would see detailed views of the Blackheath construction footprint a well as a widened road corridor due to vegetation clearance. A small number of residents at the rear of their properties on Evans Lookout Road would be able to see the Blackheath construction footprint fencing and hoarding. Residents on nearby roads may also see construction vehicles
- road users on the Great Western Highway would have limited views to the Soldiers Pinch construction footprint, given its lower elevation
- road users on the Great Western Highway, including tourists or those accessing the area for recreational purposes, and a small number of nearby residents, would see construction works associated with Little Hartley construction footprint.

These changes to surroundings would affect a relatively small number of people within close proximity to the construction footprint. For these people, their enjoyment of the visual character of the area may be temporarily reduced. However, given that town centres along the alignment (Blackheath and Mount Victoria) are located over one kilometre away from the surface construction footprints, changes to visual amenity would not affect the way in which a larger number of people value and use these areas (for example, as gathering spaces, a location for businesses and tourist destinations).

Potential visual impacts associated with construction of the water supply pipeline would be minimised as these would generally occur within the existing road reserves, and would be short-term as construction would move progressively along the route.

### Overall impact to local amenity

Overall, there would be several changes to amenity in the social locality during the construction of the project, which would collectively have an impact of a **moderate** magnitude in areas where people live and interact. Potential noise impacts would be the most prominent contributor to impacts on surroundings, as unmitigated airborne and ground-borne construction noise impacts during tunnelling and associated work, although temporary, could affect the quality of surroundings for residences in Blackheath. The likelihood of this impact would be **likely.** The overall significance of the social impact would therefore be **high** (negative).

### 5.5.2 Natural features

Natural features associated with bushland and the Blue Mountains National Park, most of which is of world heritage status based principally on its natural, landscape and ecological values, are integral to the values of the community. Bushland is present to the east and west of the Great Western Highway within the social locality, which contributes to the character and visual amenity of the area. Residential interviews identified that the preservation of existing character, including the conservation of natural areas, was an aspiration for residents in Blackheath and Little Hartley.

The project would minimise impacts to the Blue Mountains National Park and biodiversity relative to other project options considered (for example, a surface road upgrade), by minimising the need for vegetation removal within the National Park.

There would be direct and indirect impacts to biodiversity during construction which could impact the environmental values of the area. Direct impacts would include loss of vegetation and flora and fauna habitat, limited to the area within the construction footprints. Indirect impacts to areas outside of the construction footprint could also occur, including inadvertent impacts on adjacent habitat or vegetation, such as reduced viability due to noise, dust or light spill associated with construction work. Public access and use of recreational areas of the Blue Mountains National Park would generally be maintained, allowing people to continue to use natural features of the area which they value.

The water supply pipeline between Little Hartley and Lithgow would be designed to avoid and/or minimise the removal of native vegetation, and its construction would take place within the existing disturbed road corridor, thereby avoiding potential impacts to valued or important natural features.

Impacts to biodiversity are assessed in further detail in Chapter 12 (Biodiversity) and Appendix H (Technical report – Biodiversity) of the EIS.

The overall magnitude of impact is considered **minor**, given that the impact to people's values around natural features is generally restricted to the construction footprint. The likelihood of impacts to natural features which people value would be **likely**. The overall social significance of the impact to people's values around natural features of the social locality would be **medium** (negative).

### 5.5.3 Crime, safety and security

Crime statistics, including the most commonly occurring offences within the Blue Mountains and Lithgow LGAs are outlined in Section 3.1.5.

The presence of the construction sites may result in changes to perceptions of safety in an area. This may include changes to local sight lines, restrictions for pedestrian traffic reducing passive surveillance, the provision of new surfaces for graffiti, or perception that criminal activities may be attracted to construction facilities. Despite this, the construction sites would be secured and generally located away from urban centres. Not withstanding, the construction sites may still be targets for crime or substantially change the presence of passive surveillance in these areas.

Potential safety concerns would be manageable through the application of the principles of Crime Prevention Through Environmental Design (CPTED) at the construction footprints. Regular communication with the community and stakeholders throughout construction would also allow residents to understand construction plans and therefore be better prepared for the temporary changes to the area. Any community feedback on real or perceived crime or safety issues arising from the presence of the project would be considered as part of further design development. Based on the nature of the potential safety impacts, and location of the construction sites away from urban centres, the magnitude of impact is considered to be **minimal**. The likelihood of construction sites substantially changing the security of the surrounding area is **unlikely**. As such the overall significance of impact would be a **low** (negative) impact.

Separately, the presence of a construction workforce may influence community perceptions of safety and security. While local workers would be employed wherever practicable, some workers would likely relocate to the area for the project. The introduction of a non-resident workforce, including both workers who relocate to the area and workers who use FIFO/DIDO practices, would introduce a number of new people to the region. It is likely that a large proportion of these workers may be young men, noting that 86.6 per cent of employees in the Australian construction industry are male, and the median age for workers in the construction industry is 38 (Back to Basics, 2022).

Research into the impacts of non-resident workforces on resources projects in regional towns has identified that community members may experience heightened concerns about declining safety (The Parliament of the Commonwealth of Australia, 2013; Carrington & Pereira 2011). Particular concerns were raised in this research around worker behaviour, consumption of alcohol, and women's perception of safety in public areas. There is limited comparable research on this effect for the construction of large road projects, particularly in semi-urban areas such as this. However, relevant construction worker behaviour codes would be implemented to promote respectful and appropriate behaviours in the community, thereby limiting the potential for this effect to occur during construction of the project. Furthermore, the accommodation of construction workers are likely to be distributed across towns and suburbs within a commutable distance to the construction footprint, partly diluting potential impacts to perceptions of safety.

Given the above and the broad geographic spread of those relocating to the region for this project, the magnitude of real or perceived changes in safety would be **minor**. The likelihood of the local community holding real or perceived concerns in this regard is considered to be **unlikely**, on the basis that safety due to the presence of a construction workforce was not raised as a concern in community consultation for the SIA. The overall significance of the impact would be **low** (negative).

## 5.6 Culture

### 5.6.1 Community values

Consultation with residents identified several cultural elements and values as being important to the community. Table 5-2 includes an overview of the key values identified during consultation, and a summary of the potential impacts to these during construction of the project.

**Table 5-2 Community values**

| Identified community value | Potential impacts |
|---|---|
| Proximity to the natural environment (particularly the Blue Mountains National Park) and associated recreational opportunities such as bushwalking | Public access and use of recreational areas of the Blue Mountains National Park would generally be maintained, allowing people to continue to use natural features of the area which they value. There may be impacts to the environmental values of the area associated with vegetation removal, loss of habitat and indirect impacts on the viability of habitat (for example, due to dust, noise and light spill), however these impacts would be spatially limited.<br><br>Further detail is included in Section 5.5.2. |
| Community facilities and services (for example, presence of community groups, museums, galleries, art facilities and schools) | The majority of community facilities and services within the vicinity of the project are concentrated within the town centres of Blackheath and Mount Victoria. These town centres are located at considerable distance (over one kilometre away) from the surface construction footprint. Access to these facilities from areas outside the town may be indirectly affected by temporary increases in travel times due to the presence of construction vehicles along the Great Western Highway. At Browntown Oval, adjacent to the Soldiers Pinch construction footprint, the distance between the majority of the construction footprint and the oval would be around 300 metres and would largely avoid impacts that potentially limit the enjoyment and use of the oval. Overall, the community would be able to continue to use and enjoy community facilities and services in the area throughout the duration of the construction period.<br><br>Further detail is included in Section 5.1.3. |
| Social elements of the community (for example, closeness to the community, friendly neighbours and presence of young families) | Changes in access, where required, may somewhat exacerbate existing barriers to social cohesion associated with the highway, for example, temporary road or footpath detours, could reduce the ease of making or maintaining of connections |

| Identified community value | Potential impacts |
|---|---|
| | These changes in access arrangements would generally be located away from town centres thereby minimising the extent of their impact. Overall, these changes during the construction period are not anticipated to substantially limit interaction within the community.<br><br>Further detail is included in Section 5.2.2. |
| The existing local character (for example the, 'small town feel' and quiet nature of the area) | Construction of the project has the potential to affect amenity as a result of changes to traffic; noise and vibration; air quality and odour and landscape and visual amenity (for example, through temporary changes to the physical design of places or through the introduction of the construction footprint). This could in turn temporarily reduce the 'small town feel' and quiet nature of the area. In particular, the visibility of the construction footprint and equipment, and exceedances of noise management levels at nearby receivers would contribute to a reduction in the character of the area. Residents and visitors near the construction footprint (in primary impact areas) would be most likely to experience these changes.<br><br>Further detail is included in Section 5.5.1. |

Overall, construction of the project may temporarily affect elements which the community value, however the majority of these would remain available for use by the community. The magnitude of changes to community values are considered to be **moderate.** These would be **possible** to occur, resulting in a **medium** (negative) impact.

### 5.6.2 Aboriginal culture and heritage

The project is part of a much larger cultural landscape for the Aboriginal community. This landscape includes a number of cultural sites and the project has the potential to affect the Aboriginal cultural values associated with the area.

Archaeological surveys completed as part of the PACHCI Addendum for the Upgrade Program were undertaken with the assistance of a number of registered Aboriginal parties (RAPs), and further site surveys were carried out in 2022 to identify Aboriginal sites.

All identified Aboriginal heritage sites were found to not intersect with the construction footprint for this project. As a result, no direct impacts to Aboriginal cultural heritage associated with these sites are anticipated. Indirect impacts in the form of tunnelling from vibration are unlikely to impact artefact-bearing deposits near the ground surface as the tunnels are deep enough as to not impact subsurface deposits. As such, the project is unlikely to affect the community's record of the past, cultural connection to the area and learnings from the past for future generations, where this is associated with the sites identified through the PACHCI.

Given that the project largely comprises subsurface infrastructure, the project would generally avoid disturbance of or harm to key elements of Aboriginal culture and values identified as a result of Aboriginal community consultation. Notwithstanding, the impacts of the project on Country may impact upon intangible cultural values. For example, landscape and visual impacts on surrounding bushland could impact upon valued elements of the landscape.

Some properties required for the project are also subject to unresolved Aboriginal Land Claims under the *Aboriginal Rights Act 1983* (NSW). The majority of these relate to substratum acquisition, with one unresolved claim over a partial surface construction lease at Soldiers Pinch. The use of this surface land would be for the duration of construction and would not impact the extent of Crown land available for Aboriginal land claims.

While land claims do not necessarily denote Aboriginal cultural or scientific archaeological values, they may indicate that the use of this area during construction may temporarily limit access to an area which

is of importance to Aboriginal communities and stakeholders in the area. Impacts to wellbeing and livelihoods of Aboriginal communities, or cultural or spiritual loss, could arise from use of this area and other potential impacts to Country. Ongoing design development would continue to include engagement with Aboriginal knowledge holders to minimise this impact.

Overall, the potential magnitude of this impact is considered **moderate**. The likelihood of negative impacts to Aboriginal cultural heritage and values has been considered **unlikely**. As such the overall significance of impact would be a **medium** (negative) impact.

### 5.6.3 Non-Aboriginal heritage

The history and heritage (including non-Aboriginal heritage) of an area can influence the identity of the community who live amongst it. While not a frequently raised theme in the residential surveys, some residents identified the preservation of local history as an aspiration they for their community. Long term residents and older age groups are potentially more sensitive to potential impacts associated with the history and heritage of an area.

The non-Aboriginal heritage assessment carried out for the project (refer to Appendix M (Technical report – Non-Aboriginal heritage) of the EIS) identified four non-Aboriginal heritage items with the potential to be affected by the project – including Greater Blue Mountains Area (Additional Values), Soldiers Pinch, Rosedale and Nioka.

Construction work and vegetation clearance at the Blackheath construction footprint and Soldiers Pinch construction footprint would result in a direct impact to part of the Greater Blue Mountains Area (Additional Values). Although not yet included on the National Heritage List, the Greater Blue Mountains Area (Additional Values) is proposed to have nationally significant natural and cultural values. The assessment concluded that due to the small section being affected relative to the overall size of the nominated item, impacts to the Greater Blue Mountains Area (Additional Values) would be negligible.

The Soldiers Pinch construction footprint would be located within the curtilage of the locally significant Soldiers Pinch heritage item, which was a historical road and rail route that passed through the area in 1814. Development over the years has likely resulted in the disturbance of the heritage item, however further surveys would be required to determine the presence of any surviving remnants or features of the heritage item. Potential direct impacts are predicted to the heritage item, however these are predicted to be negligible.

Negligible to minor indirect (visual) impacts are also predicted at locally listed heritage items (Rosedale and Nioka) (refer to Appendix M (Technical report – Non-Aboriginal heritage) of the EIS for further detail).

Part of the construction footprint at Little Hartley encroaches the curtilage of two potential archaeological sites – the Mount Victoria Stockade (probable state significance) and the site of Plough Inn (probable local significance). Potential direct impacts to these sites were assessed as moderate and major respectively. However, given that these are not listed, physical heritage items, impacts to them are unlikely to substantially affect the broader amenity or people's experience of the surrounding area.

Given that potential impacts to historic heritage items from the project are generally considered negligible to minor, or would be temporary in nature, the project is unlikely to affect the cultural value of these items to members of the community, or the capacity for that value to be appreciated by the broader community.

On this basis, the magnitude of potential social impacts associated with impacts to non-Aboriginal heritage are considered **minor**. The likelihood of these impacts occurring would be **likely**. As such the overall significance of impact would be a **medium** (negative) impact.

## 5.7 Livelihoods

### 5.7.1 Business impacts

Businesses across the social locality may be affected during construction by temporary changes in passing trade, access and travel time (for employees, customers, and deliveries), changes to parking and impacts to local amenity. Potential impacts to the operation and viability of businesses can in turn affect people's livelihoods, including their ability to sustain themselves through employment or business opportunities.

In response to the business surveys, most businesses (73 to 100 per cent) indicated that they thought their business might be impacted adversely by construction activities. When asked what benefits the project may have on their business during construction, roughly a quarter of all businesses indicated that they would experience improvements in trade from construction workers. When asked about potential adverse impacts during construction, noise impacts, traffic impacts, and business access impacts were among the most common answers.

The construction footprints would be located at a distance from townships in the social locality where businesses are concentrated, and would be over one kilometre away from town centres in Blackheath and Mount Victoria. This would contribute to avoiding direct impacts to business (such as construction noise or dust-related impacts). Furthermore, an indicative construction strategy has been developed to minimise the number of heavy vehicles that need to travel through the Blackheath and Mount Victoria townships. The interaction between heavy vehicles and foot-traffic for local businesses is therefore likely to be minimal. On-street parking supply along the Great Western Highway would also be maintained during construction of the project. Appendix P (Technical report – Economics and business) of the EIS also noted that given the minor increases to average vehicle travel times along the predicted during construction, freight and commercial vehicle transport costs are not expected to be affected by the project.

Notwithstanding, businesses may experience temporary amenity impacts associated with increases in noise and vibration during tunnelling and associated work (refer to Section 6.5.1), or be affected by potential utility disruptions (refer to Section 5.3.2). Noise and vibration levels, such as short-term exceedances of ground-borne noise criteria between Evans Lookout Road and Radiance Avenue in Blackheath, could disrupt focus and interfere in business practices. Utility disruptions could affect electrical or digital connections which would be essential to the running of some businesses and those who work remotely. Amenity impacts and changes to traffic conditions along the Great Western Highway could also make some businesses, such as cafes, restaurants, and recreational businesses, less attractive for people to visit and spend time in. Mitigation measures would be implemented to avoid or minimise these impacts.

The overall magnitude of adverse amenity impacts to businesses would be **minor**. The likelihood of these impacts being experienced within the social locality would be **possible**, resulting in a **medium** (negative) social impact.

Retail, food and beverage businesses would likely experience a temporary uplift in revenues of retail businesses in the social locality (such as food and beverage businesses), due to an increase in passing trade associated with the presence of construction workers in the area. Local and regional construction contractors and businesses who service or supply goods to the construction industry would also be expected to experience an increase in trade. These changes would benefit livelihoods through generating revenue at existing businesses within the social locality, as well as potentially providing further employment opportunities within these businesses.

The overall magnitude of benefits to businesses associated with increased expenditure in the social locality would be considered **minor**. The likelihood of these impacts being experienced within the social locality would be **possible**, resulting in a **medium** (positive) social impact.

Further detail on business impacts is provided in Appendix P (Technical report – Economics and business) of the EIS.

### 5.7.2 Tourism impacts

Tourism is an important attractor to the social locality, which contributes to people’s livelihoods by providing employment opportunities. Businesses which rely on tourism are likely to be affected by temporary disruptions to local amenity (discussed in Section 6.5.1), which may make these areas less attractive to visit. Notwithstanding, the townships within the social locality are located at a distance (over one kilometre away) from construction sites, thereby minimising the extent of these amenity-related impacts.

The construction of the project may also require short and long-term occupancy of accommodation within the local area for employees sourced from outside the region, which may temporarily reduce the availability of these facilities for tourism. Workers would be sourced from the local area where possible to minimise this effect. While some workers may use short-term accommodation in the region, it is

anticipated that there would generally be sufficient accommodation for tourists and visitors to continue to access the area. However, during peak construction, there is potential for increased demand for this accommodation from the construction workforce to increase prices, which may limit the ability of some tourists/visitors to access affordable accommodation in the area. Availability of accommodation is discussed further in Section 5.3.3.

While there may be some benefits to local accommodation providers due to a potential upturn in trade, tourists or those wishing to visit the area may experience a negative impact due to lack of availability of accommodation. This may have a flow on effect to other businesses that rely on tourism. For example, restaurants and recreational businesses that cater to tourists are less likely to be utilised by construction workers.
Overall, changes in amenity and availability of accommodation throughout the duration of construction could have a temporary negative impact on the attractiveness of the area to tourists, and flow on effects on employment in tourism. This could affect people's capacity to earn an income throughout employment in tourism.

The overall magnitude of tourism-related impacts to businesses and employees in the tourism industry during construction in the social locality would be considered **minor**, and the likelihood would be **possible**, resulting in a **medium** (negative) social impact.

### 5.7.3 Economic impacts

Construction activity can benefit the economy by injecting money into the local, regional and state economies. This can result in employment and business opportunities for people.

The economic benefits of construction can include:

- increased expenditure at local and regional businesses through purchases by construction workers
- direct employment through on-site construction activities
- direct expenditure associated with on-site construction activities
- indirect employment and expenditure through the provision of goods and services required for construction.

Appendix P (Technical report – Economics and business) of the EIS assesses the potential economic impacts during the construction of the project. The assessment identifies an increase in economic activity in Blue Mountains City Council and Lithgow City Council LGAs during construction. The capital expenditure required for the project would create increased opportunities for both businesses and workers associated with construction, while also resulting in substantial flow-on impacts to other parts of the local economy, including for local businesses and the local workforce within the social locality. It is estimated that the project could support up to around 610 additional jobs a year in Blue Mountains City Council and Lithgow City Council LGAs over the construction period.

Construction businesses, industries and skilled workers in the social locality would also experience these benefits. These may include local construction contractors, businesses who service or supply goods to the construction industry such as food and beverage retailers, accommodation providers, and other retail outlets that would cater to the day-to-day needs of the construction workforce. This temporary increase in revenue may subsequently lead to increased employment opportunities locally, which would inject additional money back into the local economy. This has the potential to benefit people's livelihoods through supporting local business and employment in these businesses.

The overall magnitude of economic benefits during construction in the social locality would be considered **minor**, given that the benefits would likely be dispersed across the broader region. The likelihood of these impacts being experienced within the social locality would be **possible**, resulting in a **medium** (positive) social impact.

## 5.8 Decision-making systems

Assessment of impacts to decision-making systems requires consideration of the extent to which people feel they have a say in decisions that affect their lives, and have access to complaint, remedy and grievance mechanisms.

Community engagement has been undertaken throughout the development of the project, including at key strategic design stages. This has included decisions relating to the design of the upgrade, with consultation on options such as the alignment of surface road options, the consideration of a tunnel, the length of tunnel and the position of portals. This consultation is detailed in Section 4.1. Detail on how the project design has been developed to minimise potential impacts and respond to community feedback is included in Section 1.2.4

Arising from this consultation Transport has also sought direct input from the community on measures to mitigate impacts associated with construction. For example, restrictions on the use of local streets by construction traffic was raised by residents as an important issue, to which the project has responded by restricting such movements.

Further, the exhibition of the EIS allows people to express their support or objection, or by providing comments on the project and how its impacts on their lives may be addressed. Submissions from the community would be responded to in a Submissions Report and considered by DPE in its assessment of the project.

Despite this, some community members may express dissatisfaction with their ability to influence the strategic decision making and construction methodology or planning. Transport would however continue to listen and engage with the community throughout the project, including the construction period, and seek to address any such issues as far as reasonably practical. This would include the provision of community complaint and information lines which would be made accessible to different groups within the community.

Community members who do not speak English at home may experience difficulty engaging in community consultation and other processes which contribute to decision-making, depending on their proficiency in English. They may also experience difficulty in understanding communications about the project and its impact during the construction period. This potential impact would be avoided as translated communication materials would be made available upon request.

Given that the views and experience of decision-making systems can vary substantially from person to person, a magnitude and likelihood rating has not been applied.

## 5.9 Distributive equity

By their very nature, large public infrastructure projects can result in impacts that are site-specific (e.g. direct noise impacts arising from a construction footprint), or non-site-specific (e.g. changes to employment opportunities across a broader area). Non-site-specific impacts are more likely to affect social groupings, rather than site-specific impacts. For example, noise impacts are likely to affect people within the vicinity of the noise source, regardless of their social group, whereas changes in employment opportunities are more likely to be skewed to certain types of work or income levels e.g. construction workers or hospitality workers.

Potential distributive equity impacts have been screened based on the significance rating of the impact, as assessed in the sections above. Potential impacts of ‘high’ significance or above have been further considered.

The only construction impact deemed to be of high overall significance (pre-mitigation), was impacts to people’s local amenity. This impact is site-specific as it is geographically linked to actual construction activity, particularly at the construction footprints. Noting that the demographic profile of people in close proximity to the construction footprints was not discernible as any one particular group (based on social, cultural, economic, gender or other factors), it is not considered likely that there would be any particular associated distributive equity impact. No intergenerational impacts would be possible noting the duration of the project’s construction is far less than a generation (i.e. less than 25 years).

The potential for impacts to local rental affordability during the construction of the project may affect distributive equity. The increased demand for accommodation by the construction workforce may have the effect of putting upward pressure on rents within the region. This could have particular impacts upon people on lower incomes, who are more likely to rent as opposed to own their home (outright or with a mortgage). It is further noted that this demographic group is also more likely to include other vulnerable or marginalised groups such as single parents, women and people who speak English as a second language.

As noted in Section 5.3.3, the project would implement a construction workforce accommodation strategy to reduce the impact of construction workers moving into the region on rental availability and affordability. This strategy would include consultation with local councils to better understand the market and how worker demand may be managed.

## 5.10 Summary of social impacts during construction

A summary of the initial significance of social impacts during construction is provided in Table 5-3. Overall, the most substantial impacts during construction relate to temporary changes to local amenity (noise, traffic and visual) during construction that would change the quality of people's surroundings. These impacts would generally be limited to areas within the vicinity of the construction footprint, however unmitigated noise impacts could temporarily affect elements of the community which are highly valued, such as the quiet nature of townships within the social locality or the natural setting of the surrounding Blue Mountains National Park. Additionally, while people from the local area would be employed wherever possible, the inward movement of construction workers potentially requiring accommodation in the region may affect short and longer-term accommodation availability and affordability if not appropriately planned and managed.

Section 8.4 provides detail on how these impacts would be managed, and the residual significance rating following the implementation of mitigation and management measures.

**Table 5-3 Summary of social impacts – construction**

| Potential impact category | Pre-mitigation impact significance |
|---|---|
| **Way of life** | |
| Changes to how people move around | Minor + likely = medium (negative) |
| Acquisition of property | Minimal + unlikely = low (negative) |
| Access to and use of Browntown Oval | Minor + likely = medium (negative) |
| Access to and use of other social infrastructure | Minor + likely = medium (negative) |
| **Community** | |
| Demographics and community composition | Moderate + possible = medium (negative) |
| Social cohesion and sense of place | Minor + possible = medium (negative) |
| **Accessibility** | |
| Access and connectivity | Minor + likely = medium (negative) |
| Temporary disruptions to utilities and digital access | Moderate + unlikely = medium (negative) |
| Access to accommodation for tourists and visitors | Minor + possible = medium (negative) |
| Access to accommodation for households who rent | Moderate + possible = medium (negative) |
| **Health and wellbeing** | |
| Community health and wellbeing – for people with pre-existing health conditions, elderly people and children | Moderate + possible = medium (negative) |
| Community health and wellbeing – for others in the social locality | Minor + possible = medium (negative) |

| Potential impact category | Pre-mitigation impact significance |
|---|---|
| **Surroundings** | |
| Local amenity | Moderate + likely = high (negative) |
| Natural features | Minor + likely = medium (negative) |
| Crime, safety and security – potential crime and safety incidents due to construction | Minimal + unlikely = low (negative) |
| Crime, safety and security – changes to community member's perceived sense of safety | Minor + unlikely = low (negative) |
| **Culture** | |
| Community values | Moderate + possible = medium (negative) |
| Aboriginal culture and heritage | Moderate + unlikely = medium (negative) |
| Non-Aboriginal heritage | Minor + likely = medium (negative) |
| **Livelihoods** | |
| Business amenity impacts | Minor + possible = medium (negative) |
| Business impacts – increased local expenditure | Minor + possible = medium (positive) |
| Tourism impacts | Minor + possible = medium (negative) |
| Economic impacts | Minor + possible = medium (positive) |

# 6 Assessment of operational impacts

This section assesses the potential social impacts resulting from the operation of the project. Potential cumulative impacts from the operation of this project and other components of the Upgrade Program are discussed in Section 7 (Assessment of cumulative impacts).

Measures have been identified to mitigate or avoid the potential negative impacts discussed in this section. These mitigation measures and the expected residual impacts following their application are presented in Section 8 (Management of impacts).

## 6.1 Way of life

### 6.1.1 Changes to how people move around

Operation of the project has the potential to positively affect how residents and the broader community access and move around their local areas. This is particularly relevant given that residential interviews identified a high reliance on private vehicle transport within the social locality.

The project would divert a substantial proportion of through traffic from the existing Great Western Highway into the twin tunnels, allowing the existing surface section of the highway to mainly cater for local and tourist traffic. This would improve movement for residents in and around the suburbs of the social locality through a reduction in congestion, particularly on weekends and during public and school holidays. This would also improve road safety for vehicle and active transport users by separating through traffic from local traffic, reducing potential traffic conflicts.

The transport assessment in Appendix D (Technical report – Transport and traffic) of the EIS identifies several benefits of the project, including improved accessibility, reduced travel time and increased road network capacity facilitated by the project. With the project in 2030 and 2040, weekday traffic volumes on the surface road are reduced by about 60 per cent in Blackheath and nearly 80 per cent in Mount Victoria. Traffic volumes on weekends and public holidays are also expected to drop to a similar degree. This substantial reduction in traffic would noticeably improve the accessibility and amenity of these towns.

These changes would result in benefits to residents' way of life, by enabling them to complete daily activities (such as accessing local shops and socialising within the area or commuting to work) with reduced traffic congestion. This is particularly relevant in places such as Blackheath, where residents noted that they typically avoid or are unable to leave their homes at some points on weekends and public holidays due to traffic congestion on the highway.

The project would also improve travel times to employment centres outside the social locality, such as Greater Sydney and Lithgow, for residents who use the project. This would generally include residents near the Blackheath portal travelling west, and residents near the Little Hartley portal travelling east. These benefits would be experienced by bus users as well as private vehicle users, as buses would be permitted to travel in the tunnel.

The project would improve the resilience of the Great Western Highway corridor between Blackheath and Little Hartley to bushfire risk and other natural disasters as the project would provide an additional route of travel across this section of the Blue Mountains. This would enable people in the social locality to travel though and out of the area more efficiently during these events.

During more localised bushfire events that may impact the Great Western Highway between Blackheath and Little Hartley, there is potential for the tunnel to be affected by smoke, which could impact the visibility of motorists in the tunnel and the in-tunnel air quality. If in-tunnel air quality deteriorates to below acceptable standards due to bushfire smoke, the tunnel would be closed to motorists to minimise impacts to human health. If in-tunnel air quality meets the acceptable standards, the tunnel would remain open and could provide a safe evacuation route. Further detail is provided in Chapter 22 (Hazards and risk) of the EIS.

Given the potential extent of improvements to the way in which people move around the social locality and surrounds, the magnitude of the positive impact would be **major**. These impacts would be **likely** to occur. As such, the overall significance of the positive impact would be **high**.

The tunnel ventilation option (emissions via ventilation outlets or portals) selected for the project would not affect the likelihood or magnitude of this particular social impact.

Potential transport and access impacts during operation have been assessed in detail in Appendix D (Technical report – Transport and traffic) of the EIS. Social impacts and benefits to access and connectivity during operation are discussed further in Section 6.3.

### 6.1.2 Access to and use of social infrastructure

Operation of the project has the potential to positively affect the ability of residents to access social infrastructure within the social locality, particularly via the existing surface highway which would mainly cater for local traffic.

As outlined in 6.1.1, there would be a substantial reduction in vehicles travelling on the existing Great Western Highway, and benefits such as improved accessibility, reduced travel time and increased road network capacity facilitated by the project. This would occur on weekdays, weekends and public holidays, and would noticeably improve the accessibility and amenity of these towns. Reduced through traffic would generally result in improved travel times for local traffic accessing social infrastructure within the social locality.

The majority of social infrastructure in the social locality is located within the Blackheath and Mount Victoria centres, and at a considerable distance from the tunnel portals. As such there is expected to be limited potential for direct adverse amenity impacts to these receivers during operation of the project. Further detail on impacts to local amenity is provided in Section 6.5.1.

The overall magnitude of the improvement in access to social infrastructure would be **moderate**. These social impacts would be **likely** to occur. The overall significance of impacts to the access and use of social infrastructure would be **high** (positive).

The tunnel ventilation option (emissions via ventilation outlets or portals) selected for the project would not impact upon the likelihood or magnitude of this particular social impact.

## 6.2 Community

### 6.2.1 Demographics and community composition

The operation of the project is not anticipated to result in a change to the demographic profile of the social locality, as much of the project's operational infrastructure would be unmanned or would only require a small operational workforce. The project is also unlikely to enable other changes that may induce any substantial demographic changes. However the improvements in accessibility resulting from the project may make the social locality a more desirable area to live, potentially attracting some new people to the area.

The overall magnitude of this impact is considered to be **minor**. The likelihood of the project resulting in broader demographic changes during operation would be **very unlikely**. As such the overall significance of the impact would be **low**.

The tunnel ventilation option (emissions via ventilation outlets or portals) selected for the project would not impact upon the likelihood or magnitude of this particular social impact.

### 6.2.2 Social cohesion and sense of place

As identified in Section 5.2.2, social cohesion refers to the connections and relationships between individuals and their community. In the residential interviews, a large majority of community members noted that the existing highway adversely affects their ability to connect with their broader community (78 per cent of respondents in Blackheath, and 100 per cent of respondents in Mount Victoria and Little Hartley). Respondents identified that this was primarily due to traffic congestion (particularly on weekends), limited pedestrian access and concerns for safety on the existing highway.

A large proportion of residential interview respondents (80 per cent in Blackheath and Mount Victoria, and 50 per cent in Little Hartley) indicated that they socialised within their local area in a typical weekday. As such, connectivity within the local area is important for maintaining social interaction.

During operation, the existing highway would be retained and would continue to provide for local access. Reduced traffic volumes and queuing, particularly heavy vehicles, are anticipated along the bypassed surface section of the existing highway. This is likely to contribute to improved amenity, leading to an improved sense of place for residents and visitors to the area through potential activation of these locations (refer to Section 6.5.1 for further detail on changes to local amenity).

A reduction in traffic on the surface road would improve residents and visitor's ability to safely and efficiently interact in the local area, particularly in town centres in Blackheath and Mount Victoria. Benefits may include improved travel times (for vehicle users), and minimised potential for interaction between local and through traffic with pedestrians and active transport users (this being a noted issues in Blackheath where a large proportion of the town is located on the other side of the highway from the main retail centre). This would contribute to an improvement in the overall social cohesion of the social locality.

Operational surface infrastructure for the project would be located at a distance from town centres, social infrastructure and other gathering places. As such this is not anticipated to create a barrier that may lead to any adverse impacts upon social cohesion and/or interactions within the community generally.

The magnitude of this impact is considered to be **moderate**. The likelihood of these impacts occurring would be **likely**. As such the overall significance of the impact would be **high** (positive).

The tunnel ventilation option (emissions via ventilation outlets or portals) selected for the project would not impact upon the likelihood or magnitude of this particular social impact.

## 6.3 Accessibility

### 6.3.1 Access and connectivity

During operation, the project would result in benefits to access and connectivity both locally and regionally. Reductions in traffic volumes and congestion on surface roads was one of the most common benefits of the project identified by the community in residential interviews, followed by improvements to access and connectivity.

As identified in 6.1.1, the project would divert a substantial proportion of through traffic from the existing Great Western Highway into the twin tunnels, allowing the existing surface section of the highway to mainly cater for local and tourist traffic. This is predicted to noticeably improved the accessibility (reduction in congestion and improvement in travel times) and amenity of Blackheath and Mount Victoria in particular, allowing road users to access facilities in their local area more easily. New access roads would be provided by the Little Hartley to Lithgow Upgrade to maintain access around the project at Little Hartley.

These reductions in traffic volumes on the existing Great Western Highway would improve the amenity and safety for active transport users. Key safety benefits, identified in Appendix D (Technical report – Transport and traffic) of the EIS, would include:

- direct improvements to a number of existing safety issues as a result of providing an additional separate carriageway, resulting in:
    - separation of opposing traffic flows
    - wider lanes and improved sightlines
    - fewer intersections
    - improved grades
- improvements due to the reduced traffic volumes and heavy vehicle traffic on the existing Great Western Highway resulting in:
    - substantially reduced local traffic through the Blue Mountains townships Blackheath and Mount Victoria
    - safety and access for pedestrians and cyclists utilising the existing road shoulder.

Additionally, by providing an alternative route to the current Great Western Highway alignment between Blackheath and Little Hartley, the project would improve network resilience by improving access for emergency vehicles in the event of an incident, benefitting people who need to access these services. The project has been designed to provide a good level of service for predicted traffic volumes in future years and scope to accommodate future growth.

The project is not anticipated to affect property access, business access or on-street parking during operation.

Overall, the project would provide substantial access and connectivity benefits both locally and regionally. These benefits would improve access to jobs, businesses, education, services, and social facilities for the community, including vulnerable people. These benefits would also address the community concerns associated with existing traffic congestion and road safety identified in the residential interviews, with 44 to 67 per cent of respondents expressing these concerns.

Given the benefits associated with access and connectivity and the importance of these benefits to the community, the magnitude of impact would be **major**. The likelihood would be **likely**, resulting in a **high** (positive) significance.

The tunnel ventilation option (emissions via ventilation outlets or portals) selected for the project would not impact upon the likelihood or magnitude of this particular social impact.

### 6.3.2 Access to accommodation

Once operational, the project would generally not affect the availability of accommodation within the social locality, due to the small operational workforce requirements (including short term accommodation and rental properties). Accommodation facilities may however benefit from an increase in business, due to an increase in visitors/tourism associated with improvements in access and amenity associated with decreased traffic on the surface highway, particularly in Blackheath and Mount Victoria (refer to Section 6.5.1 and 6.7.1 for further detail).

The overall magnitude of impacts to access to accommodation would be **minimal**. The likelihood of the project to impact the availability of accommodation in the social locality is considered to be **very unlikely**. As such the overall significance of the impact would be **low**.

The tunnel ventilation option (emissions via ventilation outlets or portals) selected for the project would not impact upon the likelihood or magnitude of this particular social impact.

## 6.4 Health and wellbeing

The operation of the project has the potential to affect health and wellbeing of people within the social locality, both positively and negatively, through several factors. This includes changes to noise and vibration, visual amenity, air quality and traffic and accessibility. It is noted that air quality and noise and vibration during operation have been identified as potential concerns by the community (refer to Section 4.2).

Appendix F (Technical report – Human health) of the EIS provides a detailed assessment of health and wellbeing impacts during operation. The assessment identified that adverse health impacts associated with air quality are generally unlikely, and that the project may offer some benefits to residents, and potentially people who regularly visit the social locality, noting the following:

- the redistribution of traffic on surface roads would result in an overall improvement in air quality in the community, including for both ventilation options (portals and ventilation outlets)
- air toxics: there would be no acute or chronic health risk issues in the local community associated with air toxics or diesel particulate matter from the project
- carbon monoxide: the project would not change the existing health outcomes in relation to exposures in the community to carbon monoxide, either adversely or beneficially. No adverse health effects are expected in relation to exposures (acute and chronic) to carbon monoxide in the local area surrounding the project
- nitrogen dioxide: the project would result in a decrease in the level of exposure to nitrogen dioxide in the population within the study area, bringing with it potential long term health benefits. The

project design with either portal or ventilation outlet emissions would result in localised impacts that are considered low and would be acceptable

- particulate matter: the project would result in lower levels of exposure to particulate matter concentrations, which has the potential for some long term health benefits to the community. The project design with either portal or ventilation outlet emissions would result in localised impacts that are considered low and acceptable. However, it is noted that the maximum risk of localised impacts would be lower where the project design includes ventilation outlets.

The operational noise assessment (refer to Appendix G (Technical report – Noise and vibration) of the EIS) identified that 30 noise sensitive receivers are expected to experience noise in excess of the adopted noise criteria, close to the western portal at Little Hartley. However, for the majority of these receivers , exceedance of the noise criteria is a result of existing noise levels, rather than due to the project. Appendix F (Technical report – Human health) of the EIS noted that for all but two receivers within the noise catchment areas, the change in noise levels due to the project is less than 2 dB(A), which is unlikely to be discernible or affect people's health. Mitigation measures would be implemented to manage operational noise impacts and thereby minimise the potential for health related for the two receivers predicted to experience an increase in noise levels greater than 2 dB(A). One of these receptors has already been identified for consideration of noise mitigation measures as part of the Little Hartley to Lithgow Upgrade.

Selection of a preferred tunnel ventilation option may result in some minor differences in the nature of health and wellbeing impacts. For example, the maximum risk of localised impacts to health associated with particulate matter has been identified as lower where the project design includes ventilation outlets, however both options result in low, acceptable impacts. The ventilation outlets are predicted to result in more exceedances of noise management levels compared to the portals, however the differences are relatively minor (i.e. up to nine additional receivers affected during emergency conditions (a worst-case scenario)). These differences in the nature of impact is not expected to appreciably affect the overall likelihood, magnitude or overall significance of health and wellbeing impacts.

The operation of the project would also contribute to health and wellbeing benefits for residents and the broader community. With the increase in accessibility and decrease in traffic congestion, road users and pedestrians may feel more connected to their community. Road users may experience a decrease in stress due a reduction in the time spent experiencing traffic congestion. An improvement in the ease of moving around can lead to an improved sense of place and can facilitate better access to social infrastructure such as medical facilities or community halls, increasing physical health and mental wellbeing, including for vulnerable groups in the community.

The predicted improvements in factors that contribute to health and wellbeing – such as decreases in noise, traffic congestion and air quality impacts – would benefit a range of groups in the community. Young children, the elderly and people with existing health conditions may particularly benefit from these improvements.

Overall, operation of the project may result in both positive and negative impacts on health and wellbeing of residents. The overall likelihood of these impacts occurring would be **likely**. The magnitude of positive impacts is considered to be **minor**, with the magnitude of adverse impacts to health and wellbeing also being **minimal**. On this basis, the overall social significance of health and wellbeing would be **medium** (positive) and **low** (negative).

## 6.5 Surroundings

### 6.5.1 Local amenity

The project would generally improve amenity experienced by residents and visitors around Blackheath and Mount Victoria by reducing the volume of traffic on surface roads. This would be achieved by transferring a substantial proportion of commuter and freight traffic from the existing Great Western Highway into the tunnels. This would subsequently reduce noise and vibration and congestion through these areas.

Adverse amenity impacts during operation could be experienced within proximity to new surface infrastructure, particularly within the vicinity of the portal locations where the majority of surface

infrastructure would be located. It is noted that there are relatively few receivers located adjacent to the Little Hartley portal, given the low density of the area.

Detail on local amenity impacts in relation to traffic and access, noise and vibration and landscape and visual amenity is provided in the following sections.

**Traffic and access**

As outlined in Section 6.1.1, there would be a substantial reduction in traffic on the existing Great Western Highway. This would provide clear benefits to road users, such as improved accessibility, reduced travel time and increased road network capacity. In Blackheath and Mount Victoria this would noticeably improve the accessibility and amenity of these towns for residents and visitors. Furthermore, a reduction in heavy vehicles on the surface road would contribute to improved sense of safety in the towns, and potentially improve the ability for people to safety cross roads. This improvement is likely to be particularly valuable to elderly people and children, who would be relatively more sensitive to changes in traffic safety.

**Noise and vibration**

Operation of the project has the potential to result in changes to noise and vibration. This would result in flow on effects to local amenity, how residents and visitors experience places, and their health and wellbeing. Generally, road traffic noise within the town centres of Blackheath and Mount Victoria would decrease due to the reduction in vehicles using the surface road, thereby improving amenity. Specifically, road traffic noise levels would be reduced at about 2,000 noise sensitive receivers adjacent to the bypassed sections of the Great Western Highway.

Detailed noise prediction results are provided in Appendix G (Technical report – Noise and vibration) of the EIS and have been summarised below.

The assessment of road traffic noise during operation indicates that:

- in 2040 (10 years after opening of the project), it is expected that there would be reduced road traffic noise levels at a large number of receivers (around 2,000) where the tunnel provides a bypass to the existing surface road
- in 2040, road traffic noise levels are predicted to exceed the relevant controlling noise criterion at a total of 30 sensitive receivers. The majority of these receivers would experience relatively minor exceedances (less than 2 dB(A)), however two sensitive receivers located on the Great Western Highway at Little Hartley would have increase such that they would be eligible for the consideration of additional feasible and reasonable noise mitigation measures. These measures would be applied in accordance with the Noise Mitigation Guideline (RMS, 2015b).

Given that a large proportion of traffic would use the tunnel, there would be an anticipated reduction in the number of maximum noise events that would affect residential receivers between Blackheath and Little Hartley.

Potential reductions in amenity due to noise impacts may occur for receivers located near the portal at Blackheath. The assessment of noise from fixed facilities (such as ventilation equipment, transformers, water treatment plant, emergency pumps and the tunnel operations facility) indicated the following:

- for the portal emissions design option, during normal traffic, noise levels are predicted to exceed the relevant controlling noise criterion for normal traffic conditions at one receiver at Blackheath (by up to 1 dB). No exceedances are predicted at Little Hartley. This may increase to up to 14 receivers (with exceedances up to 4 dB) at Blackheath during an emergency scenario, which would be very rare
- for the ventilation outlet design option, during normal traffic conditions, noise levels are predicted to exceed the relevant controlling noise criterion for normal traffic conditions at three receivers at Blackheath (by up to 1 dB), and two receivers at Little Hartley (by up to 2 dB). This may increase to up to 19 receivers at Blackheath (with exceedances up to 5 dB) and four receivers at Little Hartley (with exceedances up to 4 dB) during an emergency scenario, which would be very rare.

### Air quality

Appendix E (Technical report – Air Quality) of the EIS provides detail on air quality impacts, including the approach used to model and assess air quality impacts associated with the project. Key outcomes of the assessment in relation to surroundings are summarised below.

In the air quality assessment model, the following components were treated separately to take into account potential changes in traffic emissions across the road network:

- emissions from proposed ventilation outlets for tunnels
- emissions from proposed portal emissions for tunnels
- emissions from the traffic on the surface road network.

Operational impacts at both Blackheath and Little Hartley (where ventilation infrastructure would be located) were shown to result in an overall low level of air quality impacts on nearby residential receivers. While small increases in pollutant levels are predicted at a number of receptors at Blackheath and Little Hartley, all receptor concentrations for both the portal emissions and ventilation outlets complied with relevant NSW EPA assessment criteria and impacts were rated as negligible. Comparison of the ventilation options at the worst affected receptors indicated that in general results between the ventilation outlet and portal emissions were very similar in most circumstances. As such, the ventilation option selected is not anticipated to appreciably impact upon the likelihood or magnitude of potential impacts related to air quality.

Most receivers would be expected to experience a decrease in pollutant concentrations. The largest decreases would be expected in the bypassed townships along the Great Western Highway, due to the reduction in traffic on the surface road within the vicinity of these centres.

Young children, the elderly and people with existing health conditions may particularly benefit from these improvements.

### Landscape and visual

Appendix N (Technical report – Landscape and visual) of the EIS provides an assessment of the potential landscape and visual impacts during operation of the project. The project is located in a tunnel for majority of its length, which would generally result in an overall improvement to the landscape and visual environment experienced by residents and visitors to the area. This would arise from the substantial reduction of traffic and heavy vehicles on the existing surface road, resulting in minor benefits overall.

Adverse visual impacts are likely to be confined to discrete areas at the Blackheath and Little Hartley ends of the tunnel where operational surface infrastructure would be located.

At Blackheath, where the operational infrastructure would be located amongst dense bushland on a sloped site, vegetation clearing would comprise a substantial change from the existing environment. Views east across the valley that were previously screened by vegetation would become exposed to motorists, cyclists and train commuters. A small number of residents on Evans Lookout Road would also be subject to visual changes.

Given the presence of other large operational infrastructure, the portal emissions option, which would not require a 10-metre ventilation outlet structure, would only moderately reduce the impact rating at these viewpoints. Overall, the visual impact of the project at Blackheath is considered to be moderate (adverse). This is based on consideration of the proposed infrastructure and the unique sensitivities of the Blue Mountains (given the high value of landscape and views linked to tourism, the natural environment and heritage values).

At Little Hartley, changes were considered from elevated views across the Hartley Valley, seen by hikers at trails and lookouts, and from the existing Great Western Highway alignment by residents and motorists. From these viewpoints the overall visual impact would be limited by the substantial distance from the project coupled with undulating terrain. The ventilation outlet structure (if this ventilation design option is selected) and the operations buildings would comprise the most prominent elements of the project. While these elements would be uncharacteristic of the surrounding environment, they would be partially screened by landscaping. Overall, the visual impact of the project at Little Hartley is considered to be moderate (adverse). This is based on consideration of the proposed infrastructure and the

picturesque character of the valley, the high volume of tourist traffic and activity and recreational hiking trails nearby.

**Overall impact to local amenity**

Overall, changes associated with the project would both positively and negatively affect the experience of residents and visitors in the social locality.

The level of amenity within areas bypassed by the project, particularly in Blackheath and Mount Victoria town centres, is anticipated to improve. This is largely due to the reduction in heavy vehicles present on the surface road in these areas, and associated noise. Improvements in amenity would contribute to sense of place, support social interaction and potentially attract new visitors to these areas. These improvements in amenity would be experienced by current generations in the social locality upon opening of the project, as well as in the longer term by future generations in the community.

The combined consequence of these improvements in amenity is considered to be of **moderate** magnitude, and would be **likely** to occur. This would result in a **high** (positive) social impact significance in bypassed areas.

In areas closest to portal infrastructure in Blackheath and Little Hartley (generally in primary impact areas), residents and visitors to the area may experience adverse changes in their surroundings associated with noise, visual and air quality impacts detailed above. The combined magnitude of these impacts would also be **minor,** given that there are relatively fewer receivers in these locations compared to the townships. This impact would be **likely** to occur, resulting in **medium** (negative) impacts in areas closest to portal infrastructure.

### 6.5.2 Natural features

As identified in Section 5.5.2, Natural features associated with the Blue Mountains National Park are integral to the environmental values of residents and the broader community. Residential interviews identified that the preservation of existing character, including the conservation of natural areas, was an aspiration for residents in Blackheath and Little Hartley. The project would generally minimise direct impacts to the Blue Mountains National Park and biodiversity, relative to other project options considered (for example, a surface road upgrade).There would be potential for indirect impacts to biodiversity during operation which could affect the environmental elements of the area which are valued by the community, particularly in proximity to surface infrastructure. These impacts would generally include impacts on adjacent vegetation and habitat during operation (for example, due to a change in land use patterns), and potential impacts on aquatic ecology due to changes in hydrology and water quality. These impacts can be appropriately managed through design and mitigation measures and would generally not affect people's experience and appreciation of natural features within the social locality more broadly.

Surface infrastructure – including the tunnel portals and ventilation, as well as tunnel operations facility, water quality basins other small road infrastructure – would partly detract from the landscape amenity of bushland along the Great Western Highway, including at Blackheath. Tunnel ventilation outlets, if selected, would comprise a 10-metre structure which could result in additional minor landscape impacts relative to the portal option. For both ventilation options, landscaping provided as part of the project would help screen project infrastructure and visually integrate it into the natural environment. As such, the overall social implications of either ventilation or portals are expected to be similar. Appendix N (Technical report – Landscape and visual) of the EIS provides a detailed landscape assessment for areas of bushland both along the Great Western Highway and within the social locality more broadly.

Public access and use of recreational areas of the Blue Mountains National Park would be maintained throughout operation, allowing people to continue to use natural features of the area which they value. The access and connectivity benefits identified in Section 6.3.1 could also improve people's ability to access recreational facilities associated with the National Park when travelling within the social locality, particularly when using vehicles to access these facilities.

Overall, operation of the project would result in indirect adverse impacts to natural features that could affect people's environmental values. The social implications of these impacts would be considered **minor** in magnitude, and **likely** to occur, resulting in an overall **medium** (negative) social impact.

### 6.5.3 Crime, safety and security

Given that the project largely comprises subsurface infrastructure, there are limited surface elements with the potential to be affected by or generate crime and security-related risks. Additionally, residents generally did not express crime and security as a major concern for their local area in response to the resident interviews.

The portals would be located away from prominent public areas. Other operational ancillary facilities (including the tunnel operations facility at Blackheath and ventilation outlets, if required) would be co-located with the portals. Operational ancillary facilities would be adequately secured, include lighting and would be designed with consideration of CPTED principles. This would support safety and security in areas with a public interface. A reduction in traffic on the existing surface road would also be expected to improve road safety for pedestrians and active transport users, by reducing their interaction with vehicles.

Taking into account the low level of concern expressed by the community in relation to this issue, the magnitude of impact would be **minimal**. Given the nature of the project, with limited security-related risks, adverse impacts to crime, or a deterioration in security in the community is considered **unlikely** to occur. The overall significance of the impact would be **low** (negative).

The tunnel ventilation option (emissions via ventilation outlets or portals) selected for the project would not impact upon the likelihood or magnitude of this particular social impact.

## 6.6 Culture

### 6.6.1 Community values

Consultation through residential interviews identified the several elements as being of key value to the community.

Table 6-1 includes an overview of the key values identified during consultation, and a summary of the potential impacts to these during operation of the project.

**Table 6-1 Community values**

| Identified community value | Potential operational impacts |
|---|---|
| Proximity to the natural environment (particularly the Blue Mountains National Park) and associated recreational opportunities such as bushwalking | Public access and use of recreational areas of the Blue Mountains National Park would be maintained throughout operation, allowing people to continue to use natural features of the area which they value. However, the presence of surface infrastructure may somewhat detract from the appearance of bushland within small parts the social locality. This would be largely managed through appropriate landscaping to screen these views.<br><br>Further detail is included in Section 6.5.2. |
| Community facilities and services (for example, presence of community groups, museums, galleries, art facilities and schools) | The substantial reduction to traffic volumes along the existing Great Western Highway through Blackheath and Mount Victoria would noticeably improve the accessibility and amenity of these towns, where the majority of community facilities and services are located. Reduced through traffic would generally result in improved travel times for local traffic accessing these facilities within the social locality. Given the separation between the town centres and the tunnel portals there is expected to be limited potential for direct adverse amenity impacts to these receivers during operation of the project.<br><br>Further detail is included in Section 6.1.2. |
| Social elements of the community (for example, closeness to the community, friendly neighbours and presence of young families) | The reduction in traffic on the surface road would improve people's ability to safely and efficiently interact in the local area, particularly in town centres in Blackheath and Mount Victoria. This may arise through improvements to travel times (for vehicle users) or through increased permeability of the surface road for pedestrians. This |

| Identified community value | Potential operational impacts |
|---|---|
| | would contribute to an improvement in the overall social cohesion of the social locality, thereby positively contributing to this community value.<br><br>Further detail is included in Section 6.2.2. |
| The existing local character (for example the 'small town feel' and quiet nature of the area) | The level of amenity within areas bypassed by the project, particularly in Blackheath and Mount Victoria town centres, is anticipated to improve, thereby enhancing the existing local character of these areas. This is largely due to the reduction in heavy vehicles present on the surface road in these areas. Improvements in amenity would contribute to an improved sense of place, support social interaction and potentially attract new visitors. However, areas closest to portal infrastructure in Blackheath and Little Hartley, residents and visitors may experience minor adverse changes in their surroundings associated with noise, visual and air quality impacts, which would partly detract from the character of the area.<br><br>Further detail is included in Section 6.5.1. |

Overall, the project is generally expected to enhance elements of the community which were identified to be highly valued. In particular, improvements in the accessibility and amenity of Blackheath and Mount Victoria would provide for improved access and amenity to local shops and community facilities in these centres, and provide a more attractive destination for social interaction. The overall magnitude of impacts upon community values would be **minor**, and would be **likely** to occur, resulting in a **medium** (positive) impact.

### 6.6.2 Aboriginal culture and heritage

As described in Section 5.6.2, the Aboriginal heritage sites identified in the PACHCI Addendum do not intersect with the project footprint. Operation of the project is largely associated with the tunnel and potential impacts to identified elements of Aboriginal culture and value are unlikely to occur.

The PACHCI Addendum concluded that potential operational impacts to Aboriginal culture and heritage such as visual amenity or change of use, association or access are not anticipated to affect listed or potential heritage items. The project is therefore unlikely to change the context of or disturb identified items of Aboriginal cultural significance. The operation of the project would also be unlikely to change people's access to and use of identified cultural sites, as there would be limited, discrete areas of surface infrastructure.

In response to the following key principles for action in the Connecting with Country Draft Framework, the project would incorporate a visual interpretation of the cultural and physical identity of the Country:

- respecting the rights of Aboriginal peoples through ongoing engagement mindful of their cultural and intellectual property with a goal to care for Country through considered and sensitive design
- delivering an interpretive design solution that provides tangible and intangible benefits for current and future generations, with the Aboriginal people determining the representation of their cultural materials, customs and knowledge
- prioritising consideration of the local, place specific cultural identities, supporting a reciprocal relationship with Country.

In line with the Designing with Country framework, Transport would continue to engage with Aboriginal knowledge holders with a view to incorporating Aboriginal culture and heritage into the design development of the project. As such, the design of project would seek to avoid adverse impacts to Aboriginal cultural values. However, if not appropriately managed through the design process, ongoing impacts associated with the operation of the project, for example landscape and visual impacts associated with surface infrastructure, could affect elements of the area which are valued by Aboriginal communities.

Based on the above, the likelihood of negative impacts to Aboriginal cultural heritage and values is considered to have **moderate** consequences and would be **very unlikely**. As such the overall significance of impact would be a **low** (negative) impact.

### 6.6.3 Non-Aboriginal heritage

Given that the project is largely underground, there are limited surface elements which have the potential to alter the context of non-Aboriginal heritage items. Operation of the project would generally not affect the community's existing level of access to and appreciation of non-Aboriginal heritage items. A heritage interpretation strategy would be prepared for the project to address historic and contemporary heritage and community values and would identify innovative and engaging opportunities for interpretation. This would be a minor positive impact to the non-Aboriginal heritage context.

One item (Rosedale, a locally listed heritage item fronting the Great Western Highway in Little Hartley) would likely be visually impacted by elevated project elements including mainline carriageways, operational ancillary facilities and tunnel portals proposed at Little Hartley. This may affect the community's ability to appreciate the item in its existing open, pastoral landscape. The potential to use vegetation screenings to reduce the visual impact of the project at Rosedale, including retention of existing mature trees, would serve to screen the operational infrastructure from the views of the heritage item and minimise this impact.

Based on the above, the likelihood of negative impacts to non-Aboriginal heritage and values is considered to a **minor** magnitude and would be **very unlikely**. As such the overall significance of impact would be a **low** (negative) impact.

## 6.7 Livelihoods

### 6.7.1 Business impacts

Impacts to businesses have the potential to affect livelihoods by affecting people's capacity to sustain themselves through employment or business income, particularly in town centres where many businesses rely on passing trade and/or tourism.

Potential business impacts of the project have been assessed in Appendix P (Technical report – Economics and business) of the EIS. The assessment considers the potential impacts to businesses from changes in passing trade.

Businesses across the social locality may be affected during operation as a result of changes in passing trade and changes in local amenity (detailed in Section 6.5.1). Depending on the nature of the business, the actual impact would vary. During the operation of the project, a substantial proportion of vehicles would travel via the tunnels, thereby reducing their opportunity to visit business in bypassed areas. This could adversely affect the livelihoods of people running local businesses who may be reliant on 'stoppers' (people making an unplanned stop on a journey). However, improvements in local amenity in these areas also have potential to attract tourists and visitors to these areas as a destination, as detailed in Section 6.7.2.

In Blackheath, businesses such as petrol stations, take-away food businesses and some retail stores, would be most likely to experience a reduction in business activity due to their reliance on passing trade. Businesses which service tourists who are spending time in the area rather than passing through, such as accommodation and speciality retail, are relatively less likely to experience this impact. In Mount Victoria, some retail businesses and the petrol station may be adversely affected by a reduction in passing trade. However, other existing businesses which cater to visitors to the area may experience some growth in patronage due to the improved appeal and amenity of the town resulting from improved road conditions.

Businesses in both Blackheath and Mount Victoria which cater to tourists may benefit from improvements in amenity and traffic conditions, which could potentially attract tourists to the area (discussed further in in Section 6.7.2). Improvements in amenity in bypassed areas may also attract new businesses to the area and increase the share of tourism-related businesses.

Due to the relatively smaller population size in Little Hartley, businesses which rely on passing trade, such as food and beverage outlets, may experience a more substantial downturn in trade in the short-

term (relative to Blackheath and Mount Victoria), however would generally be expected to recover in the medium-longer term.

Overall, the results indicate that while some businesses which rely on passing trade may be adversely affected in the short-term, in the medium to longer term there are expected to be improved livelihoods for people running businesses as a result of improvements in local amenity. Businesses which service local residents and tourism would generally remain viable, thereby retaining employment opportunities for people within these businesses.

As noted above, the potential for adverse impacts to business owner's livelihoods associated with a downturn in passing trade would generally be an impact in the short-term, which would affect current generations. Future generations in the area are expected to benefit in the long term, as business owners would benefit from the long-term amenity improvements associated with the tunnel bypass, which could attract new businesses and customers to the area.

The magnitude of adverse impacts to livelihoods would be **minor**. The likelihood of this occurring would be **possible** given that similar impacts have occurred as a result of other bypass projects (refer to Appendix P (Technical report – Economics and business) for further detail). As such the overall social significance would be **medium** (negative), however would improve over time as improvements in local amenity would potentially attract further visitors.

### 6.7.2 Tourism-related impacts

During operation of the project, businesses which rely on tourism – i.e., people visiting the social locality as a destination rather than an unplanned stop on a journey – are likely to be positively affected by changes in amenity. These are discussed further in Section 6.5.1.

Appendix P (Technical report – Economics and business) of the EIS considers how the project may affect tourism and accommodation businesses in the social locality. By improving access to the Blue Mountains National Park and other cultural and recreational opportunities (e.g. Mount Victoria Museum), walking trails and sporting facilities, the project is expected to increase tourism expenditure within the Blue Mountains and Lithgow local government areas, including within the social locality.

Businesses that cater to tourists, such as accommodation, specialty shops or restaurants, are generally more likely to be visited as destinations and rely less on passing trade. Accommodation businesses and other businesses which cater to tourism may benefit from an increase in demand, as bypassed areas become more attractive to visit due to decreases in traffic, in particular heavy vehicles, on the existing surface portion of the Great Western Highway, and the subsequent improvements in amenity that would arise. Potential growth of tourism related businesses may create more job opportunities in the long term.

The magnitude of this impact would be **minor**. The likelihood of this occurring would be **possible** given that similar impacts have occurred as a result of other bypass projects (refer to Appendix P (Business Impact Assessment) of the EIS for further detail. As such the overall social significance would be **medium** (positive).

### 6.7.3 Economic impacts

The operation of the project has expected to have broader economic benefits to the region in which the social locality is situated (comprising the Blue Mountains and Lithgow local government areas).

Appendix P (Technical report – Economics and business) of the EIS identified that during the first ten years of operation, the project would provide a direct impact of between around $8 million and $10 million per annum in net output for Blue Mountains City Council and Lithgow City Council local government areas. This impact would be largely driven by the productivity uplift associated with business, freight related benefits and increased tourism spend within the regional area. However, at a regional level this is expected to be economically offset by a modest decline in passing trade activity, due to a reduction in local through traffic on the surface road.

The broader economic benefits of the project would likely result in flow on effects for livelihoods within the social locality. In particular, an increase in tourism spend in the area would provide greater opportunity for people to earn an income through employment in the tourism industry.

The overall magnitude of economic benefits during construction in the social locality would be considered **minor**, given that the benefits would likely be dispersed across the broader region. The likelihood of these impacts being experienced within the social locality would be **possible**, resulting in a **medium** (positive) social impact.

## 6.8 Decision-making systems

As identified in Section 5.8, assessment of impacts to decision-making systems requires consideration of the extent to which people can have a say in decisions that affect their lives, and have access to complaint, remedy and grievance mechanisms.

Community engagement has been undertaken throughout the development of the project, including at key strategic design stages. This has included decisions relating to the design of the project, with consultation on options such as the alignment of surface road options, the consideration of a tunnel, the length of tunnel and the position of portals. This consultation is detailed in Section 4.1. The design of the project has also sought to minimise potential impacts, as described in Section 1.2.4. Transport would continue to listen and engage with the community throughout the detailed design and seek to address any such issues as far as reasonably practical.

Further, the preparation and exhibition of the EIS is a statutory process which enables people to make a submission expressing their support, objection or comments on the project and its potential impacts. Submissions from the community would be responded to in a Submissions Report, and considered by DPE in their assessment of the project. Once operational, the project would have limited impact upon people's ability to interact in decisions that affect them.

Given that the views and experience of decision-making systems can vary significantly from person to person, a magnitude and likelihood rating has not been applied.

## 6.9 Distributive equity

Considerations in relation to distributive equity and the approach to the consideration of impacts is discussed in Section 5.9.

No adverse impacts greater than medium were noted in the impact assessment. The only 'high' impacts were all positive, for the following factors:

- changes to how people move around
- access to and use of social infrastructure
- social cohesion and sense of place
- access and connectivity
- local amenity – in bypassed areas.

During operation concerns may be raised by those likely to be affected by direct amenity impacts. This would likely be limited to those living or working near the tunnel portals where people would be potentially exposed to greater noise impacts and reduced air quality, as well the visual impact of the operational infrastructure.

Noting that the demographic profile of people in close proximity to the portals was not discernible as any one particular group (based on social, cultural, economic, gender or other factors), it is unlikely any one social group would be affected disproportionately to another.

Intergenerational impacts are expected to be limited on the basis that the project would continue to provide a similar benefit for people in subsequent generations as it does at the commencement of operation. While some social cost would be borne by the current generation (such as **adverse** amenity impacts during the construction period), this would managed through the implementation of construction phase mitigation**.**

## 6.10 Summary of social impacts during operation

A summary of the initial significance of social impacts during construction is provided in Table 6-2. Overall, the impacts with the highest (positive) significance rating during operation relate to improvements in access and connectivity. The separation of through traffic and local traffic would reduce congestion, improving people's ability to move around their local area, and access local shops and facilities. This would address the community expectations for the project identified in consultation undertaken for the SIA. The reduction in traffic on the surface road would also result in improvements to people's surroundings and sense of place in the towns along this part of the Great Western Highway, including Blackheath and Mount Victoria.

Adverse social impacts during operation generally relate to changes in people's surroundings and local amenity in areas which are closest to surface infrastructure. The tunnel bypass would result in a reduction in passing trade, which would result in adverse impacts to some businesses, and thereby livelihoods. This adverse impact would be expected to recede over time, and be partly offset by amenity improvements which would attract visitors to these areas.

Section 8.4 provides detail on how social impacts would be managed, and the residual significance rating following the implementation of mitigation and management measures.

**Table 6-2 Summary of social impacts – operation**

| Potential impact category | Pre-mitigation impact significance |
|---|---|
| **Way of life** | |
| Changes to how people move around | Major + likely = high (positive) |
| Access to and use of social infrastructure | Moderate + likely = high (positive) |
| **Community** | |
| Demographics and community composition | Minor + very unlikely = low (negative) |
| Social cohesion and sense of place | Moderate + likely = high (positive) |
| **Accessibility** | |
| Access and connectivity | Major + likely = high (positive) |
| Access to accommodation | Minimal + very unlikely = low (negative) |
| **Health and wellbeing** | |
| Community health and wellbeing benefits | Minor + likely = medium (positive) |
| Community health and wellbeing – adverse impacts | Minimal + likely = low (negative) |
| **Surroundings** | |
| Local amenity – in bypassed areas | Moderate + likely = high (positive) |
| Local amenity – within the vicinity of surface infrastructure | Minor + likely = medium (negative) |
| Natural features | Minor + likely = medium (negative) |
| Crime, safety and security | Minimal + unlikely = low (negative) |
| **Culture** | |
| Community values | Minor + likely = medium (positive) |
| Aboriginal culture and heritage | Moderate + very unlikely = low (negative) |
| Non-Aboriginal heritage | Minor + very unlikely = low (negative) |

| Potential impact category | Pre-mitigation impact significance |
|---|---|
| **Livelihoods** | |
| Business impacts | Minor + possible = medium (negative) |
| Tourism impacts | Minor + possible = medium (positive) |
| Economic impacts | Minor + possible = medium (positive) |

# 7 Assessment of cumulative impacts

This section considers the potential cumulative social impacts and benefits of the project and other projects that occur at the same time or consecutively in the social locality, during both construction and operation.

Cumulative impacts have the potential to occur when benefits or impacts from a project overlap or interact with those of other projects, potentially resulting in a larger overall effect (positive or negative) on the environment or local communities. Cumulative impacts may occur when projects are constructed or operated concurrently or consecutively. Once the project is operational, other projects which interrelate may enhance the project and create positive cumulative benefits.

Four projects were reviewed against the following screening criteria for this cumulative impact assessment:

- spatially relevant (i.e., the development or activity overlaps with, is adjacent or in close proximity to the project)
- timing (i.e., the expected timing of its construction overlaps or occurs consecutively to construction and/or operation of the project)
- scale (i.e., large-scale major development or infrastructure projects that have the potential to result in cumulative impacts with the project)
- status (i.e., projects in development with sufficient publicly available information to inform this environmental impact statement and with an adequate level of detail to assess the potential cumulative impacts).

Projects identified as contributing to potential cumulative impacts have met these criteria and include:

- Katoomba to Blackheath Upgrade (including Medlow Bath Upgrade)
- Little Hartley to Lithgow Upgrade.

Given the regional setting of the project primarily within the Blue Mountains LGA and a small portion within the Lithgow LGA, there are fewer major projects within the locality.

The Katoomba to Blackheath Upgrade involves widening of around 5.3 kilometres of the existing Great Western Highway between Rowan Lane, Katoomba and Tennyson Road, Blackheath from one to two lanes in each direction. Construction is expected to commence in 2023. The Medlow Bath Upgrade involves upgrade of a 1.2 kilometre section of the existing Great Western Highway at Medlow Bath to a four-lane divided carriageway as part of the Great Western Highway Upgrade Program – Katoomba to Lithgow (the Upgrade Program). Construction is expected to commence in mid-2022. The Katoomba to Blackheath Upgrade and Medlow Bath Upgrade are located adjacent to, and three kilometres east of, the project along the Great Western Highway.

The Little Hartley to Lithgow Upgrade includes upgrade of about 14 kilometres of highway to a four lane divided highway between Little Hartley and Lithgow. The Little Hartley to Lithgow Upgrade is located immediately west of the project on the existing Great Western Highway alignment. Construction is expected to commence in 2022.

Figure 1-8 shows the interface of the Katoomba to Blackheath Upgrade (including Medlow Bath) and the Little Hartley to Lithgow Upgrade construction programs with the project. The location of these projects is shown on Figure 1-1.

Chapter 24 (Cumulative impacts) of the EIS details the full cumulative impact assessment methodology adopted for the project.

The cumulative impact assessment undertaken for the project considers the overall social impacts of the Upgrade Program infrastructure. Social impacts have been considered against an existing environment prior to the construction or operation of these projects.

## 7.1 Construction

The Katoomba to Blackheath Upgrade and Little Hartley to Lithgow Upgrade would be under construction when construction of the project commences. As identified in Section 1.2, construction of the project is expected to take around eight years. Subject to planning approval, construction is planned to commence in 2024 and be completed by late 2031; however, the project would be open to traffic by 2030. Construction of the project would overlap with the construction activities associated with the Katoomba to Blackheath Upgrade and Little Hartley to Lithgow Upgrade which are due to be complete in 2027 and 2026 respectively, however peak construction years are not expected to overlap.

Cumulative impacts are likely to be most acutely experienced around primary impact areas at Blackheath and Little Hartley, where the construction footprint would be directly adjacent to the footprint for the Katoomba to Blackheath Upgrade and Little Hartley to Lithgow Upgrade, respectively. Communities around these particular areas would be subject to sequential construction impacts from the Upgrade Program over an extended period of time (up to around eight to nine years). Vulnerable groups which are more sensitive to construction impacts could potentially be disproportionally impacted by adverse cumulative impacts during construction.

Cumulative social impacts are detailed below.

Impacts to the accessibility of areas around Blackheath and Little Hartley may result from localised increased congestion, poor intersection performance and reduced travel speeds from the combined construction traffic generation and more extensive speed limit reductions associated with these projects. It is estimated that the Upgrade Program could result in around 40 to 50 per cent more construction related vehicles at any one location, than those assessed for the project. This could also affect people's way of life and their ability to move around the social locality, as well as result in stress associated with congestion impacts.

Adverse impacts to the way in which residents and the broader community experience their surroundings could be experienced for a longer duration of time due to the extended presence of construction at the Blackheath construction footprint and Little Hartley construction footprint. Although there is predicted to be minimum impact from cumulative construction noise impacts from the overlapping staging of the Katoomba to Blackheath Upgrade and Little Hartley to Lithgow Upgrade with the project, there is the potential for construction noise fatigue at nearby receivers due to the increased duration of the construction period. Potential cumulative air quality and dust impacts during construction are also anticipated to be minor, however receivers at the Blackheath and Little Hartley construction footprints may experience these impacts over a longer duration due to the continued presence of construction work. In relation to visual amenity, the Upgrade Program would result in the increased presence of construction-related infrastructure and an extended construction footprint and duration which would increase the magnitude of change experienced at viewpoints around Blackheath and Little Hartley during construction. These changes in the amenity of nearby properties at Blackheath and Little Hartley due to construction noise, air quality and visual impacts could result in impacts to people's sense of place and wellbeing over the construction period for the Upgrade Program as a whole.

The extended construction period and potential associated impacts on traffic, noise, air quality and visual amenity has the potential to result in construction fatigue and ongoing stress in areas where construction activities overlap or occur sequentially – including around the Blackheath and Little Hartley construction footprints. This may disproportionately affect vulnerable groups which are more sensitive to construction impacts, such as elderly residents and children.

Furthermore, the construction of other elements of the Upgrade Program may result in a higher number of construction workers present in the social locality, some of which may relocate to the area from other regions. Given that the peak construction years of the projects are not expected to overlap, this is not expected to result in a substantial increase in the maximum workforce size that has been considered in the assessment of social impacts from the project in Section 5 (Assessment of construction impacts). Additionally, the transition of the workforce across different components of the Upgrade Program as a whole would be encouraged. This would reduce additional accommodation needs and would support the local workforce. This would also reduce the potential for substantial impacts to community values, beyond what is assessed in Section 5.2.1.

Some increased benefits to livelihoods may occur, as some retail and construction-focused businesses would experience higher level of spending due to the ongoing presence of construction activities, thus improving people's capacity to earn an income in the social locality.

The Medlow Bath Upgrade is located around three kilometres east of the project and construction is expected to be completed by mid-2024 and would therefore have limited overlap with the project. Therefore, the project is generally not anticipated to directly contribute to the cumulative social impacts identified above, except for the potential to cause construction fatigue in surrounding communities.

When compared to the existing environment, the unmitigated magnitude of cumulative social impacts is considered to be **major**. The likelihood of these impacts occurring would be **likely**. As such the overall social significance in relation to construction cumulative impacts would be a **medium** (negative) impact.

To manage these impacts, opportunities to minimise and manage cumulative impacts across the Great Western Highway Upgrade Program would be identified in consultation with other projects in the Upgrade Program, and implemented where reasonable and feasible (refer to Chapter 24 (Cumulative impacts) of the EIS). Some of the key focus areas for this would include construction amenity issues, particularly in relation to construction traffic, dust, noise and vibration.

## 7.2 Operation

Delivery of the Upgrade Program would enable the social benefits identified in Section 6 (Assessment of operational impacts) to be fully realised. This project, and the other projects considered in this assessment which form part of the Upgrade Program, would collectively substantially improve travel times and decrease congestion on the existing Great Western Highway compared to the existing environment (i.e. prior to the commencement of construction of the Katoomba to Blackheath Upgrade and Little Hartley to Lithgow Upgrade).

This would offer a range of social benefits for both the social locality and the broader region, including:

- improved accessibility within the social locality and the broader region, and improved access to local businesses, facilities, jobs and social infrastructure
- substantially improvements in amenity and road user safety in bypassed town centres, contributing to an improved sense of place, as well as potentially attracting additional tourists and visitors
- enhanced wellbeing and decreased stress from the reduction in travel times and congestion experienced by road users
- the accessibility and safety benefits delivered by the project would be enhanced by additional active transport and safety initiatives, including active transport trails to the east and west of the project (provided as part of the Katoomba to Blackheath Upgrade and the Little Hartley to Lithgow Upgrade), and the formalisation of the informal Berghofer's Pass car park to improve the safety and amenity of the car park for visitors (as part of the Little Hartley to Lithgow Upgrade). This would support opportunities for people to enjoy natural features in the area.

The assessment of several amenity-related impacts (including transport and traffic, noise and vibration, and air quality) have included an assessment of the broader Upgrade Program within their relevant operational impact assessments and have therefore taken into consideration the potential cumulative impacts of the Upgrade Program as a whole. As such, the cumulative impact of the majority of transport and amenity related impacts are assessed in Section 6 (Assessment of operational impacts).

There is some potential for adverse changes to how residents and visitors experience their surroundings and their sense of place, particularly in relation to visual amenity, associated with collective presence of surface infrastructure in Blackheath and Little Hartley, noting that this would be located at a distance from town centres. At Little Hartley for example, cumulatively, the view would be characterised by bridges, tunnel portals and batters, increasing the visual impact experienced from viewpoints. An urban design framework would be implemented to provide consistency in design, and landscaping provided for screening, to help manage this impact.

Overall, the projects are expected to result in a cumulative social benefit associated with improvements in travel time and local amenity. When compared to the existing environment, the magnitude of this

impact would be considered **major**, and the likelihood would be **likely**. As such the overall social significance in relation to operational cumulative impacts would be a **high** (positive) impact.

# 8 Management of impacts

## 8.1 Performance outcomes

Performance outcomes have been developed that are consistent with the SEARs for the project. The performance outcomes for the project are summarised below in Table 8-1 and identify measurable, performance-based standards for environmental management. Measures and strategies to address these performance outcomes are described in the following sections.

**Table 8-1 Performance outcomes for the project – social impacts**

| SEARs desired performance outcome | Project performance outcome | Timing |
|---|---|---|
| The project is designed to provide socially sustainable outcomes.<br>The project will maximise the social and economic welfare of the community.<br>The project will deliver better development outcomes by minimising negative social impacts and enhancing positive social impacts on affected communities | Design and implement the project to provide a net positive social and economic outcome, including:<br>• avoiding or minimising the environmental impacts of the project during construction and operation (refer to project objectives in other areas)<br>• avoiding or minimising direct and indirect impacts on social infrastructure<br>• avoiding or minimising disruptions to local businesses during construction<br>• maximising project employment within the region during construction and operation<br>• develop and implement clear, timely and inclusive stakeholder engagement and information measures. | Design, construction and operation |

## 8.2 Management and mitigation measures

A construction environment management plan (CEMP) would be prepared for the project. The CEMP would detail the proposed approach to environmental management, monitoring and reporting during construction. A number of sub-plans (and other supporting documentation, as required) would also be prepared as part of the CEMP.

A Stakeholder Engagement Strategy has been prepared for the Upgrade Program and would be used to guide community and stakeholder engagement activities during construction of the project. Engagement during construction would include updates on planned construction activities and would respond to concerns and enquiries in a timely manner, seeking to minimise potential impacts where possible.

Construction and operational mitigation measures to manage potential social impacts of the project are outlined in Table 8-2.

The management of other environmental impacts (such as noise and vibration, traffic and transport, and other amenity-related impacts) would contribute to the management of social impacts, due to their interrelated nature. Other mitigation measures identified in the EIS which are relevant to the management of potential social impacts include:

- measures in Chapter 8 (Transport and traffic), specifically measures regarding the management of construction traffic volumes and safety during construction
- measures in Chapter 9 (Air quality), specifically measures regarding dust and odour mitigation
- measures in Chapter 11 (Noise and vibration), specifically measures regarding which address potential exceedances of relevant noise criteria
- measures in Chapter 18 (Landscape and visual), specifically measures regarding minimising visual impacts during construction and ensuring operational infrastructure is integrated with the existing landscape

- measures in Chapter 20 (Business, land use and property), specifically measures regarding economic and business impacts

Additionally, the measures in Chapter 24 (Cumulative impacts) would contribute to the management of cumulative social impacts. In accordance with mitigation measure CI1, opportunities to minimise and manage cumulative impacts across the Great Western Highway Upgrade Program will be identified in consultation with other projects in the Upgrade Program, and implemented where reasonable and feasible. Of relevance to cumulative social impacts, key focus areas for the minimisation and management of cumulative impacts will include:

- construction planning and staging, including coordination of construction activities and provision of respite periods
- coordination of stakeholder notification and engagement activities across the Upgrade Program
- construction amenity issues, particularly in relation to construction traffic, dust, noise and vibration
- avoidance and minimisation of impacts on biodiversity, Aboriginal heritage and non-Aboriginal heritage.

Management and mitigation measures identified to manage potential social impacts and/enhance social benefits which arise as a result of the project, in addition to the measures proposed for other environmental impacts, are outlined in Table 8-2.

**Table 8-2 Mitigation measures – social impacts**

| ID | Mitigation measure | Timing |
|---|---|---|
| SI1 | A Social Impact Management Plan (SIMP) will be prepared and implemented during construction and for the first three years of operation of the project. The SIMP will be prepared in consultation with the relevant local councils and will guide monitoring and adaptive management of social impacts resulting from the project. The SIMP will include details of:<br>• desired social outcomes for the project<br>• adaptive management and mitigation strategies to address potential impacts<br>• a process of monitoring predicted social impacts against actual impacts<br>• indicators used to monitor desired social outcomes<br>• a process for reporting on social impacts<br>• identification of appropriate stakeholder responsibilities.<br>The SIMP will be developed taking into account the requirements of the Skills, Employment and Industry Development Strategy for the Great Western Highway Upgrade Program, and the environmental mitigation measures developed for potential business, land use and property impacts. | Construction and operation |
| SI2 | Managers of social infrastructure located adjacent to the construction footprint (including Browntown Oval) will be notified of the timing and duration of construction works and engaged in relation to the management of potential impacts on the social infrastructure, with the aim of minimising potential disruptions to the use of the social infrastructure from construction activities. | Construction |
| SI3 | Construction workers for the project will be employed from the local area, where possible, to manage the need for people to relocate to the area for the duration of construction, and to contribute to local employment opportunities. | Construction |
| SI4 | A construction workforce accommodation strategy will be prepared to confirm workforce accommodation requirements and options, in | Design and construction |

| ID | Mitigation measure | Timing |
|---|---|---|
| | order to minimise potential adverse impacts to the rental market and short-term accommodation availability. This strategy will include consultation with local councils to better understand the market and how worker demand may be managed. | |
| SI5 | Opportunities to encourage visitors to areas that are bypassed by the project will be identified in consultation with the relevant local councils and other relevant government agencies. This will include development and implementation of a directional signage strategy during construction and operation of the project, and in accordance with applicable traffic signage standards and guidelines. The strategy will be developed with the aim of signposting key locations along the project corridor, and identifying the range of services, businesses and social infrastructure within the bypassed areas. | Design, construction and operation |
| SI6 | Stakeholder engagement activities carried out during construction will be accessible to a range of groups in the community. This will include, at a minimum, a range of engagement methods (including options for physical copies of engagement materials) and opportunities for translated materials, upon request. | Construction |

## 8.3 Social impact monitoring

Monitoring of social impacts is an important process to identify any unanticipated impacts that may arise as a result of this project. The engagement and analysis undertaken for this SIA provides a foundation for the ongoing monitoring and adaptive management of social impacts of the project.

A process for monitoring predicted social impacts would be detailed in the SIMP for the project (refer to mitigation measure S1). The monitoring process would indicatively involve:

- undertaking social impact engagement activities with residents and businesses (of a similar nature to the engagement undertaken for the SIA) during construction (indicatively every six months) and for the first three years of operation
- collating feedback provided by the community and stakeholders through the complaint management process during construction
- reviewing engagement results and feedback to consider the appropriateness of mitigation measures and identify potential unanticipated social impacts. The outcomes of this review would inform updates to mitigation measures for the project, if required.

Opportunities would be sought to undertake social impact engagement activities concurrently with other engagement activities for the project, to minimise the potential for consultation fatigue. The frequency of social impact engagement may also be revised in response to feedback from the community, if required.

## 8.4 Residual impacts

Residual social impacts of the project are those that remain after mitigation measures are implemented. A summary of the potential residual social impacts is included in Table 8-3 (for construction related impacts) and Table 8-4 (for operational impacts). This has been presented to illustrate the effect of the proposed mitigation measures, and to align with the requirements of the SIA Guideline.

A number of impacts have been assessed as having a low unmitigated impact. Following the implementation of standard mitigation and management measures or design refinement, the residual impact of these have been assessed as either being so small that they don't warrant further consideration or as having no residual impact. These include social impacts during construction relating to acquisition of property and crime, safety and security; and operational impacts relating to access to accommodation, health and wellbeing, crime, safety and security, Aboriginal culture and heritage and non-Aboriginal heritage.

**Table 8-3 Residual social impact summary – construction**

| Potential impact | Initial impact significance | Mitigation and monitoring approach | Residual impact significance |
|---|---|---|---|
| **Way of life** | | | |
| Temporary disruptions to the way in which residents, visitors and road users travel within the local area, generally associated with changes to traffic arrangements during construction | Minor + likely = medium (negative) | • implementation of the CEMP and Construction Transport and Access Management Plan (CTAMP), which include measures that minimise impacts to road users (vehicle users, pedestrians and cyclists) and measures to safely manage any residual impacts, as well as other transport management measures identified in the EIS<br>• clear, frequent and inclusive communication though the implementation of the Stakeholder Engagement Strategy<br>• establishment of monitoring process through the SIMP, to facilitate feedback on construction impacts and enable measures to be reviewed and amended if required, to respond to specific impacts | Minimal + likely = low (negative) |
| Temporary disruptions to the use and enjoyment of Browntown Oval associated with the presence of nearby construction activity at the Soldiers Pinch construction footprint and shared access point to the oval and construction footprint. The oval would however remain open for use throughout construction | Minor + likely = medium (negative) | • consultation would be carried out with managers of social infrastructure located directly adjacent to the construction footprint (including Browntown Oval) about the timing and duration of construction works and management of potential impacts, with the aim of minimising potential disruptions to the use of the social infrastructure from construction activity<br>• implementation of CTAMP, which will include measures to minimise and manage construction traffic and road safety impacts on other road users, including pedestrians and cyclists<br>• clear, frequent and inclusive communication though the implementation of the Stakeholder Engagement Strategy<br>• establishment of monitoring process through the SIMP, to facilitate feedback on construction impacts and enable measures to be reviewed and amended if required, to respond to specific impacts | Minimal + likely = low (negative) |

| Potential impact | Initial impact significance | Mitigation and monitoring approach | Residual impact significance |
|---|---|---|---|
| Temporary disruptions to the use and enjoyment of Browntown Oval associated with the presence of nearby construction activity at the Soldiers Pinch construction footprint and shared access point to the oval and construction footprint. The oval would however remain open for use throughout construction | Minor + likely = medium (negative) | • consultation would be carried out with managers of social infrastructure located directly adjacent to the construction footprint (including Browntown Oval) about the timing and duration of construction works and management of potential impacts, with the aim of minimising potential disruptions to the use of the social infrastructure from construction activity<br>• implementation of CTAMP, which will include measures to minimise and manage construction traffic and road safety impacts on other road users, including pedestrians and cyclists<br>• clear, frequent and inclusive communication though the implementation of the Stakeholder Engagement Strategy<br>• establishment of monitoring process through the SIMP, to facilitate feedback on construction impacts and enable measures to be reviewed and amended if required, to respond to specific impacts | Minimal + likely = low (negative) |
| Indirect impacts to the enjoyment and amenity of other social infrastructure facilities for residents and other members of the local community, particularly where it is located near to the construction footprint | Minor + likely = medium (negative) | • consultation would be carried out with managers of social infrastructure located directly adjacent to the construction footprint (including Browntown Oval) about the timing and duration of construction works and management of potential impacts, with the aim of minimising potential disruptions to the use of the social infrastructure from construction activity<br>• implementation of the CEMP and CTAMP, which include measures that minimise impacts to road users (vehicle users, pedestrian and cyclists) and measures to safely manage any residual impacts, as well as other transport management measures identified in the EIS<br>• clear, frequent and inclusive communication though the implementation of the Stakeholder Engagement Strategy<br>• establishment of monitoring process through the SIMP, to facilitate feedback on construction impacts and enable measures to be reviewed and amended if required, to respond to specific impacts | Minimal + likely = low (negative) |

| Potential impact | Initial impact significance | Mitigation and monitoring approach | Residual impact significance |
|---|---|---|---|
| **Community** | | | |
| Potential impacts to the makeup and identity of the local community may arise from the introduction of significant numbers of workers to the social locality, which may be of concern to existing residents | Moderate + possible = medium (negative) | • the construction workforce would be sourced from the local area where possible, to manage the need for people to relocate to the area for the duration of construction, and to contribute to local employment opportunities. This would be a focus of the Skills, Employment and Industry Development Strategy being implemented for the Upgrade Program, including this project<br>• construction workers would be briefed on respectful and appropriate behaviours in the community<br>• clear, frequent and inclusive communication though the implementation of the community and stakeholder engagement plan<br>• establishment of monitoring process through the SIMP, to facilitate feedback on construction impacts and enable measures to be reviewed and amended if required, to respond to specific impacts | Minimal + possible = low (negative) |
| Reduced social cohesion for residents and members of the local community due to indirect construction impacts and changes to access | Moderate + possible = medium (negative) | • implementation of the CEMP, CTAMP, Construction Noise and Vibration Management Plan (CNVMP) and mitigation measures identified in the EIS to address noise, traffic, air quality and landscape and visual impacts<br>• clear, frequent and inclusive communication though the implementation of the Stakeholder Engagement Strategy<br>• establishment of monitoring process through the SIMP, to facilitate feedback on construction impacts and enable measures to be reviewed and amended if required, to respond to specific impacts | Minimal + possible = low (negative) |

| Potential impact | Initial impact significance | Mitigation and monitoring approach | Residual impact significance |
|---|---|---|---|
| **Accessibility** | | | |
| Temporary impacts to access and connectivity for residents and members of the local community associated with increased construction traffic, and altered traffic and public transport arrangements | Minor + likely = medium (negative) | • implementation of the CEMP and CTAMP, which include measures that minimise impacts to road users (vehicle users, pedestrians and cyclists) and measures to safely manage any residual impacts, as well as other transport management measures identified in the EIS<br>• clear, frequent and inclusive communication though the implementation of the Stakeholder Engagement Strategy<br>• establishment of monitoring process through the SIMP, to facilitate feedback on construction impacts and enable measures to be reviewed and amended if required, to respond to specific impacts | Minimal + likely = low (negative) |
| Temporary disruptions to utilities limiting access to digital resources for residents and local businesses | Moderate + unlikely = medium (negative) | • utility checks and consultation with the relevant utility providers would be undertaken during design development and construction to confirm the presence of utilities and utility protection measures<br>• clear, frequent and inclusive communication though the implementation of the Stakeholder Engagement Strategy | Minimal + unlikely = low (negative) |
| Reduction in the availability of short-term accommodation required to support tourism, resulting in adverse impacts to potential visitors and local business which rely on tourism | Minor + possible = medium (negative) | • the construction workforce would be sourced from the local area where possible, to manage the need for people to relocate to the area for the duration of construction, and to contribute to local employment opportunities<br>• implementation of the Skills, Employment and Industry Development Strategy for the Upgrade Program. The strategy aims to maximise outcomes for the local and regional communities and industry and contribute to skills development and diversity within the infrastructure sector<br>• development of a workforce accommodation strategy to confirm accommodation requirements and options, which would aim to minimise potential adverse impacts to the rental market and short-term accommodation availability | Minimal + unlikely = low (negative) |

| Potential impact | Initial impact significance | Mitigation and monitoring approach | Residual impact significance |
|---|---|---|---|
| Reduction in the availability of longer-term rental properties within an hour from the project for residents, due to use of these properties by the construction workforce, with flow on effects to rental affordability | Moderate + possible = medium (negative) | • the construction workforce would be sourced from the local area where possible, to manage the need for people to relocate to the area for the duration of construction, and to contribute to local employment opportunities<br>• implementation of the Skills, Employment and Industry Development Strategy for the Upgrade Program. The strategy aims to maximise outcomes for the local and regional communities and industry and contribute to skills development and diversity within the infrastructure sector<br>• development of a workforce accommodation strategy to confirm accommodation requirements and options, which would aim to minimise potential adverse impacts to the rental market and short-term accommodation availability | Minor + unlikely = low (negative) |
| **Health and wellbeing** | | | |
| Impact to health and wellbeing of vulnerable groups in the community (such as those with pre-existing physical and/or mental health conditions, the elderly, and children), such as increased stress or annoyance (e.g. due to noise impacts) associated with ongoing construction impacts | Moderate + possible = medium (negative) | • implementation of the CEMP, CTAMP, CNVMP and mitigation measures identified in the EIS to address noise, traffic, air quality and landscape and visual impacts<br>• clear, frequent and inclusive communication though the implementation of the Stakeholder Engagement Strategy<br>• establishment of monitoring process through the SIMP, to facilitate feedback on construction impacts and enable measures to be reviewed and amended if required, to respond to specific impacts | Minor + unlikely = low (negative) |
| Impact to health and wellbeing of other residents and visitors within the vicinity of the construction footprint, such as increased stress, due to ongoing construction impacts | Minor + possible = medium (negative) | • implementation of the CEMP, CTAMP, CNVMP and mitigation measures identified in the EIS to address noise, traffic, air quality and landscape and visual impacts<br>• clear, frequent and inclusive communication though the implementation of the Stakeholder Engagement Strategy<br>• establishment of monitoring process through the SIMP, to facilitate feedback on construction impacts and enable measures to be reviewed and amended if required, to respond to specific impacts | Minimal + unlikely = low (negative) |

| Potential impact | Initial impact significance | Mitigation and monitoring approach | Residual impact significance |
|---|---|---|---|
| **Surroundings** | | | |
| Adverse impact to the way in which residents and visitors experience their surroundings due to temporary reductions in local amenity (traffic, noise, air quality and landscape and visual impacts) | Moderate + likely = high (negative) | • implementation of the CEMP, CTAMP, CNVMP and mitigation measures identified in the EIS to address noise, traffic, air quality and landscape and visual impacts<br>• clear, frequent and inclusive communication though the implementation of the Stakeholder Engagement Strategy<br>• establishment of monitoring process through the SIMP, to facilitate feedback on construction impacts and enable measures to be reviewed and amended if required, to respond to specific impacts | Minor + likely = medium (negative) |
| Adverse impacts to elements of the natural environment which are valued by the residents and the broader community, such as biodiversity and landscape impacts | Minor + likely = medium (negative) | • implementation of the CEMP, CTAMP, CNVMP, Construction Flora and Fauna Management Plan (CFFMP) and mitigation measures identified in the EIS to address noise, traffic, air quality, landscape and visual and biodiversity impacts<br>• clear, frequent and inclusive communication though the implementation of the Stakeholder Engagement Strategy<br>• establishment of monitoring process through the SIMP, to facilitate feedback on construction impacts and enable measures to be reviewed and amended if required, to respond to specific impacts | Minimal + likely = low (negative) |
| **Culture** | | | |
| Temporary adverse impacts upon elements of the social locality which residents and the community have identified as being highly valued – including the natural environment, community facilities and services, social interaction and the quiet local character of the area | Moderate + possible = medium (negative) | • implementation of the CEMP, CTAMP, CNVMP, CFFMP and mitigation measures identified in the EIS to address noise, traffic, air quality, landscape and visual and biodiversity impacts<br>• clear, frequent and inclusive communication though the implementation of the Stakeholder Engagement Strategy<br>• establishment of monitoring process through the SIMP, to facilitate feedback on construction impacts and enable measures to be reviewed and amended if required, to respond to specific impacts | Minor + likely = medium (negative) |

| Potential impact | Initial impact significance | Mitigation and monitoring approach | Residual impact significance |
|---|---|---|---|
| Potential impacts to elements of the landscape which are valued by Aboriginal communities, which could lead to cultural or spiritual loss for these communities | Moderate + unlikely = medium (negative) | • ongoing implementation of a Connecting with Country design process as described in Chapter 4 (Project description) of the EIS, which includes ongoing engagement with Aboriginal stakeholders. | Minor + unlikely = low (negative) |
| Construction impacts to non-Aboriginal heritage items and sites which are valued by the community | Minor + likely = medium (negative) | • implementation of the CEMP, Construction Heritage Management Plan and mitigation measures identified in the EIS to heritage impacts<br>• a detailed archaeological survey will be carried out within those parts of the Mount Victoria Stockade site and the potential Plough Inn site that would be directly affected by construction of the project, and which have not been previously disturbed/surveyed by the Little Hartley to Lithgow Upgrade project<br>• development of a heritage interpretation strategy for the project which identifies key stories and interpretive opportunities related to non-Aboriginal heritage. The strategy would address historic and contemporary heritage and community values and would identify innovative and engaging opportunities for interpretation | Minimal + likely = low (negative) |
| **Livelihoods** | | | |
| Adverse impacts to business amenity which could disrupt business practices and/or make some businesses less attractive for customers to businesses | Minor + possible = medium (negative) | • implementation of the CEMP, CTAMP, CNVMP and mitigation measures identified in the EIS to address noise, traffic, air quality and landscape and visual impacts<br>• access to local businesses would be maintained throughout construction<br>• ongoing consultation with local businesses to allow for time to prepare for changed traffic conditions | Minimal + possible = low (negative) |

| Potential impact | Initial impact significance | Mitigation and monitoring approach | Residual impact significance |
|---|---|---|---|
| Benefits to retail and construction-related businesses associated with the presence of construction workers and activities, improving the livelihoods of these businesses | Minor + possible = medium (positive) | • to enhance potential business and economic benefits, a Skills, Employment and Industry Development Strategy is being implemented for the Upgrade Program, including this project, to promote opportunities for upskilling and training of the local workforce. Its key focus areas are jobs, skills, diversity and business initiatives that achieve local economic and social outcomes | Moderate + possible = medium (positive) |
| Changes in amenity and availability of accommodation during construction which could have a temporary negative impact on the attractiveness of the area to tourists, and flow on effects on employment in tourism for local businesses and employees | Minor + possible = medium (negative) | • implementation of the CEMP, CTAMP, CNVMP and mitigation measures identified in the EIS to address noise, traffic, air quality and landscape and visual impacts<br>• construction workers would be sourced from the local area, where possible, to manage demand on accommodation. This would be a focus of the skills and employment strategy for the project | Minimal + possible = low (negative) |
| Economic benefits to the social locality during construction associated with increased expenditure at local businesses and employment opportunities, resulting in benefits to livelihoods for local businesses and their employees | Minor + possible = medium (positive) | • to enhance potential business and economic benefits, a Skills, Employment and Industry Development Strategy is being implemented for the Upgrade Program, including this project, to promote opportunities for upskilling and training of the local workforce. Its key focus areas are jobs, skills, diversity and business initiatives that achieve local economic and social outcomes | Moderate + possible = medium (positive) |
| **Cumulative social impacts** | | | |
| Concurrent construction activities may result in cumulative social impacts to residents, visitors and businesses in the social locality, such as disruptions to way of life or decrease in the quality of surroundings due to combined amenity-related impacts near the construction footprint. Communities closest to the construction footprint may experience construction and consultation fatigue | Moderate + likely = high (negative) | • implementation of measures to minimise and manage cumulative impacts in the Upgrade Program, as described in Chapter 24 (Cumulative impacts) of the EIS. Key focus areas would include construction amenity issues, particularly in relation to construction traffic, dust, noise and vibration<br>• clear, frequent and inclusive communication though the implementation of the Stakeholder Engagement Strategy<br>• establishment of monitoring process through the SIMP, to facilitate feedback on construction impacts and enable measures to be reviewed and amended if required, to respond to specific impacts | Minor + likely = medium |

**Table 8-4 Residual social impact summary – operation**

| Potential impact | Initial impact significance | Mitigation and monitoring approach | Residual impact significance |
|---|---|---|---|
| **Way of life** | | | |
| Benefits to residents way of life within the social locality, as the project would enable them to complete daily activities (such as accessing local shops and socialising within the area, or commuting to work) with reduced traffic congestion | Major + likely = high (positive) | Several measures would contribute to and/or enhance way of life benefits, for example:<br>• adoption of urban design objectives and criteria set out in the urban design report for the project (included in Appendix N (Technical report – Urban design, landscape and visual) of the EIS) would provide a high quality design outcome<br>• as set out in Chapter 8 (Transport and traffic) of the EIS, Transport would continue to work with local councils to support the delivery of an active transport link between Blackheath and Little Hartley. Other potential opportunities for active transport and placemaking initiatives would be subject to ongoing investigation and consultation with relevant councils<br>• community and stakeholder engagement throughout detailed design development | Major + likely = high (positive) |
| Improved travel times for local traffic/road users accessing social infrastructure within the social locality, and amenity improvements where social infrastructure is located in bypassed town centres | Moderate + likely = high (positive) | | Major + likely = high (positive) |
| **Community** | | | |
| Improvements in social cohesion, as reduction in traffic on the surface road would improve the ability of residents and visitors to safely and efficiently interact in the local area, particularly in town centres in Blackheath and Mount Victoria | Moderate + likely = high (positive) | • adoption of urban design objectives and criteria set out in the urban design report for the project (included in Appendix N (Technical report – Urban design, landscape and visual) of the EIS)) and implementation of the State Design Review Panel process as outlined in Chapter 4 (Project description) of the EIS would provide a high quality design outcome<br>• as set out in Chapter 8 (Transport and traffic) of the EIS, Transport would continue to work with local councils to support the delivery of an active transport link between Blackheath and Little Hartley. Other potential opportunities for active transport and placemaking | Moderate + likely = high (positive) |

| Potential impact | Initial impact significance | Mitigation and monitoring approach | Residual impact significance |
|---|---|---|---|
| | | initiatives would be subject to ongoing investigation and consultation with relevant councils<br>• community and stakeholder engagement throughout detailed design development | |
| **Accessibility** | | | |
| Benefits to access and connectivity locally and regionally for road users, associated with reduced travel times and congestion | Major + likely = high (positive) | • adoption of urban design objectives and criteria set out in the urban design report for the project (included in Appendix N (Technical report – Urban design, landscape and visual) of the EIS)) and implementation of the State Design Review Panel process as outlined in Chapter 4 (Project description) of the EIS would provide a high quality design outcome<br>• as set out in Chapter 8 (Transport and traffic) of the EIS, Transport would continue to work with local councils to support the delivery of an active transport link between Blackheath and Little Hartley. Other potential opportunities for active transport and placemaking initiatives would be subject to ongoing investigation and consultation with relevant councils<br>• community and stakeholder engagement throughout detailed design development | Major + likely = high (positive) |
| **Surroundings** | | | |
| Improvements in local amenity in bypassed town centres, experienced by residents and visitors, due to improvements in traffic congestion, noise, visual amenity and air quality | Moderate + likely = high (positive) | • adoption of urban design objectives and criteria set out in the urban design report for the project (included in Appendix N (Technical report – Urban design, landscape and visual) of the EIS)) and implementation of the State Design Review Panel process as outlined in Chapter 4 (Project description) of the EIS would provide a high quality design outcome<br>• as set out in Chapter 8 (Transport and traffic) of the EIS, Transport would continue to work with local councils to support the delivery of an active transport link between | Moderate + likely = high (positive) |

| Potential impact | Initial impact significance | Mitigation and monitoring approach | Residual impact significance |
|---|---|---|---|
| | | Blackheath and Little Hartley. Other potential opportunities for active transport and placemaking initiatives would be subject to ongoing investigation and consultation with relevant councils<br>• community and stakeholder engagement throughout detailed design development | |
| Adverse changes in surroundings associated with noise, visual and air quality impacts for residents in areas closest to portal infrastructure in Blackheath and Little Hartley | Minor + likely = medium (negative) | • additional design measures if a ventilation outlet option is adopted, such as the murals painted on the building at Evans Lookout Road, Blackheath, which pay homage to the natural environment within the Blue Mountains<br>• adoption of urban design objectives and criteria set out in the urban design report for the project (included in Appendix N (Technical report – Urban design, landscape and visual)) would provide a high quality design outcome<br>• post-construction noise and air quality monitoring to confirm that relevant targets are achieved<br>• community and stakeholder engagement throughout detailed design development | Minimal + likely = low (negative) |
| Landscape amenity and biodiversity-related impacts to bushland and natural features could impact upon environmental elements of the area which are valued by the community | Minor + likely = medium (negative) | • adoption of urban design objectives and criteria set out in the urban design report for the project (included in Appendix N (Technical report – Urban design, landscape and visual) of the EIS)) and implementation of the State Design Review Panel process as outlined in Chapter 4 (Project description) of the EIS would provide a high quality design outcome<br>• development of a landscape concept design plan for the project to ensure that new native plantings are consistent with the existing landscape character and screen views to the proposed operational infrastructure | Minimal + likely = low (negative) |

| Potential impact | Initial impact significance | Mitigation and monitoring approach | Residual impact significance |
|---|---|---|---|
| **Culture** | | | |
| Improvements in the accessibility and amenity of Blackheath and Mount Victoria townships, would provide for improved access and amenity to local shops and community facilities in these centres, and provide a more attractive destination for social interaction for residents and businesses | Minor + likely = medium (positive) | • adoption of urban design objectives and criteria set out in the urban design report for the project (included in Appendix N (Technical report – Urban design, landscape and visual) of the EIS)) and implementation of the State Design Review Panel process as outlined in Chapter 4 (Project description) of the EIS would provide a high quality design outcome<br>• in line with the Designing with Country framework, engagement with Aboriginal knowledge holders with a view to incorporating Aboriginal culture and heritage into the design development of the project<br>• heritage interpretation strategy to address historic and contemporary heritage and community values and identify innovative and engaging opportunities for interpretation<br>• community and stakeholder engagement throughout detailed design development | Major + likely = medium (positive) |
| **Livelihoods** | | | |
| Businesses which are bypassed by the project which rely on passing trade may experience a downturn in customers, affecting their livelihoods | Minor + possible = medium (negative) | • implementation of a strategy for directional signage to ensure effective and appropriate signposting for key locations along the project, to continue to attract visitors. Consultation would also be undertaken with the relevant local councils to identify opportunities to encourage visitors to areas that are bypassed by the project | Minimal + possible = low (negative) |
| Accommodation businesses and other businesses which cater to tourism may benefit from an increase in demand, as bypassed areas become more attractive to visit due to decreases in traffic congestion | Minor + possible = medium (positive) | • implementation of a strategy for directional signage to ensure effective and appropriate signposting for key locations along the project, to continue to attract visitors. Consultation would also be undertaken with the relevant local councils to identify opportunities to encourage visitors to areas that are bypassed by the project | Minor + possible = medium (positive) |

| Potential impact | Initial impact significance | Mitigation and monitoring approach | Residual impact significance |
|---|---|---|---|
| The broader economic benefits of the project would likely result in flow on effects for livelihoods within the social locality. An increase in tourism spend in the area would provide greater opportunity for businesses and residents to earn an income through employment in the tourism industry | Minor + possible = medium (positive) | • implementation of a strategy for directional signage to ensure effective and appropriate signposting for key locations along the project, to continue to attract visitors. Consultation would also be undertaken with the relevant local councils to identify opportunities to encourage visitors to areas that are bypassed by the project | Minor + possible = medium (positive) |
| **Cumulative social impacts** | | | |
| Cumulative benefits to access and connectivity for residents, businesses, visitors and road users, and associated improvements to health and wellbeing provided by the Upgrade Program as a whole | Major + likely = high (positive) | • as set out in Chapter 8 (Transport and traffic) of the EIS, Transport would continue to work with local councils to support the delivery of an active transport link between Blackheath and Little Hartley, which would further enhance the cumulative benefit to access and connectivity. Other potential opportunities for active transport and placemaking initiatives would be subject to ongoing investigation and consultation with relevant councils | Major + likely = high (positive) |

# 9 Conclusion

This SIA has been prepared to support the EIS and to address the relevant SEARs issued for the EIS. Specifically, this report has been prepared to assess the potential social impacts of construction and operation of the project that may affect residents, businesses and other key stakeholders, and to identify appropriate mitigation and management measures to address the impacts identified and/or enhance potential benefits.

The SIA identified a range of social impacts, both positive and negative, which are anticipated during construction and operation of the project. Appropriate forms of mitigation and management, identified in Section 8 (Management of impacts) and the EIS, would allow negative impacts of the project to be addressed to an acceptable level.

Key residual potential social impacts of the project would include the following:

- during construction
  - impacts to community health and wellbeing, such as increased stress, due to ongoing construction impacts within the vicinity of the construction footprint
  - adverse impacts to the way in which residents and visitors experience their surroundings due to temporary reductions in local amenity (traffic, noise, air quality and landscape and visual impacts)
  - potential impacts on the availability and affordability of accommodation in the region, if construction workforce accommodation requirements are not planned and managed appropriately
  - temporary adverse impacts upon elements of the social locality which the community have identified as being highly valued - including the natural environment, community facilities and services, social interaction and the quiet local character of the area
  - business and economic benefits to the social locality during construction associated with increased expenditure at local businesses and employment opportunities
  - cumulative social impacts due to concurrent construction activities with other components of the Upgrade Program may result in, such as disruptions to way of life or decrease in the quality of surroundings due to combined amenity-related impacts near the construction footprint.
- during operation
  - in areas closest to new surface infrastructure, adverse impacts to the way in which residents and visitors experience their surroundings due to temporary reductions in local amenity (traffic, noise, air quality and landscape and visual impacts)
  - key social benefits during operation which primarily relate to the substantial reduction of through traffic on the existing Great Western Highway, allowing people to move around their local area with improved safety and ease, and increasing access to local facilities, social infrastructure and businesses.

The implementation and ongoing monitoring of these impacts would support delivery of social benefits associated with the project.

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# Annexure A

## Certification page

# Annexure A – Certification page

I, Jamie McMahon, certify that this social impact assessment contains all information relevant to the social impact assessment for this project, and that the information is not false or misleading. The SIA Author's qualifications and experiences are listed below.

- Experience in in social science methodologies and demonstrated social impact assessment skills in government and private settings. The author is a social impact specialist and has managed social impact assessments for numerous transport infrastructure, and energy projects in NSW, including State Significant Projects
- Bachelor of Environmental Science (Honours)
- Certified Environmental Practitioner – Impact Assessment Specialist (IA11004)
- Member of Environment Institute of Australia and New Zealand
- NSW Division Committee member, Environment Institute of Australia and New Zealand
- EIANZ Impact Assessment Special Interest Section committee member
- NSW Registered Environmental Assessment Practitioner.

Date: 13 December 2022

Signature:

# Annexure B

## Social baseline data

# Annexure B – Social baseline data

**Table B-10-1 Key demographic characteristics of the local and regional study area (2016)**

| Key Demographic | Mount Victoria SSC | Blackheath SSC | Blue Mountains LGA | Kanimbla SSC | Little Hartley SSC | Lithgow LGA | NSW Average |
|---|---|---|---|---|---|---|---|
| Median age | 45 | 51 | 44 | 54 | 50 | 45 | 38 |
| Total Resident Population (no. persons) | 1,016 | 4,396 | 76,904 | 121 | 506 | 21,090 | 7,480,228 |
| Population aged <15 (no. persons) | 176 | 683 | 14,069 | 12 | 82 | 3,591 | 1,386,330 |
| %^ | 17.3% | 15.5% | 18.3% | 10% | 16.2% | 17% | 18.5% |
| Population aged 15+ (no. persons) | 849 | 3,718 | 62,829 | 113 | 431 | 17,499 | 6,093,914 |
| %^ | 83.6% | 84.6% | 81.7% | 93% | 85.2% | 83% | 81.5% |
| Population aged 65+ (no. persons) | 188 | 1,147 | 15,017 | 40 | 102 | 4,649 | 1,217,646 |
| %^ | 18.5% | 26.1% | 19.5% | 33% | 20.2% | 22% | 16.3% |
| Population aged 85+ (no. persons) | 18 | 76 | 1,635 | 4 | 10 | 513 | 167,505 |
| %^ | 1.8% | 1.7% | 2.1% | 3.3% | 2% | 2.4% | 2.2% |
| Aboriginal and Torres Strait Islander population (no. persons) | 24 | 96 | 1,823 | 3 | 5 | 1,208 | 216,176 |
| %^ | 2.4% | 2.2% | 2.4% | 2.4% | 1% | 5.7% | 2.9% |
| Speaks a language other than English at home (no. persons) | 64 | 275 | 4,707 | 4 | 23 | 727 | 1,882,015 |
| %^ | 6.3% | 6.3% | 6.1% | 3.2% | 4.6% | 3.5% | 25.2% |
| Speaks only English at home (no. persons) | 843 | 3,847 | 68,689 | 112 | 452 | 17,905 | 5,126,633 |
| %^ | 83% | 87.5% | 89.3% | 92.6% | 75.8% | 84.9% | 68.5% |
| Has a need for assistance (no. persons) | 41 | 272 | 4,228 | 7 | 16 | 1,387 | 402,048 |
| %^ | 4% | 6.2% | 5.5% | 5.8% | 3.2% | 6.6% | 5.4% |

^percentage of total resident population for respective Census year

**Table B-10-2 Key demographic characteristics of the local and regional study area (2021)**

| Key Demographic | Mount Victoria SSC | Blackheath SSC | Blue Mountains LGA | Kanimbla SSC | Little Hartley SSC | Lithgow LGA | NSW Average |
|---|---|---|---|---|---|---|---|
| Median age | 49 | 53 | 45 | 54 | 49 | 46 | 39 |
| Total Resident Population (no. persons) | 945 | 4,672 | 78,121 | 184 | 629 | 20,849 | 8,072,163 |
| Population aged <15 (no. persons) | 130 | 643 | 13,633 | 15 | 91 | 3,419 | 1,470,006 |
| %^ | 13.8% | 13.8% | 17.5% | 8.2% | 14.5% | 16.4% | 18.2% |
| Population aged 15+ (no. persons) | 815 | 4,029 | 64,488 | 169 | 538 | 17,430 | 6,602,157 |
| %^ | 86.2% | 86.2% | 82.5% | 91.8% | 85.5% | 83.6% | 81.8% |
| Population aged 65+ (no. persons) | 247 | 1,387 | 17,538 | 46 | 136 | 5,110 | 1,424,141 |
| %^ | 26.1% | 29.7% | 22.4% | 25.0% | 21.6% | 24.5% | 17.6% |
| Population aged 85+ (no. persons) | 12 | 114 | 1,763 | 4 | 13 | 534 | 183,895 |
| %^ | 1.3% | 2.4% | 2.3% | 2.2% | 2.1% | 2.6% | 2.3% |
| Aboriginal and Torres Strait Islander population (no. persons) | 37 | 104 | 2,101 | 0 | 26 | 1,621 | 278,043 |
| %^ | 3.9% | 2.2% | 2.7% | 0.0% | 4.1% | 7.8% | 3.4% |
| Speaks a language other than English at home (no. persons) | 83 | 310 | 5,061 | 9 | 34 | 903 | 2,146,080 |
| %^ | 8.8% | 6.6% | 6.5% | 4.9% | 5.4% | 4.3% | 26.6% |
| Speaks only English at home (no. persons) | 839 | 4,066 | 70,398 | 165 | 531 | 18,199 | 5,457,982 |
| %^ | 88.8% | 87.0% | 90.1% | 89.7% | 84.4% | 87.3% | 67.6% |
| Has a need for assistance (no. persons) | 56 | 310 | 4,568 | 6 | 30 | 1,582 | 464,712 |
| %^ | 5.9% | 6.6% | 5.8% | 3.3% | 4.8% | 7.6% | 5.8% |

^percentage of total resident population for respective Census year

**Table B-10-3 Population projections for Blue Mountains LGA (NSW Department of Planning & Environment, 2022)**

| Year | Projected population for Blue Mountains LGA | Percentage increase (from previous 5 year period) |
|---|---|---|
| 2016 | 78,835 | - |
| 2021 | 79,373 | 0.7% |
| 2026 | 80,050 | 0.9% |
| 2031 | 81,061 | 1.3% |
| 2036 | 82,334 | 1.6% |
| 2041 | 83,951 | 2% |

**Table B-10-4 Population projections for Lithgow LGA (NSW Department of Planning & Environment, 2022)**

| Year | Projected population for Lithgow LGA | Percentage increase (from previous 5 year period) |
|---|---|---|
| 2016 | 21,484 | - |
| 2021 | 21,477 | 0% |
| 2026 | 21,547 | 0.3% |
| 2031 | 21,540 | 0% |
| 2036 | 21,408 | -0.6% |
| 2041 | 21,147 | -1.2% |

**Table B-10-5 2016 Labour Force Characteristics**

| Key Demographic | Mount Victoria SSC | Blackheath SSC | Blue Mountains LGA | Kanimbla SSC | Little Hartley SSC | Lithgow LGA | NSW |
|---|---|---|---|---|---|---|---|
| Total Labour Force | 448 | 1,942 | 37,642 | 57 | 273 | 8455 | 3,605,872 |
| Employed full time (FT) | 210 | 958 | 20,994 | 41 | 150 | 4627 | 2,134,521 |
| %^ | 46.9% | 49.3% | 55.8% | 72% | 55% | 54.7% | 59.2% |
| Employed part time (PT) | 190 | 797 | 13,148 | 15 | 95 | 2678 | 1,071,151 |
| %^ | 42.4% | 41% | 34.9% | 26% | 34.8% | 31.7% | 29.7% |
| Employed away from work* | 16 | 61 | 1,246 | - | 13 | 326 | 174,654 |
| %^ | 3.6% | 3.1% | 3.3% | - | 4.8% | 3.9% | 4.8% |
| Unemployed | 30 | 98 | 1,778 | 4 | 11 | 651 | 225,546 |
| %^ | 6.7% | 5.1% | 4.7% | 7% | 4% | 7.7% | 6.3% |

*Employed full time or part time, but away from work at the time of the 2016 Census
^Percentage of total labour force for each geographical location

**Table B-10-6 Unemployment data – March quarter 2022 (National Skills Commission, 2022)**

| March quarter 2022 data | Blue Mountains LGA | Lithgow LGA | NSW |
|---|---|---|---|
| Unemployed (no of persons) | 1,318 | 307 | 197,200 |
| Labour force (no of persons) | 41,848 | 10,653 | 4,308,200 |
| Unemployment rate | 3.1% | 2.9% | 4.6% |

**Table B-10-7 Residential dwelling characteristics (number of dwellings; 2016)**

| Category | Mount Victoria SSC | Blackheath SSC | Blue Mountains LGA | Kanimbla SSC | Little Hartley SSC | Lithgow LGA | NSW Average |
|---|---|---|---|---|---|---|---|
| Separate House | 387 (69.6%) | 1,837 (69.5%) | 26,482 (80.7%) | 55 (67.1%) | 186 (83.4%) | 6766 (76%) | 1,729,820 (59.9%) |
| Semi-detached, townhouse or terrace house | 0 (0%) | 40 (1.5%) | 1,404 (4.3%) | - | 4 (1.8%) | 538 (6%) | 317,447 (11%) |
| Flat or apartment | 0 (0%) | 17 (0.6%) | 582 (1.8%) | - | - | 134 (1.5%) | 519,380 (18%) |
| Other dwelling (caravan, cabin, tent, flat attached to a shop) | 0 (0%) | 7 (0.3%) | 53 (0.2%) | - | - | 353 (4%) | 23,583 (0.8%) |
| Dwelling structure not stated | 0 (0%) | 10 (0.4%) | 109 (0.3%) | - | - | 72 (0.8%) | 14,077 (0.5%) |
| Unoccupied private dwelling | 158 (28.4%) | 728 (27.5%) | 4,196 (12.8%) | 23 (28.1%) | 32 (14.4%) | 1051 (11.8%) | 284,741 (9.9%) |

Percentages may not add to 100% due to rounding

**Table B-10-8 Residential dwelling characteristics (number of dwellings; 2021)**

| Category | Mount Victoria SSC | Blackheath SSC | Blue Mountains LGA | Kanimbla SSC | Little Hartley SSC | Lithgow LGA | NSW Average |
|---|---|---|---|---|---|---|---|
| Separate House | 430 (74.1%) | 2,031 (73.6%) | 28,125 (82.5%) | 76 (75.2%) | 220 (84.9%) | 7,455 (77.8%) | 1,902,734 (59.5%) |
| Semi-detached, townhouse or terrace house | 3 (0.5%) | 43 (1.6%) | 1,339 (3.9%) | 0 (0%) | 4 (1.5%) | 643 (6.7%) | 340,582 (10.6%) |
| Flat or apartment | 0 (0%) | 30 (1.1%) | 943 (2.8%) | 0 (0%) | 0 (0%) | 133 (1.4%) | 630,030 (19.7%) |
| Other dwelling (caravan, cabin, tent, flat attached to a shop) | 4 (0.7%) | 11 (0.4%) | 47 (0.1%) | 0 (0%) | 0 (0%) | 64 (0.7%) | 19,374 (0.6%) |
| Dwelling structure not stated | 0 (0%) | 8 (0.3%) | 71 (0.2%) | 0 (0%) | 0 (0%) | 28 (0.3%) | 7,754 (0.2%) |
| Unoccupied private dwelling | 144 (24.8%) | 644 (23.3%) | 3,566 (10.5%) | 23 (22.8%) | 36 (13.9%) | 1,261 (13.2%) | 299,524 (9.4%) |

Percentages may not add to 100% due to rounding

**Table B-10-9 Home ownership and household structure (2016)**

| | Category | Mount Victoria SSC | Blackheath SSC | Blue Mountains LGA | Kanimbla SSC | Little Hartley SSC | Lithgow LGA | NSW Average |
|---|---|---|---|---|---|---|---|---|
| Home Ownership | Owned outright | 157 (39.7%) | 823 (43%) | 11,218 (39.2%) | 37 (62.7%) | 80 (41.5%) | 3286 (41.8%) | 839,665 (32.2%) |
| | Owned with a mortgage | 145 (36.6%) | 580 (30.3%) | 11,295 (39.5%) | 15 (25.4%) | 90 (46.5%) | 2300 (29.3%) | 840,004 (32.3%) |
| | Rented | 90 (22.7%) | 448 (23.4%) | 5,267 (18.4%) | 8 (13.6%) | 13 (6.7%) | 1931 (24.6%) | 826,922 (31.8%) |
| | Other tenure type | 0 (0%) | 18 (1%) | 251 (0.9%) | - | - | 81 (1%) | 23,968 (1%) |
| | Tenure type not stated | 5 (1.3%) | 43 (2.3%) | 595 (2.1%) | - | - | 260 (3.3%) | 73,763(2.8%) |
| Household Structure | Family household | 240 (60.6%) | 1,178 (61.6%) | 20,389 (71.2%) | 41 (69.5%) | 149 (77.2%) | 5114 (65%) | 1,874,524 (72%) |
| | Single (or lone) | 138 (34.9%) | 664 (34.7%) | 7,386 (25.8%) | 16 (27.1%) | 38 (19.7%) | 2561 (32.6%) | 620,778 (23.8%) |
| | Group household | 17 (4.3%) | 75 (3.9%) | 845 (3%) | 0 | 3 (1.6%) | 188 (2.4%) | 109,004 (4.2%) |

Percentages may not add to 100 per cent due to rounding

**Table B-10-10 Home ownership and household structure (2021)**

| | Category | Mount Victoria SSC | Blackheath SSC | Blue Mountains LGA | Kanimbla SSC | Little Hartley SSC | Lithgow LGA | NSW Average |
|---|---|---|---|---|---|---|---|---|
| Home Ownership | Owned outright | 201 (46.5%) | 998 (47.1%) | 12,483 (40.9%) | 42 (55.3%) | 107 (49.1%) | 3,484 (41.9%) | 914,537 (31.5%) |
| | Owned with a mortgage | 150 (34.7%) | 623 (29.4%) | 11,848 (38.8%) | 22 (28.9%) | 96 (44%) | 2,459 (29.6%) | 942,804 (32.5%) |
| | Rented | 75 (17.4%) | 438 (20.7%) | 5,435 (17.8%) | 10 (13.2%) | 12 (5.5%) | 2,008 (24.1%) | 944,585 (32.6%) |
| | Other tenure type | 8 (1.9%) | 34 (1.6%) | 460 (1.5%) | 5 (6.6%) | 3 (1.4%) | 191 (2.3%) | 55,931 (1.9%) |
| | Tenure type not stated | 4 (0.9%) | 28 (1.3%) | 303 (1%) | 3 (3.9%) | 0 (0%) | 177 (2.1%) | 42,613 (1.5%) |
| Household Structure | Family household | 255 (59%) | 1,301 (61.4%) | 21,637 (70.9%) | 54 (71.1%) | 185 (84.9%) | 5,280 (63.5%) | 2,065,107 (71.2%) |
| | Single (or lone) | 169 (39.1%) | 758 (35.8%) | 8,142 (26.7%) | 18 (23.7%) | 36 (16.5%) | 2,831 (34%) | 723,716 (25%) |
| | Group household | 15 (3.5%) | 60 (2.8%) | 752 (2.5%) | 6 (7.9%) | 0 (0%) | 203 (2.4%) | 111,646 (3.8%) |

Percentages may not add to 100 per cent due to rounding

**Table B-10-11 Employment by industry 2016**

| Industry | Mount Victoria SSC | | Blackheath SSC | | Blue Mountains LGA | | Kanimbla SSC | | Little Hartley SSC | | Lithgow LGA | | NSW | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. persons | % | No. persons | % | No. persons | % | No. persons | % | No. persons | % | No. persons | % | No. persons | % |
| Agriculture, Forestry and Fishing | 6 | 1.5% | 10 | 0.5% | 167 | 0.9% | 6 | 10.9% | 7 | 2.7% | 224 | 2.9% | 72,625 | 2.2% |
| Mining | 8 | 1.9% | 35 | 1.9% | 116 | 0.6% | 3 | 5.5% | 16 | 6.1% | 694 | 8.9% | 31,736 | 0.9% |
| Manufacturing | 19 | 4.6% | 60 | 3.3% | 1,321 | 7.3% | 3 | 5.5% | 7 | 2.7% | 411 | 5.3% | 197,331 | 5.8% |
| Electricity, Gas, Water and Waste Services | 8 | 1.9% | 17 | 0.9% | 357 | 2% | 3 | 5.5% | 3 | 1.1% | 279 | 3.6% | 31,881 | 0.9% |
| Construction | 28 | 6.8% | 142 | 7.7% | 2,570 | 14.2% | 3 | 5.5% | 19 | 7.2% | 519 | 6.7% | 282,491 | 8.4% |
| Wholesale Trade | 5 | 1.2% | 21 | 1.1% | 557 | 3.1% | 0 | - | 3 | 1.1% | 174 | 2.2% | 103,722 | 3.1% |
| Retail Trade | 45 | 10.9% | 145 | 7.9% | 1,310 | 7.2% | 0 | - | 24 | 9.1% | 761 | 9.8% | 326,396 | 9.7% |
| Accommodation and Food Services | 46 | 11.2% | 220 | 12% | 1,134 | 6.3% | 3 | 5.5% | 25 | 9.5% | 701 | 9% | 239,222 | 7.1% |
| Transport, Postal and Warehousing | 33 | 8% | 43 | 2.3% | 1,052 | 5.8% | 0 | - | 12 | 4.6% | 359 | 4.6% | 158,760 | 4.7% |
| Information Media and Telecommunications | 7 | 1.7% | 36 | 2% | 389 | 2.1% | 0 | - | 4 | 1.5% | 63 | 0.8% | 73,398 | 2.2% |
| Financial and Insurance Services | 3 | 0.7% | 31 | 1.7% | 540 | 3% | 0 | - | 3 | 1.1% | 159 | 2% | 167,259 | 5% |
| Rental, Hiring and Real Estate Services | 3 | 0.7% | 47 | 2.6% | 281 | 1.6% | 3 | 5.5% | 4 | 1.5% | 101 | 1.3% | 59,652 | 1.8% |

| Industry | Mount Victoria SSC | | Blackheath SSC | | Blue Mountains LGA | | Kanimbla SSC | | Little Hartley SSC | | Lithgow LGA | | NSW | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Professional, Scientific and Technical Services | 30 | 7.3% | 134 | 7.3% | 1,227 | 6.8% | 3 | 5.5% | 15 | 5.7% | 228 | 2.9% | 274,078 | 8.1% |
| Administrative and Support Services | 18 | 4.4% | 67 | 3.6% | 568 | 3.1% | 3 | 5.5% | 4 | 1.5% | 270 | 3.5% | 117,482 | 3.5% |
| Public Administration and Safety | 32 | 7.8% | 123 | 6.7% | 1,733 | 9.5% | 3 | 5.5% | 30 | 11.4% | 745 | 9.6% | 204,173 | 6% |
| Education and Training | 38 | 9.2% | 230 | 12.5% | 1,714 | 9.4% | 3 | 5.5% | 22 | 8.3% | 500 | 6.4% | 282,568 | 8.4% |
| Health Care and Social Assistance | 56 | 13.6% | 278 | 15.1% | 1,198 | 6.6% | 6 | 10.9% | 32 | 12.1% | 904 | 11.6% | 422,195 | 12.5% |
| Arts and Recreation Services | 16 | 3.9% | 59 | 3.2% | 455 | 2.5% | 8 | 14.5% | 3 | 1.1% | 88 | 1.1% | 51,775 | 1.5% |
| Other Services | 10 | 2.4% | 67 | 3.6% | 661 | 3.6% | 3 | 5.5% | 13 | 4.9% | 303 | 3.9% | 124,477 | 3.7% |
| Inadequately described/Not stated | 12 | 2.9% | 73 | 4% | 798 | 4.4% | 3 | 5.5% | 13 | 4.9% | 322 | 4.1% | 159,108 | 4.7% |
| **Total** | **412** | **-** | **1,839** | **-** | **18,157** | **-** | **55** | **-** | **218** | **-** | **7798** | | **3,380,332** | **-** |

Percentages may not add to 100 per cent due to rounding

**Table B-10-12 Journey to work (Single Method only) (2016)**

| Transport Method | Mount Victoria SSC | | Blackheath SSC | | Blue Mountains LGA | | Kanimbla | | Little Hartley SSC | | Lithgow LGA | | NSW | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. persons | % | No. persons | % | No. persons | % | No. persons | % | No. persons | % | No. persons | % | No. persons | % |
| Train | 24 | 8.1% | 100 | 7.5% | 2,806 | 10.1% | 3 | 8.8% | 0 | - | 53 | 0.8% | 252,786 | 9.3% |
| Bus | 0 | 0 | 12 | 0.9% | 127 | 0.5% | 0 | - | 0 | - | 24 | 0.4% | 133,903 | 4.9% |
| Ferry | 0 | 0 | 0 | 0 | 3 | 0 | 0 | - | 0 | - | 0 | - | 7752 | 0.3% |
| Tram (includes light rail) | 0 | 0 | 0 | 0 | 7 | 0 | 0 | - | 0 | - | 0 | - | 2732 | 0.1% |
| Taxi | 0 | 0 | 0 | 0 | 67 | 0.2% | 0 | - | 0 | - | 21 | 0.3% | 6694 | 0.2% |
| Car, as driver | 236 | 79.7% | 1,040 | 78.1% | 21,713 | 78.4% | 28 | 82.4% | 168 | 85.3% | 5,371 | 84.5% | 1,953,399 | 71.6% |
| Car, as passenger | 7 | 2.4% | 65 | 4.9% | 1,221 | 4.4% | 0 | - | 11 | 5.6% | 333 | 5.2% | 144,820 | 5.3% |
| Truck | 3 | 1% | 16 | 1.2% | 360 | 1.3% | 0 | - | 12 | 6.1% | 108 | 1.7% | 32,908 | 1.2% |
| Motorbike/ scooter | 3 | 1% | 5 | 0.4% | 179 | 0.7% | 0 | - | 0 | - | 18 | 0.3% | 21,159 | 0.8% |
| Bicycle | 3 | 1% | 10 | 0.8% | 120 | 0.4% | 0 | - | 0 | - | 23 | 0.4% | 23,332 | 0.9% |
| Other | 4 | 1.4% | 12 | 0.9% | 171 | 0.6% | 0 | - | 4 | 2.1% | 36 | 0.6% | 18,811 | 0.7% |
| Walked only | 8 | 2.7% | 75 | 5.6% | 916 | 3.3% | 0 | - | 0 | - | 366 | 5.8% | 130,957 | 4.8% |
| **Total one method** | **296** | **-** | **1,331** | **-** | **27,693** | **-** | **34** | **-** | **197** | **-** | **6,353** | **-** | **2,729,260** | **-** |

Percentages may not add to 100 per cent due to rounding

**Table B-10-13 Vehicle ownership count of private occupied dwellings 2016**

| Industry | Mount Victoria SSC | | Blackheath SSC | | Blue Mountains LGA | | Kanimbla SSC | | Little Hartley SSC | | Lithgow LGA | | NSW | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No | % |
| No motor vehicles | 34 | 8.6% | 160 | 8.4% | 1,846 | 6.5% | 3 | 5.1% | 0 | - | 703 | 8.9% | 239,625 | 9.2% |
| One motor vehicle | 187 | 47.2% | 895 | 46.8% | 10,651 | 37.2% | 16 | 27.1% | 39 | 21.2% | 2,698 | 34.3% | 946,159 | 36.3% |
| Two motor vehicles | 115 | 29% | 622 | 32.5% | 10,423 | 36.4% | 21 | 35.6% | 80 | 41.5% | 2,538 | 32.9% | 887,849 | 34.1% |
| Three motor vehicles | 27 | 6.8% | 147 | 7.7% | 3,235 | 11.3% | 10 | 17% | 39 | 20.2% | 954 | 12.1% | 283,044 | 10.9% |
| Four motor vehicles | 18 | 4.6% | 37 | 1.9% | 1,730 | 6% | 4 | 7.4% | 22 | 11.4% | 574 | 7.3% | 152,005 | 5.8% |
| Not stated | 9 | 2.3% | 52 | 2.7% | 752 | 2.6% | - | - | 5 | 2.6% | 391 | 5% | 95,623 | 3.7% |

Percentages may not add to 100 per cent due to rounding

**Table B-10-14 Vehicle ownership count of private occupied dwellings 2021**

| Industry | Mount Victoria SSC | | Blackheath SSC | | Blue Mountains LGA | | Kanimbla SSC | | Little Hartley SSC | | Lithgow LGA | | NSW | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % | No | % |
| No motor vehicles | 27 | 6.3% | 167 | 7.9% | 1,786 | 5.9% | 0 | 0.0% | 0 | 0.0% | 670 | 8.1% | 262,031 | 9.0% |
| One motor vehicle | 203 | 47.0% | 1,015 | 47.9% | 11,315 | 37.1% | 21 | 27.6% | 37 | 17.0% | 2,955 | 35.5% | 1,096,761 | 37.8% |
| Two motor vehicles | 143 | 33.1% | 680 | 32.1% | 11,405 | 37.4% | 27 | 35.5% | 99 | 45.4% | 2,702 | 32.5% | 989,258 | 34.1% |
| Three motor vehicles | 30 | 6.9% | 170 | 8.0% | 3,669 | 12.0% | 19 | 25.0% | 44 | 20.2% | 1,110 | 13.4% | 321,310 | 11.1% |
| Four motor vehicles | 26 | 6.0% | 62 | 2.9% | 2,052 | 6.7% | 11 | 14.5% | 34 | 15.6% | 718 | 8.6% | 187,380 | 6.5% |
| Not stated | 6 | 1.4% | 26 | 1.2% | 302 | 1.0% | 0 | 0.0% | 3 | 1.4% | 164 | 2.0% | 43,732 | 1.5% |

**Note on data quality:** Tables of Census data are subject to perturbation to protect the confidentiality of individuals, in accordance with the *Census and Statistics Act 1905* (ABS, 2017). Perturbation is a technique which has been developed to randomly adjust count values. When the technique is applied, counts and totals are slightly adjusted to prevent any identifiable data being exposed. These adjustments result in small introduced random errors. However, the information value of the table as a whole is not impaired. Due to this process, percentage calculations for statistics may not total to 100 per cent in some instances. Notwithstanding, the quality of the data is considered suitable for this assessment.

## Crime profile data

Table B-10-15 lists the number of incidents reported to, or detected by, the NSW Police Force and the incident rates per 100,000 persons for the year 2020 for the Blue Mountains LGA. Incidents have been listed by the highest number of offences to the lowest. Table B-10-16 lists the equivalent data Lithgow LGA in the year 2020. The tables also include detail on trends for the criminal offences over the preceding 24 month period, and the rank of each LGA relative to other NSW LGAs for the offence, where reported by BOCSAR. Data from NSW has also is included in both tables for comparative purposes.

**Table B-10-15 Offences - Blue Mountains LGA – 2020 (Information sourced from BOCSAR, 2022)**

| | Blue Mountains LGA | | | | NSW | |
|---|---|---|---|---|---|---|
| Offence | Number of incidents | Rate per 100,000 | 24-month trend^^ | LGA Rank* | Number of incidents | Rate per 100,000 |
| Malicious damage to property | 734 | 927.7 | Stable | 38 | 53,252 | 658.3 |
| Breach bail conditions | 347 | 438.6 | +67.6% | - | 51,171 | 632.5 |
| Harassment, threatening behaviour and private nuisance | 336 | 424.7 | Stable | - | 38,651 | 477.8 |
| Fraud | 269 | 340.0 | Stable | 83 | 44,323 | 547.9 |
| Other offences | 230 | 290.7 | +296.6% | - | 27,238 | 336.7 |
| Domestic violence related assault | 213 | 269.2 | Stable | 94 | 32,078 | 396.5 |
| Non-domestic violence related assault | 182 | 230.0 | Stable | - | 29,448 | 364.0 |
| Breach Apprehended Violence Order | 161 | 203.5 | Stable | - | 19,964 | 246.8 |
| Steal from motor vehicle | 133 | 168.1 | -41.9% | 92 | 28,338 | 350.3 |
| Liquor offences | 128 | 161.8 | Stable | - | 8,051 | 99.5 |
| Possession and/or use of cannabis | 118 | 149.1 | Stable | - | 18,096 | 223.7 |
| Break and enter dwelling | 95 | 120.1 | Stable | 101 | 19,658 | 243.0 |
| Steal from retail store | 93 | 117.5 | Stable | 78 | 19,911 | 246.1 |
| Steal from dwelling | 92 | 116.3 | -28.7% | 102 | 16,811 | 207.8 |
| Trespass | 92 | 116.3 | Stable | - | 10,183 | 125.9 |
| Other theft | 86 | 108.7 | -29.5% | - | 19,724 | 243.8 |

| | Blue Mountains LGA | | | | NSW | |
|---|---|---|---|---|---|---|
| Offence | Number of incidents | Rate per 100,000 | 24-month trend^^ | LGA Rank* | Number of incidents | Rate per 100,000 |
| Break and enter non-dwelling | 79 | 99.9 | 64.6% | 74 | 7,366 | 91.1 |
| Sexual assault | 74 | 93.5 | Stable | 80 | 6,989 | 86.4 |
| Prohibited and regulated weapons offences | 74 | 93.5 | Stable | - | 15,316 | 189.3 |
| Indecent assault, act of indecency and other sexual offences | 67 | 84.7 | Stable | | 8,024 | 99.2 |
| Transport regulatory offences | 58 | 73.3 | -59.7% | | 73,590 | 909.7 |
| Motor vehicle theft | 45 | 56.9 | Stable | 107 | 11,707 | 144.7 |
| Resist or hinder officer | 29 | 36.7 | Stable | | 5,623 | 69.5 |
| Other drug offences | 27 | 34.1 | Stable | | 6,058 | 74.9 |
| Receiving or handling stolen goods | 25 | 31.6 | Stable | | 7,995 | 98.8 |
| Other offences against justice procedures | 25 | 31.6 | Stable | | 1,719 | 21.2 |
| Possession and/or use of amphetamines | 22 | 27.8 | nc** | | 8,000 | 98.9 |
| Possession and/or use of other drugs | 19 | 24.0 | nc** | | 6,687 | 82.7 |
| Offensive language | 18 | 22.8 | nc** | | 2,119 | 26.2 |
| Steal from person | 16 | 20.2 | nc** | 43 | 2,153 | 26.6 |
| Assault Police | 14 | 17.7 | nc** | | 2,507 | 31.0 |
| Offensive conduct | 13 | 16.4 | nc** | | 3,876 | 47.9 |
| Pornography offences | 11 | 13.9 | nc** | | 857 | 10.6 |
| Arson | 10 | 12.6 | nc** | | 3,916 | 48.4 |
| Criminal intent | 10 | 12.6 | nc** | | 2,311 | 28.6 |
| Possession and/or use of cocaine | 9 | 11.4 | nc** | | 2,123 | 26.2 |
| Cultivating cannabis | 9 | 11.4 | nc** | | 1,199 | 14.8 |
| Other offences against the person | 7 | 8.8 | nc** | | 1,353 | 16.7 |
| Possession and/or use of ecstasy | 6 | 7.6 | nc** | | 1,460 | 18.0 |

| | Blue Mountains LGA | | | | NSW | |
|---|---|---|---|---|---|---|
| Offence | Number of incidents | Rate per 100,000 | 24-month trend^^ | LGA Rank* | Number of incidents | Rate per 100,000 |
| Robbery without a weapon | 5 | 6.3 | nc** | 76 | 1,146 | 14.2 |
| Possession and/or use of narcotics | 4 | 5.1 | nc** | | 356 | 4.4 |
| Dealing, trafficking in cannabis | 4 | 5.1 | nc** | | 1,025 | 12.7 |
| Robbery with a weapon not a firearm | 3 | 3.8 | nc** | | 869 | 10.7 |
| Dealing, trafficking in ecstasy | 3 | 3.8 | nc** | | 471 | 5.8 |
| Dealing, trafficking in amphetamines | 2 | 2.5 | nc** | | 2,941 | 36.4 |
| Murder^ | 1 | 1.3 | nc** | | 69 | 0.9 |
| Dealing, trafficking in cocaine | 1 | 1.3 | nc** | | 1,191 | 14.7 |
| Fail to appear | 1 | 1.3 | nc** | | 766 | 9.5 |
| Robbery with a firearm | 0 | 0.0 | nc** | | 103 | 1.3 |
| Attempted murder | 0 | 0.0 | nc** | | 25 | 0.3 |
| Murder accessory, conspiracy | 0 | 0.0 | nc** | | 1 | 0.0 |
| Manslaughter ^ | 0 | 0.0 | nc** | | 4 | 0.0 |
| Abduction and kidnapping | 0 | 0.0 | nc** | | 202 | 2.5 |
| Blackmail and extortion | 0 | 0.0 | nc** | | 92 | 1.1 |
| Stock theft | 0 | 0.0 | nc** | | 387 | 4.8 |
| Dealing, trafficking in narcotics | 0 | 0.0 | nc** | | 356 | 4.4 |
| Dealing, trafficking in other drugs | 0 | 0.0 | nc** | | 647 | 8.0 |
| Manufacture drug | 0 | 0.0 | nc** | | 65 | 0.8 |
| Importing drugs | 0 | 0.0 | nc** | | 231 | 2.9 |
| Betting and gaming offences | 0 | 0.0 | nc** | | 74 | 0.9 |
| Prostitution offences | 0 | 0.0 | nc** | | 19 | 0.2 |
| Escape custody | 0 | 0.0 | nc** | | 176 | 2.2 |

* *Ranks and rates are only calculated for Local Government Areas (LGAs) with populations of 3000 people or more (n = 120). Rates are only calculated for the major offences. Ranks are not calculated for murder due to the low number of recorded victims per LGA. The robbery and sex offence categories are combined because the numbers are too small within the individual categories to calculate reliable rate estimates.*
*** Trend information is not calculated (nc) if at least one 12-month period in the selected timeframe had less than 20 incidents.*
^ *For murder and manslaughter, the data are counts of recorded victims, not criminal incidents.*
^^ *The trend test used was a two-tailed Kendall's rank-order correlation test with a 0.05 level of significance. For the 24-month trend the annual percentage change is provided if the trend was significant.*

**Table B-10-16 Offences – Lithgow LGA – 2020 (Information sourced from BOCSAR, 2022)**

| | Lithgow LGA | | | | NSW | |
|---|---|---|---|---|---|---|
| Offence | Number of incidents | Rate per 100,000 | 24-month trend^^ | LGA Rank* | Number of incidents | Rate per 100,000 |
| Malicious damage to property | 235 | 1,087.7 | Stable | 25 | 53,252 | 658.3 |
| Breach bail conditions | 179 | 828.5 | Stable | - | 51,171 | 632.5 |
| Harassment, threatening behaviour and private nuisance | 156 | 722.1 | Stable | - | 38,651 | 477.8 |
| Domestic violence related assault | 130 | 601.7 | Stable | 36 | 32,078 | 396.5 |
| Non-domestic violence related assault | 121 | 560.1 | Stable | 19 | 29,448 | 364.0 |
| Fraud | 106 | 490.6 | Stable | 45 | 44,323 | 547.9 |
| Breach Apprehended Violence Order | 104 | 481.4 | Stable | - | 19,964 | 246.8 |
| Other offences | 102 | 472.1 | Stable | - | 27,238 | 336.7 |
| Other theft | 93 | 430.5 | Stable | - | 19,724 | 243.8 |
| Steal from motor vehicle | 92 | 425.8 | Stable | 30 | 28,338 | 350.3 |
| Steal from dwelling | 78 | 361.0 | Stable | 26 | 16,811 | 207.8 |
| Break and enter dwelling | 74 | 342.5 | Stable | 38 | 19,658 | 243.0 |
| Prohibited and regulated weapons offences | 55 | 254.6 | Stable | - | 15,316 | 189.3 |
| Possession and/or use of cannabis | 54 | 249.9 | Stable | - | 18,096 | 223.7 |
| Steal from retail store | 49 | 226.8 | Stable | 36 | 19,911 | 246.1 |
| Indecent assault, act of indecency and other sexual offences | 44 | 203.7 | Stable | - | 8,024 | 99.2 |

| | Lithgow LGA | | | | NSW | |
|---|---|---|---|---|---|---|
| Offence | Number of incidents | Rate per 100,000 | 24-month trend^^ | LGA Rank* | Number of incidents | Rate per 100,000 |
| Break and enter non-dwelling | 38 | 175.9 | Stable | 38 | 7,366 | 91.1 |
| Sexual assault | 34 | 157.4 | Stable | 14 | 6,989 | 86.4 |
| Trespass | 32 | 148.1 | Stable | - | 10,183 | 125.9 |
| Motor vehicle theft | 25 | 115.7 | Stable | 71 | 11,707 | 144.7 |
| Possession and/or use of amphetamines | 24 | 111.1 | Stable | - | 8,000 | 98.9 |
| Arson | 21 | 97.2 | Stable | - | 3,916 | 48.4 |
| Other drug offences | 21 | 97.2 | nc** | - | 6,058 | 74.9 |
| Offensive language | 20 | 92.6 | Stable | - | 2,119 | 26.2 |
| Resist or hinder officer | 18 | 83.3 | nc** | - | 5,623 | 69.5 |
| Other offences against the person | 14 | 64.8 | nc** | - | 1,353 | 16.7 |
| Possession and/or use of other drugs | 13 | 60.2 | nc** | - | 6,687 | 82.7 |
| Receiving or handling stolen goods | 10 | 46.3 | nc** | - | 7,995 | 98.8 |
| Criminal intent | 10 | 46.3 | nc** | - | 2,311 | 28.6 |
| Assault Police | 9 | 41.7 | nc** | - | 2,507 | 31.0 |
| Offensive conduct | 8 | 37.0 | nc** | - | 3,876 | 47.9 |
| Liquor offences | 6 | 27.8 | nc** | - | 8,051 | 99.5 |
| Steal from person | 4 | 18.5 | nc** | 48 | 2,153 | 26.6 |
| Dealing, trafficking in amphetamines | 4 | 18.5 | nc** | - | 2,941 | 36.4 |
| Cultivating cannabis | 4 | 18.5 | nc** | - | 1,199 | 14.8 |
| Pornography offences | 4 | 18.5 | nc** | - | 857 | 10.6 |
| Robbery without a weapon | 3 | 13.9 | nc** | 47 | 1,146 | 14.2 |
| Dealing, trafficking in cannabis | 3 | 13.9 | nc** | - | 1,025 | 12.7 |
| Possession and/or use of cocaine | 2 | 9.3 | nc** | - | 2,123 | 26.2 |

| | Lithgow LGA | | | | NSW | |
|---|---|---|---|---|---|---|
| Offence | Number of incidents | Rate per 100,000 | 24-month trend^^ | LGA Rank* | Number of incidents | Rate per 100,000 |
| Dealing, trafficking in other drugs | 2 | 9.3 | nc** | - | 647 | 8.0 |
| Other offences against justice procedures | 2 | 9.3 | nc** | - | 1,719 | 21.2 |
| Robbery with a firearm | 1 | 4.6 | nc** | - | 103 | 1.3 |
| Stock theft | 1 | 4.6 | nc** | - | 387 | 4.8 |
| Dealing, trafficking in cocaine | 1 | 4.6 | nc** | - | 1,191 | 14.7 |
| Dealing, trafficking in narcotics | 1 | 4.6 | nc** | - | 356 | 4.4 |
| Prostitution offences | 1 | 4.6 | nc** | - | 19 | 0.2 |
| Escape custody | 1 | 4.6 | nc** | - | 176 | 2.2 |
| Murder^ | 0 | 0.0 | nc** | - | 69 | 0.9 |
| Robbery with a weapon not a firearm | 0 | 0.0 | nc** | - | 869 | 10.7 |
| Attempted murder | 0 | 0.0 | nc** | - | 25 | 0.3 |
| Murder accessory, conspiracy | 0 | 0.0 | nc** | - | 1 | 0.0 |
| Manslaughter ^ | 0 | 0.0 | nc** | - | 4 | 0.0 |
| Abduction and kidnapping | 0 | 0.0 | nc** | - | 202 | 2.5 |
| Blackmail and extortion | 0 | 0.0 | nc** | - | 92 | 1.1 |
| Possession and/or use of narcotics | 0 | 0.0 | nc** | - | 1,312 | 16.2 |
| Possession and/or use of ecstasy | 0 | 0.0 | nc** | - | 1,460 | 18.0 |
| Dealing, trafficking in ecstasy | 0 | 0.0 | nc** | - | 471 | 5.8 |
| Manufacture drug | 0 | 0.0 | nc** | - | 65 | 0.8 |
| Importing drugs | 0 | 0.0 | nc** | - | 231 | 2.9 |
| Betting and gaming offences | 0 | 0.0 | nc** | - | 74 | 0.9 |
| Fail to appear | 0 | 0.0 | nc** | - | 766 | 9.5 |
| Transport regulatory offences | 0 | 0.0 | nc** | - | 73,590 | 909.7 |

** Ranks and rates are only calculated for Local Government Areas (LGAs) with populations of 3000 people or more (n = 120). Rates are only calculated for the major offences. Ranks are not calculated for murder due to the low number of recorded victims per LGA. The robbery and sex offence categories are combined because the numbers are too small within the individual categories to calculate reliable rate estimates.*
*** Trend information is not calculated (nc) if at least one 12-month period in the selected timeframe had less than 20 incidents.*
*^ For murder and manslaughter, the data are counts of recorded victims, not criminal incidents.*
*^^ The trend test used was a two-tailed Kendall's rank-order correlation test with a 0.05 level of significance. For the 24-month trend the annual percentage change is provided if the trend was significant.*

## Stakeholder mapping

Stakeholder mapping has been undertaken for the purposes of community and stakeholder engagement for the project. This list has been reviewed and refined to identify stakeholder groups which are relevant to the SIA. The list of stakeholders is not exhaustive, and would be updated as required for the purposes of engagement during design development and construction.

**Table B-10-17 Stakeholder identification**

| Stakeholder group | Stakeholders |
|---|---|
| Residents | • Residents in Blackheath, Mount Victoria, Little Hartley, Kanimbla<br>• Residents adjacent to project corridor, portals and/or ventilation outlets |
| Local businesses adjacent to project corridor | • Businesses in Blackheath, Mount Victoria and Little Hartley<br>• Blackheath Chamber of Commerce<br>• Tourism operators |
| Local sensitive receivers | • St John's Anglican Church<br>• Hartley Historic Site<br>• St Peter's Anglican Church<br>• Mount Victoria Public School<br>• Mountains Christian College<br>• Blackheath Public School |
| Road users | • Members of the community who use the road (e.g. private vehicle users, bus users, active transport users)<br>• Blue Mountains Cycling Safety Forum<br>• Point to point transport operators<br>• Public bus operators (e.g. CDC NSW)<br>• Road Freight NSW<br>• Freight industry |
| Local government and peak agencies | • Blue Mountains City Council<br>• Lithgow City Council<br>• Central West Councils Joint Organisation |
| Elected members | • State and Federal MPs<br>• Blue Mountains City Council (mayor and councillors)<br>• Lithgow City Council (mayor and councillors) |
| Aboriginal groups and Local Aboriginal Land Councils | • Blue Mountains City Council Aboriginal Advisory Council<br>• Gundungurra Aboriginal Heritage Association<br>• Deerubbin Local Aboriginal Council<br>• Bathurst Local Aboriginal Land Council<br>• Darug Tribal Aboriginal Corporation<br>• Gundungurra Tribal Council<br>• Great Western Highway Upgrade Program Registered Aboriginal Parties |
| Emergency services | • NSW Ambulance<br>• NSW Fire and Rescue<br>• Blackheath/Mt Victoria Rural Fire Brigade<br>• Hartley Bushfire Brigade<br>• Blackheath Police<br>• Mt Victoria Police<br>• NSW Police<br>• State Emergency Services<br>• Rural Fire Services |
| Utilities | • Endeavour Energy |

| Stakeholder group | Stakeholders |
|---|---|
| | • Telstra<br>• Sydney Water<br>• NBN<br>• Jemena<br>• Optus<br>• Transport Asset Holding Entity (Sydney Trains) |
| Heritage and environmental bodies | • Heritage NSW<br>• National Trust<br>• Blue Mountains World Heritage Institute |
| Local community action groups, activists or interest groups | • Blackheath Highway Action Group (BAG)<br>• Hartley District Progress Association<br>• Blackheath Community Alliance (Blackheath Area Neighbourhood Centre)<br>• Vipassana Meditation Centre<br>• Blue Mountains Historical Society<br>• Blackheath Co-Design Committee<br>• Hartley District Progress Association Incorporated<br>• Hartley Reserves Crown Land Board |
| State and federal government agencies and departments | • NSW Department of the Treasury<br>• Transport for NSW<br>• NSW Department of Planning and Environment<br>• NSW Department of Industry<br>• Department of Regional NSW<br>• NSW Office of Environment and Heritage<br>• NSW Environment Protection Authority<br>• Water NSW<br>• Heritage Council of NSW<br>• Infrastructure NSW<br>• Local Land Services – Greater Sydney<br>• NSW National Parks and Wildlife Service<br>• NSW Health<br>• Department of the Treasury (federal)<br>• Department of Infrastructure, Transport, Regional Development, Communication and the Arts (federal)<br>• Department of Climate Change, Energy, the Environment and Water (federal) |

# Annexure C

## Assessment review questions

# Annexure C – Assessment review questions

The following table has been extracted from Appendix C of the SIA Guideline (2021). These review questions are used to confirm that the requirements of the SIA Guideline (2021) have been fulfilled when considering the scale of social impacts of this project.

| Review questions | | Reference within this SIA |
|---|---|---|
| **General** | | |
| 1 | Does the lead author meet the qualification and experience requirements? | Annexure A |
| 2 | Has the lead author provided a signed declaration? | Annexure A |
| 3 | Would a reasonable person judge the social impact assessment report to be impartial, transparent, and suitably rigorous given the nature of the project? | Annexure A |
| **Project's social locality and social baseline** | | |
| 4 | Does the social impact assessment report identify and describe all the different social groups that may be affected by the project? | Section 3 |
| 5 | Does the social impact assessment report identify and describe all the built or natural features that have value or importance for people, and explain why people value those features? | Section 3<br>Section 4 |
| 6 | Does the social impact assessment report identify and describe historical, current, and expected social trends or social changes for people in the locality, including their experiences with this project and other major development projects? | Section 3<br>Section 4 |
| 7 | Does the social baseline study include appropriate justification for each element, and provide evidence that the elements reflect both relevant literature and the diversity of views and likely experiences? | Section 3<br>Section 4 |
| 8 | Does the social baseline study demonstrate social-science research methods and explain any significant methodological or data limitations? | Section 3<br>Section 4<br>Section 2 |
| **Identification and description of social impacts** | | |
| 9 | Does the social impact assessment report adequately describe likely social impacts from the perspectives of how people may experience them, and explain the research used to identify them? When undertaken as a part of social impact assessment scoping and initial assessment, has the plan for the social impact assessment report been detailed? | Section 5<br>Section 6<br>Section 7 |
| 10 | Does the social impact assessment report apply the precautionary principle to identifying social impacts, and consider how they may be experienced differently by different people and groups? | Section 5<br>Section 6<br>Section 7 |
| 11 | Does the social impact assessment report describe how the preliminary analysis influenced project design and Environmental Impact Statement engagement strategy? | Section 1 |
| **Community engagement** | | |
| 12 | Were the extent and nature of engagement activities appropriate and sufficient to canvass all relevant views, including those of vulnerable or marginalised groups? | Section 4 |
| 13 | How have the views, concerns, and insights of affected and interested people influenced both the project design and each element of the social impact assessment report? | Section 5<br>Section 6<br>Section 7 |

| Review questions | | Reference within this SIA |
|---|---|---|
| **Predicting and analysing social impacts** | | |
| 14 | Does the social impact assessment report impartially focus on the most important social impacts to people at all stages of the project, without any omissions or misrepresentations? | Section 5<br>Section 6<br>Section 7 |
| 15 | Does the social impact assessment report analyse the distribution of both positive and negative social impacts, and identify who would benefit and who would lose from the project? | Section 5<br>Section 6<br>Section 7 |
| 16 | Does the social impact assessment report identify its assumptions, and include sensitivity analysis and alternative scenarios? (including 'worst-case' and 'no project' scenarios where relevant) | Section 5<br>Section 6<br>Section 7 |
| **Evaluating significance** | | |
| 17 | Do the evaluations of significance of social impacts impartially represent how people in each identified social group can expect to experience the project, including any cumulative effects? | Section 5<br>Section 6<br>Section 7 |
| 18 | Are the evaluations of significance disaggregated to consider the likely different experiences for different people or groups, especially vulnerable groups? | Section 5<br>Section 6<br>Section 7 |
| **Responses, monitoring and management** | | |
| 19 | Do the evaluations of significance of social impacts impartially represent how people in each identified social group can expect to experience the project, including any cumulative effects? | Section 5<br>Section 6<br>Section 7 |
| 20 | Are the evaluations of significance disaggregated to consider the likely different experiences for different people or groups, especially vulnerable groups? | Section 5<br>Section 6<br>Section 7 |
| 21 | Do the evaluations of significance of social impacts impartially represent how people in each identified social group can expect to experience the project, including any cumulative effects? | Section 5<br>Section 6<br>Section 7 |

# Annexure D

## SIA Consultation analysis report

Prepared for
Transport for NSW
ABN: 18804239602

# Annexure D

## Social Impact Assessment consultation analysis report

18-Jan-2023

Great Western Highway Blackheath to Little Hartley

# Annexure D

Social Impact Assessment consultation analysis report

Client: Transport for NSW

ABN: 18804239602

Prepared by

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18-Jan-2023

AECOM in Australia and New Zealand is certified to ISO9001, ISO14001 and ISO45001.

# Table of Contents

# 1.0 Overview

The *Social Impact Assessment Guideline for State Significant Projects* (Department of Planning, Industry and Environment, 2021a) (SIA Guideline) requires primary data collection and targeted consultation to gain an understanding of what is important to people and how they may be affected by a project. This annexure summarises the results of consultation undertaken for the Social Impact Assessment (SIA) for the Great Western Highway Upgrade (Blackheath to Little Hartley) in order to meet the targeted consultation requirements of the SIA Guideline.

Consultation activities for the SIA included interviews with residents, business surveys and stopper surveys undertaken during April 2022. For each consultation activity, an overview of how the consultation activity was carried out is provided. This is followed by the specific survey/interview questions, and their responses. Residential interview results are included in Section 2.0. Business survey results are included in Section 3.0. Stopper survey results are included in Section 4.0.

# 2.0 Residential interview results

## 2.1 Approach

Residential interviews were undertaken to better understand the potential social impacts of the project on community members. The key aims of these surveys were to:

- identify features of the community, the social locality and/or landscape which people value
- understand the way of life of the community, including what a typical day includes, what community facilities are utilised, and modes of transport used within the local area
- seek input from the community on how the construction and operation of the project might affect upon their lives (both positively and negatively)
- seek input on how the project may most appropriately manage impacts.

The interview questions were developed with reference to the categories of social impacts and guidance on data collection detailed in the SIA Guideline. Interview questions also sought to obtain additional location-specific demographic detail.

The interviews were carried out using a stratified random approach where residents were approached randomly via door-knocking on selected streets. These streets were reflective of the social locality, which was based on areas likely to be subject to the largest project impacts. The following areas were targeted:

- residential streets in Blackheath, including Evans Lookout Road, Brightlands Avenue, Chelmsford Avenue, Govetts Leap Road, Wentworth Street, Hillier Avenue, Valley View Road, Station Street, Railway Street, Lookout Street, Jelicoe Street, Bundarra Street and Everleigh Street
- residential streets in Mount Victoria, including Victoria Street, Kanimbla Valley Road, Grandview Road, Harley Avenue, Mt York Road and Sylvania Street
- residences in Little Hartley, including residences along the Great Western Highway and Browns Gap Road
- other residences along the Great Western Highway within the social locality.

The interviews were undertaken between 26 April and 29 April 2022, between 10am and 6pm. A total of 119 residences were approached, from which 46 respondents participated in the interview, outlined in Table 1 below.

**Table 1 Number of respondents per suburb – residential interviews**

| Suburb | Number of respondents |
|---|---|
| Blackheath | 30 |

| Suburb | Number of respondents |
|---|---|
| Mount Victoria | 10 |
| Little Hartley | 6 |

The interview approach sought to gain a cross section of groups within the community who are likely to be most directly affected by the construction and operation of the project, with proportionate representation of potentially vulnerable and marginalised groups. To achieve representation of a diversity of groups within the community, a range of residences were approached, including detached houses, units, and mobile homes. As part of the interviews, respondents were also asked to identify if they felt they were part of a group that experiences a degree of disadvantage or exclusion in the local area or more broadly. Anecdotal information was sought from respondents on how the project can address the needs of these groups within the community. Further detail is included in 2.14.5.

## 2.2 Project awareness

Respondents were asked: *'Are you aware of the proposed Great Western Highway (Blackheath to Little Hartley) upgrade?'*

The majority of respondents (96 per cent) were aware of the project. No respondent stated that were not aware of the project.

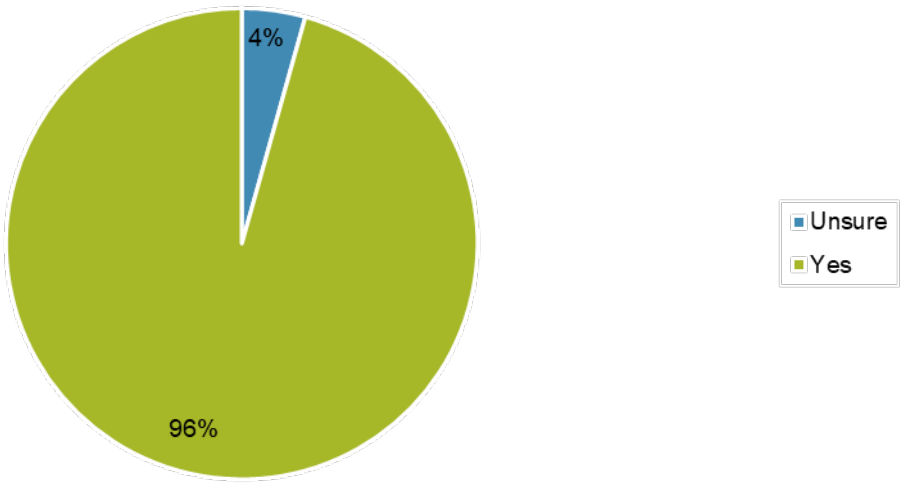


**Figure 1 Are you aware of the proposed Great Western Highway (Blackheath to Little Hartley) upgrade?**

## 2.3 Typical weekday activities

Respondents were asked: *'What does a typical weekday in your area include for you? Select all that apply:'*

Key trends from the responses included:

- in all three suburbs, accessing local shops was the most common typical weekday activity selected by respondents
- in Blackheath and Mount Victoria, the majority of respondents (80 per cent) indicated that they socialised within their local area during a typical weekday
- in Little Hartley, no respondents indicated that they went to work/studied outside of their local area, despite it being an option.

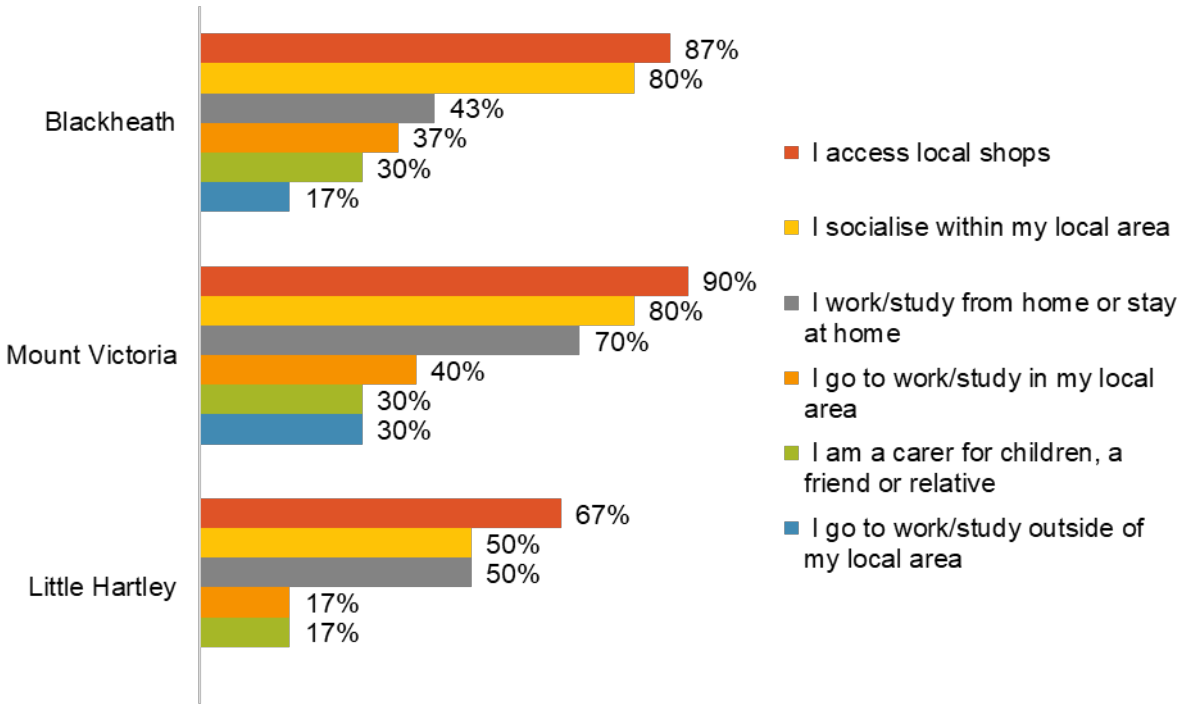


**Figure 2 Typical weekday activities of respondents**

## 2.4 Mode of transport

Respondents were asked: *'What mode of transport do you most commonly use during your typical weekday?'*

Respondents were able to select multiple responses.

Key trends from the responses included:

- in all three suburbs, the majority of respondents (over 90 per cent) indicated that car/private vehicle was their most commonly used form of transport during a typical weekday
- respondents in Little Hartley indicated that car/private vehicle was their most commonly used form of transport during a typical weekday. No respondents selected train, cycle or bus despite these being options
- in Mount Victoria, 50 per cent of respondents indicated that train was one of their most commonly used form of transport during a typical weekday.

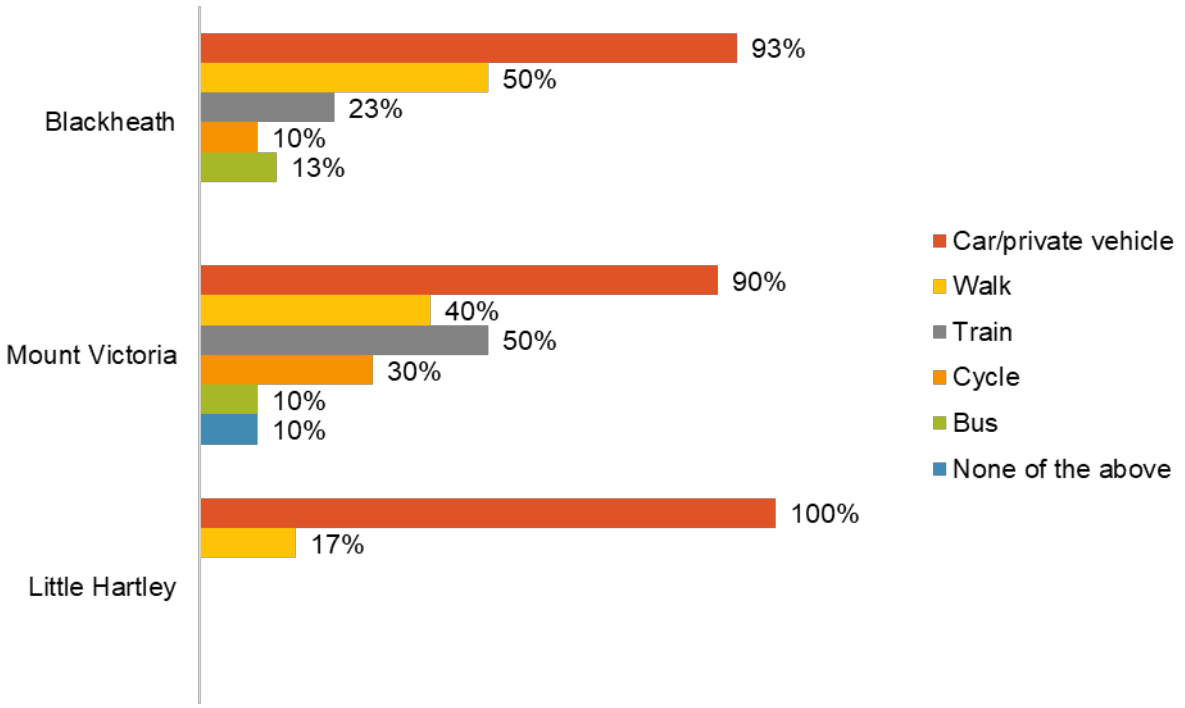


**Figure 3 Most commonly used modes of transport during a typical weekday for respondents**

## 2.5 Community values

Respondents were asked: *'What are some of the physical or cultural elements of your community that you value most?'*

This was asked as an open-ended question to capture a broad range of responses. Responses were categorised into themes which reflect the most common responses. These included:

- **natural environment**, for example the Blue Mountains National Park, bushland and bushwalking opportunities
- **social elements of the community**, for example closeness to the community, friendly neighbours and the presence of young families
- **community facilities and services**, for example community groups, museums, galleries, art facilities, schools
- **existing local character**, for example the 'small town feel', village feel and quiet nature of the area
- **other responses** included the climate, tourism and heritage elements of the area.

Some respondent's answers fell within more than one theme.

Key trends from the responses included:

- in all three suburbs, the natural environment was valued highly by 63, 40, and 50 per cent of respondents in Blackheath, Mount Victoria, and Little Hartley respectively
- in Blackheath and Mount Victoria, community facilities and services were highly valued by 53 and 60 per cent of respondents respectively
- In all three suburbs, existing local character was highly valued with between 30 and 50 per cent of respondent answers falling within this theme.

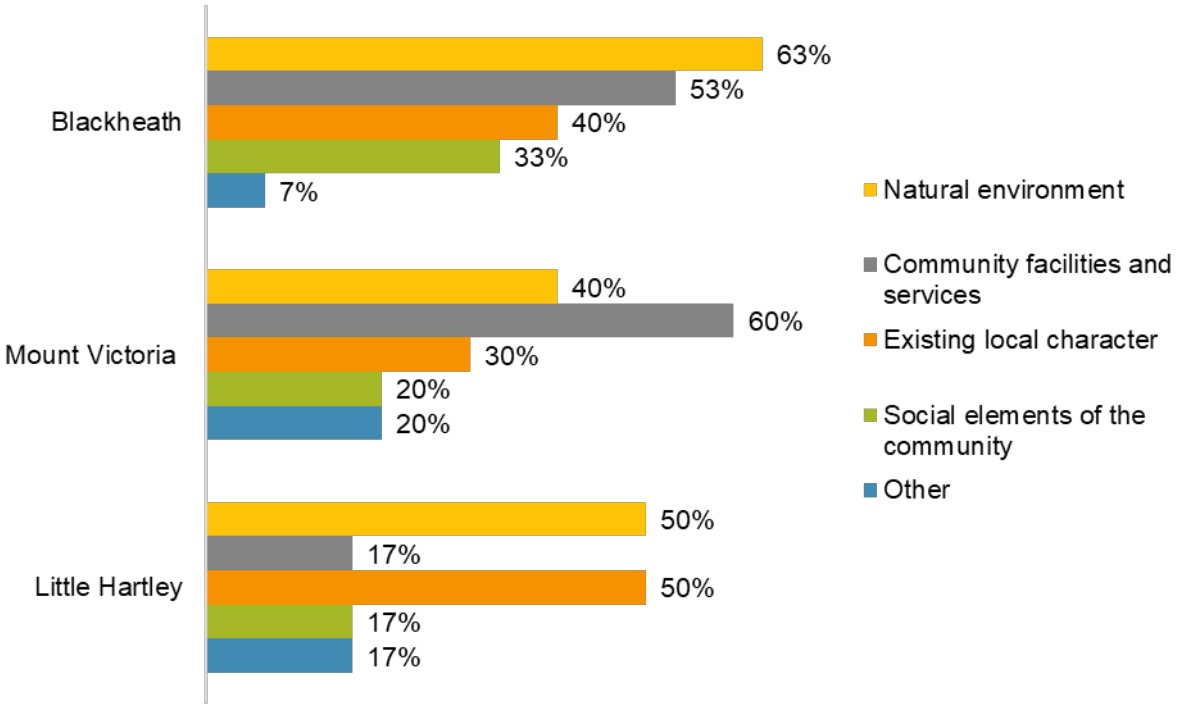


**Figure 4 Community values of respondents**

Respondents were also asked to explain: *'Why is this important to you?'.* Answers included the following:

- respondents who valued the natural environment mentioned the joy it brought their children and grandchildren, a sense of peace, quiet, and relaxation, and promoted physical activity
- respondents who valued community facilities and services mentioned ease of access, the self-sustaining village feel, opportunity to connect with members of the community and socialise, and access to health care
- respondents who valued the existing local character mentioned the quietness, sense of community, sense of home, and quality of life
- respondents who valued social elements of the community mentioned friendship, being a part of a community, and quality of life.

## 2.6 Community connectivity

Respondents were asked: '*Do you feel the existing highway positively or negatively affects your ability to connect with your broader community?'*

Some respondents selected both positive and negative impacts. Four respondents chose not to answer this question.

- in Blackheath:
  - 78 per cent of respondents stated that the existing highway negatively affects their ability to connect with their local community
  - 19 per cent of respondents stated that the existing highway had no impact or a neutral impact on their ability connect with their local community
- in Mount Victoria,
  - 100 per cent of respondents stated that the existing highway negatively affects their ability to connect with their local community

  - 33 per cent of respondents stated that the existing highway positively affects their ability to connect with their local community.

- in Little Hartley,
  - 100 per cent of respondents stated that the existing highway negatively affects their ability to connect with their local community.

Respondents were also asked to elaborate on their response. Common answers included:

- lengthy delays caused by breakdowns and accidents
- avoiding leaving the house on weekends and public holidays due to traffic
- limited pedestrian access
- concerns for safety
- positive impacts, including taking traffic off local roads, and level of impact depending on time of day.

## 2.7 Use of community facilities

Respondents were asked: *'Which of these community facilities and services in your area do you access/use regularly (i.e., at least once per week)?'.*

Respondents were able to select from a list or nominate 'other' community facilities and services. Respondents who selected the 'other' category were asked to specify. These answers included local shops and cafes, swimming pools, pubs and clubs, and markets. Respondents could select multiple answers.

Key trends from the responses included:

- in Blackheath and Little Hartley, the majority of respondents (77 and 67 per cent respectively) indicated that they access/use regularly the Blue Mountains National Park
- in all three suburbs, a high percentage of respondents (50 to 77 per cent) indicated that they access/use regularly local parks and recreational facilities
- in all three suburbs, a high percentage of respondents (50 to 63 per cent) indicated that they access/use regularly health and medical services
- in Mount Victoria, the majority of respondents (60 per cent) indicated that they access/use regularly health and medical facilities.

## Blackheath

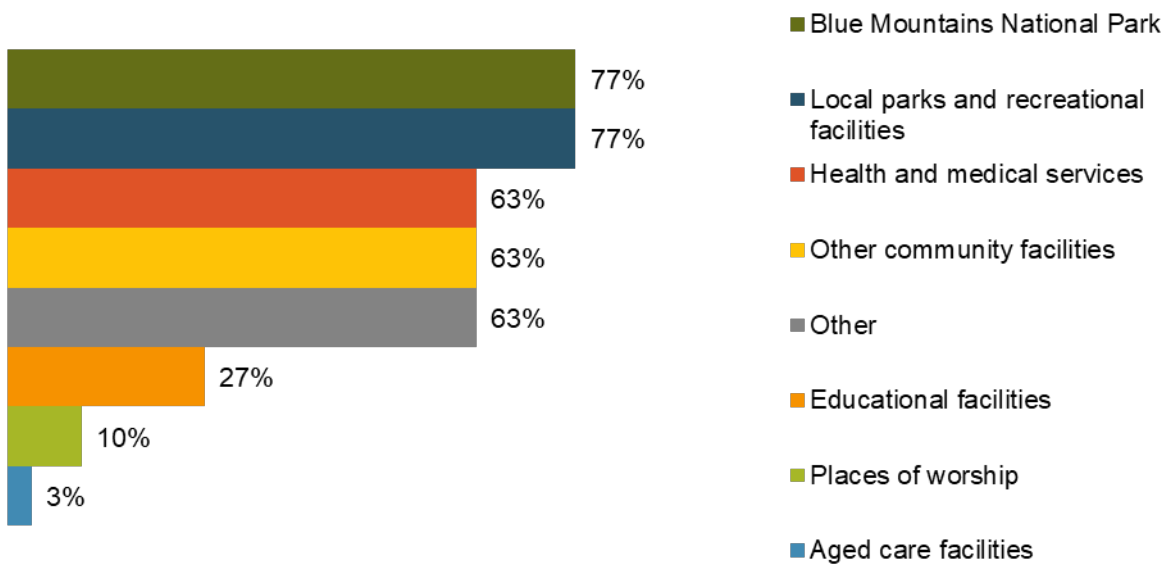


**Figure 5 Community facilities regularly used by respondents in Blackheath**

## Mount Victoria

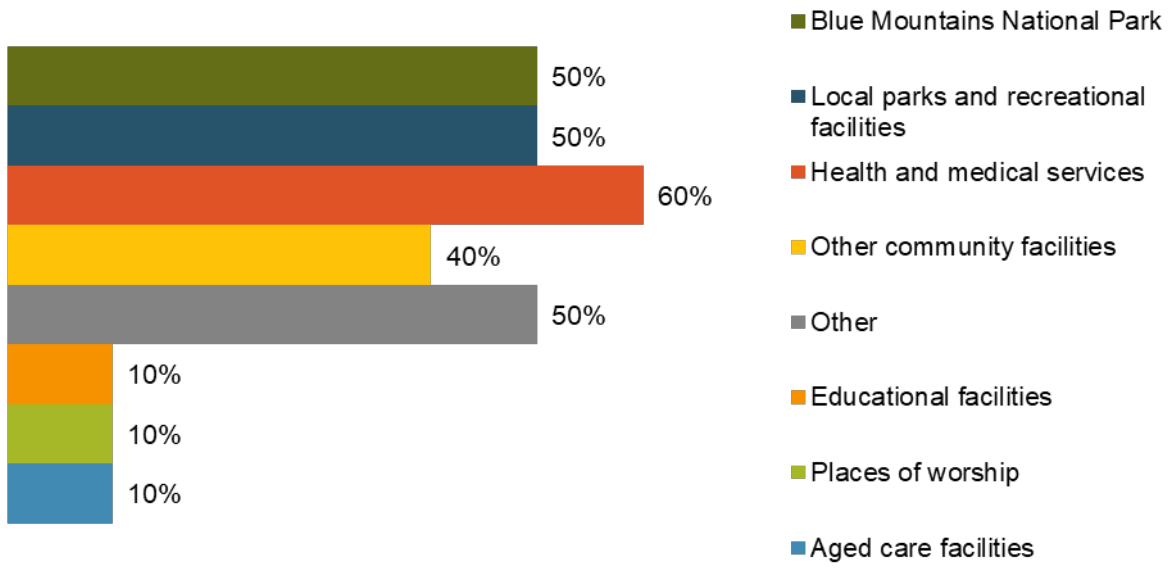


**Figure 6 Community facilities regularly accessed by respondents in Mount Victoria**

**Little Hartley**

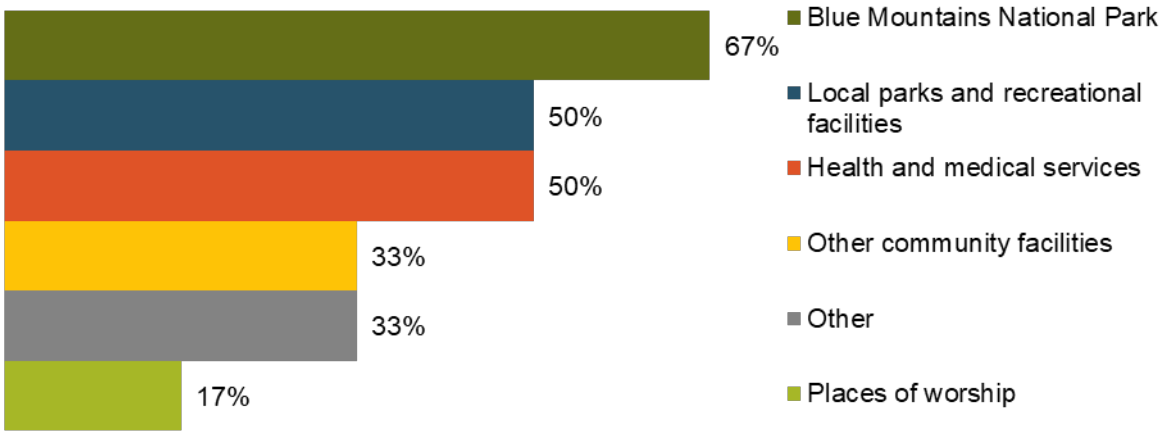


**Figure 7 Community facilities regularly accessed by respondents in Little Hartley**

## 2.8 Community aspirations

Respondents were asked: *'What aspirations do you have for your local community?'.*

This was asked as an open-ended question to capture a broad range of responses. Responses were categorised into themes which reflect the most common responses. These included:

- **improvements in local facilities and social infrastructure**, for example improvements in playgrounds, healthcare, education, retail and hospitality, and more community groups
- **preservation of existing character,** for example the local character, conservation of natural areas, preserving historic sites
- **improvements to local roads and traffic**, for example addressing safety issues, congestion issues, less traffic noise, improved maintenance of roads
- **economic improvements**, for example increased employment, increased tourism
- **public transport improvements**, for example more frequent rail services, increased bus services
- **other responses** included improvements in parking, infrastructure for renewable energy, preservation of local history, improved railway level crossing safety, and wildlife tunnels for the highway.

Some respondent's answers fell within more than one theme.

Key trends from the responses included:

- in Blackheath and Mount Victoria, respondents aspired for improvements in local facilities and social infrastructure the most, with 40 and 60 per cent of respondents' answers falling within this theme respectively
- in Little Hartley, preservation of existing character was the most commonly held aspiration, with 50 per cent of respondents' answers falling within this theme.

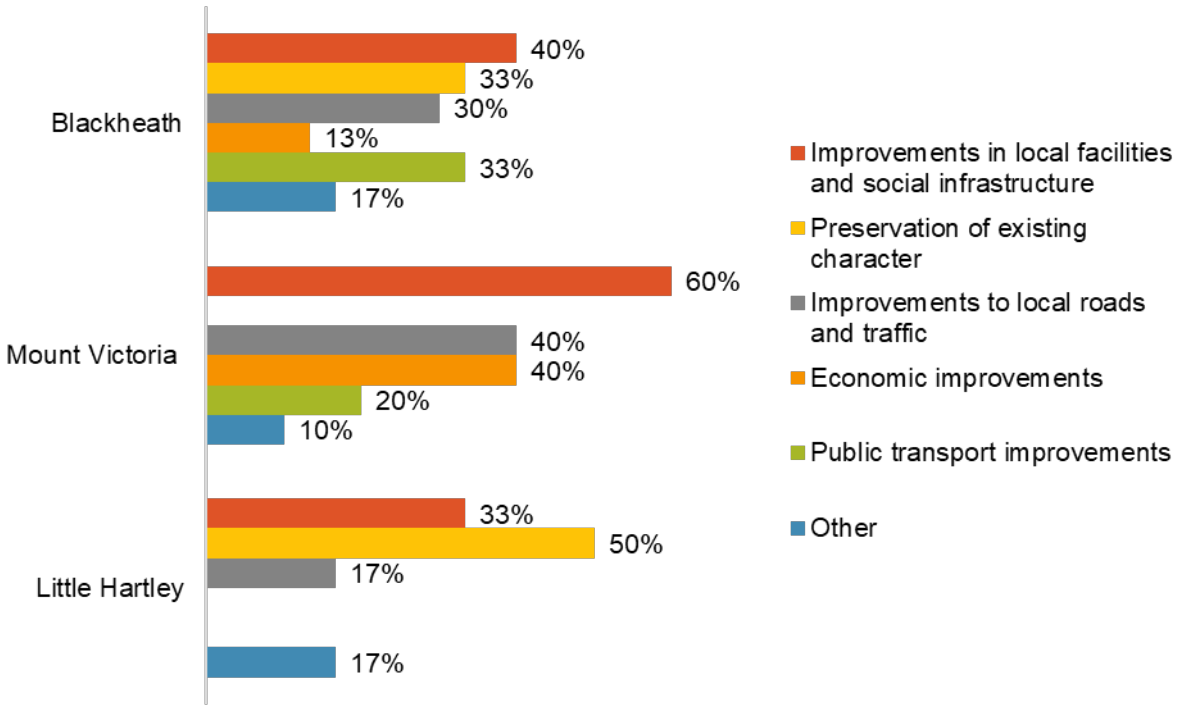


**Figure 8 Community aspirations of respondents**

Respondents were also asked: *'How can the project help facilitate your aspirations for the local community?'.* Responses included the following:

- respondents who aspired for improvements in local facilities and social infrastructure felt the project could help facilitate their aspirations through improvements in parking availability, reductions in noise and congestion, and improvements to tourism. Some respondents also noted that facilitating this aspiration would require better freight rail services, surface road improvements, improving active transport along the existing highway, and whether or not enough people are drawn to the region. One respondent noted the project would not help facilitate this aspiration
- respondents who aspired for preservation of existing character felt the project could help facilitate their aspirations by traffic reductions, removing trucks from the surface roads, improving local access and connectivity, and improvements to tourism. Two respondents noted the project would not help facilitate this aspiration
- respondents who aspired for improvements to local roads and traffic felt the project could help facilitate their aspirations by avoiding traffic queuing on weekends and taking trucks off the roads. Some respondents also noted that facilitating this aspiration would require better roadside seating, improvements to train services, and improving access to the existing highway from local roads
- respondents who aspired for economic improvements felt the project could help facilitate their aspirations by reducing congestion on local roads, improvements to tourism, and improving growth to the area. Some respondents also noted that facilitating this aspiration would require better freight rail services and public transport improvements
- respondents who aspired for public transport improvements felt the project could help facilitate their aspirations by taking trucks off the roads. One respondent noted the project would not help facilitate this aspiration, and another respondent was unsure how the project could help.

## 2.9 Community concerns

Respondents were asked: *'What issues in your community concern you the most?'*

This was asked as an open-ended question to capture a broad range of responses. Responses were categorised into themes which reflect the most common responses. These included:

- **traffic congestion and travel time concerns**
- **economic concerns**, for example, unemployment and loss of local businesses
- **road safety concerns**, for example, safety concerns regarding the volume of trucks on the road, pedestrian safety, road conditions, escape routes in times of emergency
- **concerns about the natural environment**, for example, concerns in relation to vegetation clearing and climate change
- **traffic noise concerns**, for example regarding truck compression braking noise
- **housing concerns**, for example an increase in the presence of short-term rental properties, rental prices, affordability
- **healthcare access concerns**
- **other concerns** included street lighting, parking in the town, crime, public transport.

Some respondent's answers fell within more than one theme. Four respondents chose not to answer this question.

Key trends from the responses included:

- in Blackheath and Little Hartley, traffic congestion and travel time concerns were the most commonly held type of concern, with 48 and 67 per cent of respondents' answers falling within this theme respectively. In Mount Victoria, 44 per cent of respondent's answers fell within this theme
- in Mount Victoria, economic concerns were the most commonly held type of concern, with 56 per cent of respondents' answers falling within this theme
- a higher percentage of respondents in Blackheath (33 per cent) held road safety concerns compared to Mount Victoria (11 per cent) and Little Hartley (0 per cent)
- a higher percentage of respondents in Little Hartley (33 per cent) held traffic noise concerns compared to Mount Victoria (11 per cent) and Blackheath (0 per cent).

## Blackheath

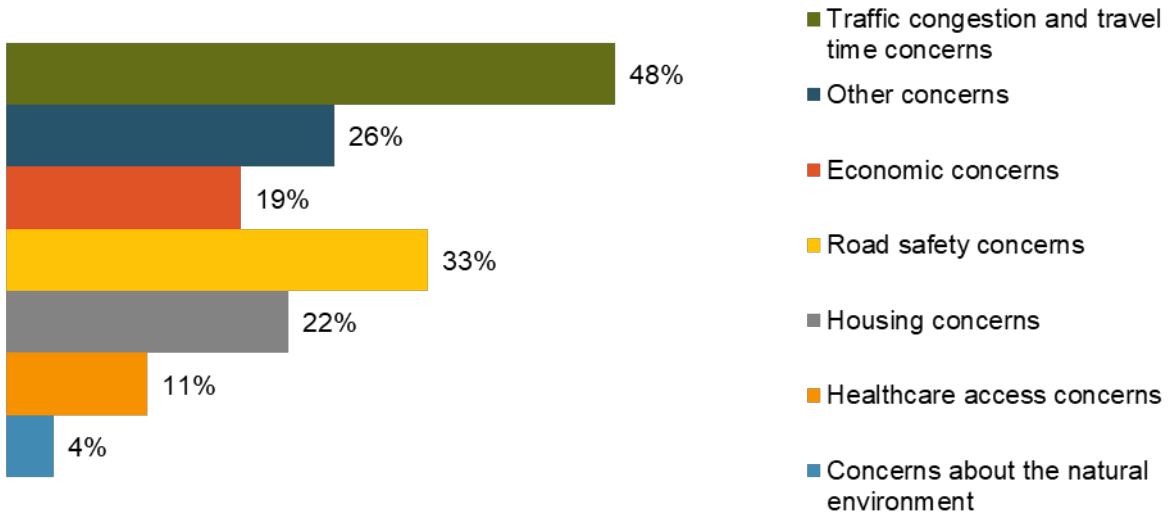


**Figure 9 Blackheath respondents' concerns for the community**

## Mount Victoria

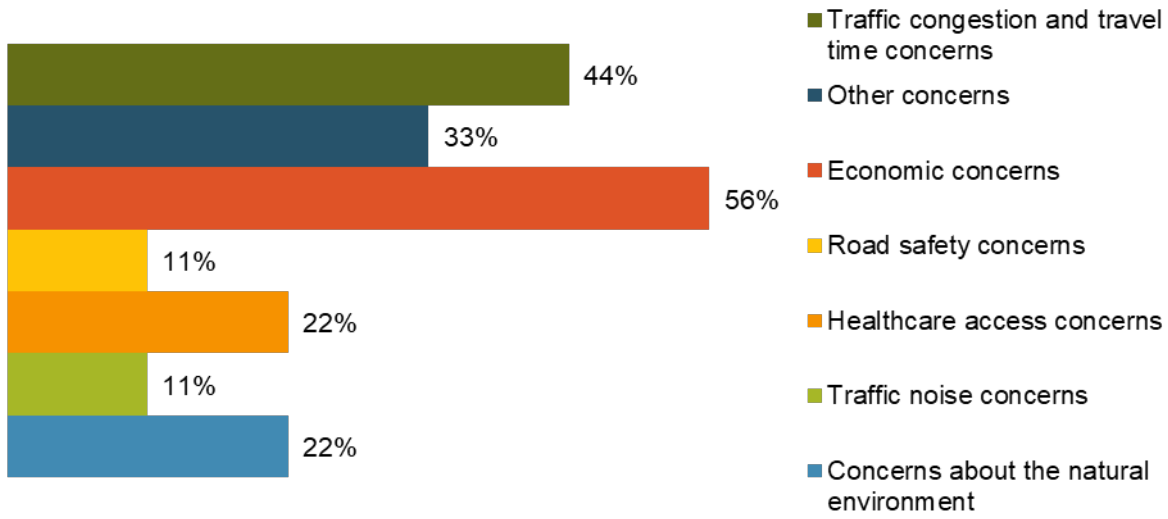


**Figure 10 Mount Victoria respondents' concerns for the community**

## Little Hartley

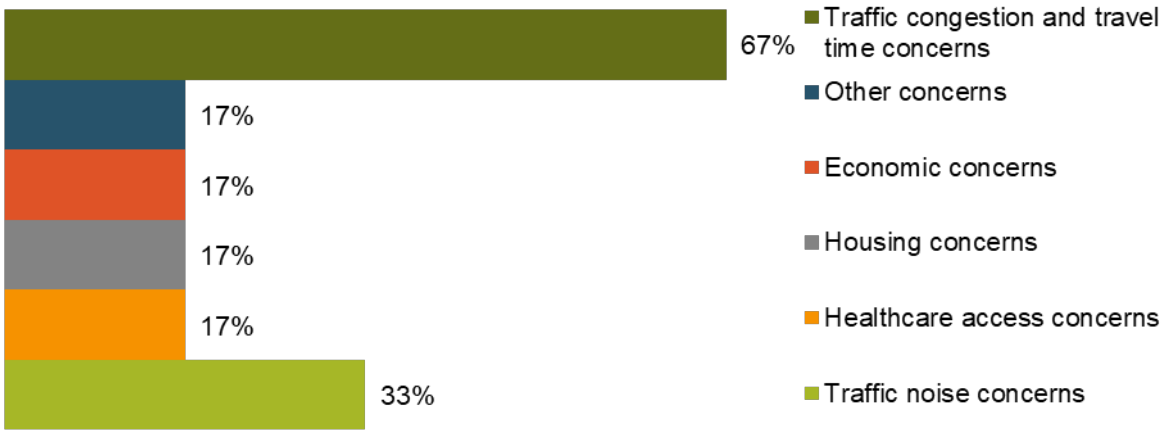


**Figure 11 Little Hartley respondents' concerns for the community**

Respondents were also asked: *'How can the project help address your concerns in the local community?*'. Responses included the following:

- respondents who held traffic congestion and travel time concerns felt the project could help address these by reducing traffic and congestion on the existing highway, taking trucks off the surface roads, and preventing accidents. One respondent also noted that addressing this concern would require a bypass starting at Katoomba. Two respondents noted the project would not help address this concern, with one stating that better train services would better address this concern
- respondents who held economic concerns felt the project could help address these by improving access to jobs locally, improving access to the region, and easing traffic and congestion. Three respondents noted that the project would not help address this concern, with one stating that people will likely bypass the town if the project were in place
- respondents who held housing concerns felt the project could help address their concerns by improving access to employment and alleviating homelessness. One respondent noted that the project could increase house prices and contribute to their concern, and another respondent was unsure how the project could help
- respondents who held traffic noise concerns felt the project could help address their concerns by taking trucks off the surface roads and reducing traffic volumes on the existing highway
- respondents who held traffic and road safety concerns felt the project could help address their concerns through taking trucks and general traffic off the surface roads, and preventing crashes on the highway
- respondents who held healthcare access concerns felt the project could help address their concerns by making it easier to travel to essential medical services in adjacent towns. One respondent was unsure how the project could help
- respondents who held concerns about the natural environment did not specify how the project could help address their concerns, with the exception of one respondent who noted that addressing this concern would require the project to incorporate more sustainable construction.

## 2.10 Construction impacts

Respondents were asked: *'Do you think the construction of the upgrade might affect your day-to-day life?'*

Some respondents selected multiple answers.

The most common response in all three suburbs was 'Yes (In a negative way)'.

### Blackheath

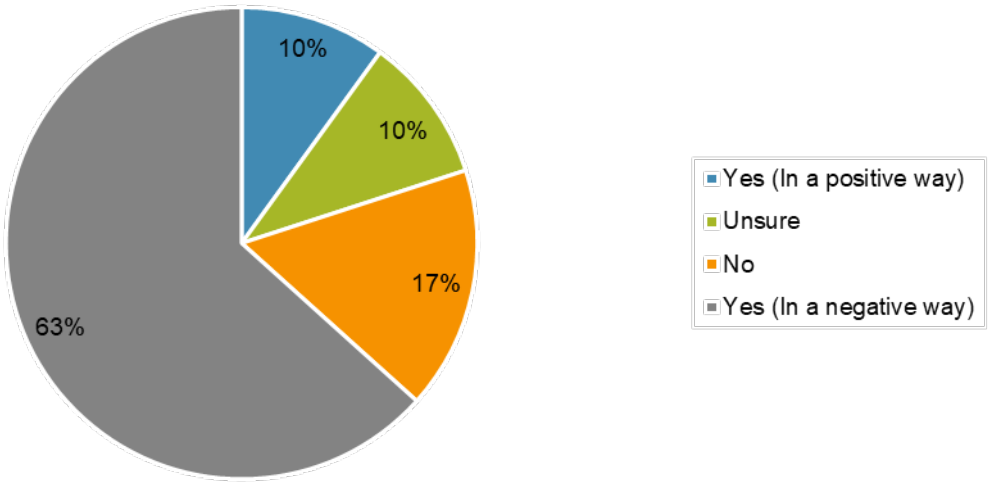


**Figure 12 Blackheath respondents' view on if construction would impact day-to-day life**

### Mount Victoria

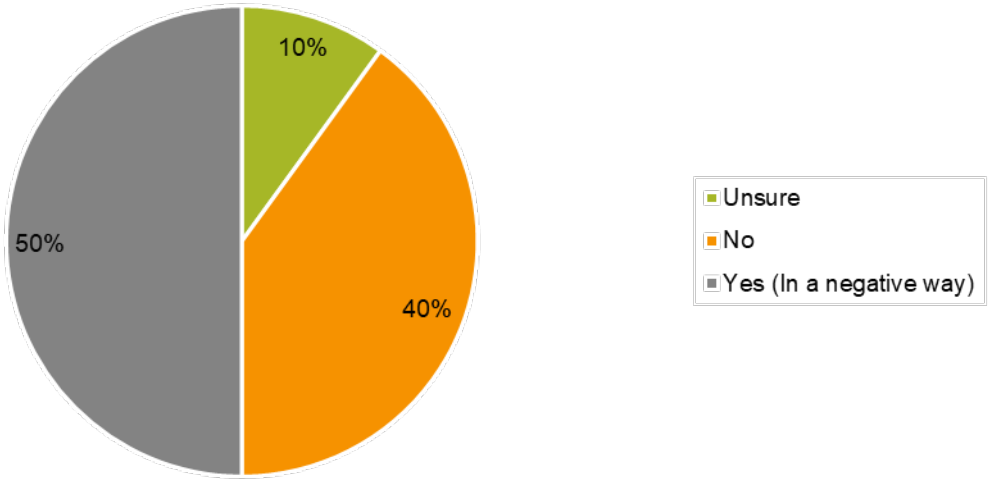


**Figure 13 Mount Victoria respondents' view on if construction would impact day-to-day life**

## Little Hartley

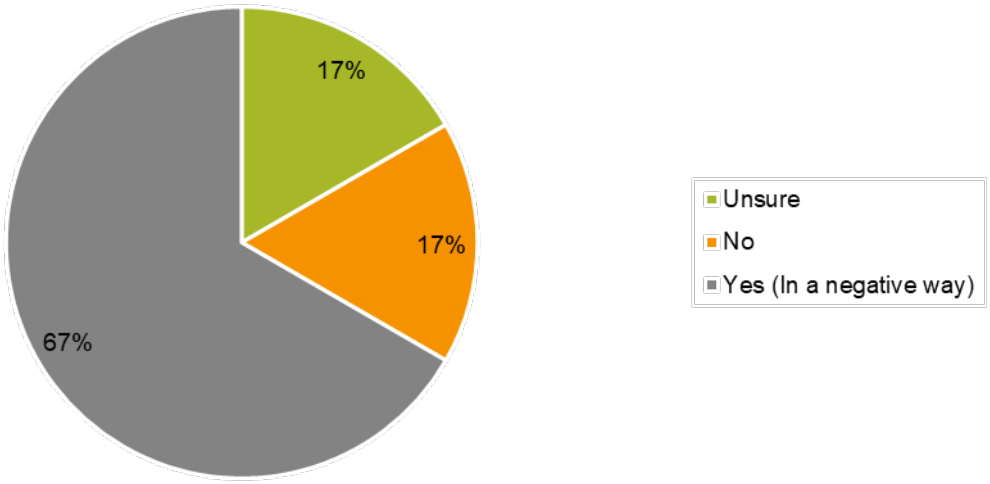


**Figure 14 Little Hartley respondents' view on if construction would impact day-to-day life**

Respondents were also asked: *'Can you elaborate?'*

This was asked as an open-ended question to capture a broad range of responses. Responses were categorised into themes which reflect the most common responses. These included:

- **adverse traffic congestion and travel time impacts**, for example, increased trucks on the road, lane closures causing traffic build up
- **adverse construction noise impacts**, for example, increased trucks on the road, general construction noise, night-time construction
- **adverse construction property damage impacts**, for example, settlement from tunnelling, vibrations causing property damage
- **adverse business impacts**, for example, discouraging tourism, loss of business from reduced access
- **adverse access and connectivity impacts**, for example, road closures, impacts on escape routes during emergencies, property and business access
- **adverse vegetation and biodiversity impacts**, for example, habitat loss
- **other adverse impacts**, for example, air quality, amenity, construction duration, trucks damaging roads, property acquisition, pollution
- **noted potential benefits during construction**, for example, reductions in trucks and traffic queues on weekends and traffic overall
- **noted no change to day-to-day life**
- **unsure**.

Some respondent's answers fell within more than one theme.

Key trends from the responses included:

- in Blackheath and Little Hartley, adverse traffic congestion and travel time impacts were the most commonly perceived impact, with 43 and 83 per cent of respondents' answers falling within this theme respectively

- in Mount Victoria, 40 per cent of respondents noted no change to day-to-day life from construction impacts.

**Blackheath**

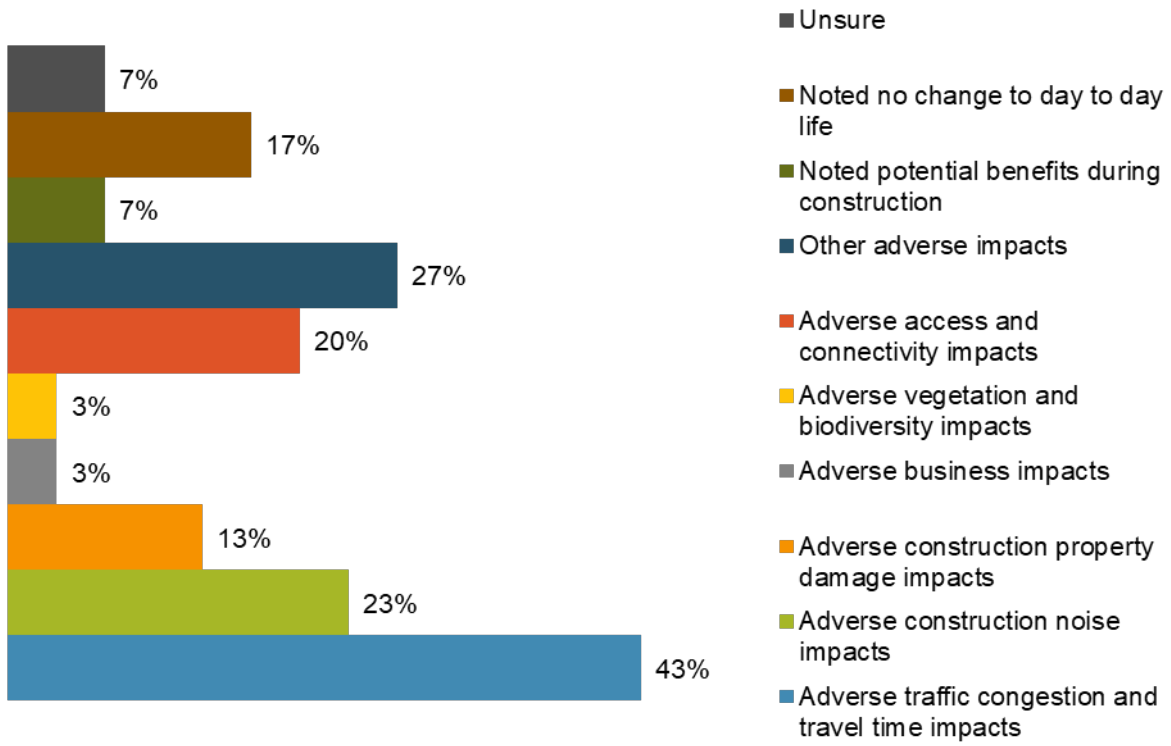


**Figure 15 Construction impacts of the project on Blackheath respondents' day-to-day life**

### Mount Victoria

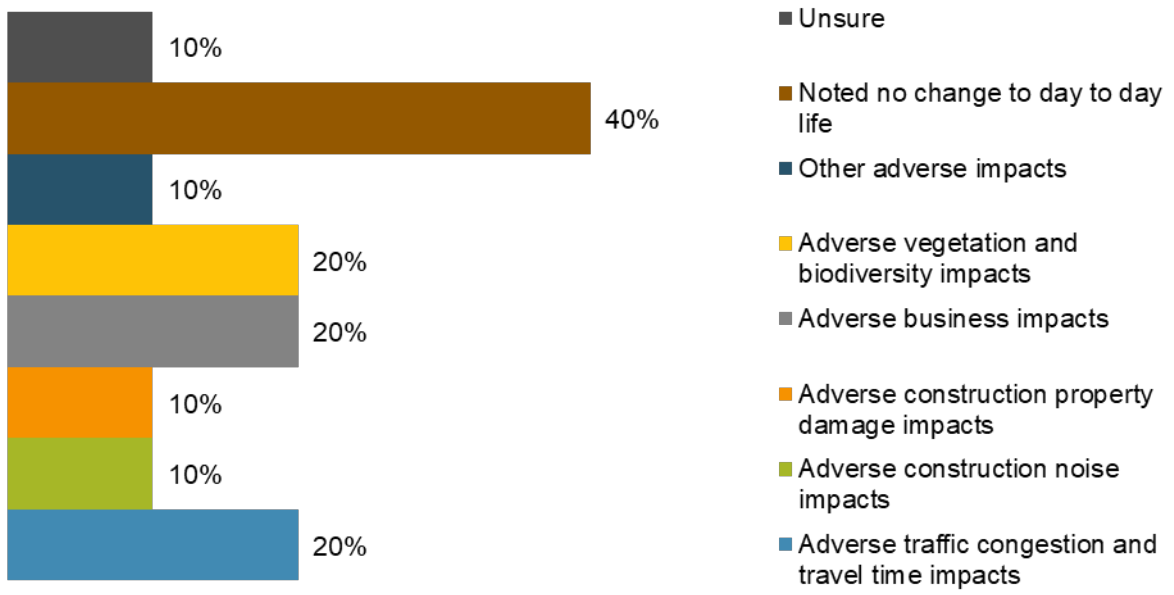


**Figure 16 Construction impacts of the project on Mount Victoria respondents' day-to-day life**

### Little Hartley

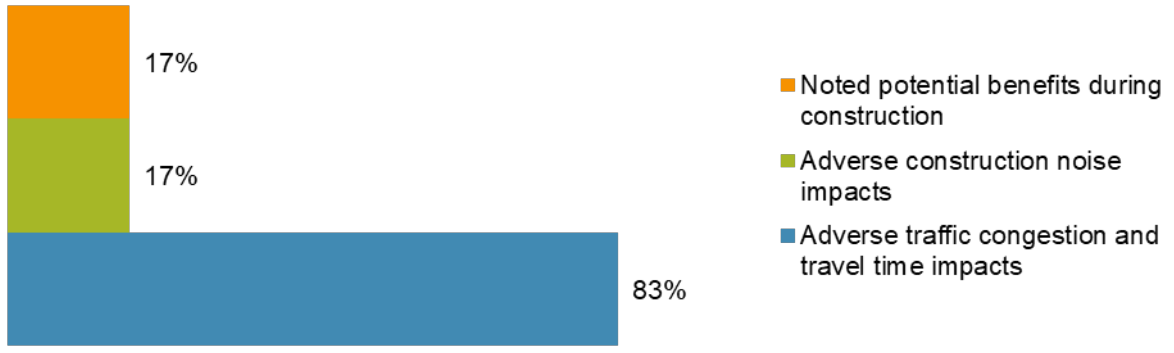


**Figure 17 Construction impacts of the project on Little Hartley respondents' day-to-day life**

## 2.11 Operational impacts

Respondents were asked: *'Do you think the operation of the upgrade might affect your day-today life?'*

Some respondents selected multiple answers.

Two respondents chose not to answer this question.

The most common response in all three suburbs was ‘Yes (In a positive way)’.

### Blackheath

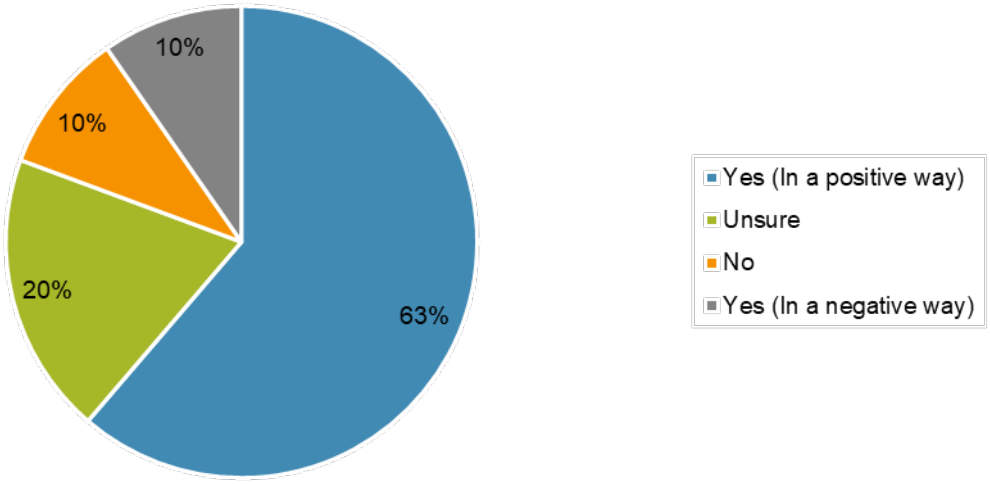


**Figure 18 Blackheath respondents' view on if operation would impact day-to-day life**

### Mount Victoria

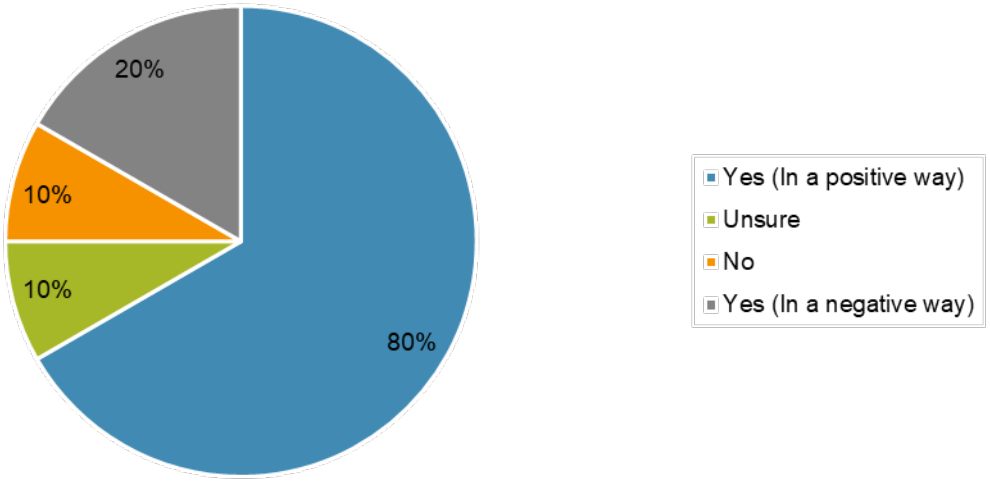


**Figure 19 Mount Victoria respondents' view on if operation would impact day-to-day life**

## Little Hartley

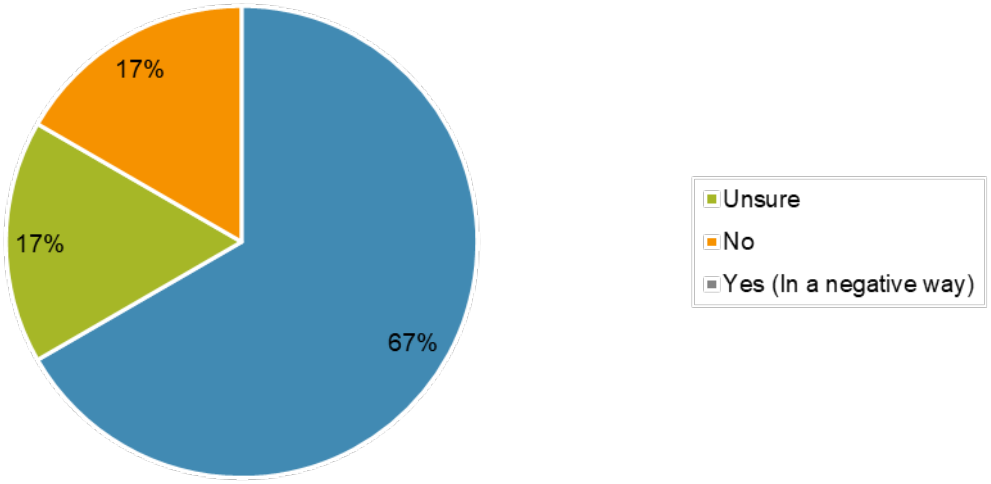


**Figure 20 Little Hartley respondents' view on if operation would impact day-to-day life**

Respondents were also asked: *'Can you elaborate?'*

This was asked as an open-ended question to capture a broad range of responses. Responses were categorised into themes which reflect the most common responses. These included:

- **improvements in traffic volumes and congestion**, for example, less trucks on the road, less cars in general
- **improvements in safety**, for example, less trucks on the road, widening of the road
- **improvements to noise**, for example, reduce truck noise, general traffic noise
- **improvements to access and connectivity**, for example, faster travel times, easier to get around
- **negative impacts**, for example, access and egress, wildlife, air quality, traffic predictability, increased housing prices
- **other or unspecified benefits**, e.g., air quality, less tourists, improved business access.

Some respondent's answers fell within more than one theme. One respondent chose not to answer this question.

Key trends from the responses included:

- in Mount Victoria and Little Hartley, improvements in traffic volumes and congestion were the most commonly perceived operational impacts to day-to-day life, with 50 per cent of respondents' answers from both suburbs falling within this theme
- in Blackheath and Little Hartley, a higher percentage of respondents' answers fell within the theme of negative impacts than in Mount Victoria, at 14 and 17 percent compared to 10 per cent respectively.

## Blackheath

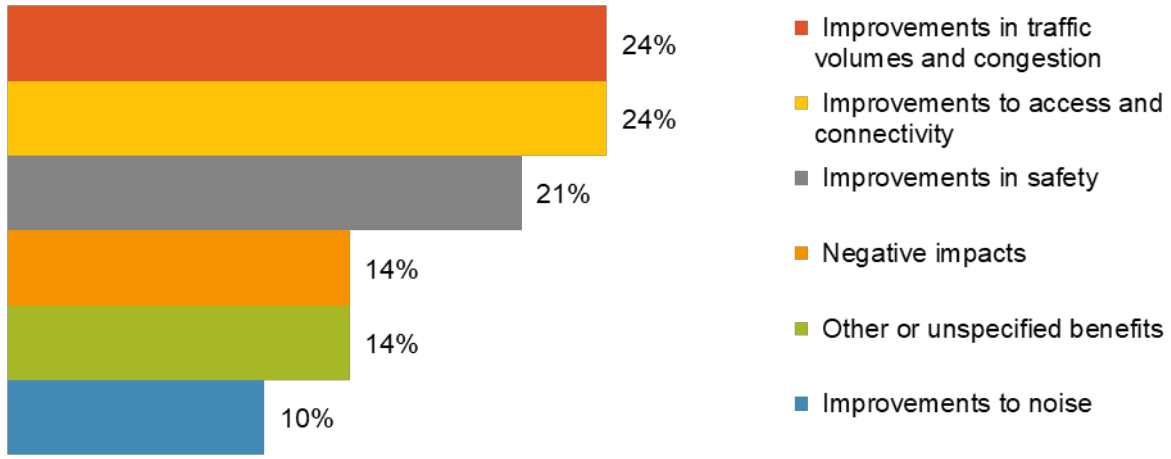


**Figure 21 Operational impacts of the project on Blackheath respondents' day-to-day life**

## Mount Victoria

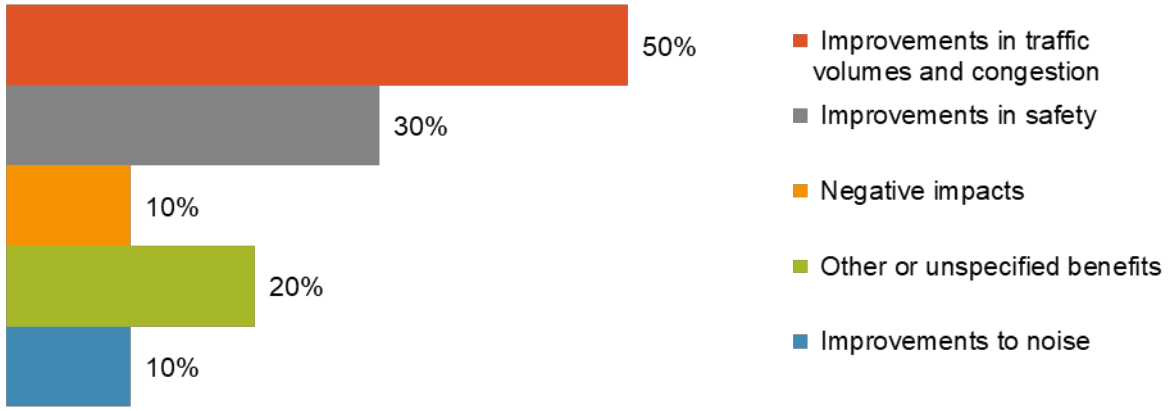


**Figure 22 Operational impacts of the project on Mount Victoria respondents' day-to-day life**

### Little Hartley

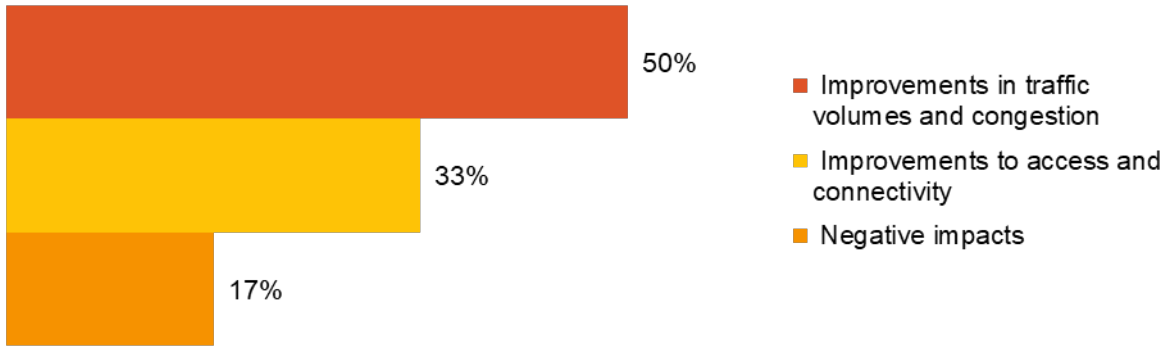


**Figure 23 Operational impacts of the project on Little Hartley respondents' day-to-day life**

Respondents were also asked about potential operational impacts on their community more broadly: *'Do you think the operation of the upgrade might affect your life or your community in bigger ways?'.*

Some respondents selected multiple answers.

Two respondents chose not to answer this question.

### Blackheath

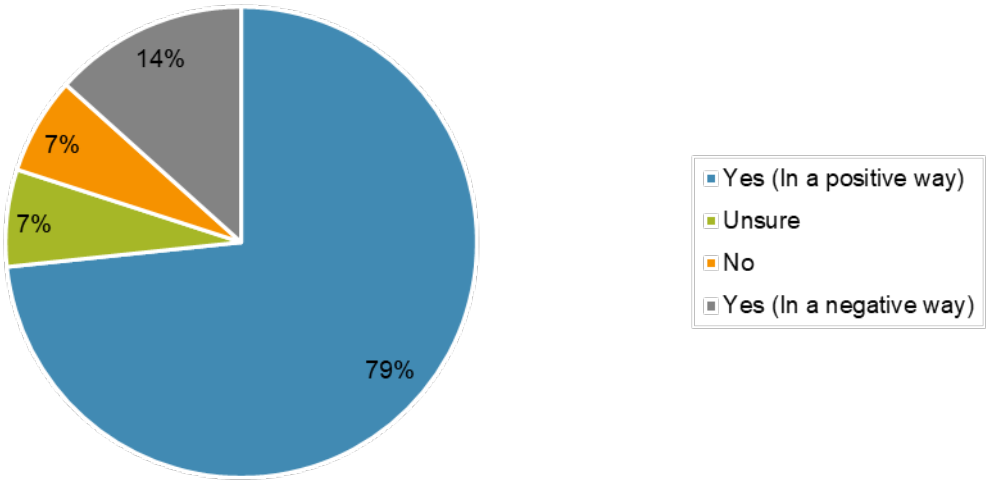


**Figure 24 Blackheath respondents' view on if operation would affect their life or their community in bigger way**

### Mount Victoria

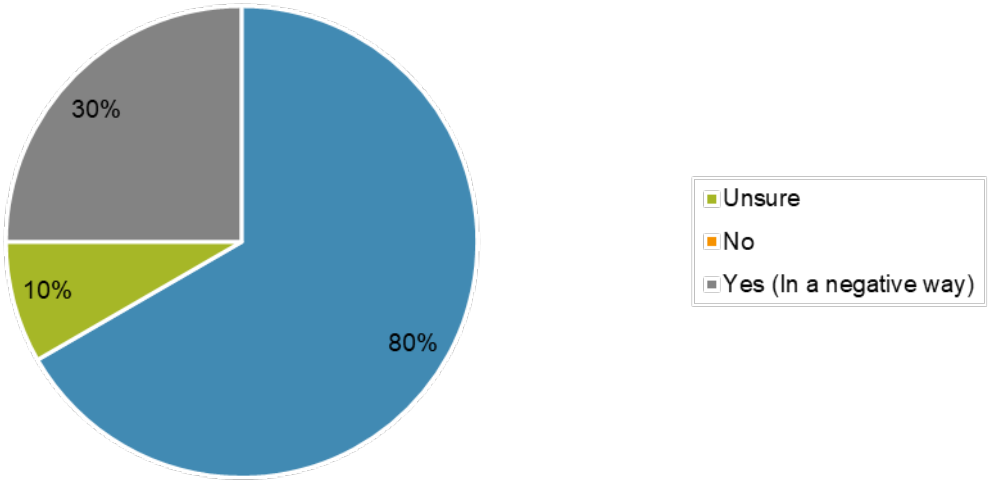


**Figure 25 Mount Victoria respondents' view on if operation would affect their life or their community in bigger ways**

### Little Hartley

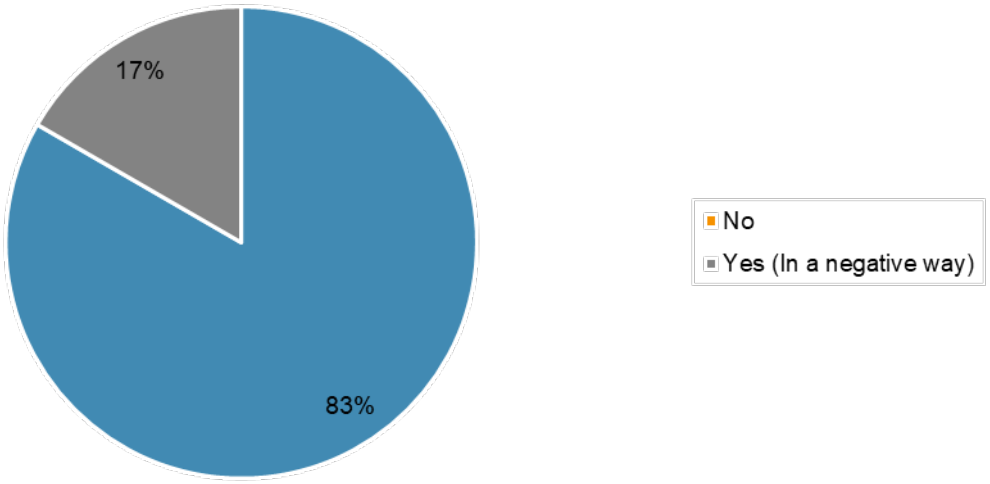


**Figure 26 Little Hartley respondents' view on if operation would affect their life or their community in bigger ways**

Respondents were also asked: *'Can you elaborate?'*

This was asked as an open-ended question to capture a broad range of responses. Responses were categorised into themes which reflect the most common responses. These included:

- **improvements in traffic volumes and congestion**, for example, less trucks on the road, less cars in general
- **improvements in safety**, for example, less trucks on the road, widening of the road
- **improvements to access and connectivity**, for example, faster travel times, easier to get around

- **improvements in tourism**, for example, tourists being attracted by less traffic, the town becoming a 'destination'
- **improve and/or preserve town character**
- **business and economic benefits to the area**, for example, increased employment, increased amenity of local businesses
- **other or unspecified benefits**, for example, reduction in road rage
- **negative business or economic impacts in the area**, for example, loss of passing trade
- **other negative impacts**, for example, overdevelopment and population increase, impacts to landowners, impacts to aquifers and wildlife, no improvements to the existing highway, lack of additional emergency escape route, and funding not being used on improving public transport
- **noted no impacts**
- **unsure.**

Some respondent's answers fell within more than one theme.

Key trends from the responses included:

- In Little Hartley, improvements in access and connectivity were the most commonly perceived operational impacts to respondents or the community more broadly, with 67 per cent of respondents' answers falling within this theme.

**Blackheath**

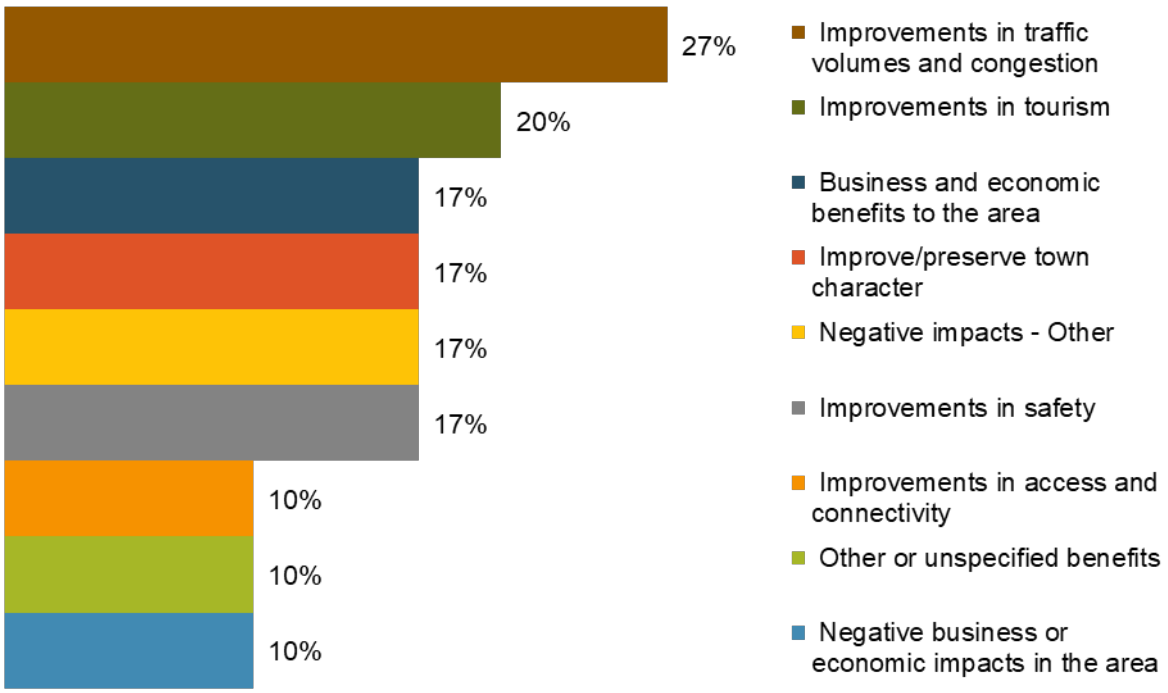


**Figure 27 Operational impacts of the project on Blackheath respondents' life or community more broadly**

### Mount Victoria

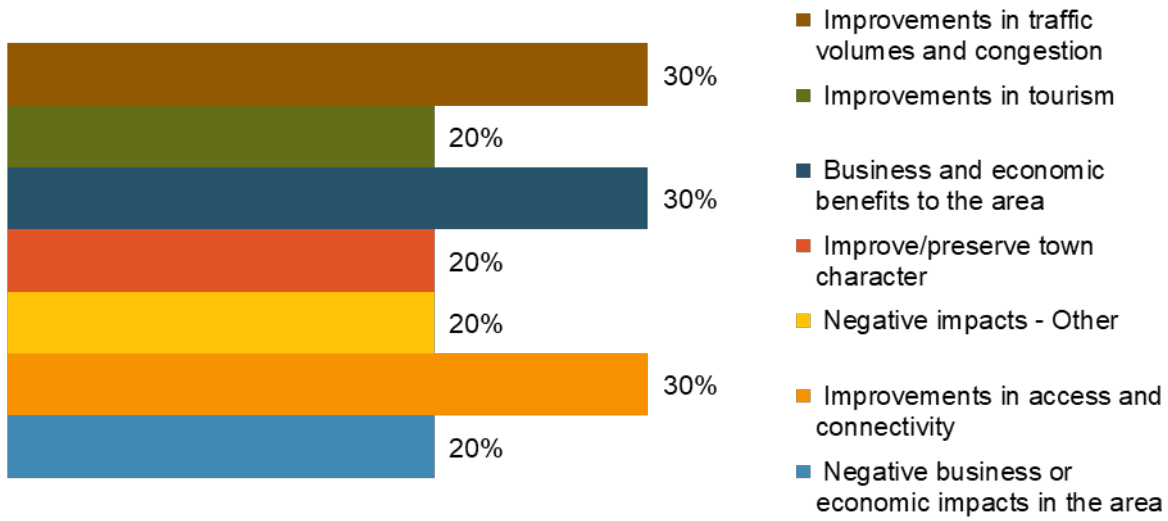


**Figure 28 Operational impacts of the project on Mount Victoria respondents' life or community more broadly**

### Little Hartley

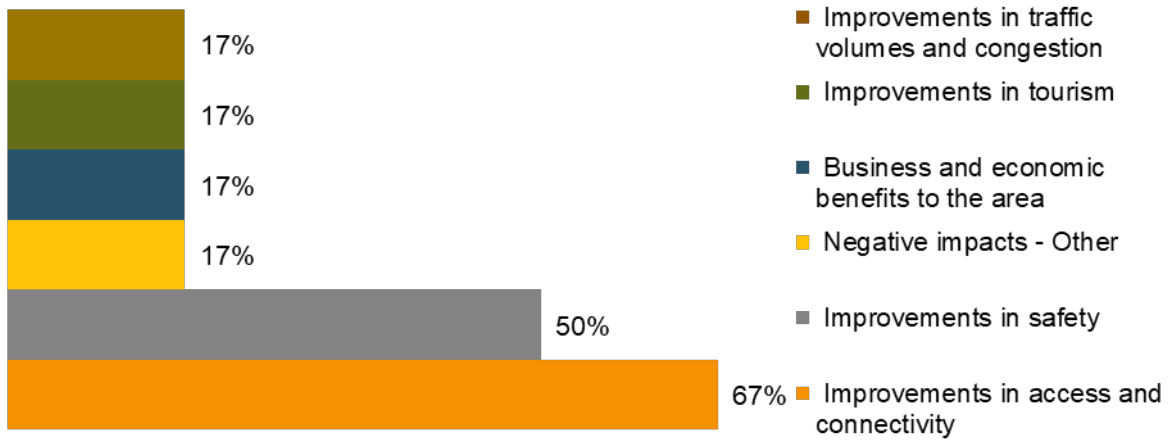


**Figure 29 Operational impacts of the project on Little Hartley respondents' life or community more broadly**

## 2.12 Construction management measures

Respondents were asked: *'Which of the following actions to manage impacts would be the most important to you during construction? Select all that apply:'*

Respondents were able to select from a list or nominate 'other' construction management measures, and select multiple answers. Respondents who selected the 'other' category were asked to specify. These answers included not disrupting railway services, increasing train services during construction, ensuring local roads are well maintained, protecting water quality and the national park, keeping trucks off local roads, and ensuring the courtesy of workers on the road and in the community.

Key trends from the responses included:

- in all three suburbs, the majority of respondents (from 70 to 100 per cent) indicated that measures aimed at minimising traffic impacts would be the most important to them during construction
- a higher percentage of respondents in Blackheath (93 per cent) indicated that measures aimed at minimising adverse construction noise impacts would be most important to them during construction, compared to Mount Victoria (50 per cent) and Little Hartley (67 per cent).

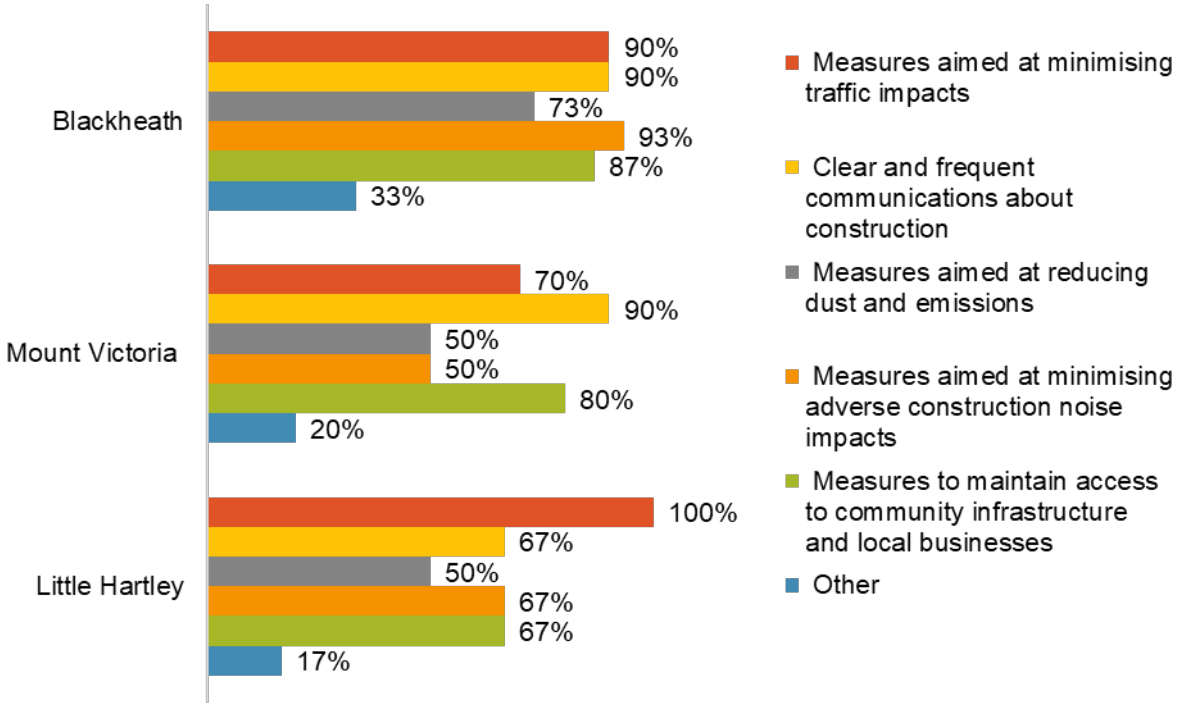


**Figure 30 Construction management measures of most importance to respondents**

## 2.13 Further comments

Respondents were able to provide other comments for consideration. These are listed below.

**Blackheath**

- “most people in Blackheath prefer a long tunnel”, respondent noted their support for the project to begin promptly
- respondent noted the difficulty of turning right on the existing highway towards Sydney, “Not sure how I’d get onto the project”
- respondent noted the design of the project, for example the ramps, need to be appropriate to the context of the area. Respondent noted there are many artists in the area who would have an interest in design. Respondent noted there is community interest in solar power and would like some environmental sustainability considerations on design of the project e.g., safe materials. Respondent noted sustainability initiatives are important
- respondent noted they appreciate the involvement of locals and door knocking
- respondent noted they would like a pedestrian or cycle underpass beneath the road and rail line
- respondent noted they were concerned with house foundations for those near the tunnel
- “I think it would be good for the community and help them”
- respondent noted that they would like an upgrade to Station Street and to provide power. Respondent noted they are concerned that construction will push traffic onto Station Street which would cause more deterioration. Respondent noted the road needs to be sealed

- “I would like to ensure any fencing for construction has access for animals.” Respondent noted that they would like a fauna passage
- “People come here to see trees, not a tunnel”, “Not going to make a difference”, “People come to Blackheath for Blackheath”
- respondent noted their concern about biodiversity impacts. Respondent noted that with population growth, construction of things like this tunnel will not make any difference to the community. Respondent noted that the tunnel should have started at Katoomba. Respondent noted their concern about tunnel ventilation stacks. Respondent noted that the community thought the project was going to be a surface widening project, but Transport for NSW announced a tunnel option, and the community did not feel properly consulted. Respondent noted that more consultation is needed
- “People with kids don’t want them near the highway”. Respondent noted their concern for 24/7 construction haulage from Blackheath. Respondent noted that they otherwise support the project
- “Tunnel should start at Medlow Bath, how will people at Medlow Bath access the benefits of the tunnel?”. Respondent noted recent fatalities relating to heavy vehicles on the existing highway. Respondent noted that the Medlow bath community must put up with two lanes at the Hydro Majestic hotel
- respondent noted they need more certainty about the future of the project concerning financial support, with concerns the project will not happen. Respondent noted that they are against surface widening and support the tunnel
- respondent provided further comment unrelated to the project regarding the need for public transport improvements.

**Mount Victoria**

- respondent noted they would like traffic light delays to be included in the traffic modelling
- respondent noted they don’t think the tunnel is needed, and that widening of the road would be sufficient
- respondent noted that consultation with traditional custodians and young families is important. Respondent noted that natural heritage needs to be preserved before it is too late and would like to see Aboriginal place names used in the project. Respondent noted they would like to see improvements to the rail corridor to be more accessible to freight as opposed to improvements to the highway, considering the energy transition
- respondent noted that noise impacts from the project are of particular importance to their place of employment at a hotel, and fear rates may have to be reduced due to noise impacts. Respondent noted concerns about impacts to the local school.
- respondent noted that blocking off business would harm businesses, and this issue is particularly important to them as business owners.

**Little Hartley**

- respondent noted their concern about construction impacts on wildlife
- respondent noted their support for a longer tunnel starting in Katoomba, and support for removing hazardous vehicles from Mount Victoria Pass. Respondent noted their support for the project to begin promptly
- respondent noted they were in favour of the project and would like it to begin promptly.

## 2.14 Demographic questions

### 2.14.1 Age of respondents

Respondents were asked: *'What is your age range?'*

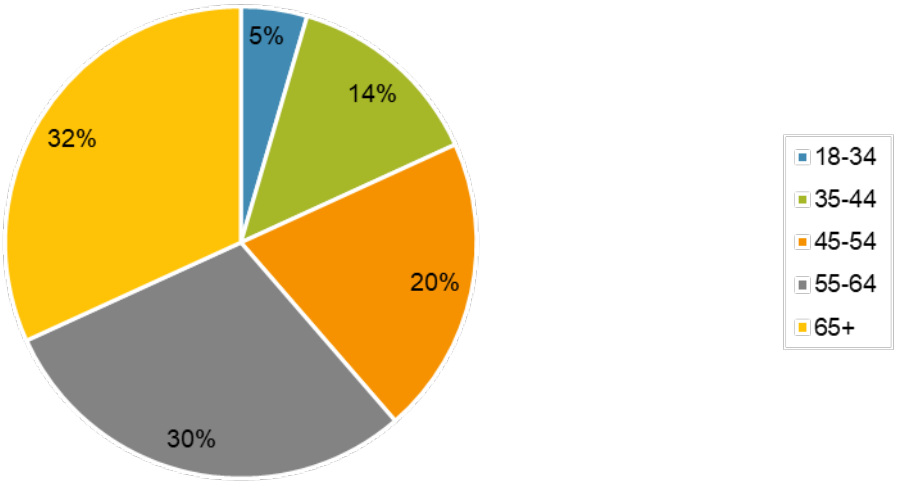


**Figure 31 Ages of respondents**

### 2.14.2 Gender

Respondents were asked: *'Gender: how do you identify?'*

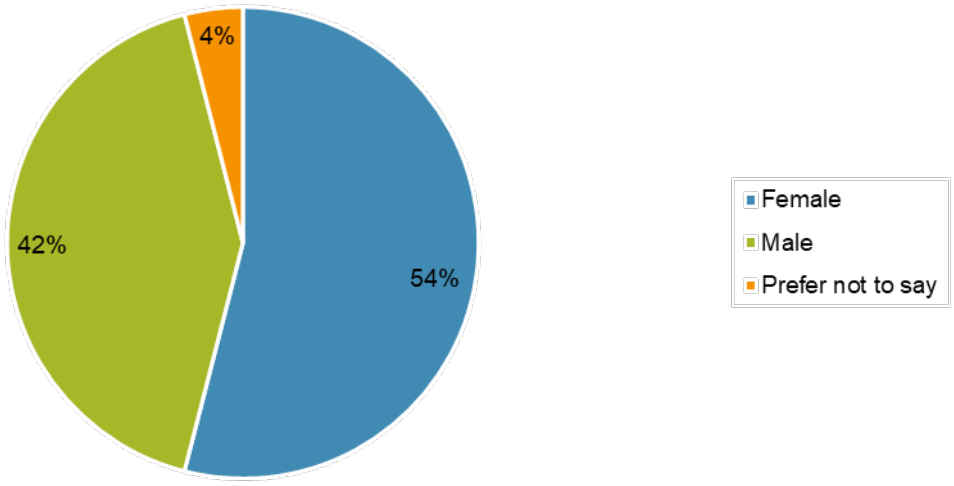


**Figure 32 Gender of respondents**

### 2.14.3 Aboriginal and/or Torres Strait Islander

Respondents were asked: *'Do you identify as Aboriginal and/or Torres Strait Islander?'*

One respondent chose not to answer this question.

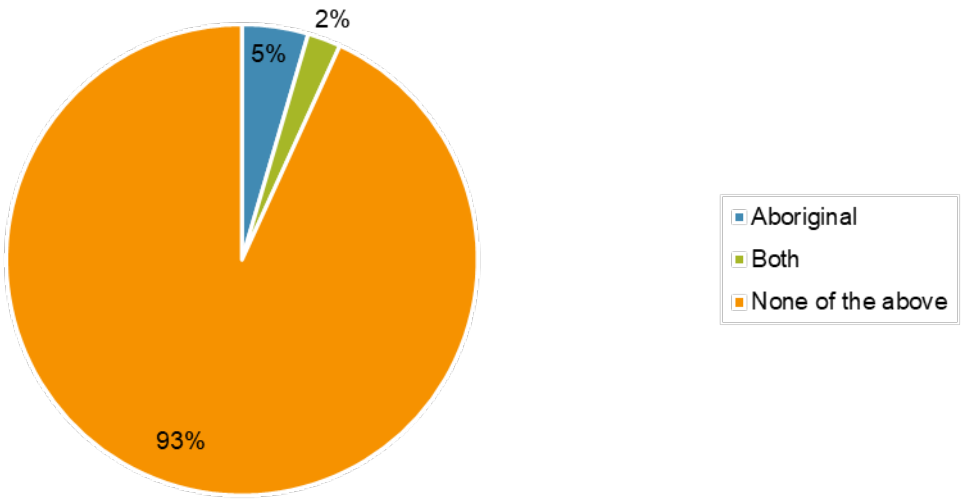


**Figure 33 Respondents who identified as Aboriginal and/or Torres Strait Islander**

### 2.14.4 Primary language spoken at home

One respondent chose not to answer this question.

- 98 per cent of respondents indicated that English was the primary language spoken at home
- two per cent of respondents indicated that both English and Spanish were the primary languages spoken at home.

### 2.14.5 Exclusion and disadvantage

Respondents were asked: *'Do you feel you are part of a group that experiences a degree of disadvantage or exclusion in your local area or more broadly?'*

One respondent chose not to answer this question.

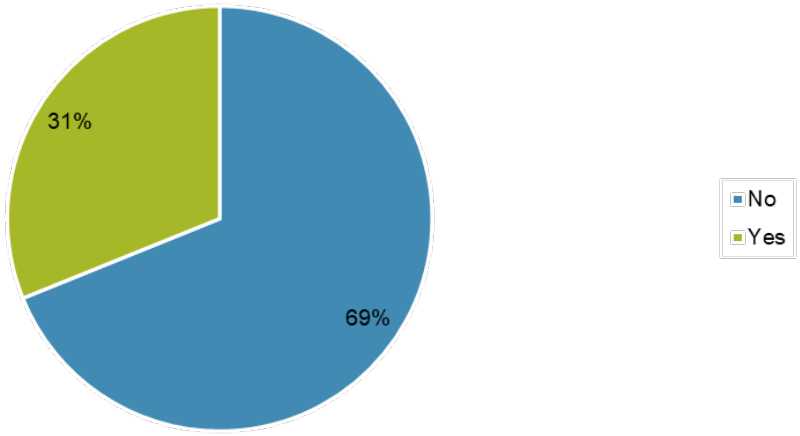


**Figure 34 Respondents who felt they were part of a disadvantaged or excluded group**

Of the respondents who answered yes to saying they felt they were part of a disadvantaged or excluded group, five said it was because they were elderly or reliant on an aged pension. Other reasons included disability, medical conditions, mental health, gender, financial status, being a pedestrian, and occupation. One resident noted that they felt elderly people are “invisible” in the community.

Respondents were also asked: *‘If you answered ‘yes’ to the question above, how do you think the project could consider the needs of members of your group?’*

Respondents that felt disadvantaged or excluded due to their occupation chose not to answer this question. Other responses included:

- for respondents that those that felt disadvantaged or excluded due to being elderly or reliant on an aged pension, answers consisted of communication via mail, continued communication about the project, improved access for emergency vehicles, and public transport improvements. One elderly resident was concerned that the project would not consider the needs of their group, stating that “once you’re out of the workforce nobody cares about you because you don’t pay tax”
- for respondents that felt disadvantaged or excluded due to their disability or medical condition, answers consisted of public transport improvements, and improved access the medical facilities
- for respondents that felt disadvantaged or excluded due to their mental health, answers consisted of a need for the project to be more conscious of noise impacts, for example, as a potential trigger for post-traumatic stress disorder
- for respondents that felt disadvantaged due to their financial status, answers included incorporating housing into the project
- for respondents that felt disadvantaged or excluded due to their gender, answers consisted of improved lighting, pathways and safety improvements
- for respondents that felt disadvantaged or excluded as a pedestrian, answers consisted of footbridges on the existing highway and safety improvements.

### 2.14.6 Household structure

Respondents were asked: *‘How would you best describe your household?’*

Some respondents selected multiple answers. One respondent chose not to answer this question.

- 40 per cent of respondents indicated that their household was best described as a family (including ‘young household’ and ‘family’)
- 31 per cent of respondents indicated that their household was best described as single
- 24 per cent of respondents indicated that their household was best described as a couple (including ‘married’, ‘empty nesters’, and ‘couple’)
- 24 per cent of respondents indicated that their household was best described as retired or retirees.

### 2.14.7 Primary residence

Respondents were asked: *‘Is this property your primary place of residence?’*

Two respondents chose not to answer this question.

- 95 per cent of respondents indicated that the property was their primary place of residence
- five per cent of respondents indicated that the property was not their primary place of residence.

Respondents were also asked: *‘If not, where do you normally live?’*

Of the respondents who answered no, one stated that their primary residence was in Sydney, and the other stated that their primary residence was a different address in Blackheath.

### 2.14.8 Children

Respondents were asked: *'Do any children live in your property?'*

Two respondents chose not to answer this question.

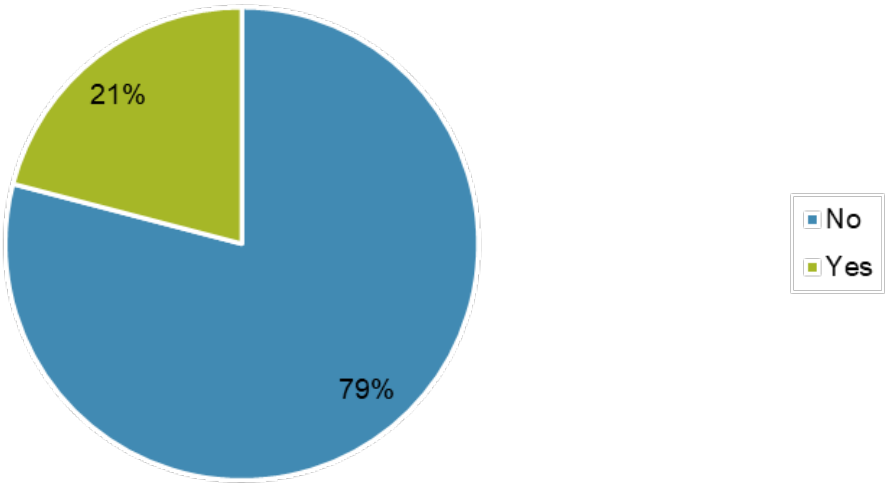


**Figure 35 Respondents with children living in their household**

### 2.14.9 Owner or tenant

Respondents were asked: *'Are you the owner or a tenant?'*

Three respondents chose not to answer this question.

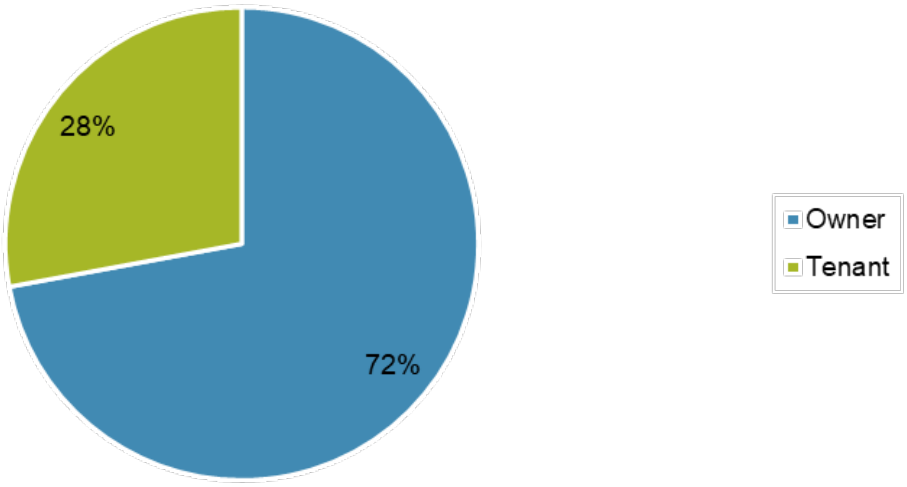


**Figure 36 Owner or tenant status of respondents**

### 2.14.10 Years lived in property

Respondents were asked: *'How many years have you lived here? If you do not live here, how long have you owned the property?'*

One respondent chose not to answer this question.

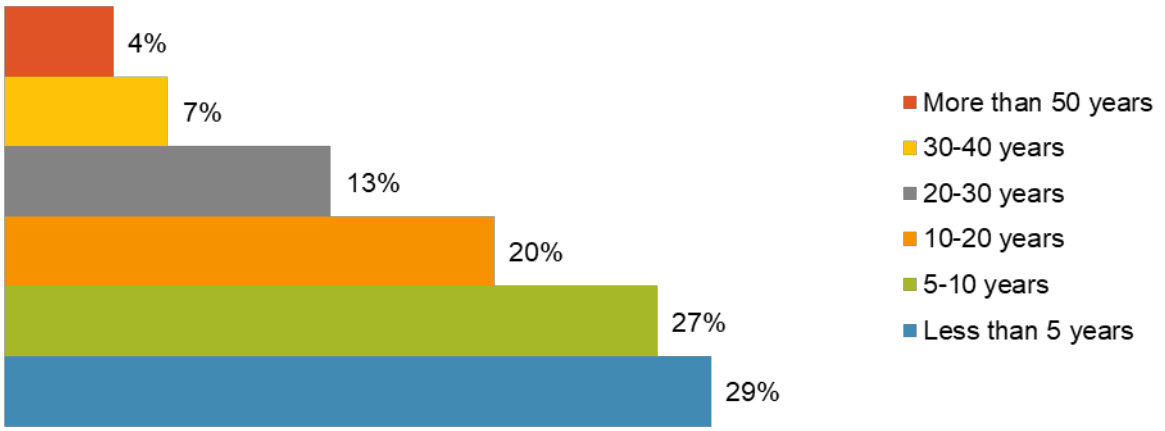


**Figure 37 Number of years respondents have lived in or owned the property**

### 2.14.11 Vehicle ownership

Respondents were asked: *'How many motor vehicles are owned/used by residents of your household?'*

One resident chose not to answer this question.

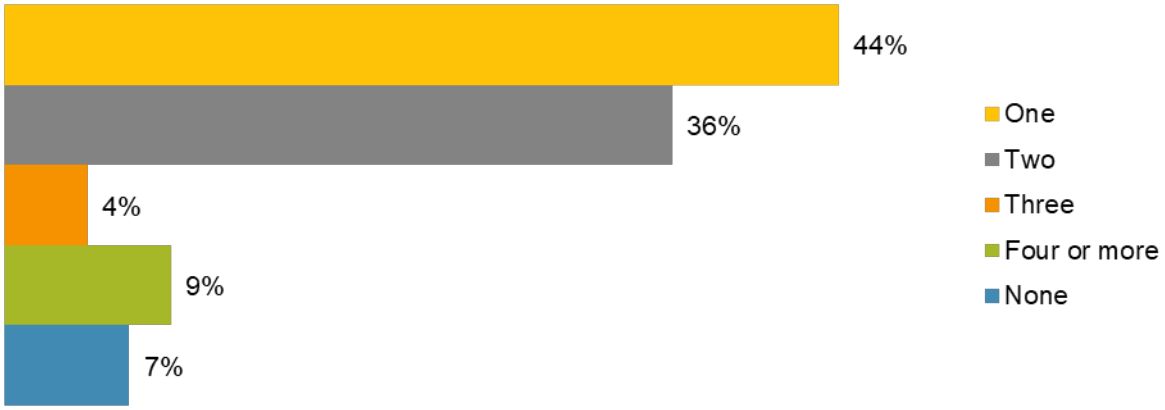


**Figure 38 Number of motor vehicles owned or used by households of respondents**

### 2.14.12 Property use

Respondents were asked: *'Do you use your property for any purpose other than as a residence?'*

Seven respondents chose not to answer this question.

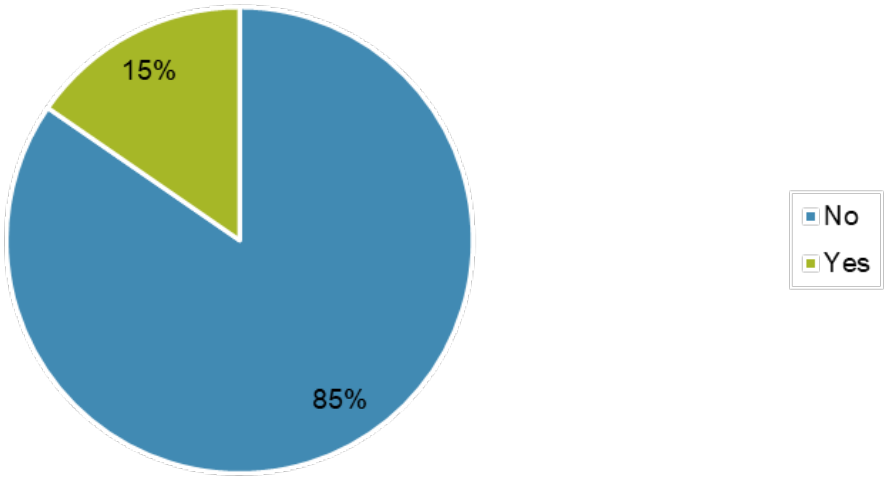


**Figure 39 Respondents who use their property for a purpose other than as a residence**

Respondents who answered yes stated that other uses included working from home, storage of business goods, short term rental accommodation, and an art studio.

## 2.15 Key findings

Key findings from the residential interviews include:

- the most common activities that respondents in all three suburbs undertook on a typical weekday included accessing local shops, socialising within the local area, and working/studying from home or staying at home
- in all three suburbs, the majority of respondents (over 90 per cent) indicated that car/private vehicle was their most commonly used form of transport during a typical weekday
- in Blackheath and Little Hartley, the most common community facilities and services that were regularly accessed or used by respondents included the Blue Mountains National Park, and local parks and recreational facilities. In Mount Victoria, respondents most commonly used health and medical services (60 per cent)
- in all three suburbs, the natural environment was a highly valued element of the community among respondents (40 to 63 per cent), with respondents specifically valuing the sense of peace, quiet and relaxation it brought. In Mount Victoria, respondents particularly valued community facilities and services (60 per cent)
- in Blackheath and Mount Victoria, the most frequently noted aspirations for the community related to improvements in local facilities and social infrastructure (40 to 60 per cent). Half of all respondents in Little Hartley indicated that they their aspirations related to the preservation of the town's existing character
- across all three suburbs respondents were concerned primarily about traffic congestion and travel time, with 44 to 67 per cent of respondents noting these concerns
- across all three suburbs the majority of respondents (50 to 67 per cent) expected construction impacts of the project to negatively affect their day-to-day life. Adverse traffic congestion and travel time impacts were the most commonly perceived impact in Blackheath and Little Hartley, with up to 83 per cent of respondents noting this concern. In Mount Victoria, 40 per cent of respondents noted that they expected no change to their day-to-day life from construction impacts.

- across all three suburbs, the majority of respondents (63 to 80 per cent) expected operational impacts of the project to positively affect their day-to-day life. Improvements in traffic volumes and congestion was one of the most commonly perceived benefits
- in Blackheath and Little Hartley, the majority of respondents (70 and 100 per cent respectively) indicated that measures aimed at minimising construction traffic impacts were most important to them. In Mount Victoria, respondents most commonly indicated that clear and frequent communication would be most valued in terms of mitigation.

# 3.0 Business survey results

## 3.1 Approach

Surveys were undertaken to understand the potential impacts of the project on local businesses. The operation of local businesses is a key element of sustaining people's livelihoods and way of life, including their capacity to sustain themselves through employment and businesses. As such, understanding the opinion of business owners, operators and workers is important to an understanding of the project's overall social impact.

A desktop study was undertaken to identify businesses within the social locality. Businesses were selected and targeted on the basis of whether they were considered likely to be dependent on passing trade. A range of business types considered dependent on passing trade were selected, including retail, food/beverage, grocery, automotive services etc.

Business survey questions were developed to understand the respondent's level of knowledge about the project, their customer base and dependency on passing, and their perception as to how the business may be affected (both positively and negatively) by the project.

Businesses were selected across the following areas for survey:

- Blackheath town centre
- Mount Victoria town centre
- key businesses within Little Hartley and Hartley
- other businesses along the Great Western Highway.

The business surveys were undertaken between 12 April and 14 April 2022; and between 26 April and 29 April 2022. Surveys were undertaken between 9am and 5pm on these days. A total of 45 businesses were approached to participate in the survey, of which 35 businesses participated, as outlined in Table 2 below.

**Table 2 Number of respondents per suburb - business surveys**

| Suburb | Number of respondents |
|---|---|
| Blackheath | 22 |
| Mount Victoria | 9 |
| Little Hartley | 4 |

## 3.2 Business type

Businesses were asked: '*What is your business type?'*

Businesses were able to select from a list or nominate 'other' business types. Businesses that selected the 'other' category were asked to specify. These answers included accommodation, disability services, real estate, automotive repairs and services, and post office.

Some businesses selected more than one answer.

Key trends from responses included:

- in Blackheath (63 per cent) and Mount Victoria (88 per cent), the majority of businesses were either retail or food/beverage
- in Little Hartley, half of all businesses surveyed were recreational/tourism businesses.

## Blackheath

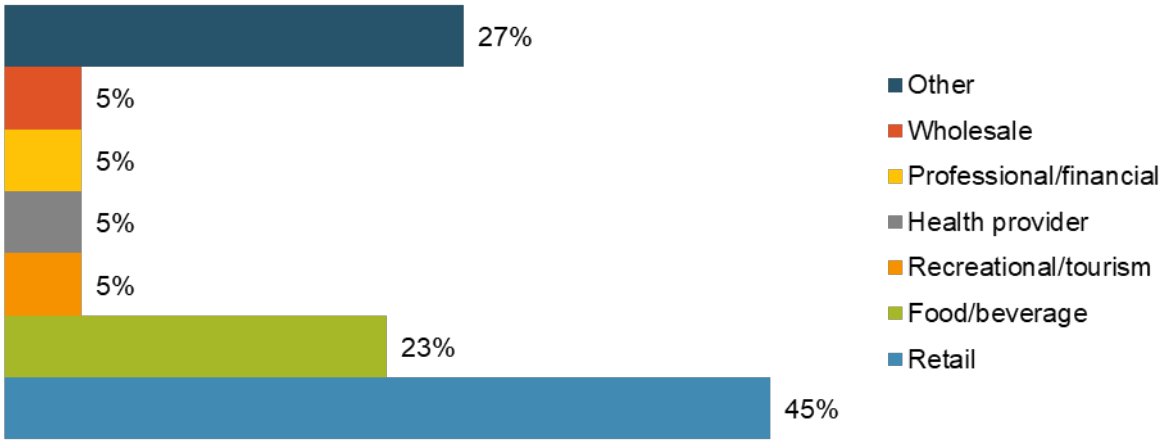


**Figure 40 Blackheath business types**

## Mount Victoria

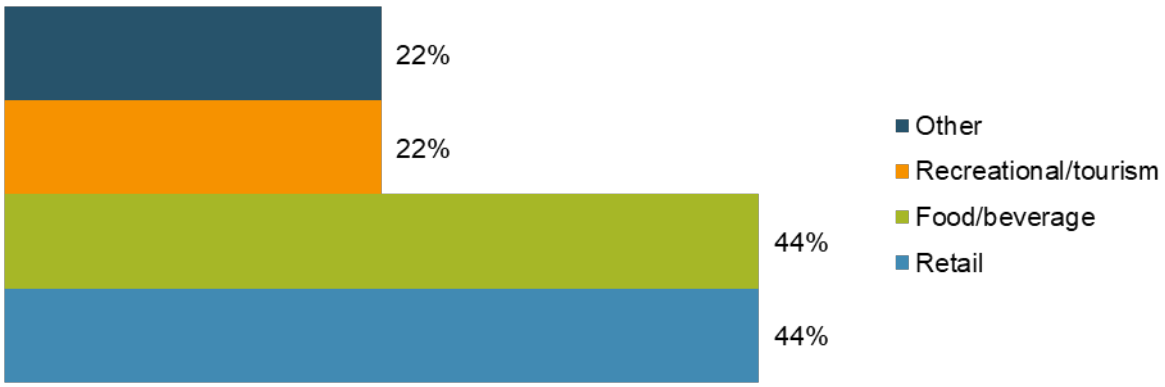


**Figure 41 Mount Victoria business types**

### Little Hartley

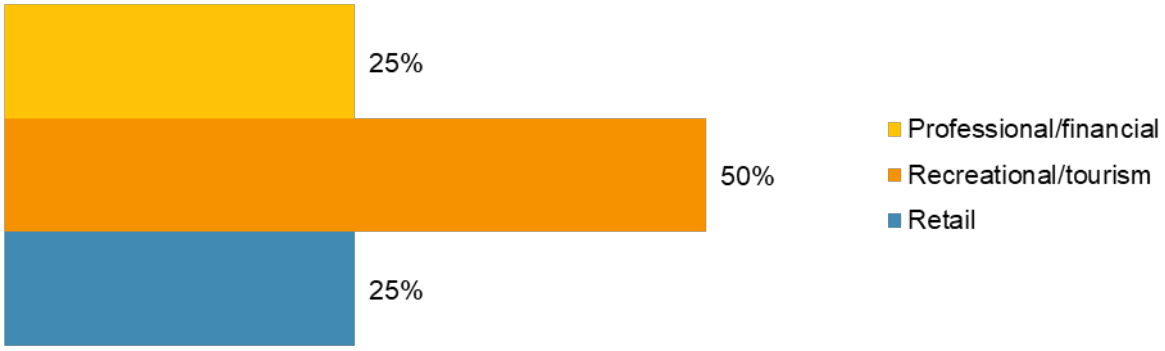


**Figure 42 Little Hartley business types**

## 3.3 Length of operation

Businesses were asked: '*For how long has your business operated in this location?'*

No businesses selected 'less than 12 months', despite it being an option.

In all three suburbs, the majority of businesses (56 to 77 per cent) have operated for more than 10 years in that location.

### Blackheath

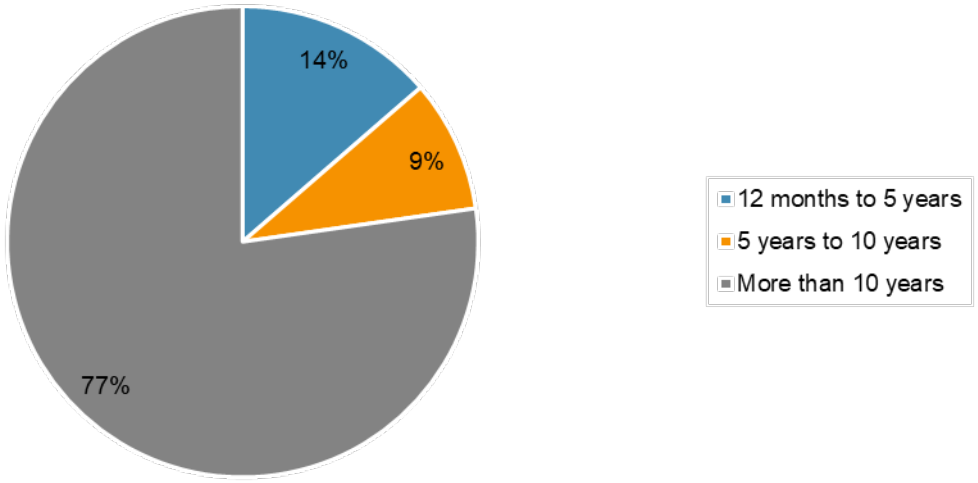


**Figure 43 Blackheath businesses length of operation**

## Mount Victoria

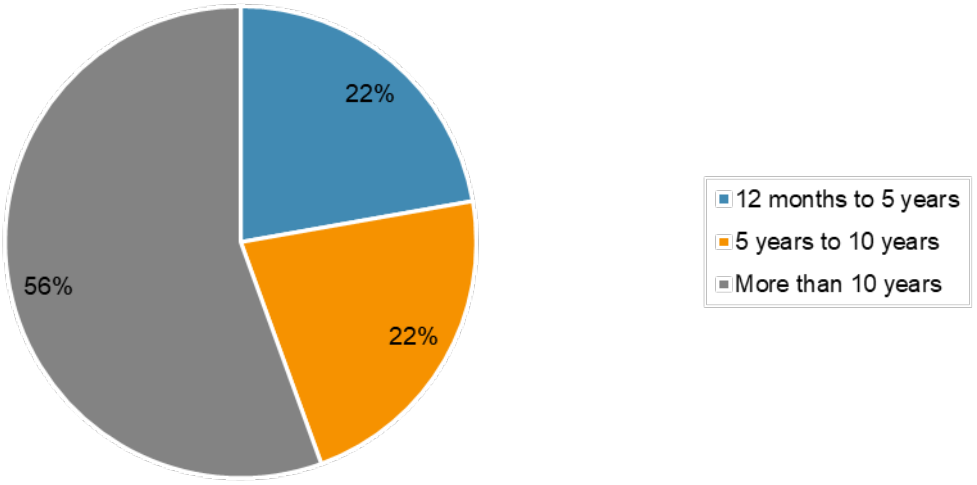


**Figure 44 Mount Victoria businesses length of operation**

## Little Hartley

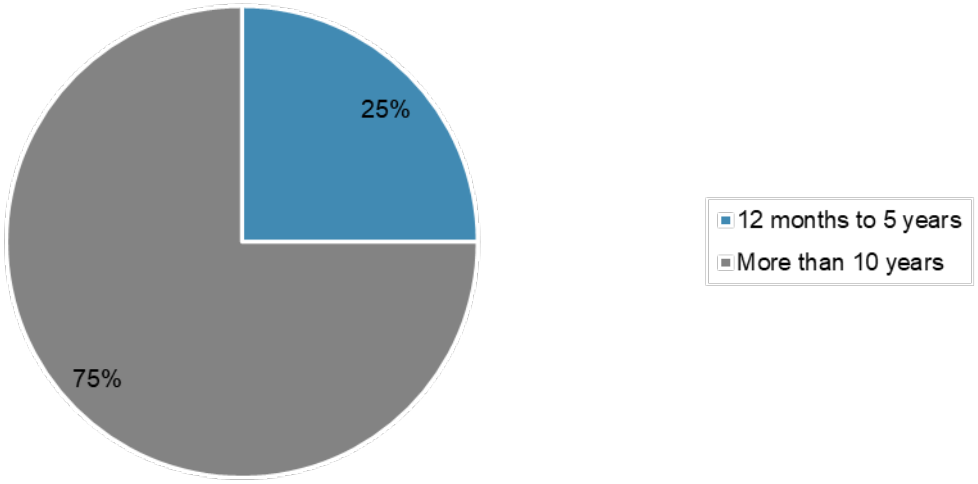


**Figure 45 Little Hartley businesses length of operation**

## 3.4 Trading hours

Businesses were asked: '*What are your general trading or operating hours?'*

One business from Mount Victoria did not select an option and chose to self-describe, as 'opens occasionally – pop up shop'.

No businesses selected 'only open at night', despite it being an option.

Key trends from responses included:

- in Blackheath, the majority of businesses (77 per cent) were only open in the day
- in Mount Victoria, no businesses were open 24 hours, but the majority of businesses (63 per cent) were open in the day and at night
- in Little Hartley, 50 per cent of businesses were open 24 hours.

**Blackheath**

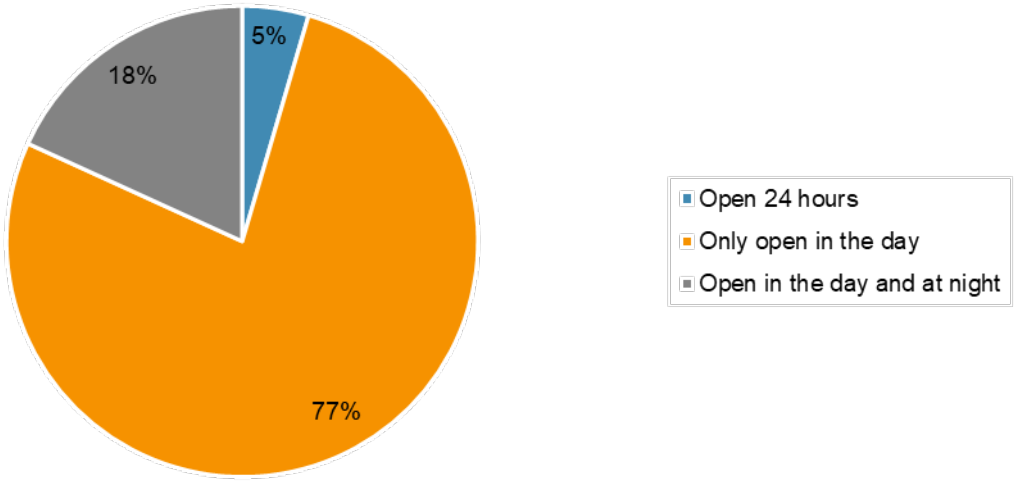


**Figure 46 Blackheath businesses trading hours**

### Mount Victoria

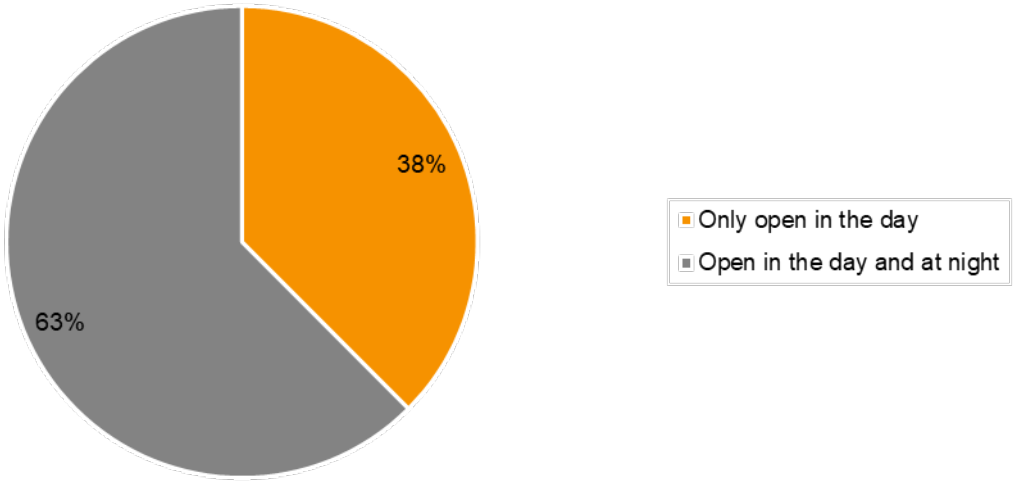


**Figure 47 Mount Victoria businesses trading hours**

### Little Hartley

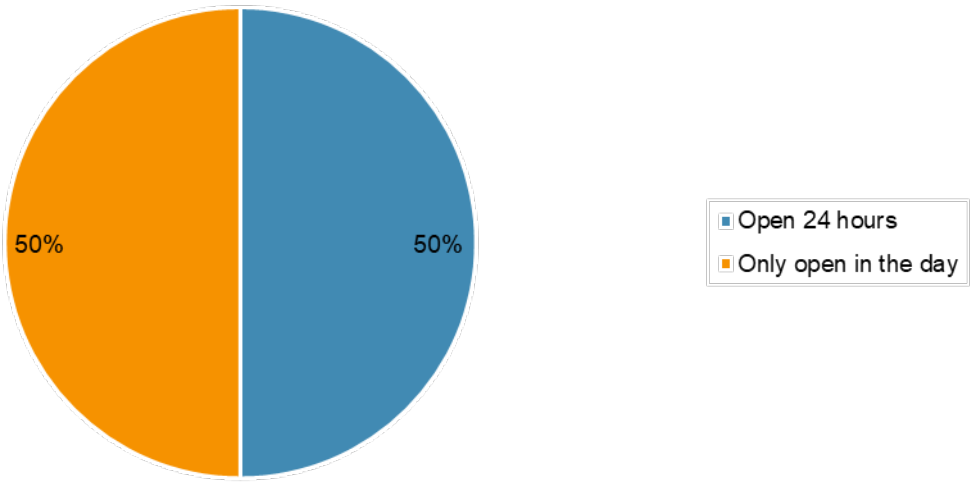


**Figure 48 Little Hartley businesses trading hours**

## 3.5 Trading days

Businesses were asked: '*What are your general trading or operating days?'*

One business from Mount Victoria did not select any options, having self-described as 'Open occasionally – pop up shop'.

In Mount Victoria, less businesses were open on Mondays, Tuesdays, Wednesdays and Thursdays (25 to 88 per cent) compared to Blackheath (91 to 100 per cent) and Little Hartley (100 per cent).

## Blackheath

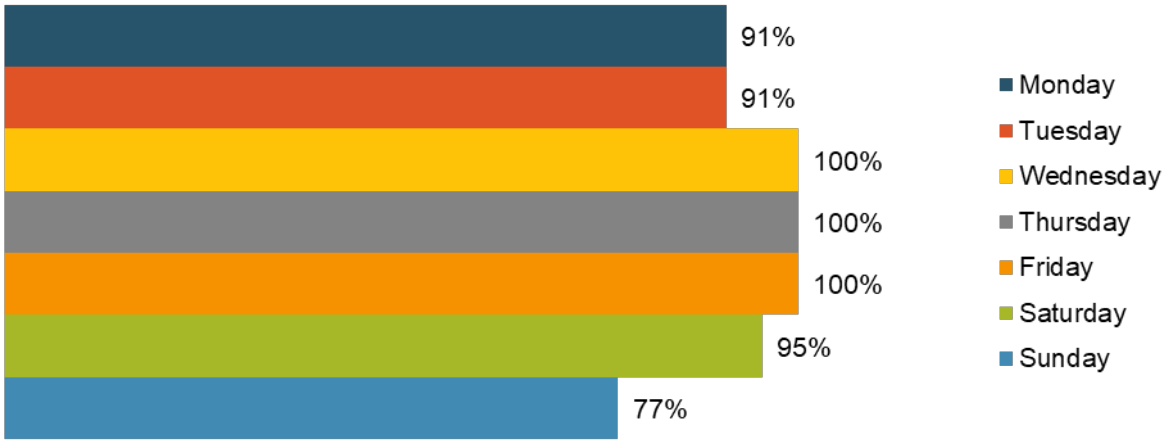


**Figure 49 Blackheath business trading days**

## Mount Victoria

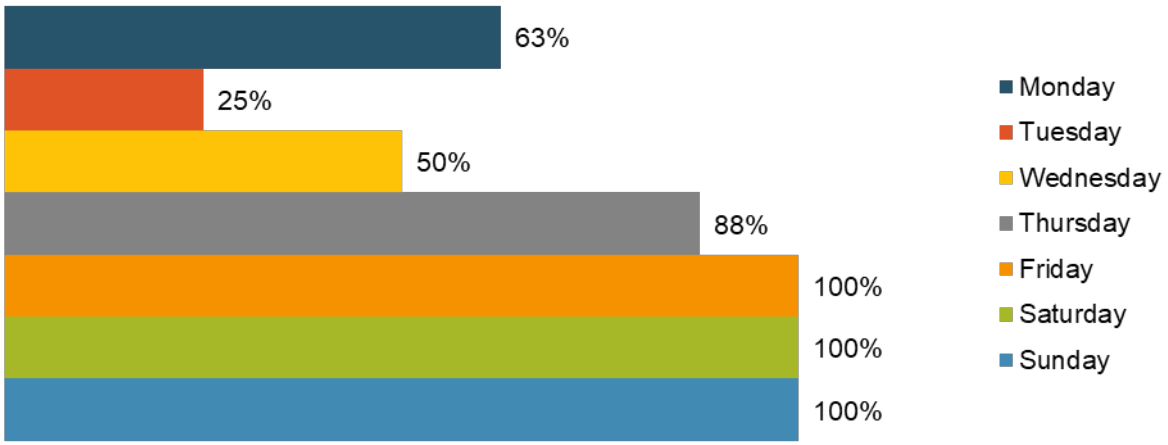


**Figure 50 Mount Victoria business trading days**

### Little Hartley

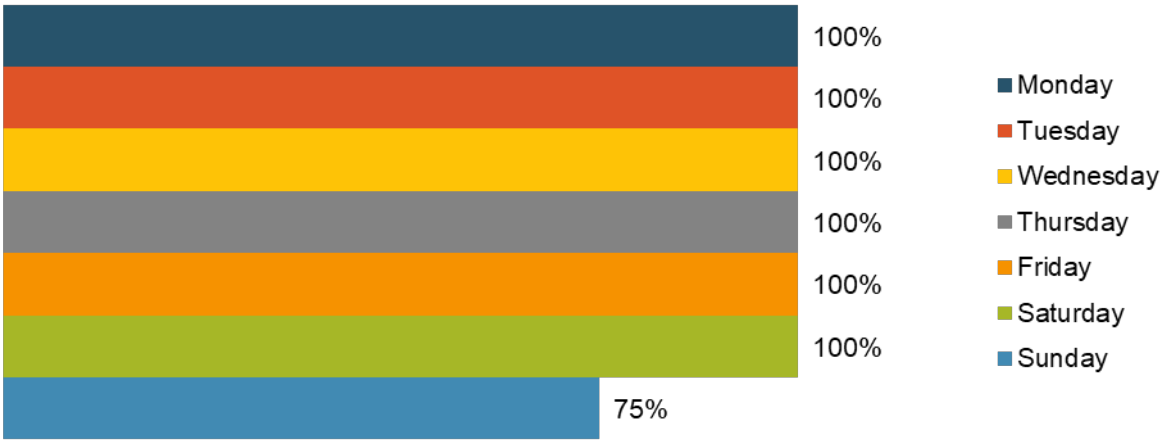


**Figure 51 Little Hartley business trading days**

## 3.6 Staff

Businesses were asked: '*How many of your staff are: full time sole trader with no staff; full time; casual; part time sole trader with no staff; part time?'*

One business in Mount Victoria chose to self-describe a separate category of employees as 'trainees'.

No businesses selected the 'part time sole trader with no staff', despite it being an option.

Key trends from responses included:

- in Blackheath and Mount Victoria, almost half (49 per cent) of all staff across businesses were casual
- Little Hartley had the highest percentage of full time staff (51 per cent) when compared to Blackheath (41 per cent) and Mount Victoria (17 per cent).

## Blackheath

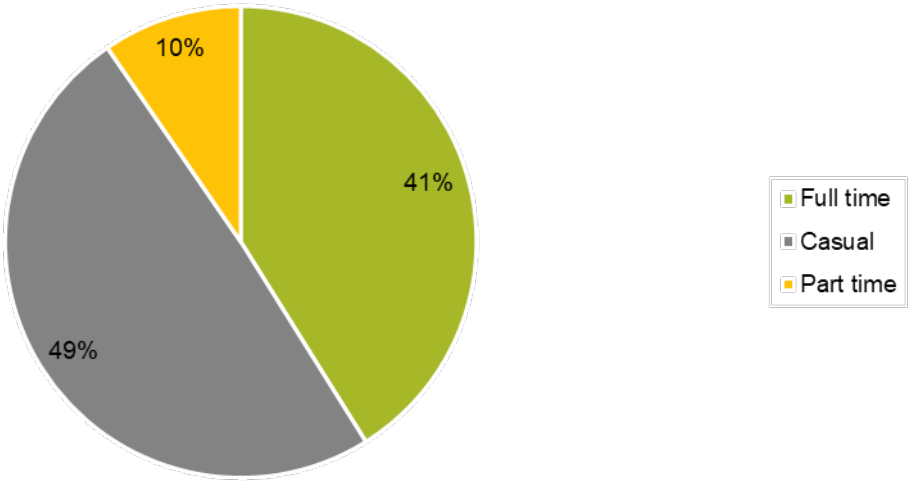


**Figure 52 How staff are employed across Blackheath businesses**

## Mount Victoria

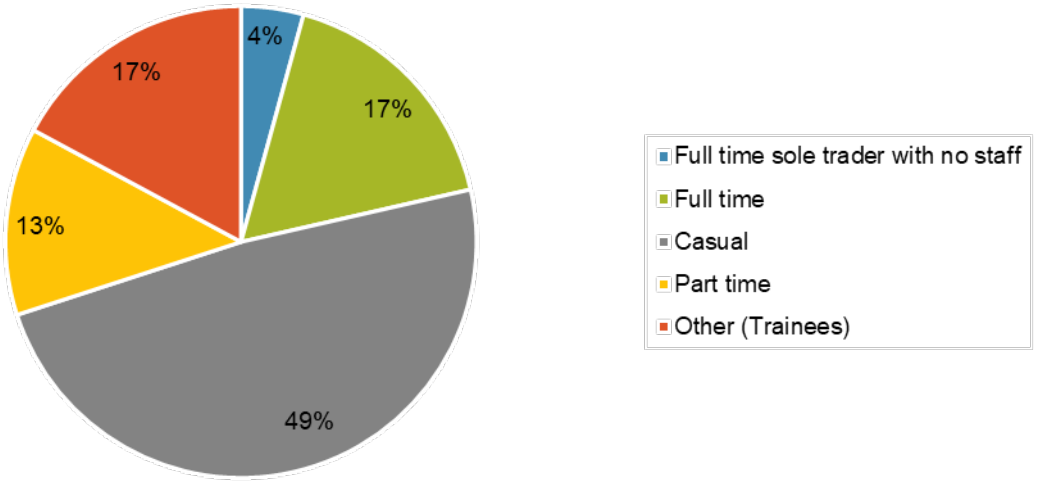


**Figure 53 How staff are employed across Mount Victoria businesses**

### Little Hartley

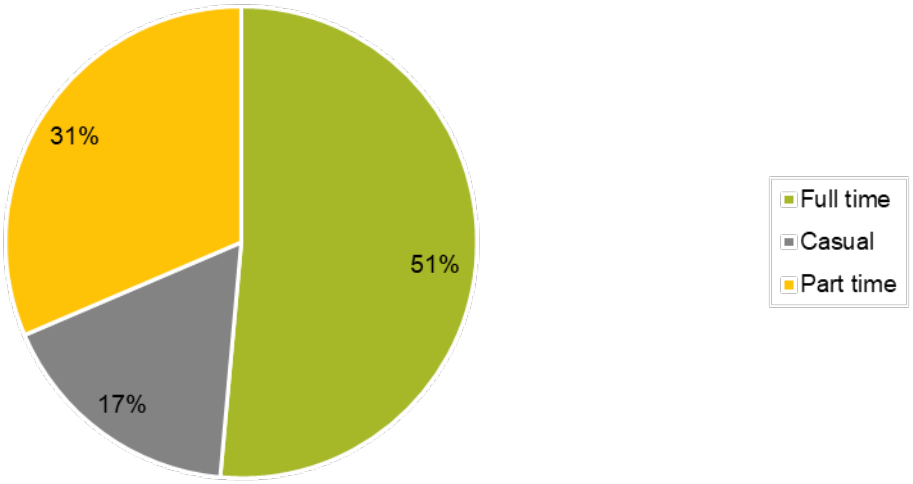


**Figure 54 How staff are employed across Little Hartley businesses**

## 3.7 Customer base

Businesses were asked: '*Broadly, where do most of your customers come from?'*

Businesses could select multiple answers.

Some key trends from responses included:

- across all three suburbs, the majority of businesses said that most of their customers were local (50 to 89 pr cent)
- in Mount Victoria, a high percentage of businesses (89 per cent) indicated that most of their customers came from elsewhere in NSW/Australia, compared to 55 per cent in Blackheath and 50 per cent in Little Hartley.

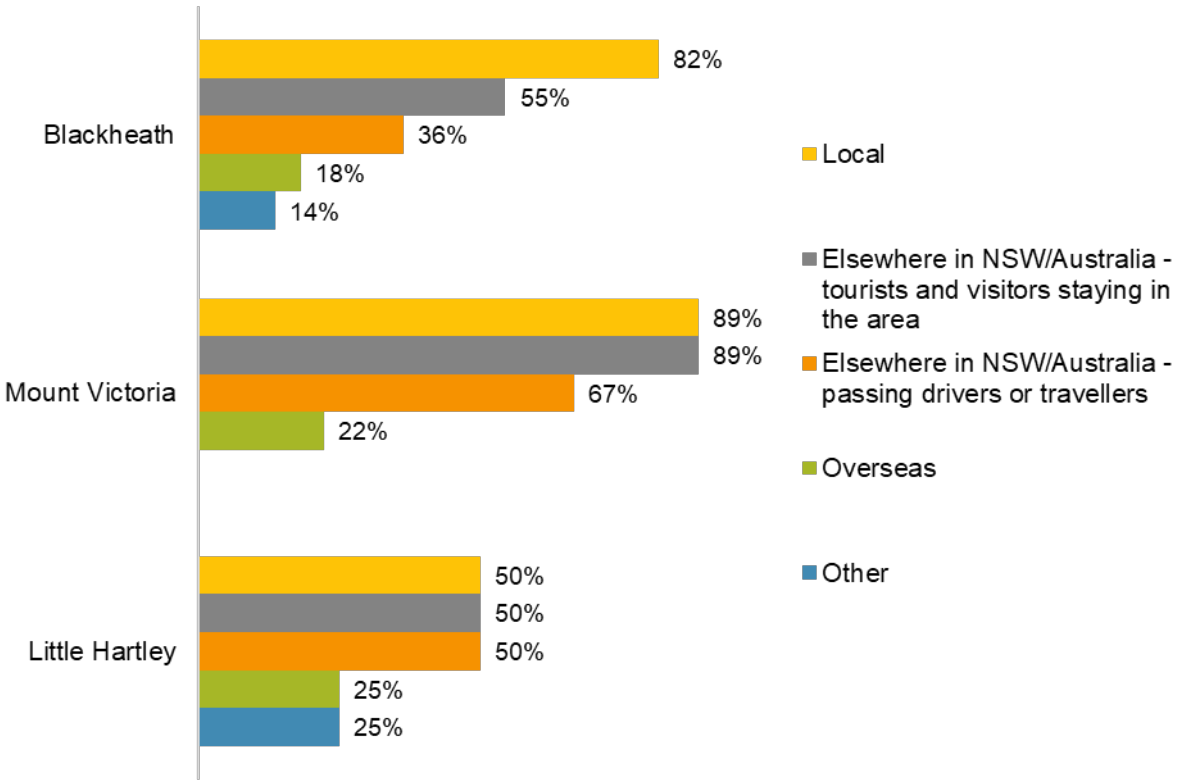


**Figure 55 Business customer base**

## 3.8 Annual business levels

Businesses were asked: *'Does your level of business vary throughout the year?'*

Key trends from responses included:

- in Blackheath and Mount Victoria, the majority of businesses (59 and 89 per cent respectively) indicated that their level of business does vary throughout the year
- in Little Hartley, the majority of businesses (75 per cent) indicated that their level of business does not vary throughout the year.

## Blackheath

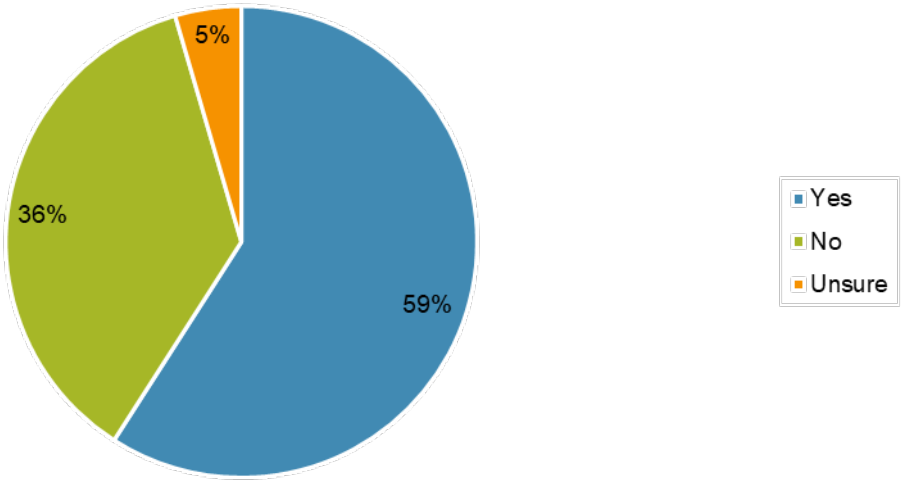


**Figure 56 Whether level of business varies throughout the year for Blackheath businesses**

## Mount Victoria

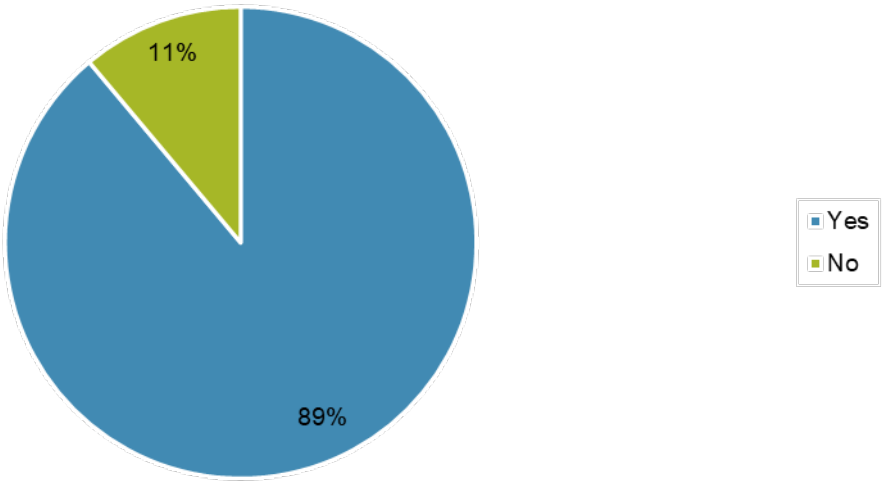


**Figure 57 Whether level of business varies throughout the year for Mount Victoria businesses**

## Little Hartley

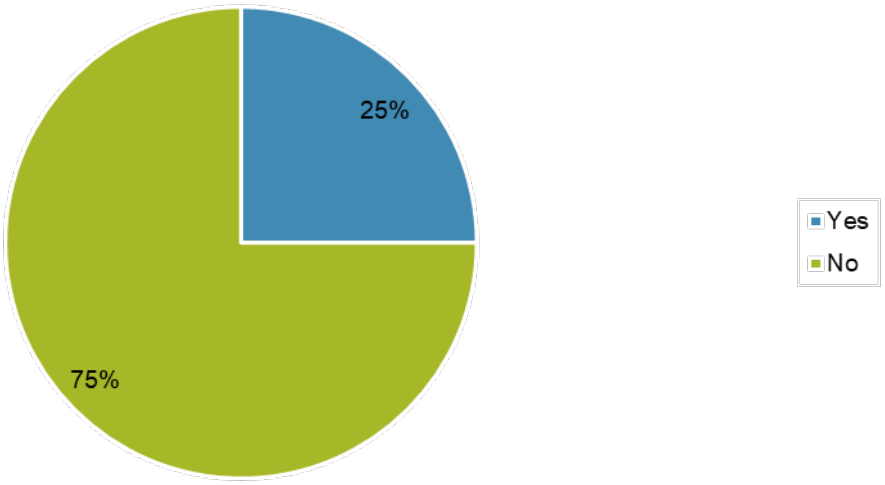


**Figure 58 Whether level of business varies throughout the year for Little Hartley businesses**

Businesses were also asked: *'If so, how/when?'*

This was asked as an open-ended question to capture a broad range of responses. Responses were categorised into themes which reflect the most common responses. These included:

- **seasonal**, for example, spring, summer, autumn, winter
- **public holidays**, for example, Easter, Christmas, Mother's Day, Father's Day
- **weekends**
- **school holidays**
- **natural disasters**, for example, bushfires, floods, landslides
- **other**, including COVID-19, the weather, traffic congestion.

Some business's responses fell within more than one theme.

The majority of businesses stated responses that fell within the themes of seasonal (48 per cent) or public holidays (43 per cent).

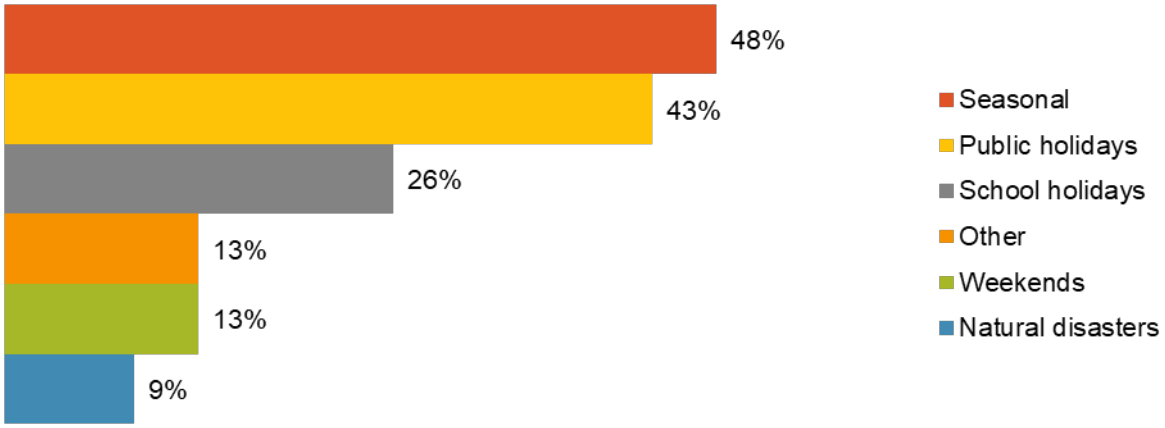


**Figure 59 How/when level of business varies throughout the year**

## 3.9 Weekly business levels

Businesses were asked: *'Does your level of business vary throughout the week?'*

Key trends from responses included:

- in all three suburbs, the majority of businesses said their business does vary throughout the week
- level of business varied the least throughout the week for Mount Victoria residents (17 per cent), compared to Blackheath (32 per cent) and Little Hartley (25 per cent) residents.

**Blackheath**

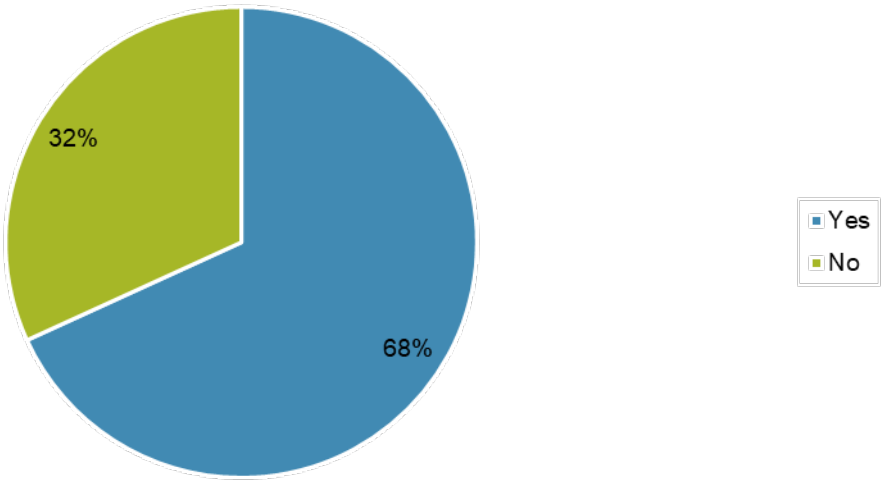


**Figure 60 Whether level of business varies throughout the week for Blackheath businesses**

## Mount Victoria

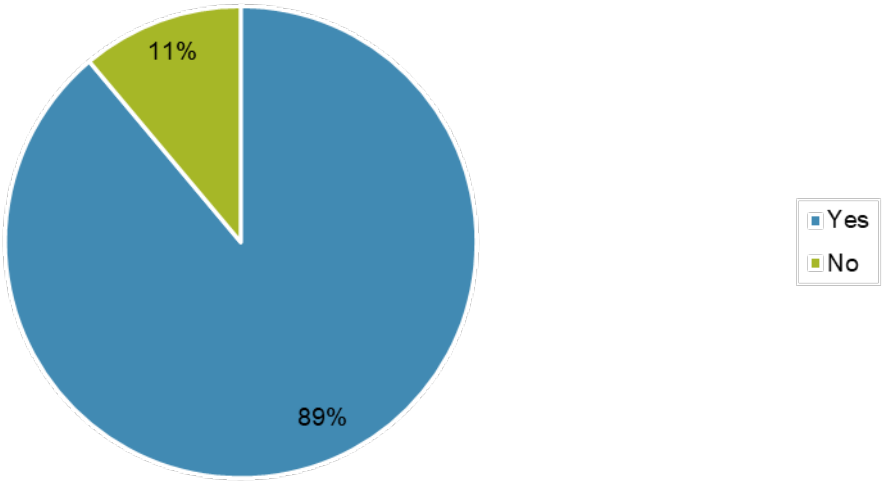


**Figure 61 Whether level of business varies throughout the week for Mount Victoria businesses**

## Little Hartley

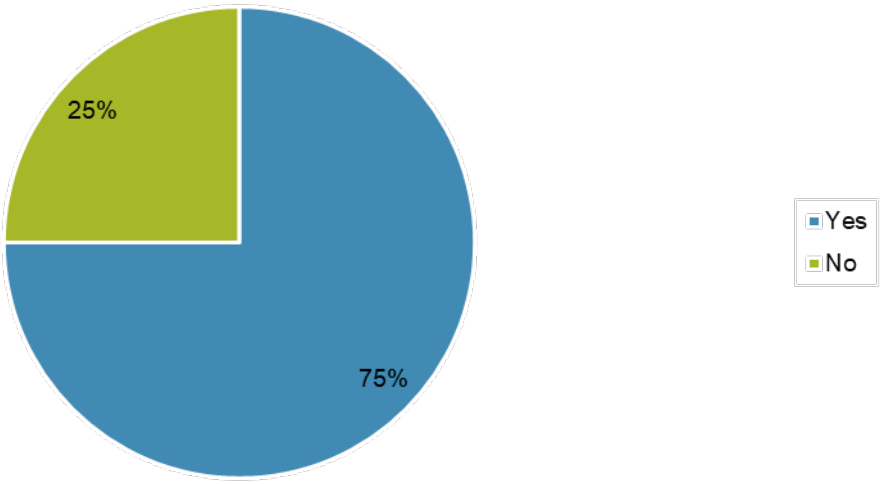


**Figure 62 Whether level of business varies throughout the week for Little Hartley businesses**

Businesses were also asked: *'If so, how/when?'*

This was asked as an open-ended question to capture a broad range of responses. Responses were categorised into themes which reflect the most common responses. These included:

- **busier on weekends**, for example, Saturdays and Sundays, Friday and Saturday nights, Thursday through to Sunday
- **busier on weekdays**, for example, weekends are slower, weekdays are better
- **other**, including mornings, depending on the weather, easter weekend.

The majority of businesses stated responses that fell within the theme of busier on weekends (81 per cent).


**Figure 63 How/when level of business varies throughout the week**

## 3.10 COVID-19 impacts

Businesses were asked: *'Transport for NSW recognises that COVID-19 has affected some businesses. Has your business been affected?'*

Respondents could select 'yes' or 'no' for if their business had been affected by COVID-19 or not.

100 per cent of businesses in Little Hartley were affected by COVID-19, followed by 86 per cent of Blackheath businesses, and 50 per cent of Mount Victoria businesses.

### Blackheath

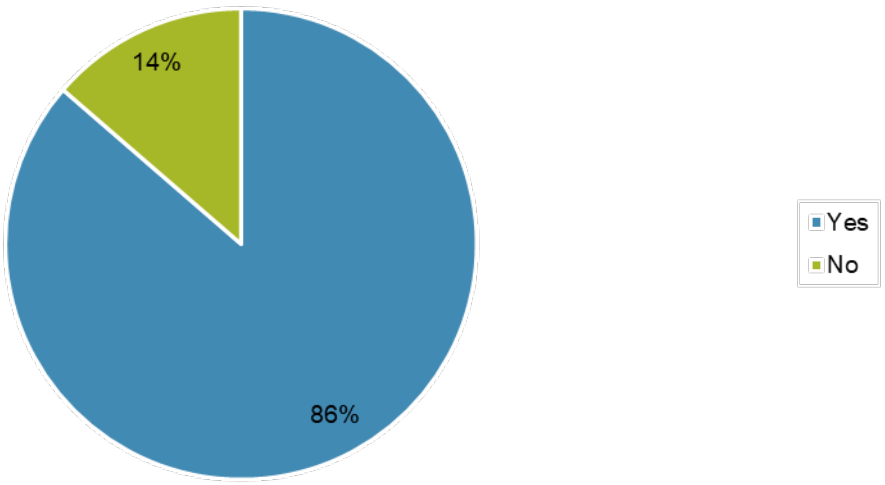


**Figure 64 Whether or not Blackheath businesses were affected by COVID-19**

## Mount Victoria

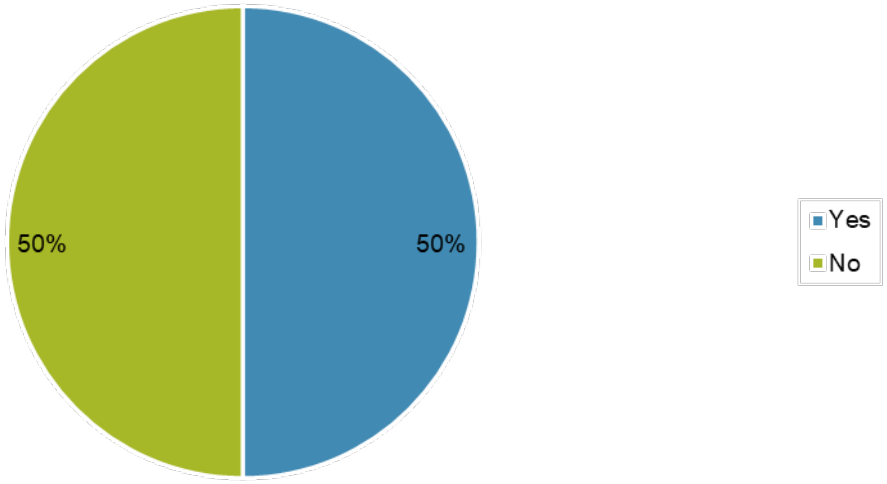


**Figure 65 Whether or not Mount Victoria businesses were affected by COVID-19**

## Little Hartley

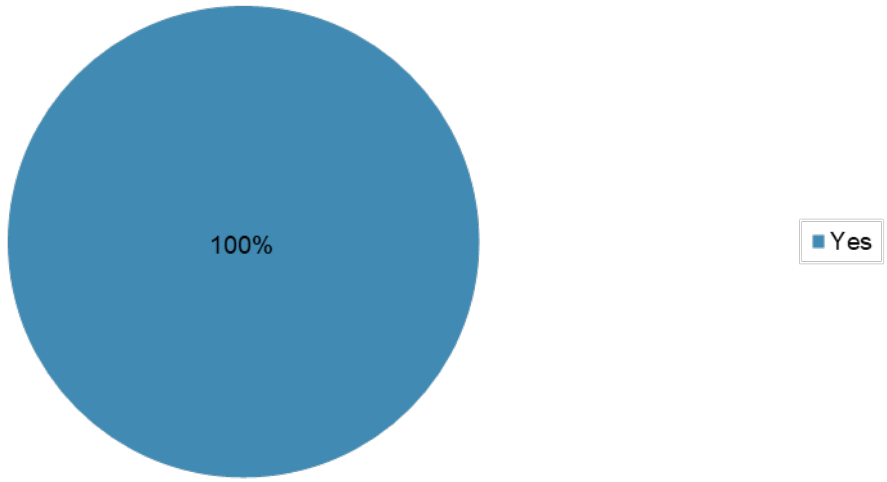


**Figure 66 Whether or not Little Hartley businesses were affected by COVID-19**

Businesses were asked: *'If so, how?'*

This was asked as an open-ended question to capture a broad range of responses. Responses were categorised into themes which reflect the most common responses. These included:

- **less customers**, for example, drop in consumer confidence, travel restrictions, last minute cancelations (isolation requirements)
- **staff shortages**, for example, high staff turnover, difficulty in finding staff, staff having to isolate
- **business forced to close**, for example, due to lack of trade, due to lack of staff
- **other negative impacts,** including increase in property demand, product shortages
- **noted positive impacts**, for example an increase in business.

Some businesses who answered 'no' to the previous question still chose to respond to this question.

Some business's responses fell within more than one theme.

The majority of businesses stated responses that fell within the theme of less customers (62 per cent).

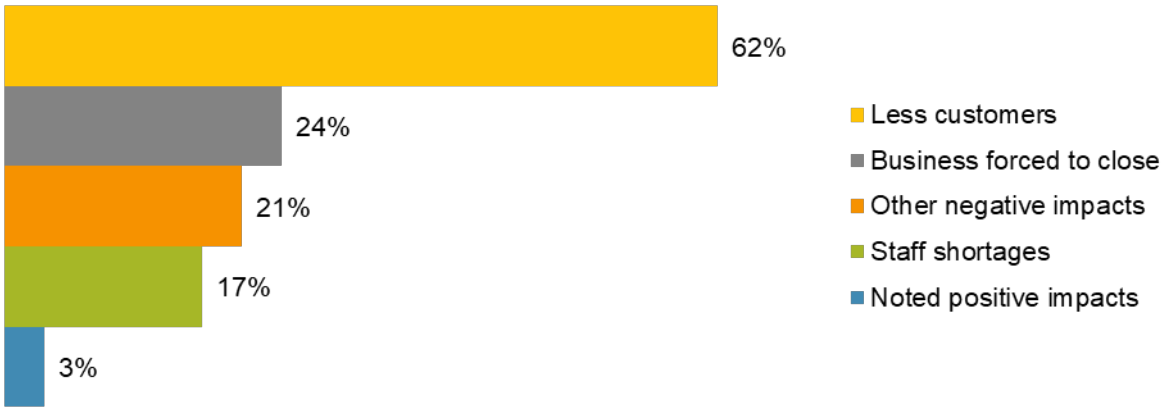


**Figure 67 How COVID-19 affected businesses**

## 3.11 Dependence on passing trade

Businesses were asked: *'How dependent is your business on passing trade (customers who visit only because they are passing through)?'*

Key trends from responses included:

- In Blackheath, over half (55 per cent) of the businesses indicated that they were moderately dependent on passing trade, while 32 per cent indicated they were not dependent
- in Little Hartley, all businesses indicated that they were either moderately dependent (75 per cent) or highly dependent (25 per cent) on passing trade
- in Mount Victoria, almost half (45 per cent) of businesses indicated that they were highly dependent on passing trade.

## Blackheath

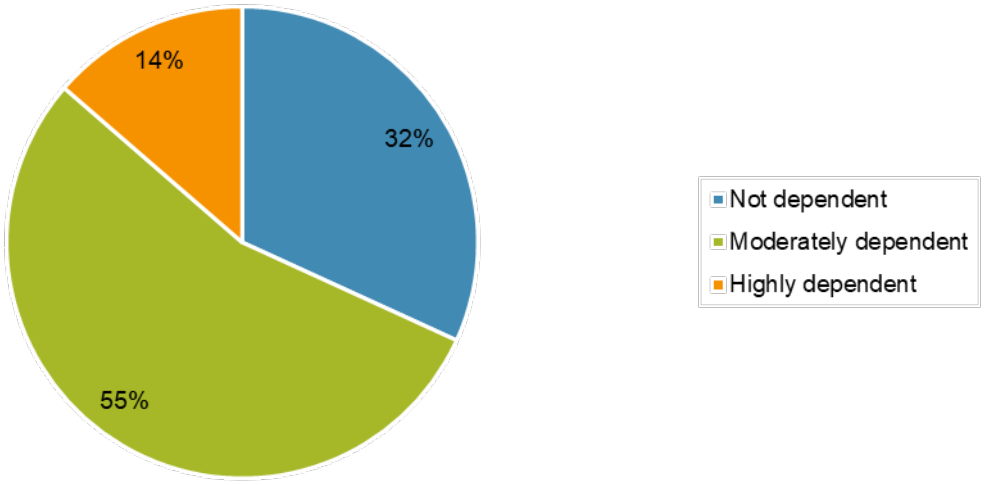


**Figure 68 Dependence of Blackheath businesses on passing trade**

## Mount Victoria

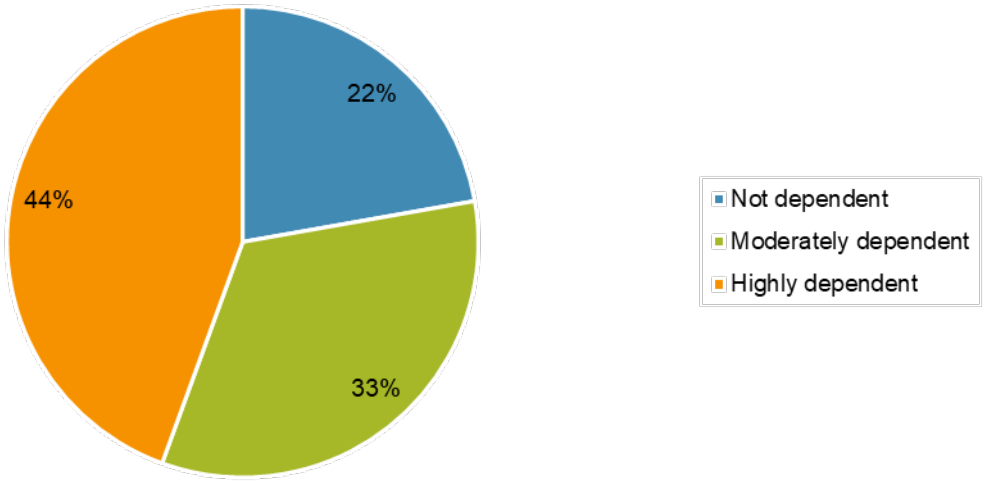


**Figure 69 Dependence of Mount Victoria businesses on passing trade**

### Little Hartley

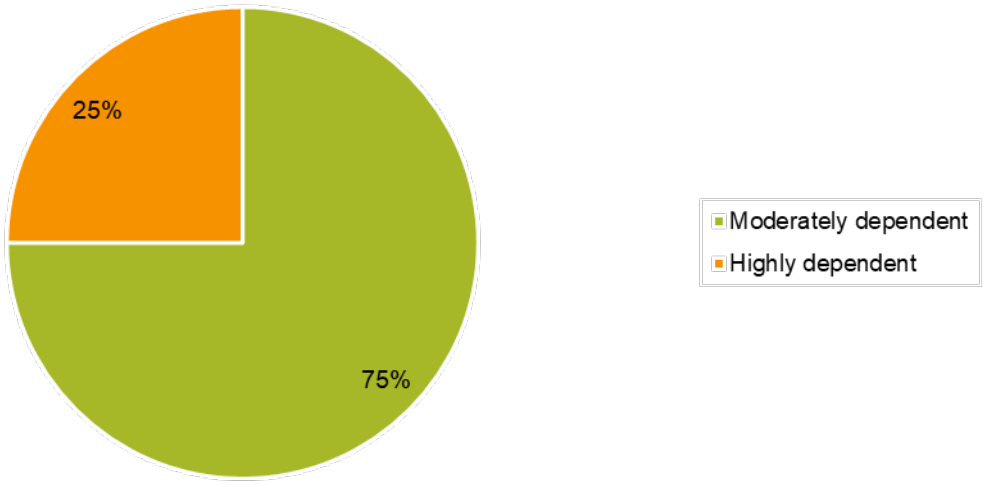


**Figure 70 Dependence of Little Hartley businesses on passing trade**

## 3.12 Dependence on visibility

Businesses were asked: *'How dependent is your business on visibility to passing traffic or pedestrians?'*

Key trends from responses included:

- in Blackheath, over half (55 per cent) of the businesses indicated that they were moderately dependent on visibility to passing trade or customers, while 32 per cent indicated they were not dependent
- in Mount Victoria, the majority of businesses indicated that they were either moderately dependent (44 per cent) or highly dependent (44 per cent) on visibility to passing traffic or pedestrians
- in Little Hartley, all businesses indicated that they were either moderately dependent (25 per cent) or highly dependent (75 per cent) on visibility to passing traffic or pedestrians.

## Blackheath

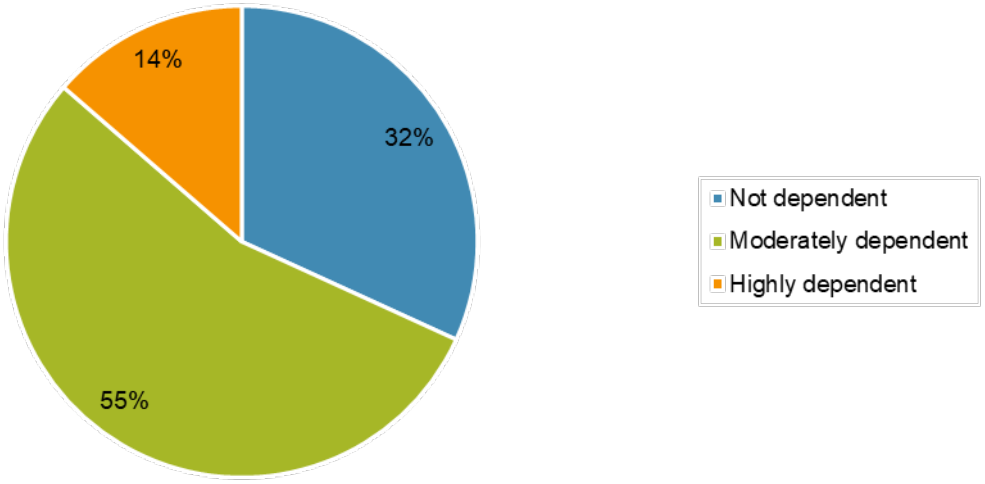


**Figure 71 Dependence of Blackheath businesses on visibility to passing traffic or pedestrians**

## Mount Victoria

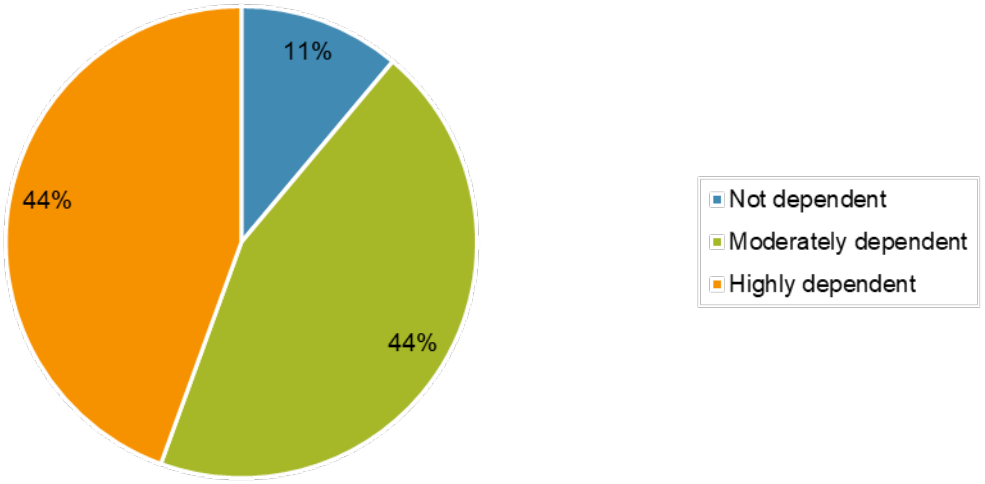


**Figure 72 Dependence of Mount Victoria businesses on visibility to passing traffic or pedestrians**

### Little Hartley

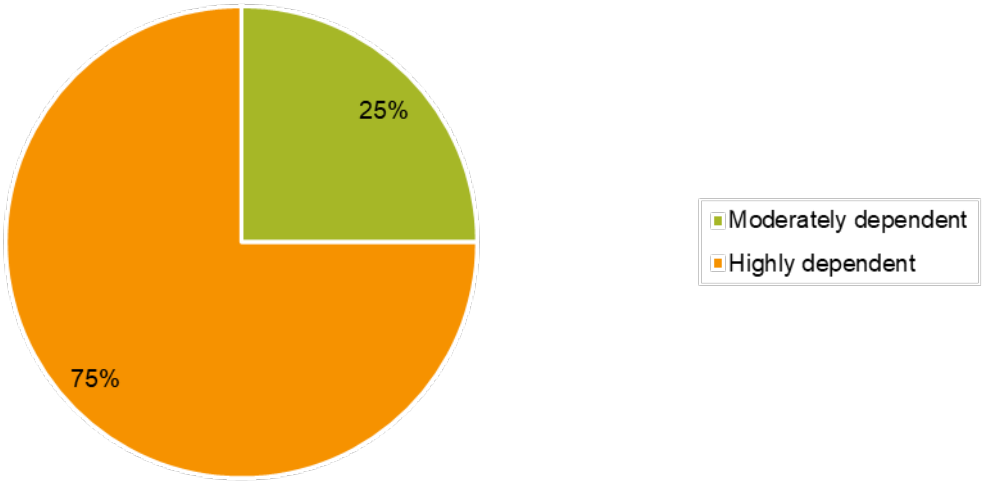


**Figure 73 Dependence of Little Hartley businesses on visibility to passing traffic and pedestrians**

## 3.13 Advertising

Businesses were asked: *'What are the main ways you promote your business?'*

Businesses were able to select from a list or nominate 'other' ways to promote their business. Businesses who selected the 'other' category were asked to specify. These answers included social media, word of mouth, the internet, local newspapers, and magazines. Businesses could select multiple answers.

Key trends from responses included:

- in all three suburbs, the majority of businesses (above 73 percent) indicated that the main way they promote their business was 'other'. The internet and social media made up the majority of these answers
- in all three suburbs, a high percentage of businesses (50 to 73 per cent) indicated that the main way they promote their business was with shop signage.

## Blackheath

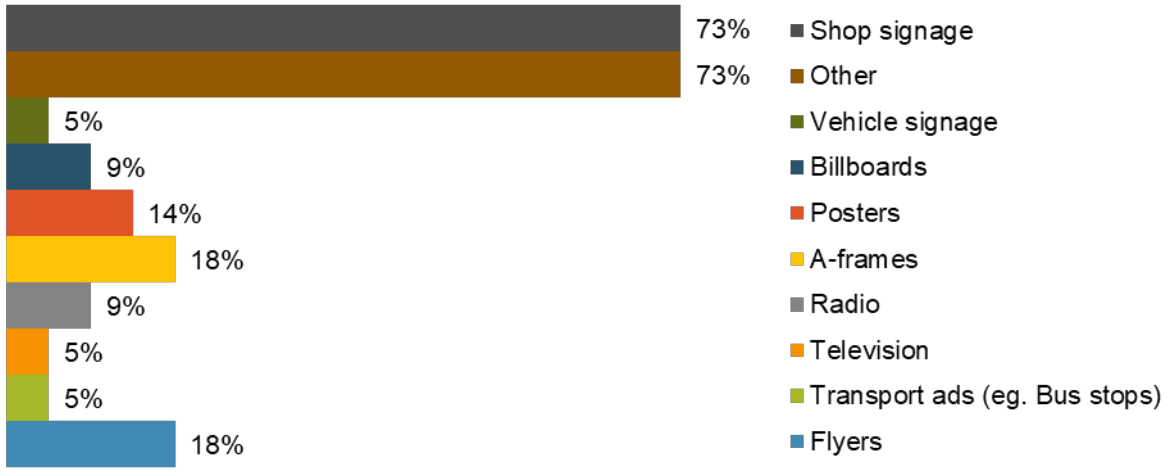


**Figure 74 Main methods of business promotion Blackheath**

## Mount Victoria

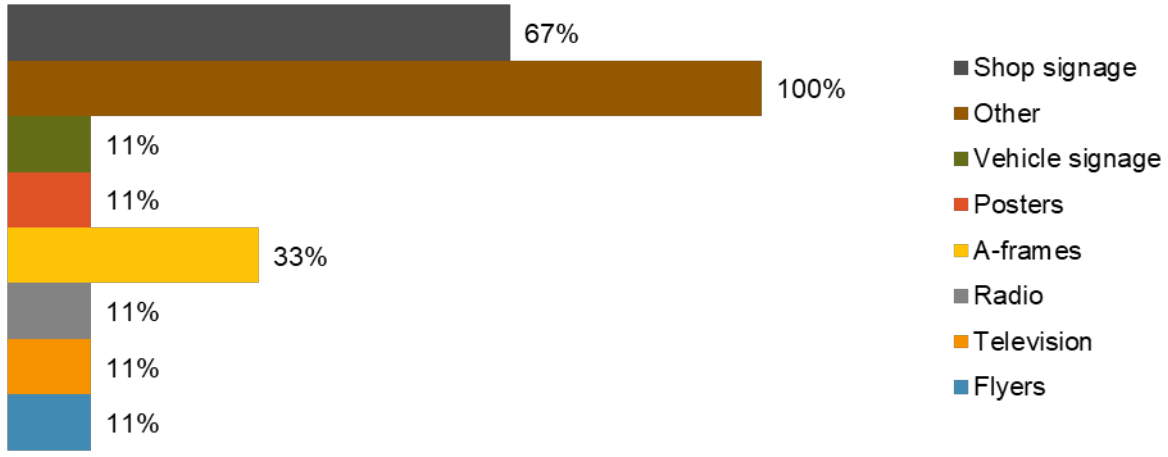


**Figure 75 Main methods of business promotion Mount Victoria**

### Little Hartley

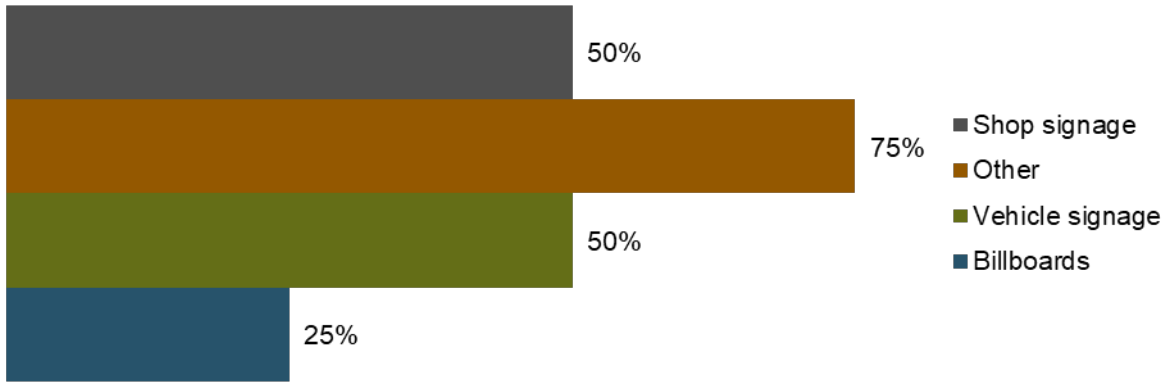


**Figure 76 Main methods of business promotion Little Hartley**

## 3.14 Specialty provider

Businesses were asked: *'Would you consider your business to be the only provider of a particular good/service in the local area?'*

Exactly half of all businesses in Blackheath considered themselves the only provider of a particular good/service in the local area, while slightly fewer businesses in Mount Victoria (44 per cent) held this view. In Little Hartley, the majority of businesses (75 per cent) considered themselves sole providers of a particular good/service in the local area.

### Blackheath

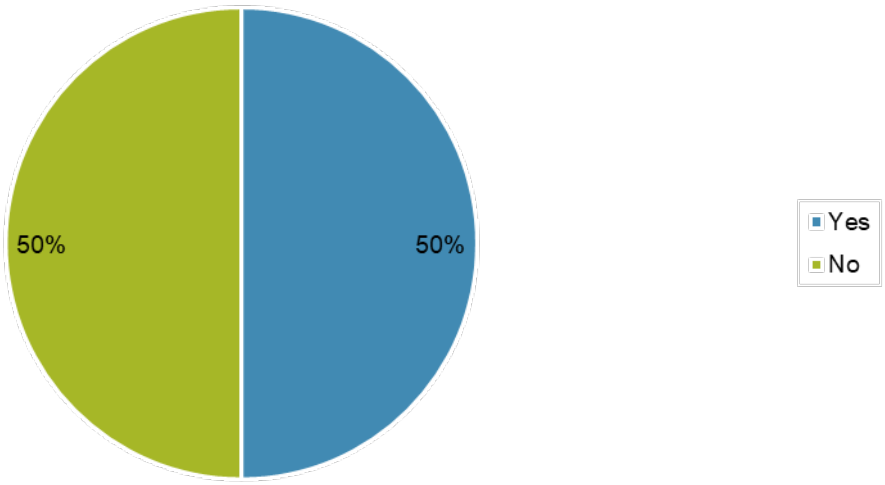


**Figure 77 Whether or not businesses in Blackheath consider themselves the only provider of a service**

### Mount Victoria

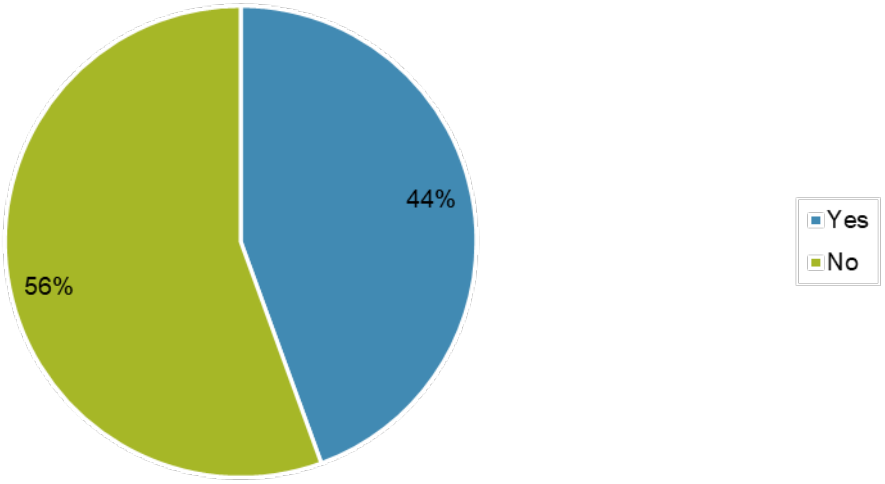


**Figure 78 Whether or not businesses in Mount Victoria consider themselves the only provider of a service**

### Little Hartley

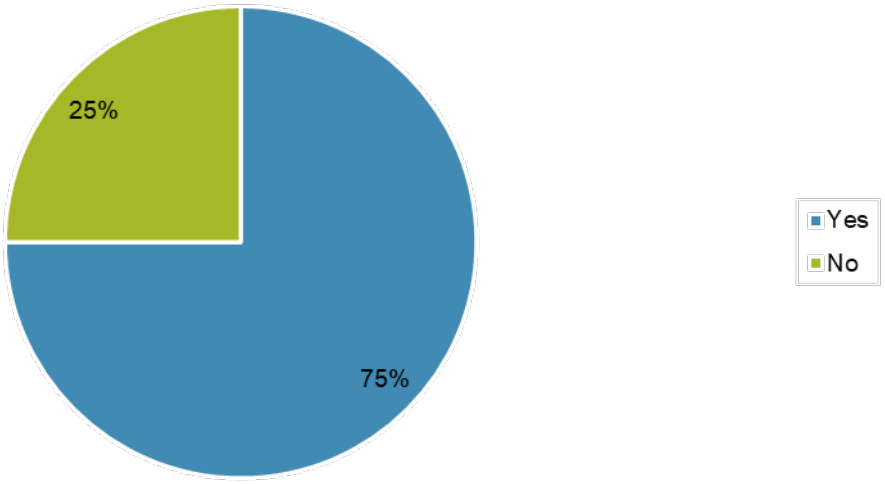


**Figure 79 Whether or not businesses in Little Hartley consider themselves the only provider of a service**

Businesses who selected 'Yes' were asked to specify the service. Three of these businesses chose not to specify. Among the answers included shoe repair services, a cinema, hospitality, fresh produce, real estate, hardware and technology.

## 3.15 Reliance on other businesses

Businesses were asked: *'Does your business have a reliance upon other local businesses and/or do businesses rely upon your business?'*

Businesses could select more than one answer.

Key trends from the responses included:

- in Blackheath and Mount Victoria, the majority of businesses indicated that they rely on other businesses (55 and 56 per cent respectively), or that other businesses rely on them (59 and 44 per cent respectively)
- in Little Hartley, 75 per cent of businesses indicated that their business does not have a reliance upon other businesses and 25 per cent indicated that businesses have a reliance upon them.

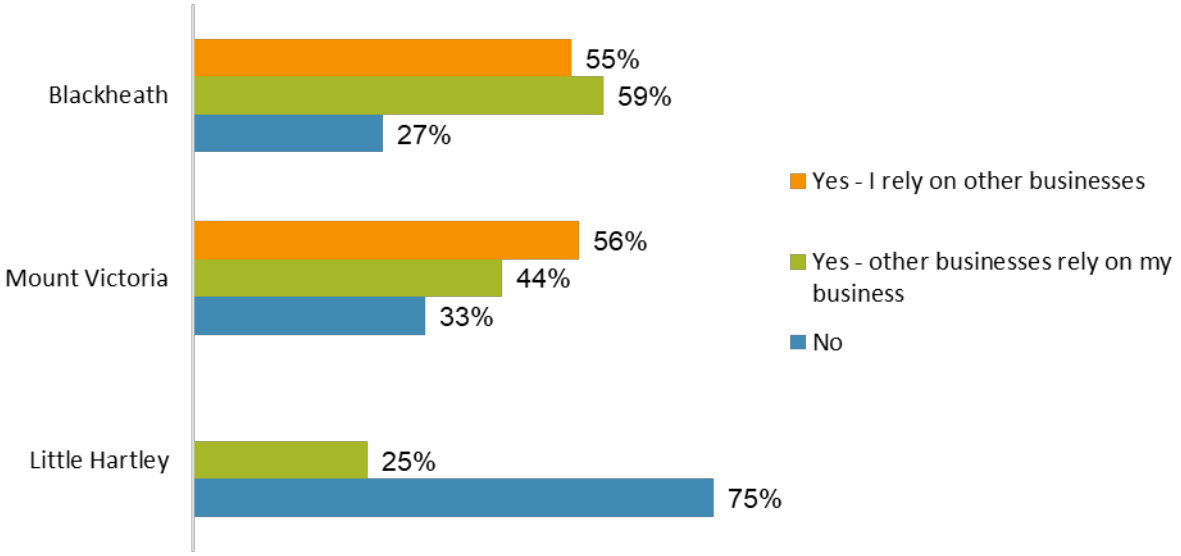


**Figure 80 Businesses' reliance upon one another**

Businesses who selected 'Yes' were asked to specify the reliance. Seven of these businesses chose not to specify. Ten businesses who selected 'No' also chose to answer. Among the answers included wholesale from/to other businesses, being contract cleaners, being a post office, all relying upon one another in the hope of attracting trade to nearby stores, and reliance on tradespeople.

## 3.16 Construction impacts

Businesses were asked: *'Is there any part of your business you think might be affected by construction activities?'*

In all three suburbs, the majority of businesses (from 73 to 100 per cent) indicated that thought a part of their business might be affected by construction activities.

## Blackheath

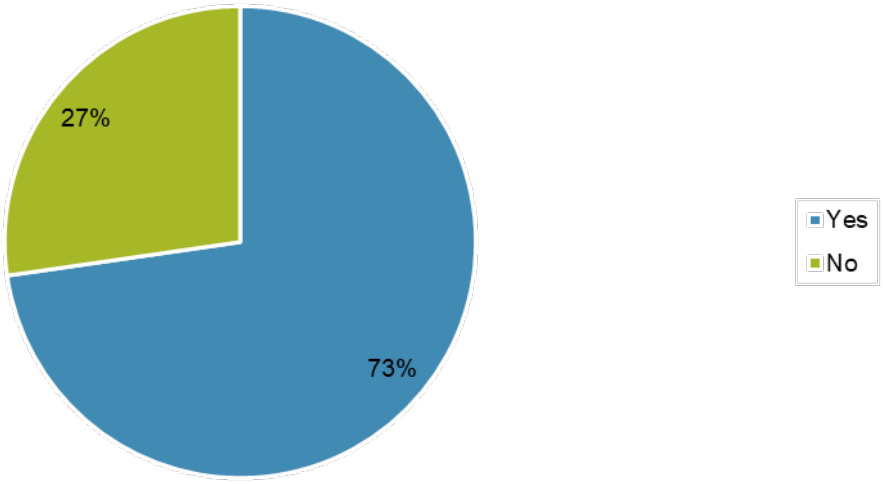


**Figure 81 Whether or not businesses in Blackheath think a part of their business might be affected by construction**

## Mount Victoria

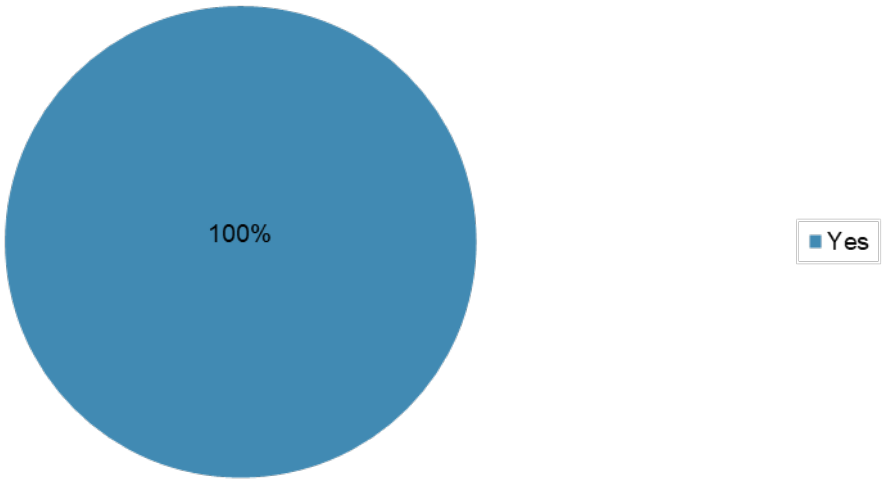


**Figure 82 Whether or not businesses in Mount Victoria think a part of their business might be affected by construction**

## Little Hartley

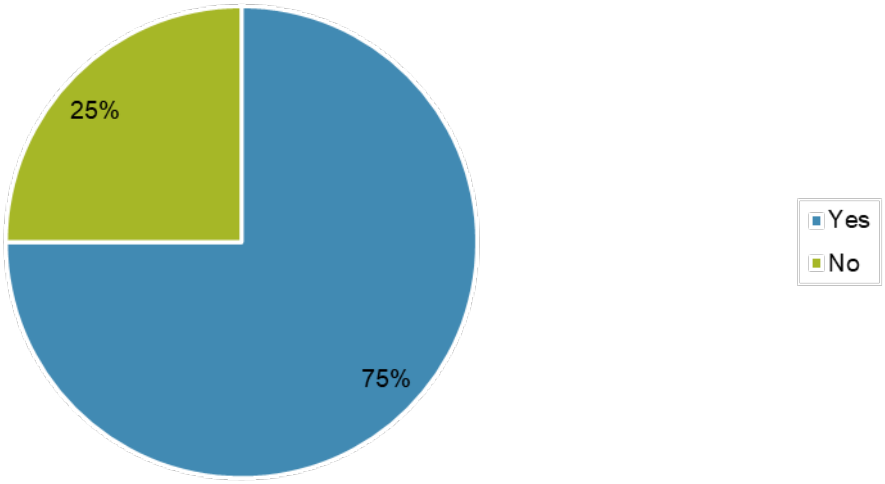


**Figure 83 Whether or not businesses in Little Hartley think a part of their business might be affected by construction**

Businesses who answered 'Yes' were asked to specify. One business chose not to answer this question. Among the answers, some common responses included noise affecting the quality of the customer experience, noise affecting ability to conduct business operation, construction affecting aesthetic appeal of the business, and construction impacting on business access and parking.

Businesses were also asked: *'What benefits do you think the project may have on your business during construction?'*

Four businesses chose not to answer this question.

This was asked as an open-ended question to capture a broad range of responses. Responses were categorised into themes which reflect the most common responses. These included:

- **improvements to trade from construction** workers, for example, workers coming to get coffee, workers needing accommodation
- **other benefits**, for example, repair and maintenance of construction vehicles.

Some responses fell within more than one theme.

In all three suburbs, roughly a quarter (25 to 33 per cent) of businesses' responses fell within the theme of improvements to trade from construction.

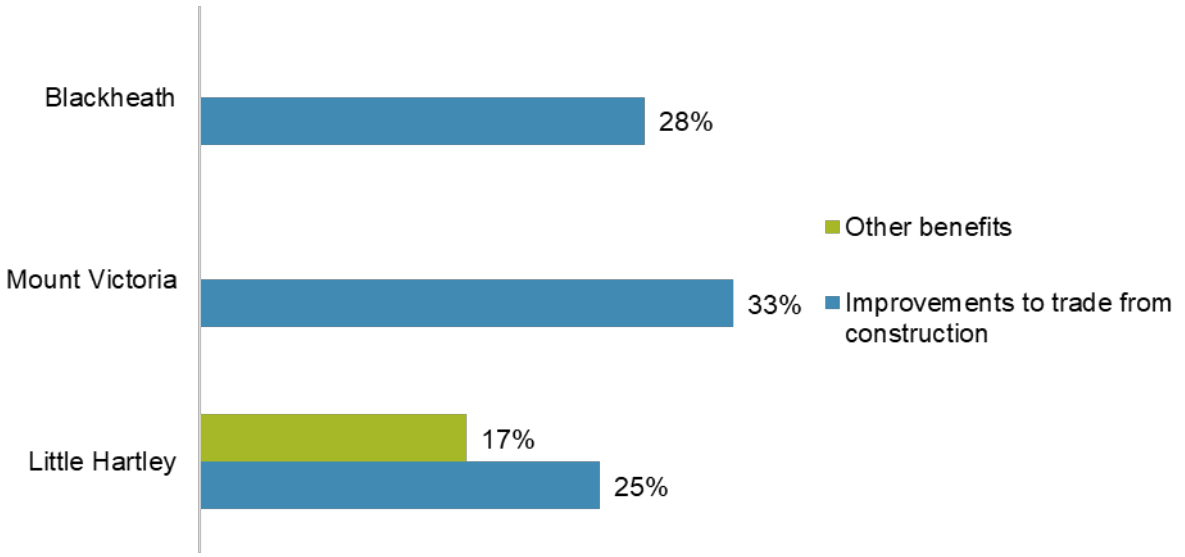


**Figure 84 Benefits during construction for businesses**

Businesses were also asked: *'What impacts do you think the project may have on your business during construction?'*

Four businesses chose not to answer this question.

This was asked as an open-ended question to capture a broad range of responses. Responses were categorised into themes which reflect the most common responses. These included:

- **construction impacts to business** access, for example, reduction in parking, loss of footpath access, road diversions during construction
- **construction traffic impacts**, for example, congestion deterring customers, delays to employee travel times
- **construction noise** impacts, for example, noise complaints by guests
- **other,** for example, potential property damage from vibration impacts, dust, general reductions in trade.

Some business's responses fell within more than one theme.

Key trends from responses included:

- in all three suburbs, a high percentage (26 to 67 per cent) of responses fell within the theme of other impacts
- in Mount Victoria, 44 per cent of responses from businesses fell within the themes of both construction traffic and noise impacts, which was higher than both Blackheath and Little Hartley.

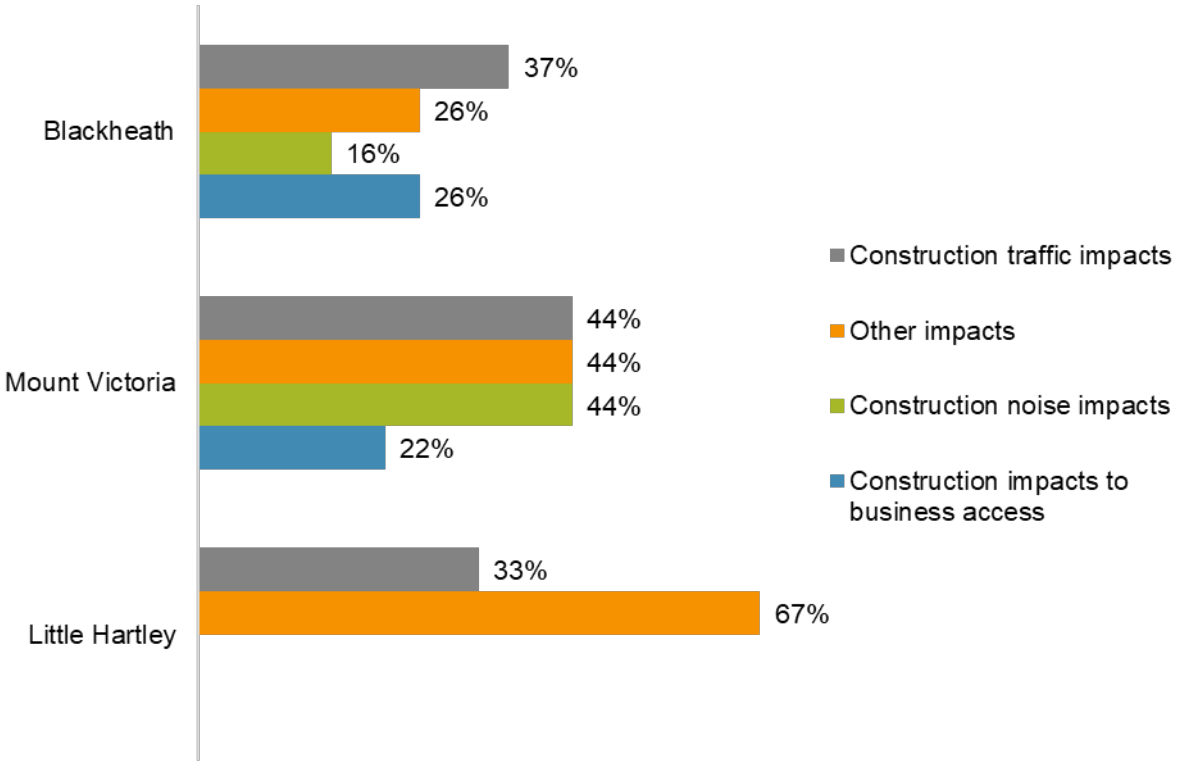


**Figure 85 Impacts during construction for businesses**

## 3.17 Operational impacts

Businesses were asked: *'What benefits do you think the project may have on your business during operation?'*

One business chose to not answer this question.

This was asked as an open-ended question to capture a broad range of responses. Responses were categorised into themes which reflect the most common responses. These included:

- **improvements to trade by making the area a destination**, for example, smoother travel for customers, will bring people to the area, make the town a tourist destination, add value to the town
- **improvements to trade by reducing traffic**, for example, free up local and tourist traffic, easier to access businesses
- **other benefits**, for example, reduced traffic noise, easier to attract staff.

Some business's responses fell within more than one theme.

Key trends from responses included:

- in Blackheath and Mount Victoria, one of the most popular themes raised was improvements to trade by reducing traffic (at 32 and 44 per cent respectively)
- in Little Hartley, the majority of responses from businesses did not identify any benefits from operation.

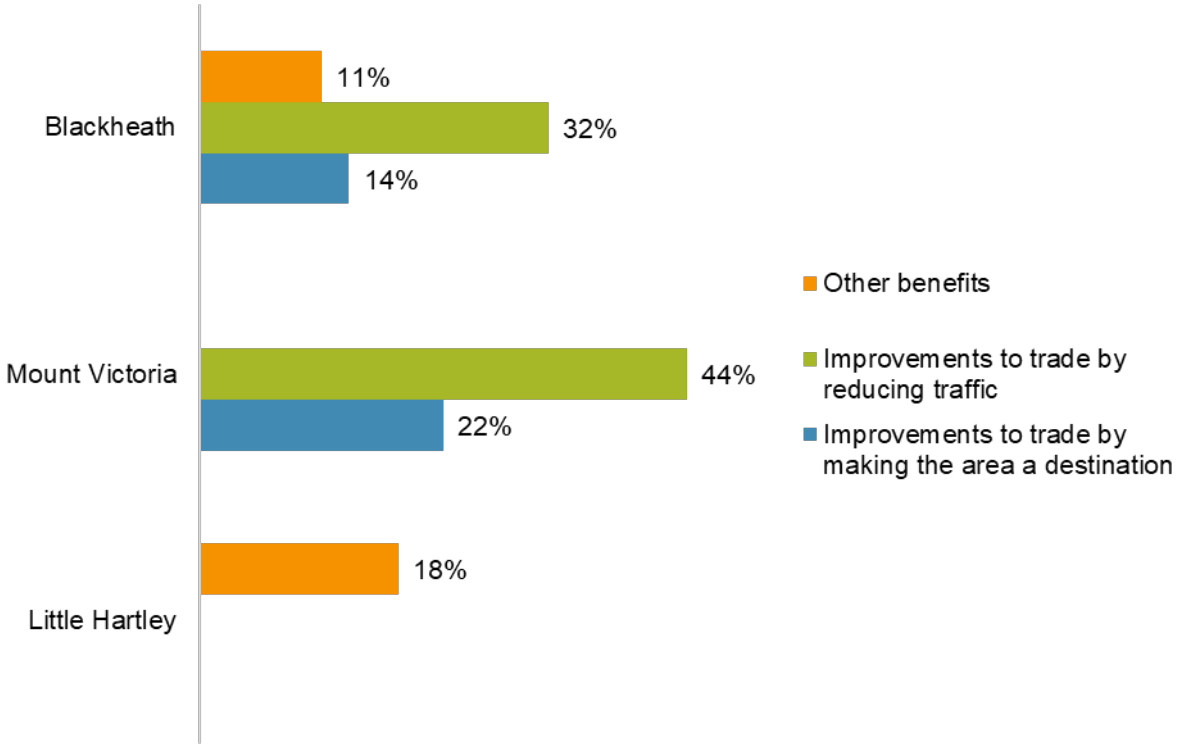


**Figure 86 Benefits to businesses during operation**

Businesses were also asked: *'What impacts do you think the project may have on your business during operation?'*

Seven businesses chose to not answer this question.

This was asked as an open-ended question to capture a broad range of responses. Responses were categorised into themes which reflect the most common responses. All responses fell within the theme of 'reductions in passing trade'.

Key trends from responses included:

- in Little Hartley the majority of businesses (67 per cent) indicated that they thought operation of the project would result in reductions in passing trade, followed by 39 per cent of respondents in Blackheath, and 29 per cent in Mount Victoria.

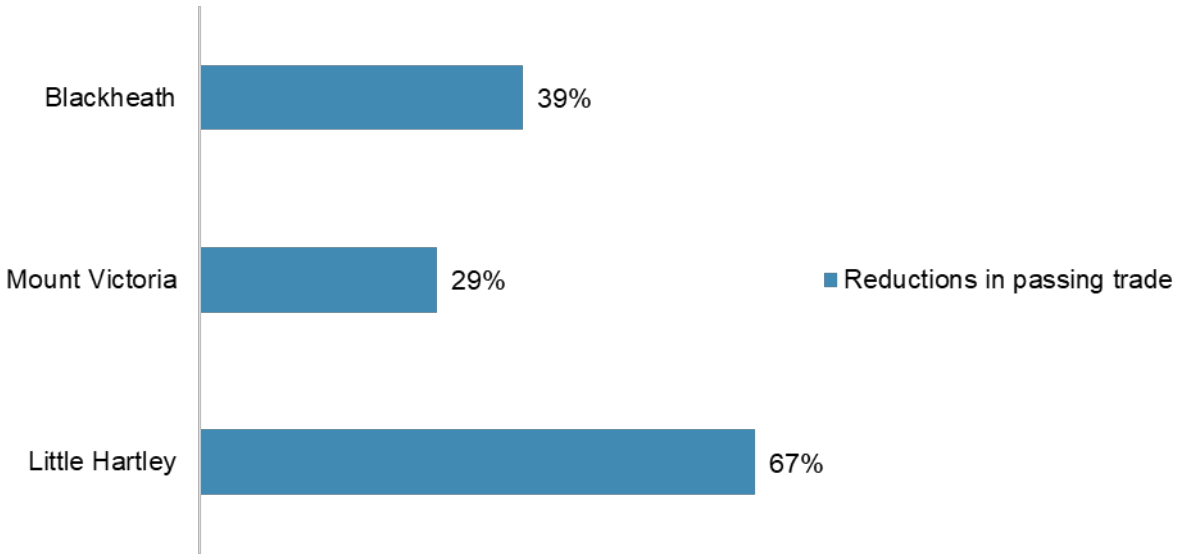


**Figure 87 Impacts to businesses during operation**

## 3.18 Measures to encourage business

Businesses were asked: *'What strategies should Transport for NSW consider to encourage people to stop at your business?'*

Businesses were able to select from two options – tourism signage (during operation) and variable messaging signage (during construction) - or nominate 'other' ways to promote their business. Businesses who selected the 'other' category were asked to specify. These answers included business-specific signs for the project while operational, easy and/or safe access to the business from the project and promoting businesses in the town online.

Businesses could select multiple answers.

Key trends from responses included:

- in all three suburbs, a high percentage of businesses (41 to 75 per cent) indicated that variable message signage during construction should be considered to encourage people to stop at their business
- in all three suburbs, the majority of businesses (64 to 89 per cent) indicated that tourism signage during operation should be considered to encourage people to stop at their business.

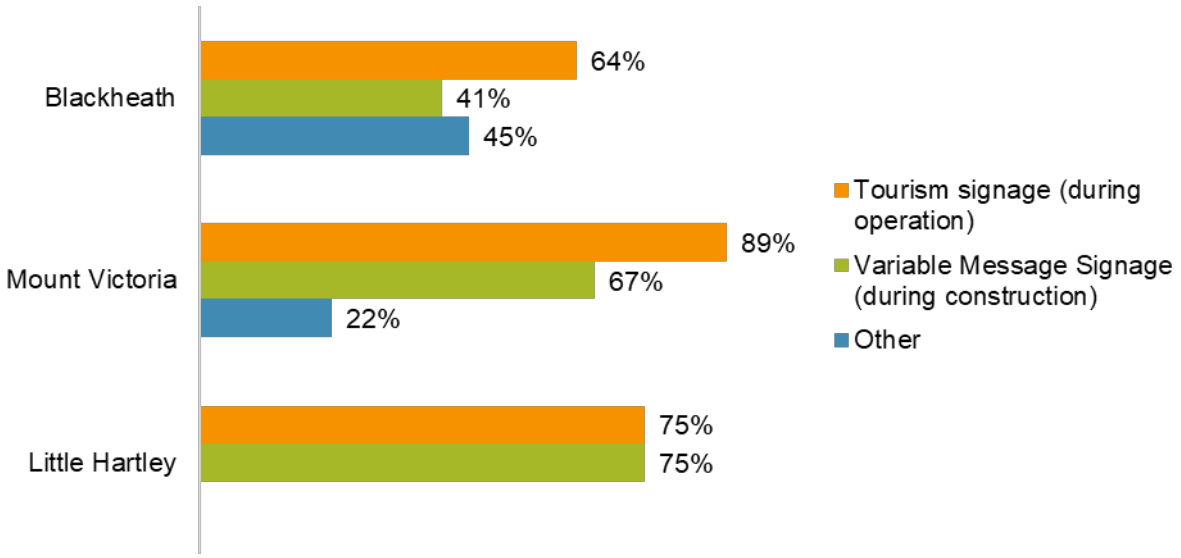


**Figure 88 Measures Transport for NSW should consider to encourage people to stop at businesses**

## 3.19 Further comments

Businesses were able to provide other comments for consideration. These are listed below.

**Blackheath**

- "Blackheath relies on community, anything that influences this will have a negative effect on local businesses"
- business staff noted that the area will become more niche like the town of Leura as a result of the project
- business staff noted their support for the project to begin promptly
- business noted they would like the construction time frame kept to a minimum
- business noted their preference for the short tunnel option, as they believed traffic would still pass-through Blackheath and it would be cheaper to build
- business noted that they would like open and regular communication from Transport for NSW to the community
- business staff noted the importance of early and frequent communication regarding noise impacts associated with construction
- business noted they would like the time of day and day of week to be considered when closing traffic lanes, and preferably not on Friday and over weekends
- business noted the need for people with autism spectrum disorder to be able to read signage and have adequate rest stops and turn-in bays to enable independent living
- "make sure that the access to business has little interruption"
- "just keep access to the village".

**Mount Victoria**

- business noted that signage is needed outside or heading up to the business, and noted the need for a 'concealed driveways ahead' sign. Business noted that it is dangerous to pull out of their driveway
- business noted that they want to know when construction is happening, and whether there will be a tunnel.

- business noted that they would not appreciate ventilation facilities located nearby
- business noted that the tunnel should start at Katoomba and go through to Lithgow
- business noted the need for better regular communication and noted that no communications had occurred as part of recent night works. Business also noted their concerns for vibration impacts during construction to the building in which the business was located, which was built in the year 1830 (heritage listed Karawatha House).

**Little Hartley**

- business noted they were unsure about the effect the project would have on tourist trade.

## 3.20 Key findings

Key findings from the business surveys include:

- businesses predominantly identified themselves as retail and food and beverage, with a higher number of recreational and tourism businesses in Little Hartley
- over half of all businesses surveyed have operated in the area for more than ten years
- the majority of customers for businesses were locals
- most businesses operated during the day across a typical Monday to Friday trading schedule
- for the majority of businesses, the level of business varied depending on the season, and increased during school and public holidays
- most businesses indicated that they were either moderately or highly dependent on passing trade
- 69 to 100 per cent of businesses stated that they were moderately to highly dependent on visibility to passing traffic and pedestrians
- the majority of businesses indicated that they were affected by COVID-19, specifically due to a reduction in trade, forced closure, or staff shortages
- about half of all businesses in Mount Victoria and Little Hartley noted that they either relied on other local businesses or other local businesses relied on them, and a similar proportion of businesses indicated that they were a specialty provider of a good or service in their local area
- most businesses (73 to 100 per cent) indicated that they thought their business might be affected in some way by construction activities. About a quarter of all businesses indicated that they would experience improvements in trade from construction workers. The most common negative impacts associated with construction included noise impacts, traffic impacts, and business access impacts
- the most common response from businesses regarding benefits from project operation involved improvements to trade caused by a reduction in traffic. The most common negative impacts associated with operation of the project was a reduction in passing trade
- tourism signage to advertise towns on the highway was the most common answer to how Transport for NSW could encourage people to stop at their business.

# 4.0 Stopper survey results

## 4.1 Approach

Stopper surveys were carried out to supplement the findings of the business surveys and to understand the demographics, travel patterns and spending habits of people stopping within the main shopping precincts within the social locality (referred to as 'stoppers'). The surveys aimed to find out if, or how, stoppers might change their behaviour once the project is under construction or in operation. This information has been used to further inform the consideration of business impacts throughout the assessment.

The locations for the survey were determined through desktop analysis of town centres and local businesses in the social locality that were anticipated to have high numbers of stoppers. Stoppers were approached by members of the project team and asked to complete the survey. Stoppers were generally surveyed at the following locations:

- **Blackheath**: around the intersection of Govetts Leap Road and Great Western Highway, Blackheath
- **Mount Victoria**: outside Ampol Foodary Mount Victoria (36A Great Western Highway, Mount Victoria) and Mount Victoria General Store & Newsagency (109 Great Western Highway, Mount Victoria)
- **Hartley/Little Hartley**: outside Hartley Fresh (2430 Great Western Highway, Hartley).

The stopper surveys were carried during the NSW school holidays between 12 April and 14 April 2022. This period was selected to target a higher volume of potential visitors to the area. Most of the stopper surveys were carried out between 9am and 5pm over these days. 84 stoppers were surveyed overall during this time, as outlined in Table 3 below.

**Table 3 Number of respondents per suburb - stopper surveys**

| Suburb | Number of respondents |
|---|---|
| Blackheath | 46 |
| Mount Victoria | 21 |
| Little Hartley | 17 |

## 4.2 Project awareness

Respondents were asked: *'Are you aware of the proposed Great Western Highway (Blackheath to Little Hartley) upgrade?'*

The majority of respondents (85 per cent) were aware of the project. No respondents selected 'unsure', despite it being an option.

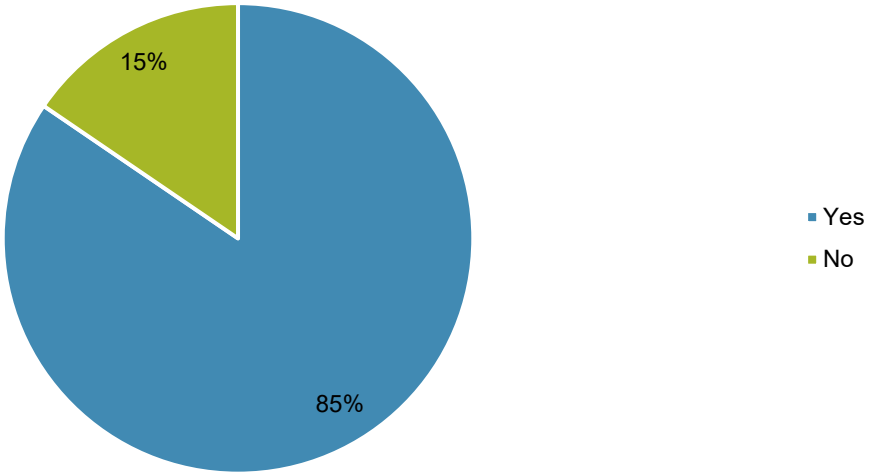


**Figure 89 Respondent awareness of the project**

Respondents who answered 'yes' were asked to specify how they were made aware of the project. Answers included word of mouth, community signs along the highway, 'being a local', through social media, in letter box drops or on the news.

## 4.3 Gender

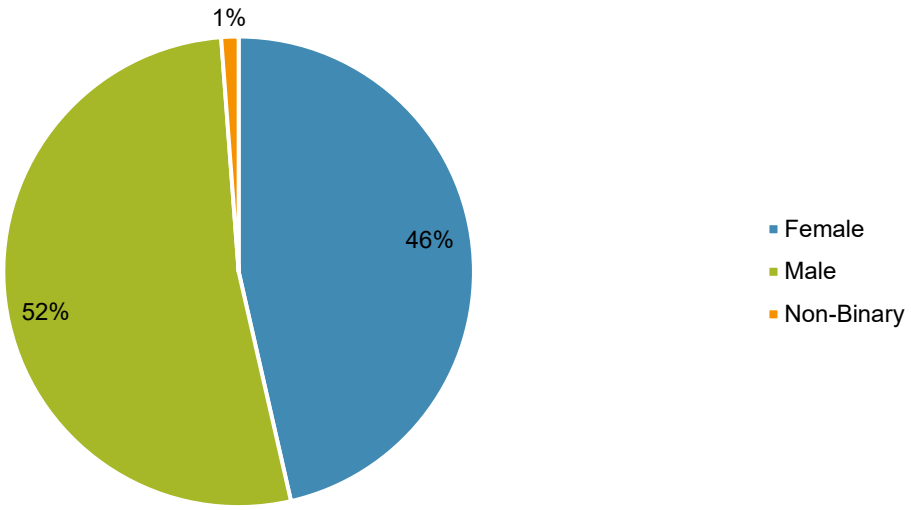


**Figure 90 Gender of respondents**

## 4.4 Age of respondents

Respondents were asked: *'What is your age bracket?'*

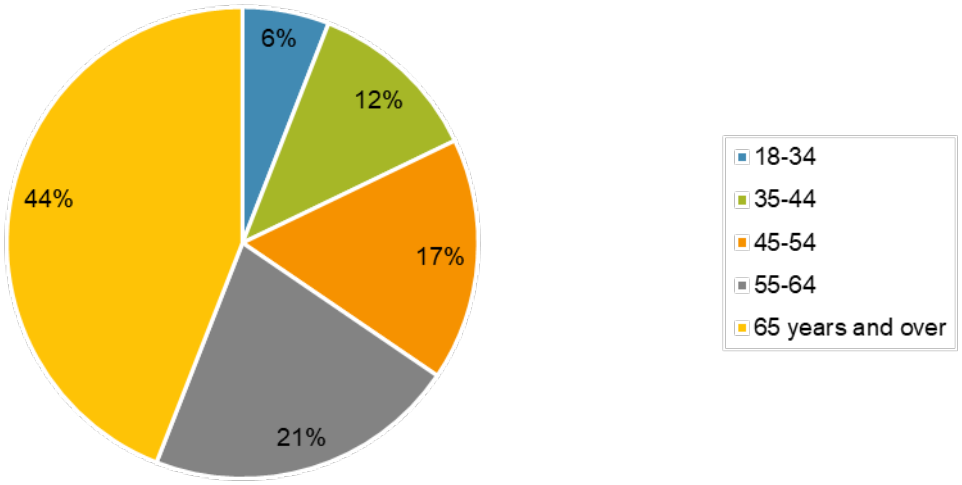


**Figure 91 Ages of respondents**

## 4.5 Where respondents live

Respondents were asked: *'Where do you live?'*

Key trends from responses included:

- over half of respondents in Blackheath (57 per cent) and Little Hartley (53 per cent) indicated that they were from Blackheath, Mount Victoria, Little Hartley or Kanimbla
- in Blackheath and Mount Victoria, 24 per cent of respondents indicated they were from Greater Sydney
- Mount Victoria was the only suburb with respondents who indicated they were from interstate, with 19 per cent of respondents selecting this option.

## Blackheath

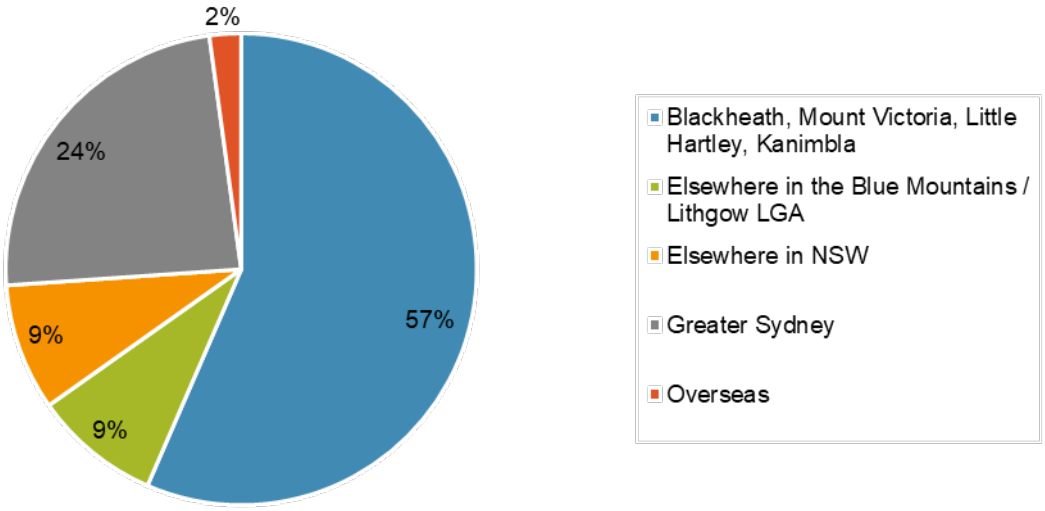


**Figure 92 Where respondents in Blackheath lived**

## Mount Victoria

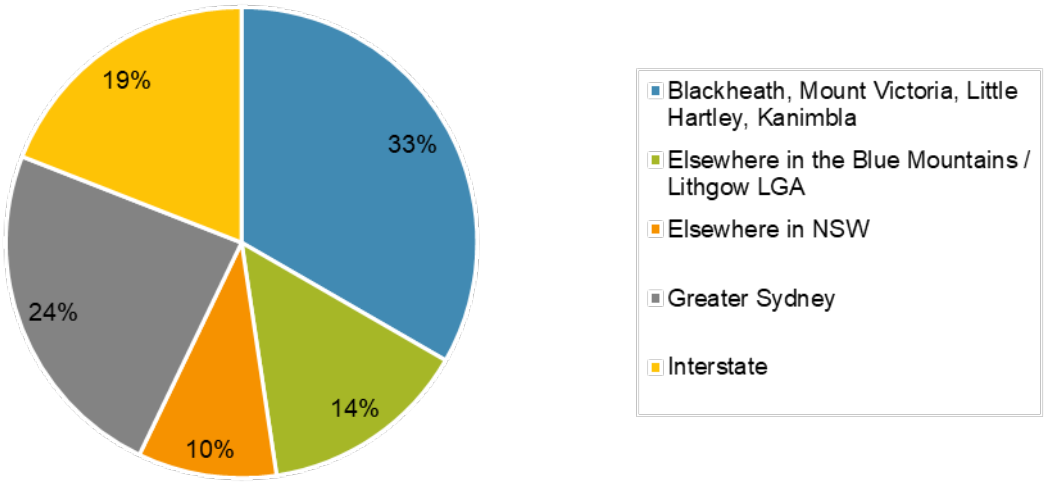


**Figure 93 Where respondents in Mount Victoria lived**

### Little Hartley

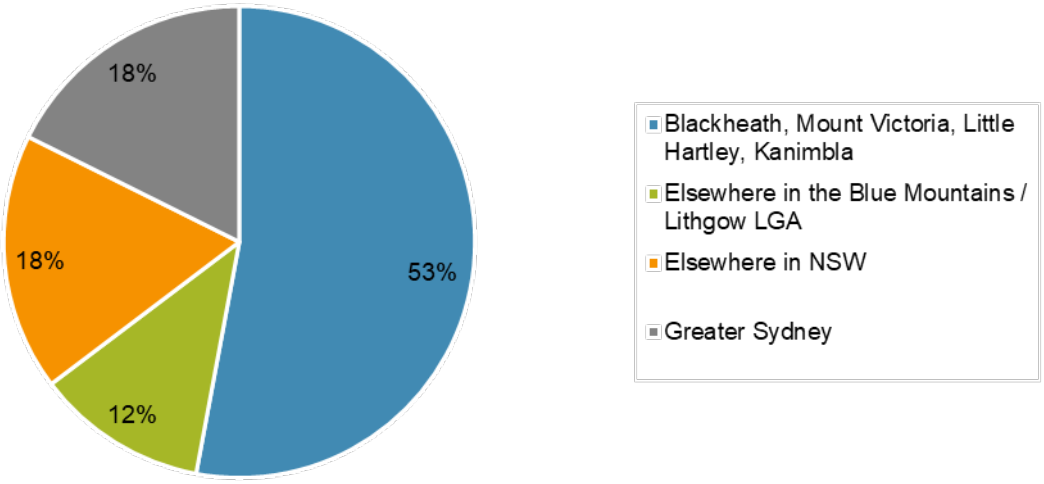


**Figure 94 Where respondents in Little Hartley lived**

## 4.6 Journey origin

Respondents were asked: *'Where did you start your journey today?'*

This was an open-ended question to capture a broad range of responses. Responses were grouped into the following categories:

- Blackheath, Mount Victoria, Little Hartley, Kanimbla
- elsewhere in the Blue Mountains / Lithgow Local Government Areas (LGA)
- Greater Sydney
- elsewhere in NSW.

One respondent chose not to answer this question.

Key trends from responses included:

- the majority of respondents in Blackheath (70 per cent), and almost half of respondents in Little Hartley (47 per cent), indicated that they began their journey in Blackheath, Mount Victoria, Little Hartley or Kanimbla. In Mount Victoria, 35 per cent of respondents indicated that they began their journey in one of these four towns
- in Mount Victoria, 30 per cent of respondents indicated that they began their journey in Greater Sydney, compared to only two per cent in Blackheath and none in Little Hartley.

## Blackheath

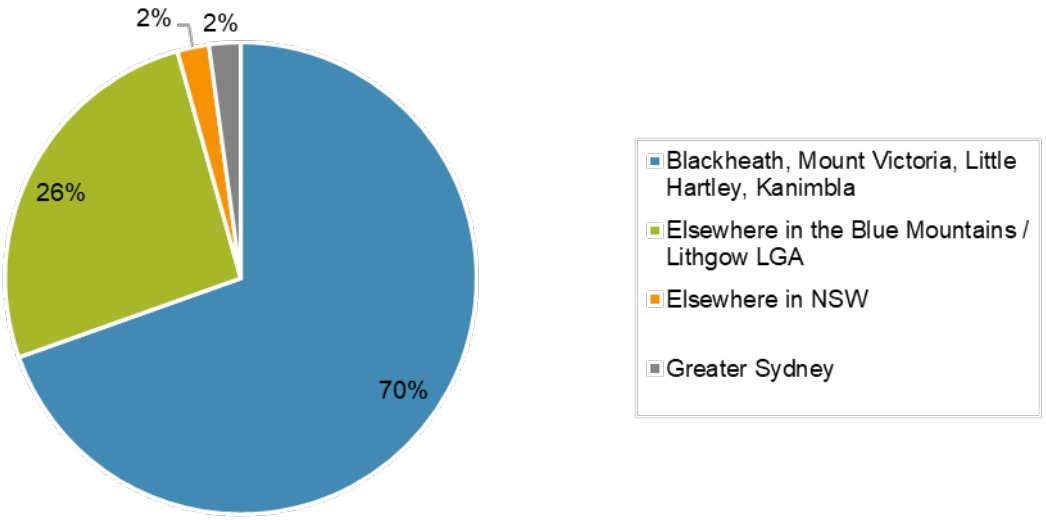


**Figure 95 Where respondents in Blackheath began their journey**

## Mount Victoria

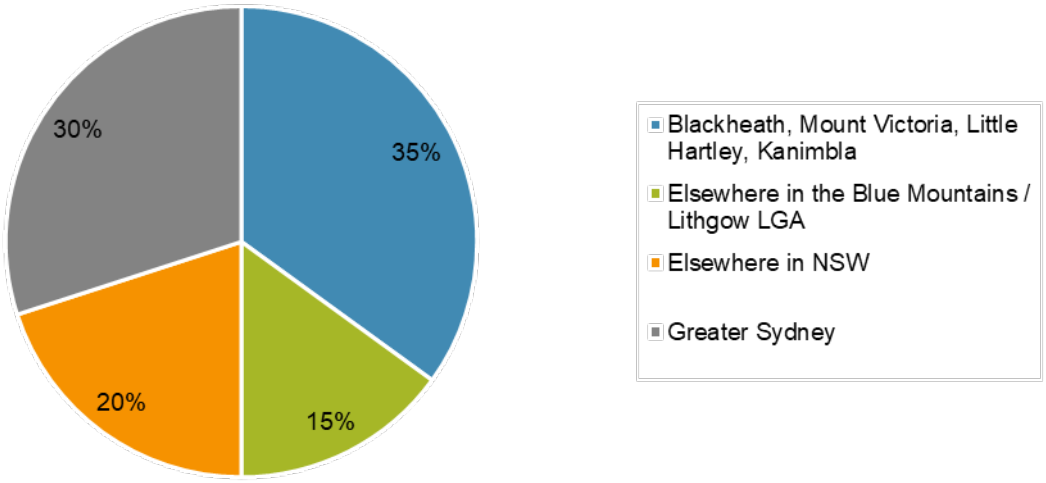


**Figure 96 Where respondents in Mount Victoria began their journey**

### Little Hartley

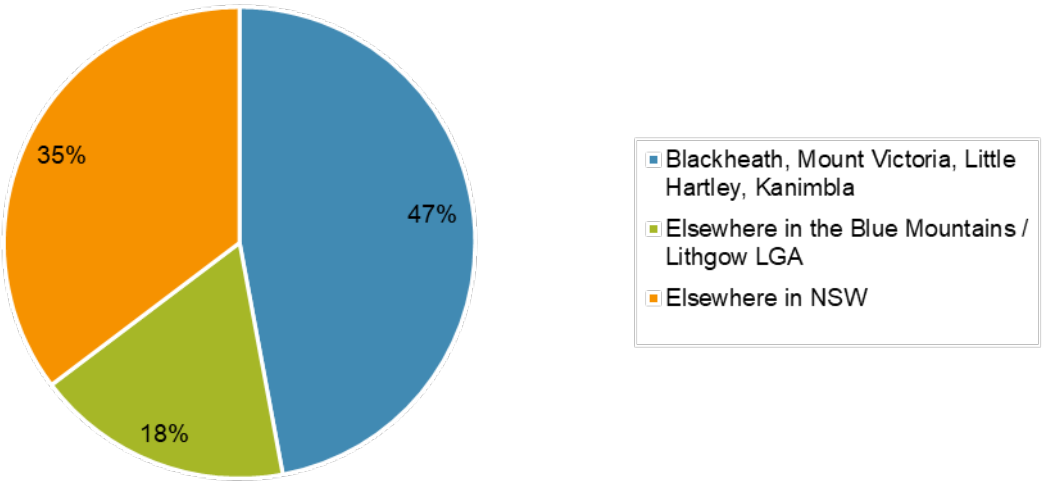


**Figure 97 Where respondents in Little Hartley began their journey**

## 4.7 Journey destination

Respondents were asked: *'Where are you heading today?'*

This was an open-ended question to capture a broad range of responses. Responses were grouped into the following categories:

- Blackheath, Mount Victoria, Little Hartley, Kanimbla
- elsewhere in the Blue Mountains / Lithgow LGA
- Greater Sydney
- elsewhere in NSW.

Three respondents chose not to answer this question.

Key trends from responses included:

- in all three suburbs, roughly half (41 to 58 per cent) of all respondents indicated that they were heading to Blackheath, Mount Victoria, Little Hartley, or Kanimbla
- in Mount Victoria, 37 per cent of respondents indicated that were heading to elsewhere in NSW, compared to only four per cent in Blackheath and 12 per cent in Little Hartley.

## Blackheath

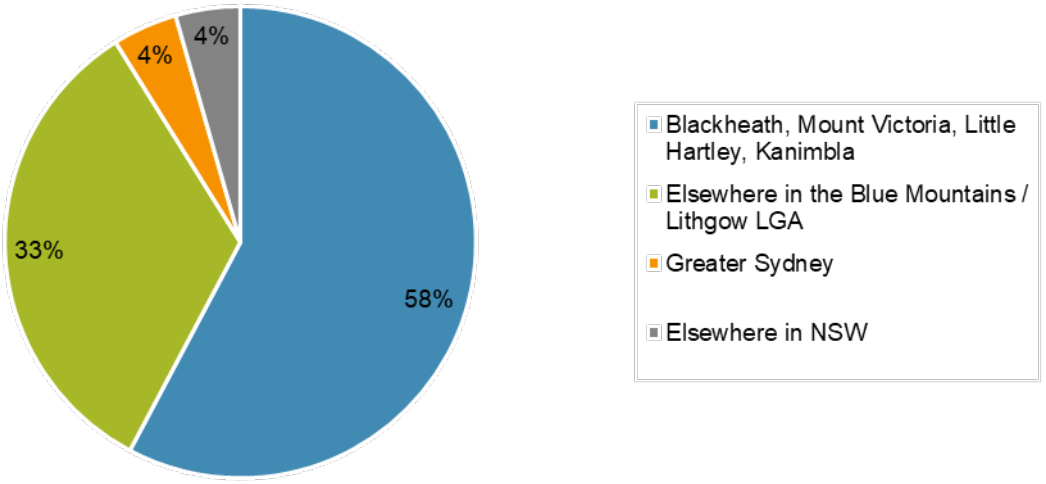


**Figure 98 Where respondents in Blackheath were heading on their journey**

## Mount Victoria

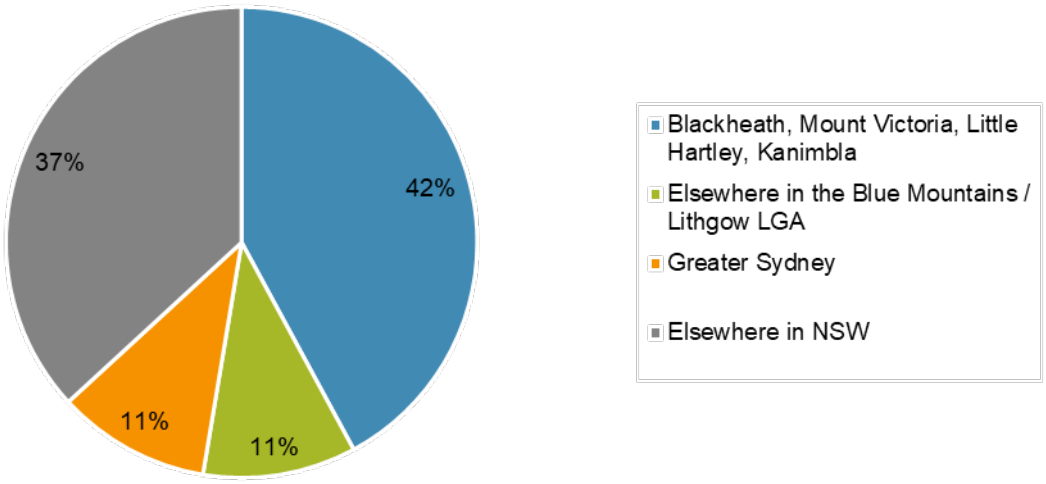


**Figure 99 Where respondents in Mount Victoria were heading on their journey**

### Little Hartley

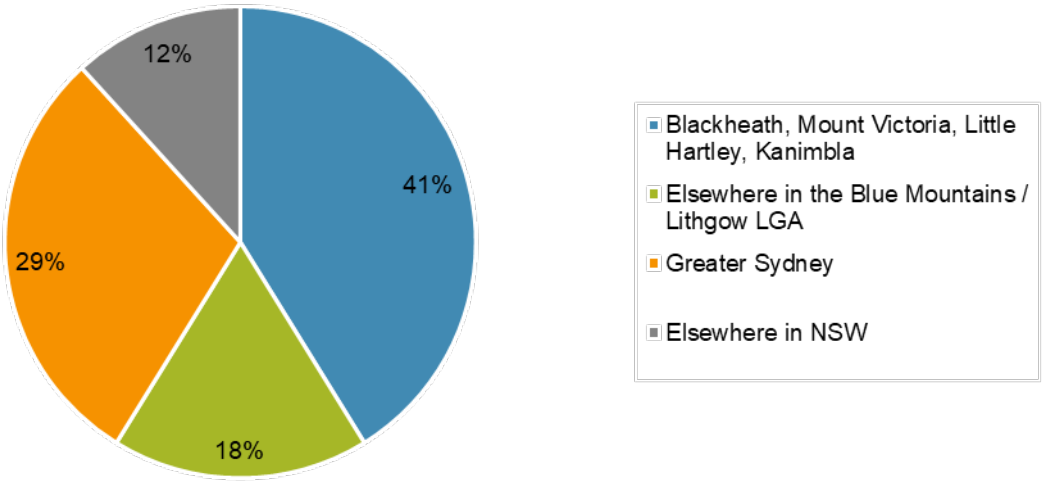


**Figure 100 Where respondents in Little Hartley were heading on their journey**

## 4.8 Mode of travel

Respondents were asked: *'How did you travel here today?'*

Two respondents chose not to answer this question. No respondents selected 'bus', despite it being an option.

In all three suburbs, the majority of respondents (68 to 94 per cent) indicated that they travelled using a car or motorbike.

### Blackheath

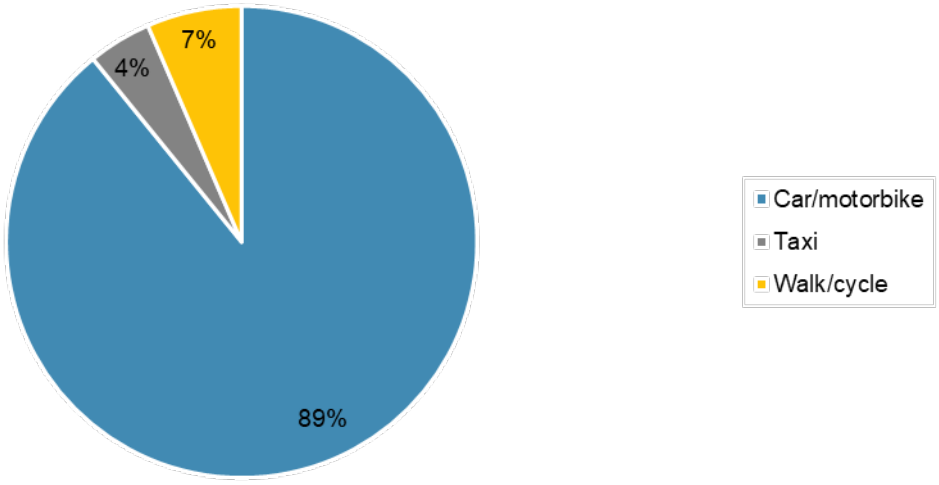


**Figure 101 Mode of transport for respondents in Blackheath**

### Mount Victoria

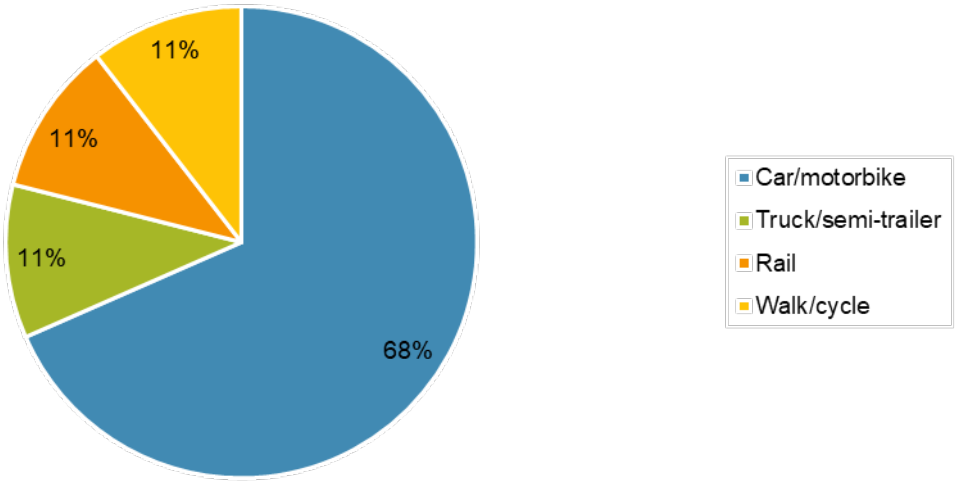


**Figure 102 Mode of transport for respondents in Mount Victoria**

### Little Hartley

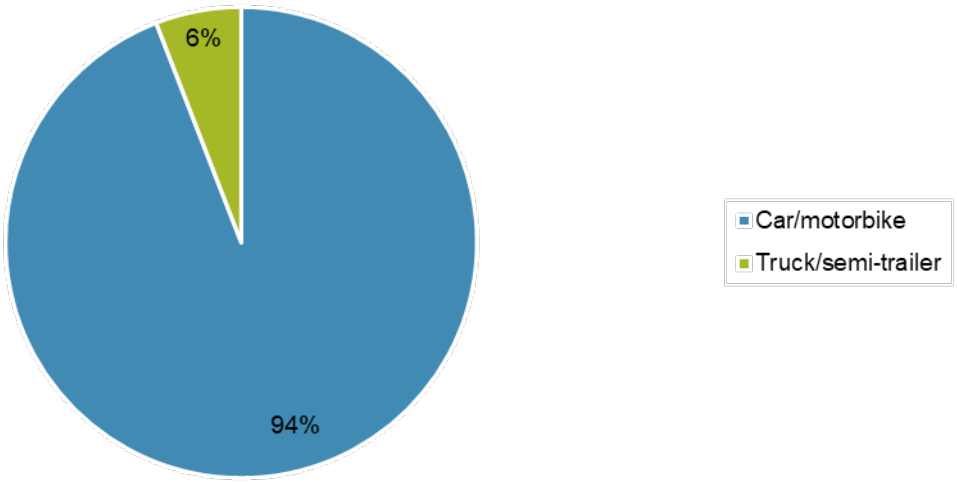


**Figure 103 Mode of transport for respondents in Little Hartley**

## 4.9 Frequency of visitation

Respondents were asked: *'How often do you visit the area?'*

Two respondents chose not to answer this question. No respondents selected 'Weekdays only', despite it being an option.

Key trends from responses included:

- in Blackheath and Little Hartley, more respondents indicated that they visit the area every day (39 and 29 per cent respectively)

- in Mount Victoria, almost half (48 per cent) of respondents indicated that they visit the area less frequently than every 2 months.

### Blackheath

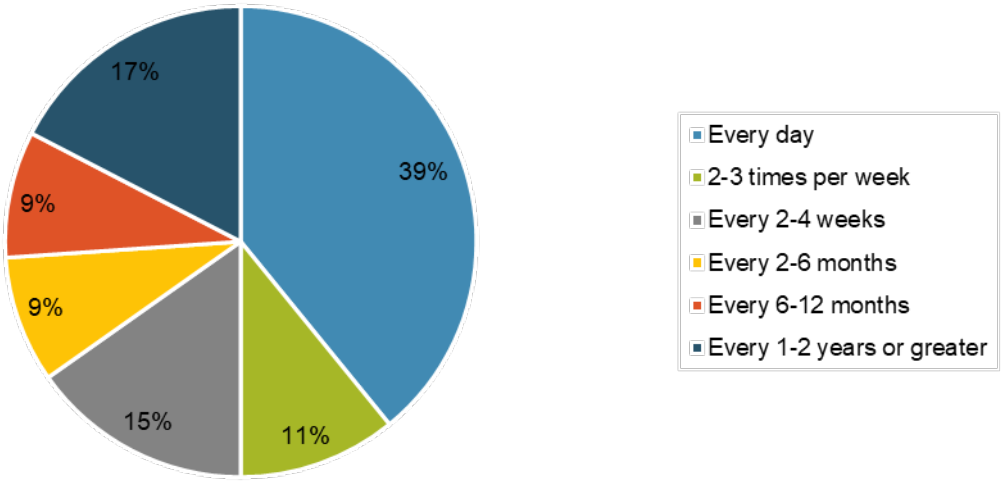


**Figure 104 How frequently respondents in Blackheath visit the area**

### Mount Victoria

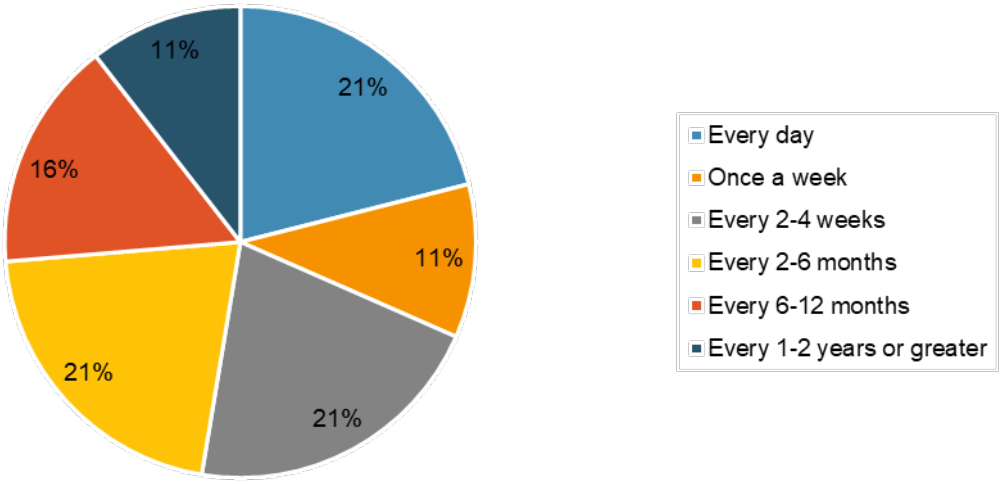


**Figure 105 How frequently respondents in Mount Victoria visit the area**

### Little Hartley

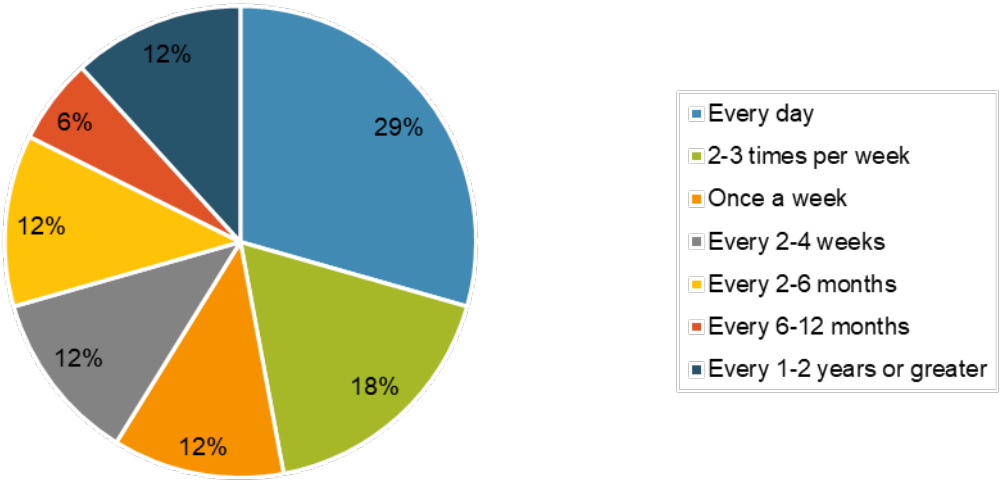


**Figure 106 How frequently respondents in Little Hartley visit the area**

## 4.10 Number of travellers

Respondents were asked: *'How many other people are travelling with you today?'*

Two respondents chose not to answer this question.

In all three suburbs, just over 40 per cent of respondents indicated that they were travelling alone. This generally was the most common response, followed by travelling with one other person (over 37 per cent).

### Blackheath

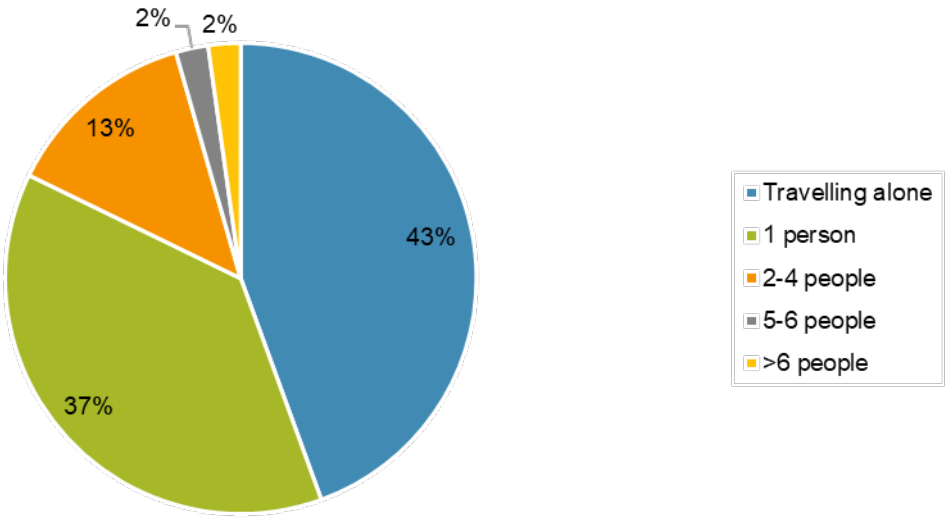


**Figure 107 Number of people travelling with respondents in Blackheath**

### Mount Victoria

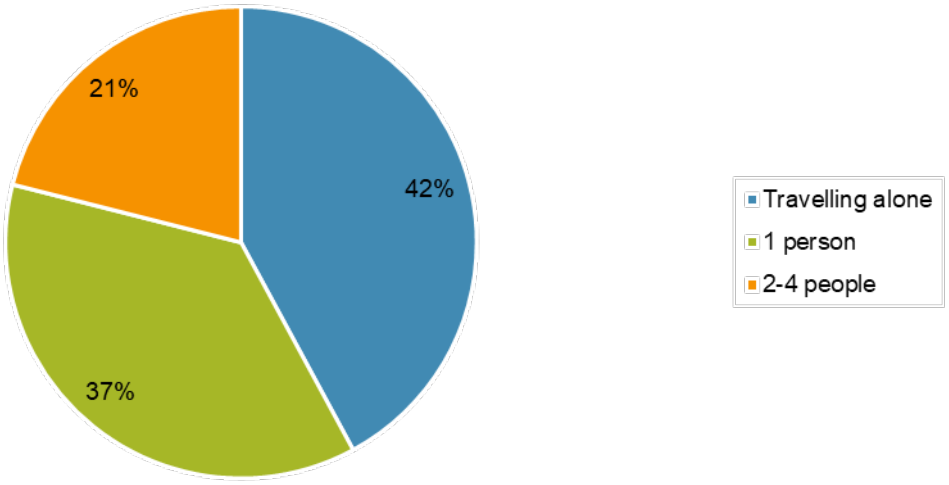


**Figure 108 Number of people travelling with respondents in Mount Victoria**

### Little Hartley

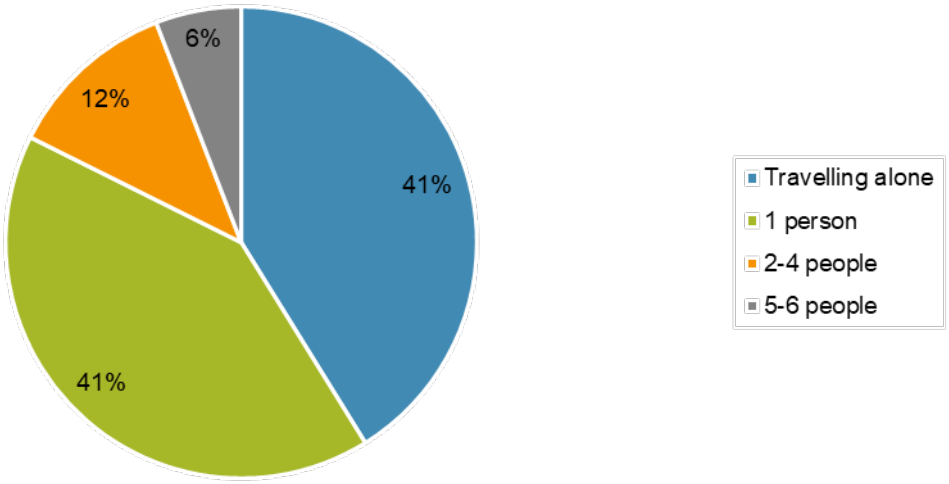


**Figure 109 Number of people travelling with respondents in Little Hartley**

## 4.11 Reasons for visiting

Respondents were asked: *'What are your main reasons for visiting the area today'?*

Respondents were able to select from a list and select multiple answers. One respondent chose not to answer this question. No respondents selected 'school pick-up/drop-off', despite it being an option.

Key trends from responses included:

- in Blackheath, just over half of all respondents (52 per cent) indicated that their main reason for visiting the area was shopping, followed by holiday/visiting (37 per cent)

- in Mount Victoria, the most common reason answer selected was holiday/visiting, with 30 per cent of respondents indicating that this was their reason for visiting the area, followed by refuelling (25 per cent)
- in Little Hartley, the majority of respondents (59 per cent) indicated that their main reason for visiting the area was for a rest/meal break while passing through, followed by shopping (41 per cent).

### Blackheath

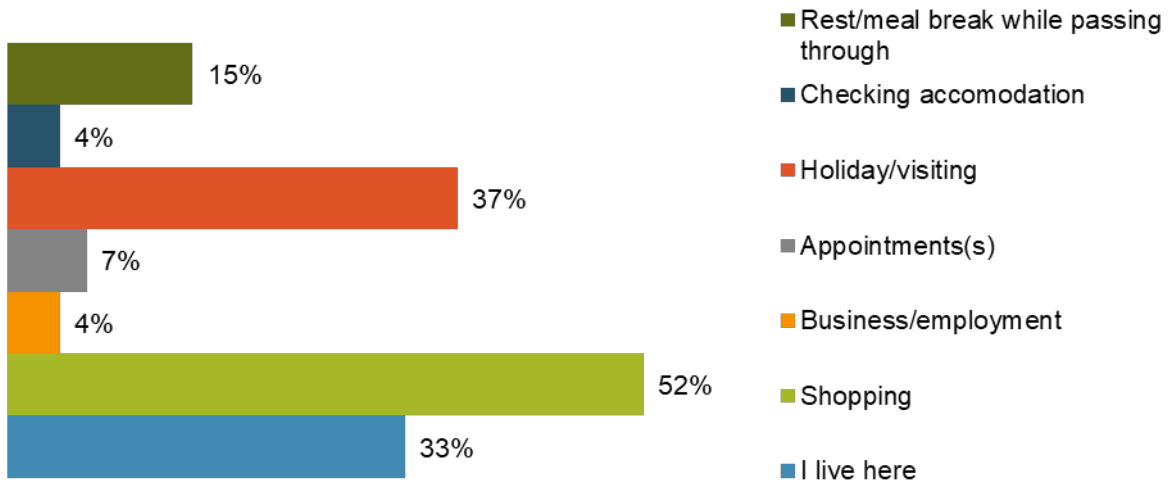


**Figure 110 Main reasons respondents in Blackheath were visiting the area**

### Mount Victoria

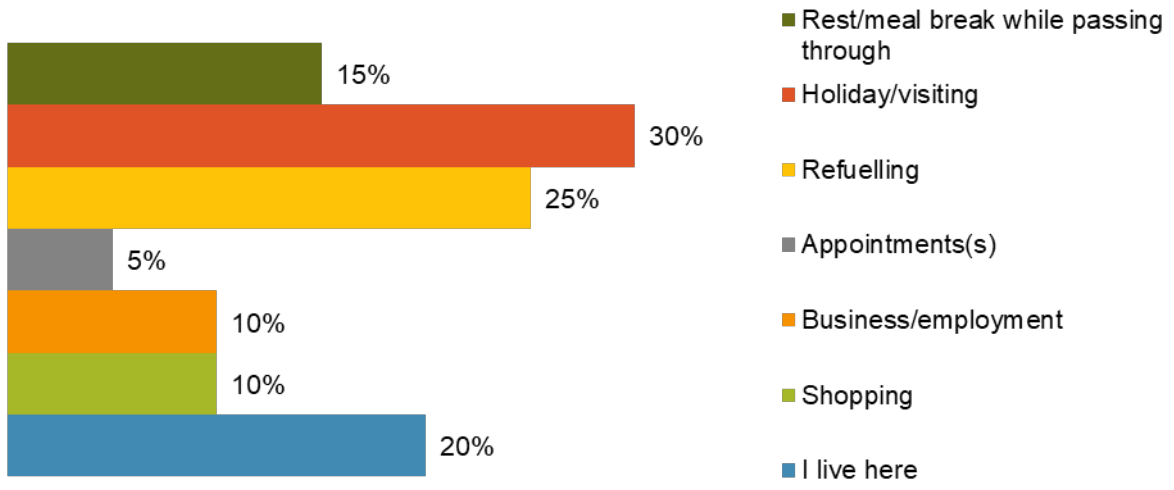


**Figure 111 Main reasons respondents in Mount Victoria were visiting the area**

**Little Hartley**

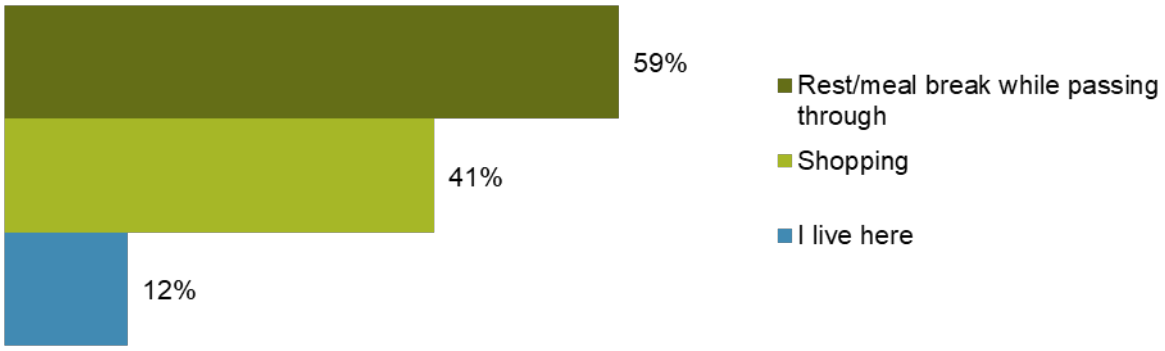


**Figure 112 Main reasons respondents in Little Hartley were visiting the area**

## 4.12 Influence for visitation (non-locals)

Non-local respondents (i.e., respondents who indicated that they lived outside of the Blue Mountains and Lithgow LGAs), were asked: *'What enticed/influenced you to visit this area today?'*

47 of the respondents were non-locals and answered this question. Respondents were able to select from a list and select multiple answers.

Key trends from responses included:

- in all three suburbs, 'planned stop on journey' was the most common response (42 to 83 per cent).
- in Mount Victoria, a higher proportion of respondents (33 per cent) indicated that their visitation was part of an unplanned stop, compared to Little Hartley (27 per cent) and Blackheath (0 per cent).

## Blackheath

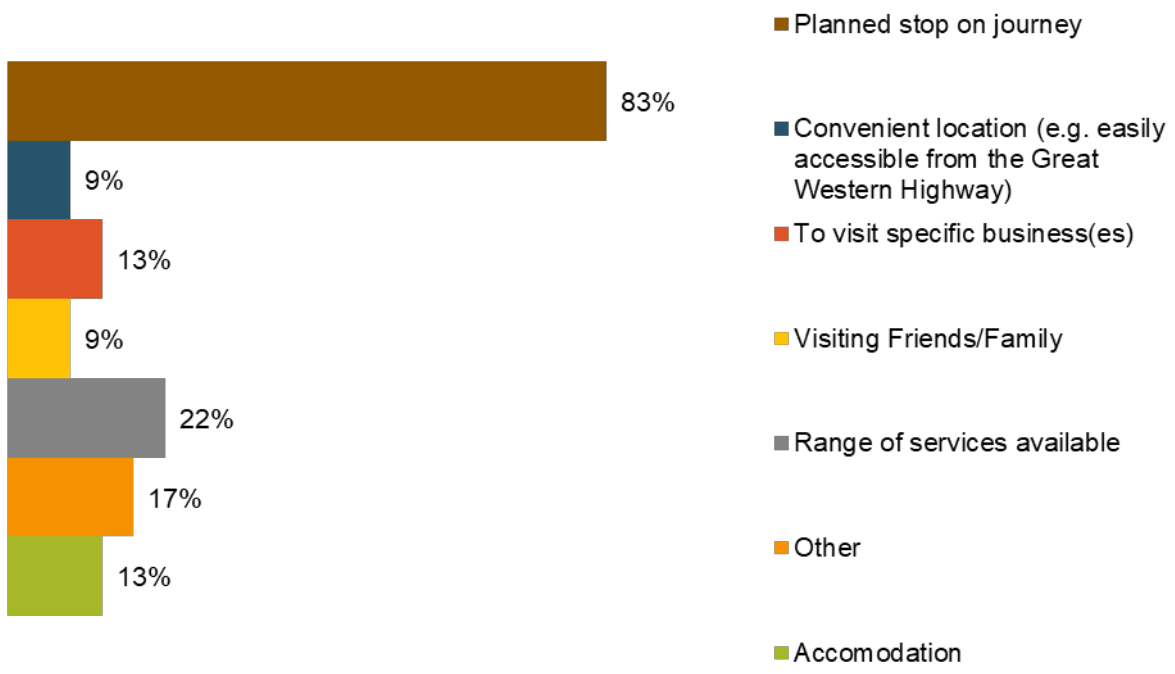


**Figure 113 What influenced non-local respondents to visit Blackheath**

## Mount Victoria

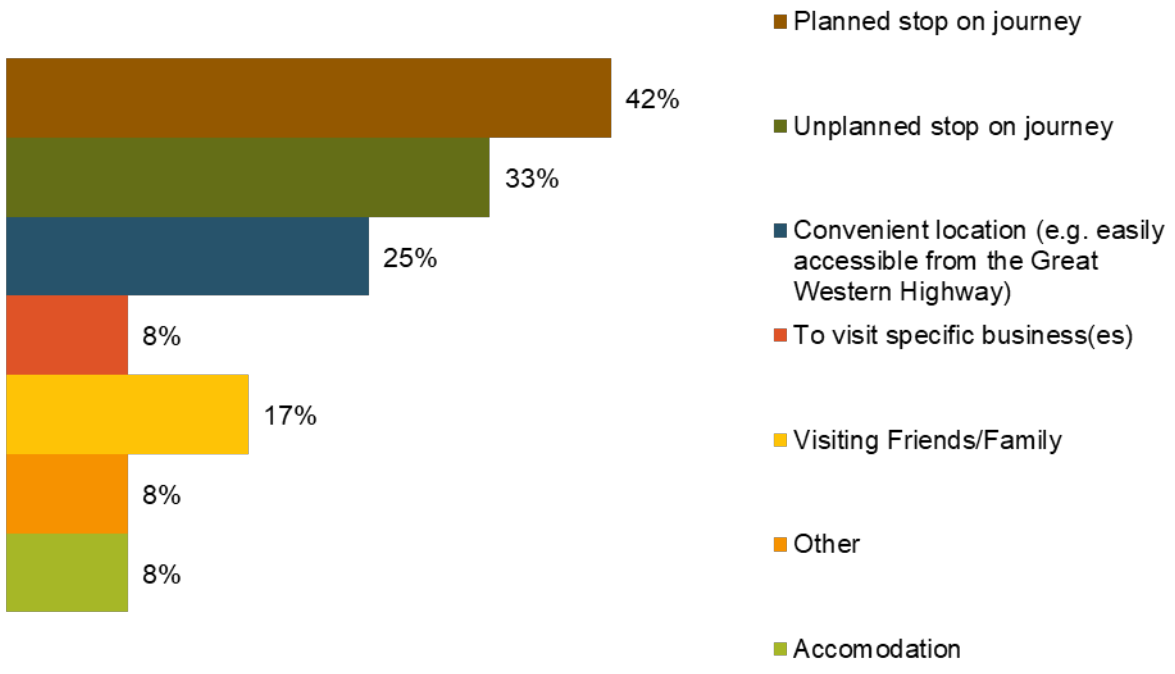


**Figure 114 What influenced non-local respondents to visit Mount Victoria**

**Little Hartley**

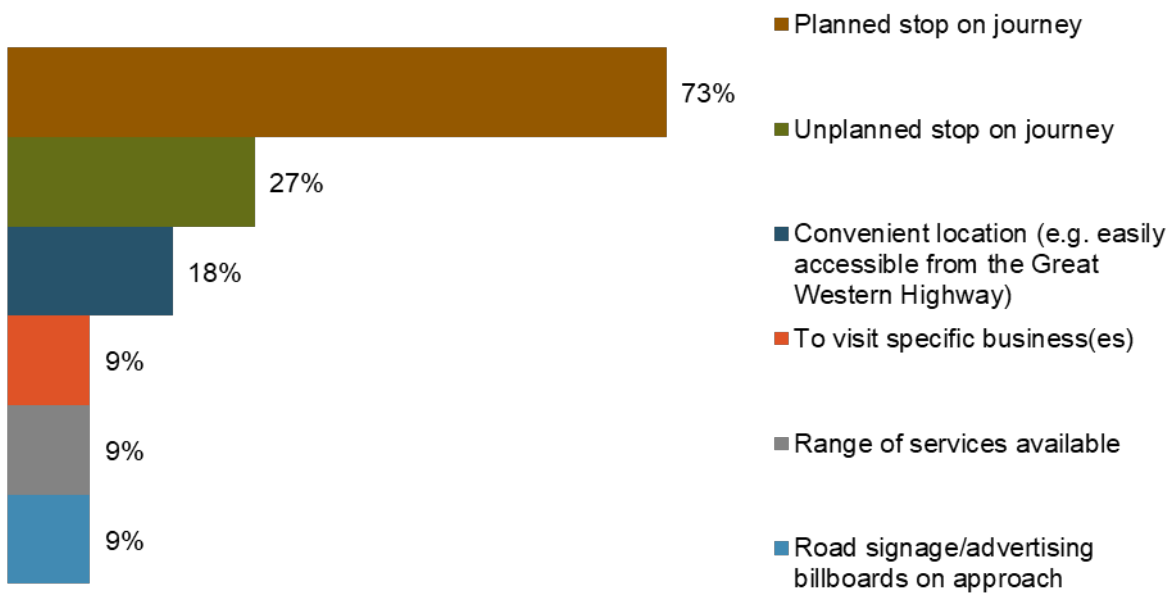


**Figure 115 What influenced non-local respondents to visit Little Hartley**

## 4.13 Time spent in the area

Respondents were asked: *'How much time have you spent/do you plan to spend here?'*

Respondents were able to select from a list and select multiple answers. One respondent chose not to answer this question.

Key trends from responses included:

- in Little Hartley and Mount Victoria, the majority of respondents indicated that they have spent or planned to spend less than one hour in the area (88 and 55 per cent respectively)
- in Blackheath, 46 per cent of respondents indicated that they have spent or planned to spend one to three hours in the area. This represented the highest proportion of responses.

## Blackheath

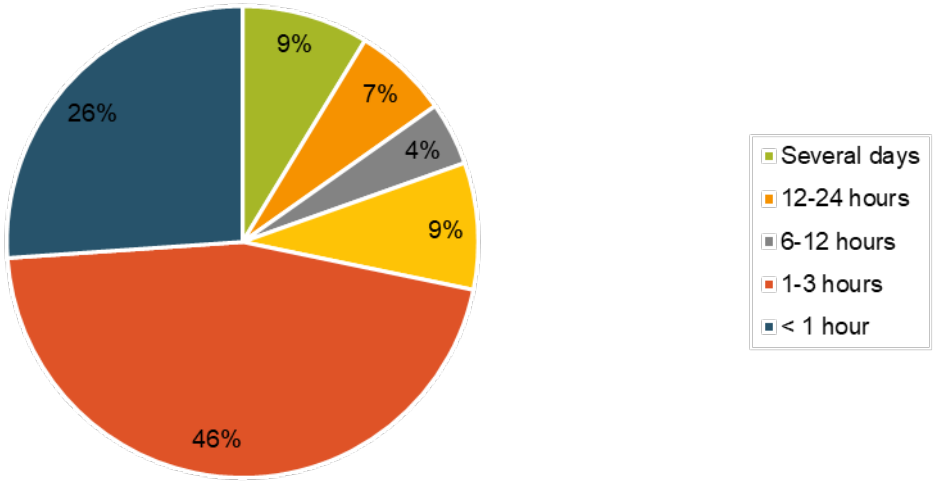


**Figure 116 Time spent or planned to spend by respondents in Blackheath**

## Mount Victoria

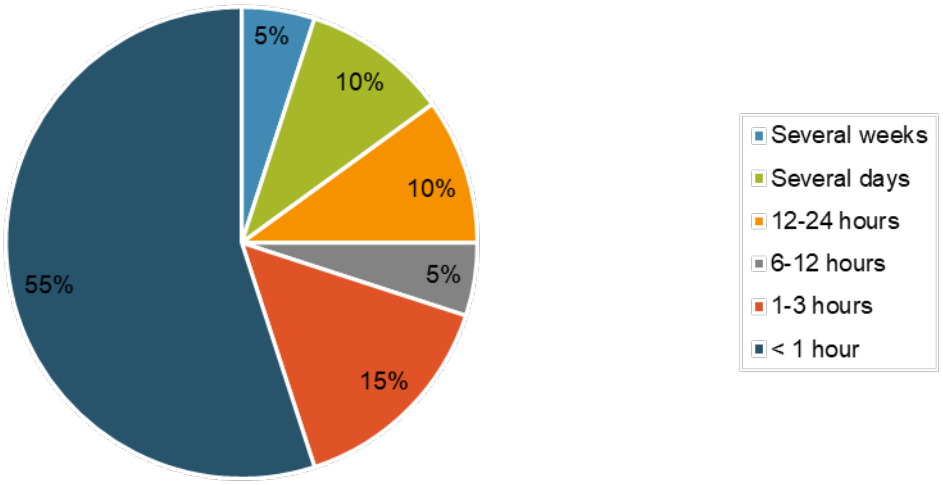


**Figure 117 Time spent or planned to spend by respondents in Mount Victoria**

### Little Hartley

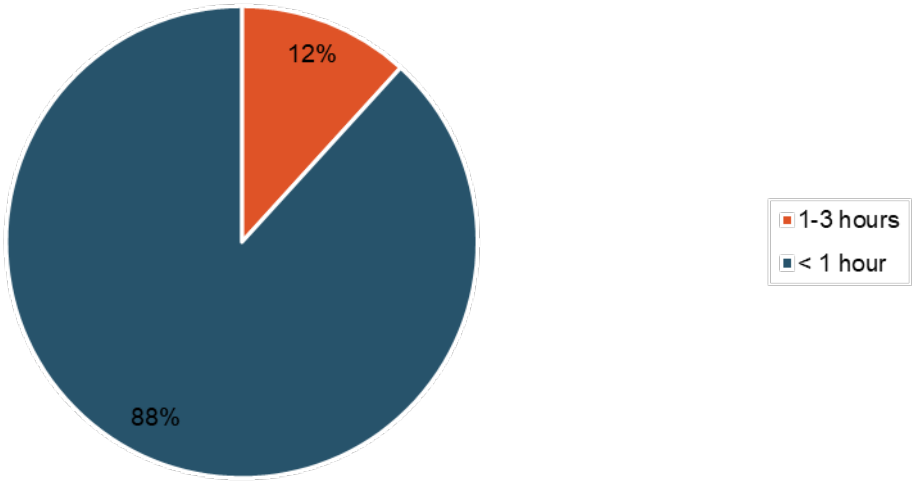


**Figure 118 Time spent or planned to spend by respondents in Little Hartley**

## 4.14 Business and service use

Respondents were asked: *'What types of business/services did/will you visit today?'*

Respondents were able to select from a list and select multiple answers. Two respondents chose not to answer this question.

Key trends from responses included:

- in all three suburbs, the majority of respondents (55 to 88 per cent) indicated that they would visit food/beverage businesses that day
- in Blackheath and Mount Victoria, a high percentage of respondents (60 and 30 per cent respectively) indicated that they would visit retail businesses that day
- in Mount Victoria, 40 per cent of respondents indicated that they would use fuel services that day. It is noted that this may be reflective of the survey location in Mount Victoria (outside Ampol Foodary).

## Blackheath

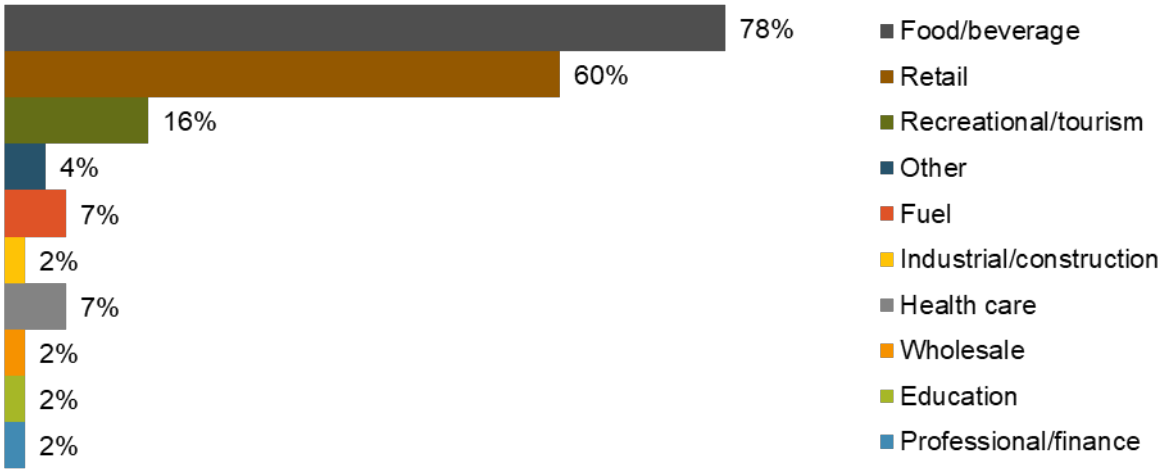


**Figure 119 Businesses and services used or to be used by respondents in Blackheath**

## Mount Victoria

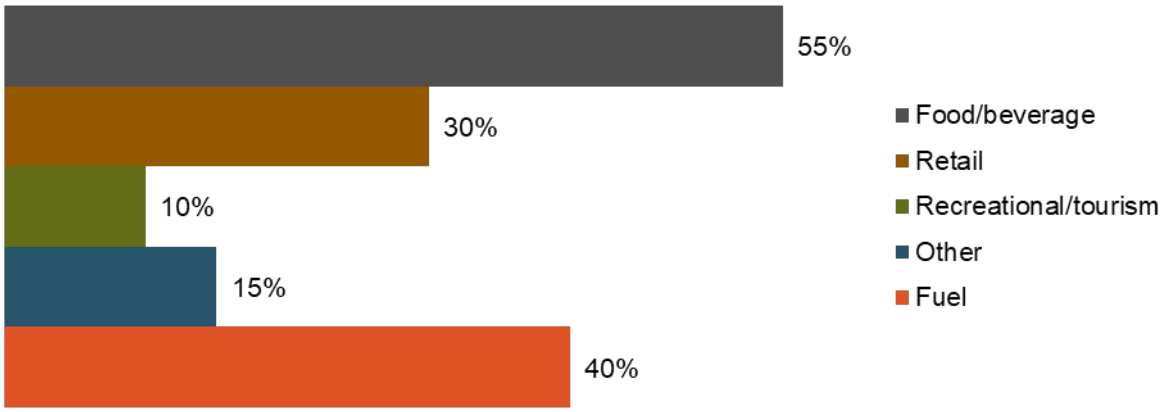


**Figure 120 Businesses and services used or to be used by respondents in Mount Victoria**

### Little Hartley

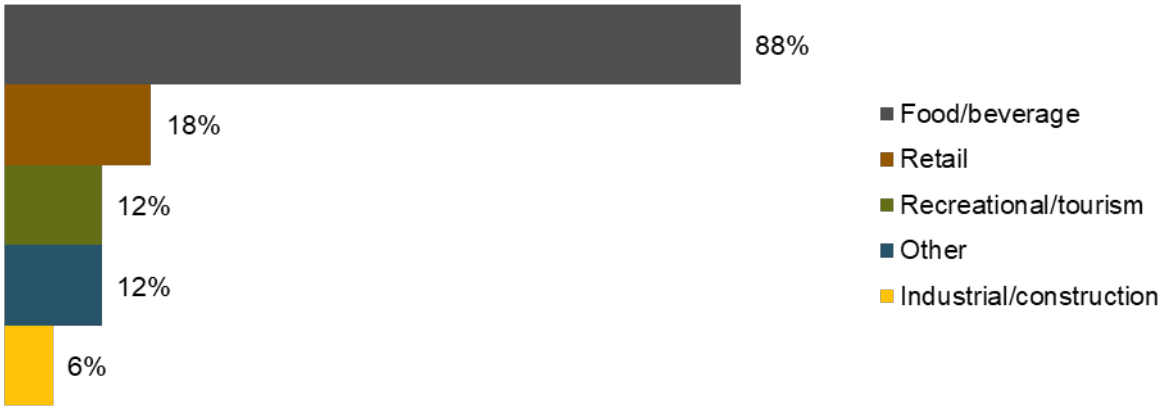


**Figure 121 Businesses and services used or to be used by respondents in Little Hartley**

## 4.15 Expenditure

Respondents were asked: *'Approximately, how much money do you think you spent/will spend during your visit?*

Respondents were able to select from a list and select multiple answers. Two respondents chose not to answer this question.

Key trends from responses included:

- in all three suburbs, the majority of respondents (56 to 76 per cent) indicated that they think they have spent or will spend less than $50 during their visit
- in Mount Victoria and Little Hartley, 24 and 30 per cent of respondents respectively indicated that they think they have spent or will spend between $50-$100 during their visit
- in Blackheath, almost a quarter of respondents (23 per cent) indicated that they think they have spent or will spend between $100-$300 during their visit. Seven per cent of respondents in Blackheath indicated that they think they have spent or will spend over $300 during their visit.

## Blackheath

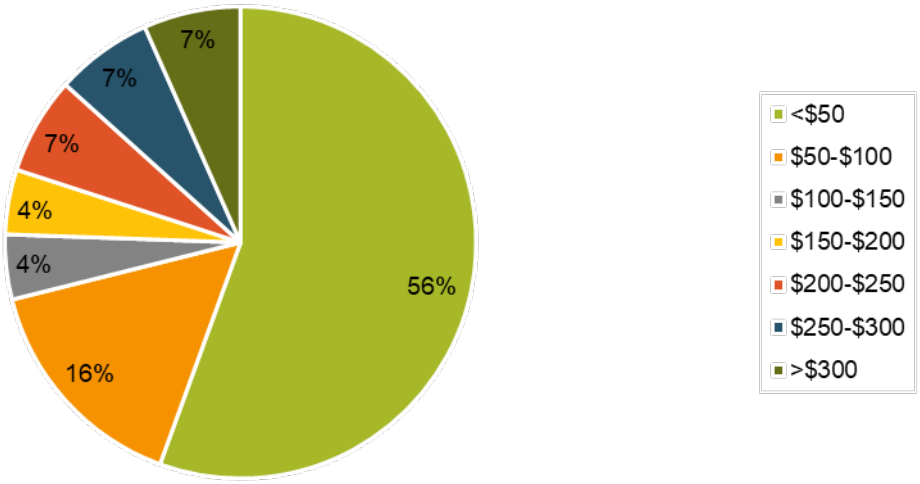


**Figure 122 How much money respondents from Blackheath think they have spent or will spend during their visit**

## Mount Victoria

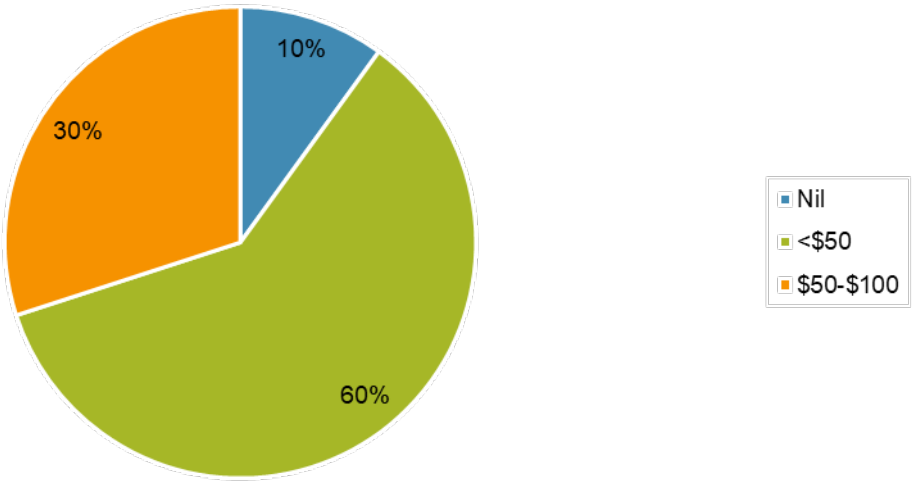


**Figure 123 How much money respondents from Mount Victoria think they have spent or will spend during their visit**

### Little Hartley

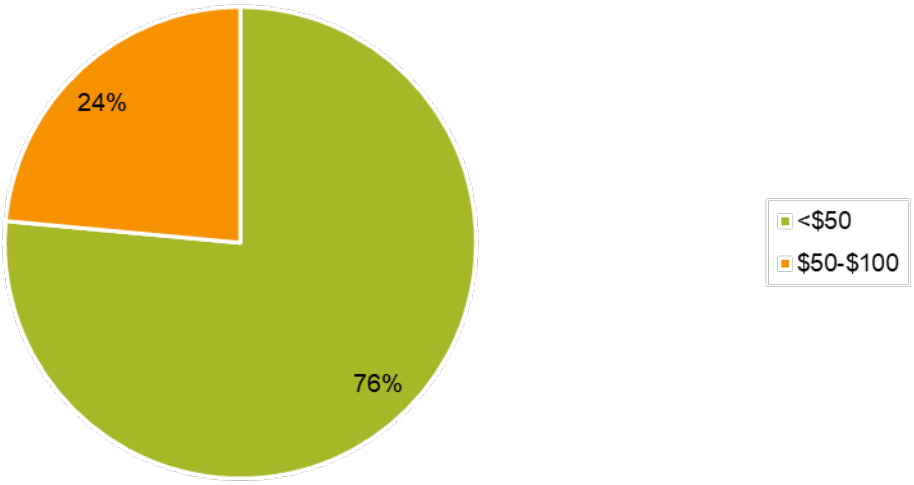


**Figure 124 How much money respondents from Little Hartley think they have spent or will spend during their visit**

## 4.16 Visitation during future operation of the project

Respondents were asked: *'If a tunnel were in place which would bypass the town, do you think you would still visit this town?'*

Three respondents chose not to answer this question.

In all three suburbs, the majority of respondents (76 to 86 per cent) indicated that they would still visit the town if a tunnel bypass was in place.

### Blackheath

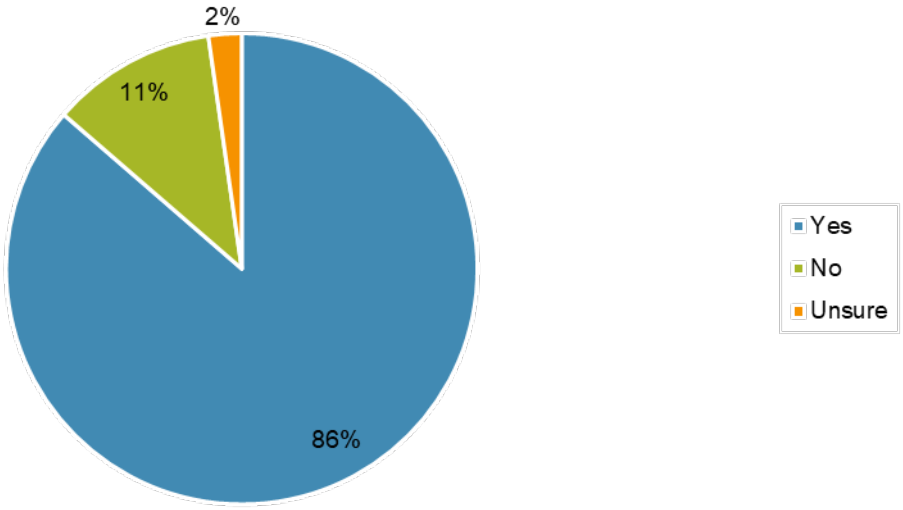


**Figure 125 Whether or not Blackheath respondents would still visit the town if a tunnel bypass was in place**

## Mount Victoria

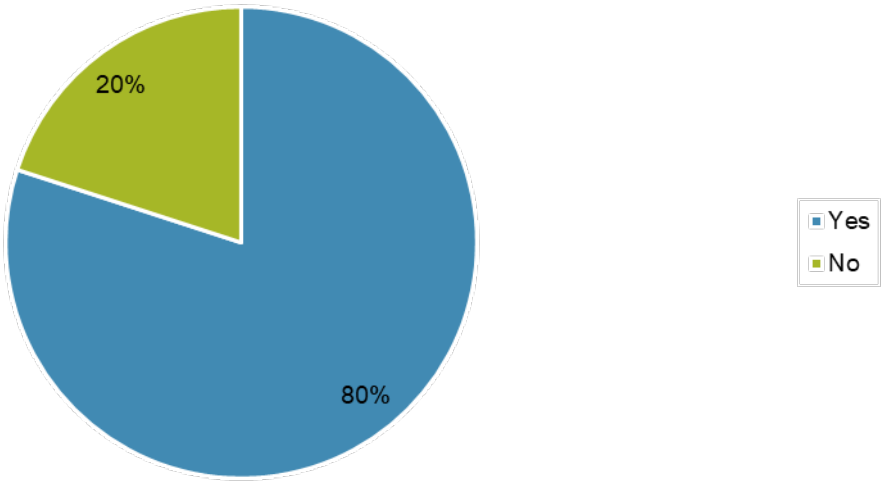


**Figure 126 Whether or not Mount Victoria respondents would still visit the town if a tunnel bypass was in place**

## Little Hartley

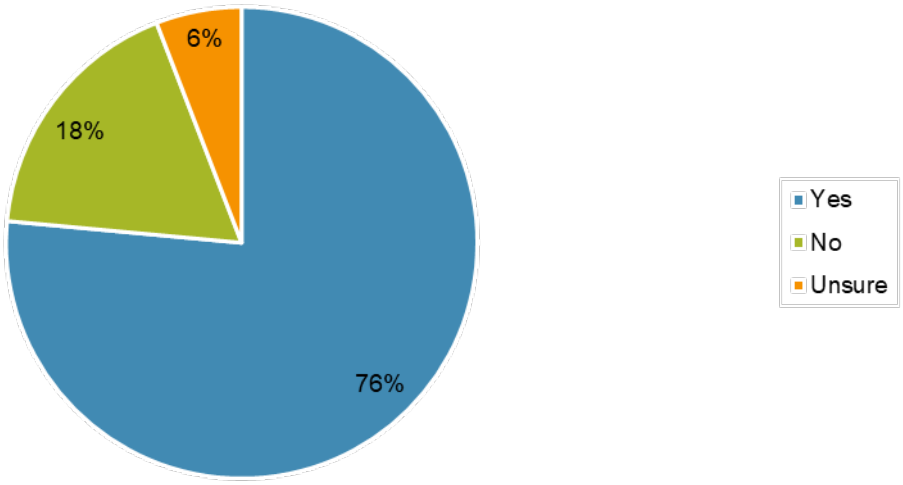


**Figure 127 Whether or not Little Hartley respondents would still visit the town if a tunnel bypass was in place**

Respondents were also asked: *'If so, would you visit: more frequently, about the same, less frequently, very frequently?'*

Some respondents who selected 'no' to the previous question still provided an answer for this question. 13 respondents did not answer this question.

In all three suburbs, the majority of respondents (81 to 92 per cent) indicated that they would visit about the same if a tunnel bypass were to be in place.

## Blackheath

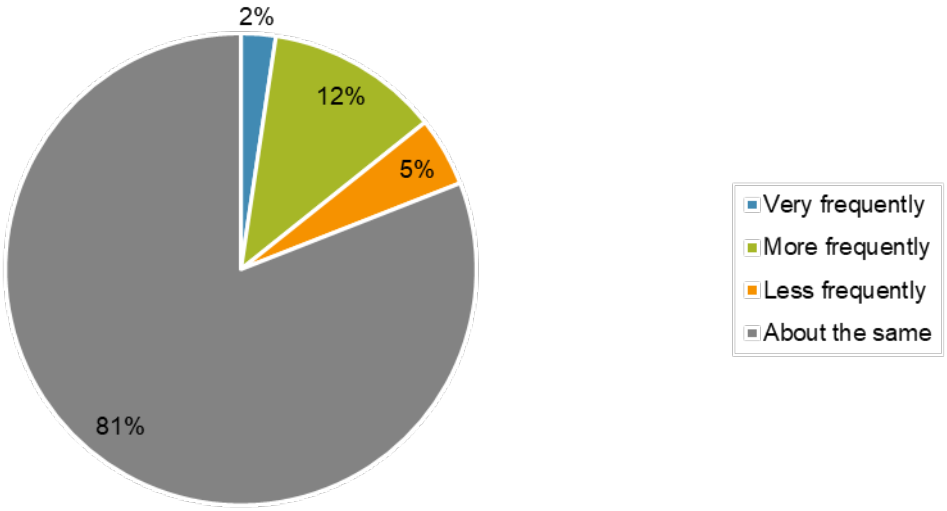


**Figure 128 How often respondents in Blackheath would visit if a tunnel bypass was in place**

## Mount Victoria

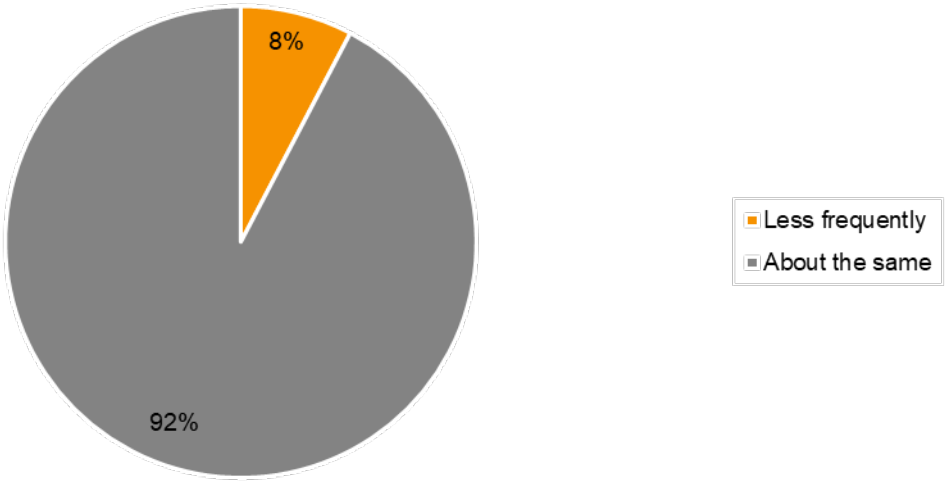


**Figure 129 How often respondents in Mount Victoria would visit if a tunnel bypass was in place**

## Little Hartley

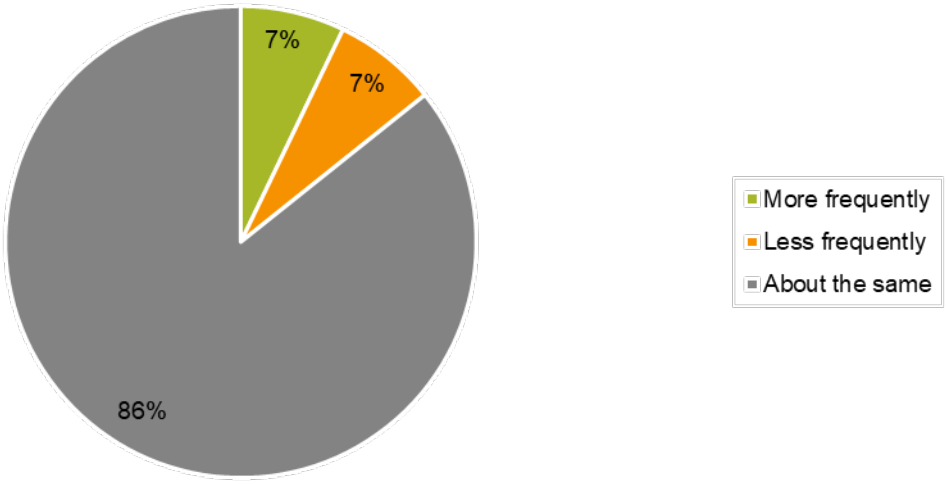


**Figure 130 How often respondents in Little Hartley would visit if a tunnel bypass was in place**

Respondents were also asked: *'What might make you visit in the future?'*

This was an open-ended question to capture a broad range of responses. Responses were categorised into themes which reflect the most common responses. These included:

- **would continue to visit because they live in the area**
- **existing attractors**, for example, businesses, tourist attractions, bushwalking, natural environment
- **improved attractors**, for example, businesses, tourist attractions, bushwalking, natural environment
- **existing local character**, for example, **'**country feel' of the area, 'charm of local businesses stay the same'
- **visiting friends and family**
- **reduction in trucks and through traffic** (i.e. on the existing Great Western Highway and surface roads)
- **other**, including for work, affordable rent.

Some respondent's answers fell within more than one theme. Fifteen respondents chose not to answer this question.

Key trends from responses included:

- in Blackheath, over half of respondents (58 per cent) indicated that existing attractors would make them visit in the future, compared to 35 per cent in Little Hartley and 18 per cent in Mount Victoria
- in Mount Victoria, 35 per cent of respondents indicated that improved attractors would make them visit in the future, compared to 24 per cent in Little Hartley and nine percent in Blackheath
- in Little Hartley, 18 per cent of respondents indicated that a reduction in trucks and through traffic would make them visit in the future, compared to 15 per cent in Blackheath, and six per cent in Mount Victoria.

## Blackheath

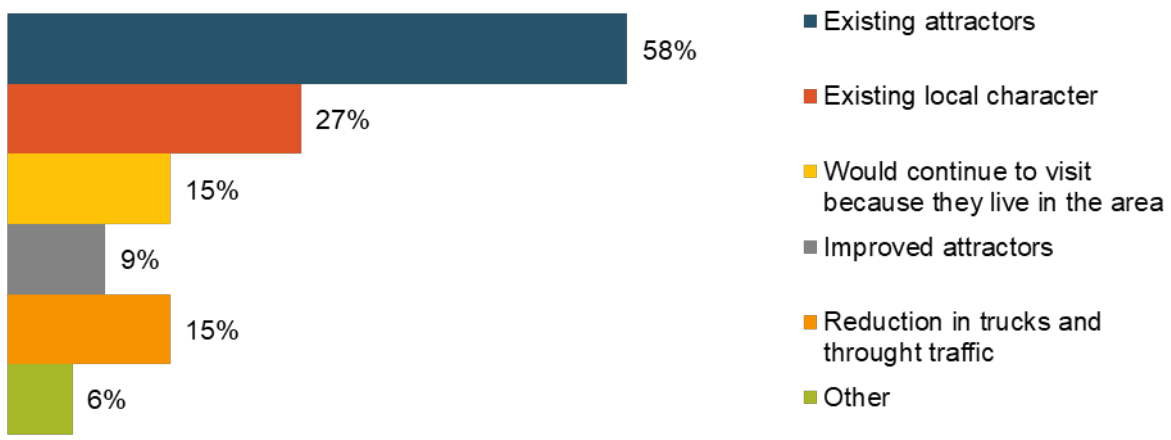


**Figure 131 What would make respondents in Blackheath visit in the future**

## Mount Victoria

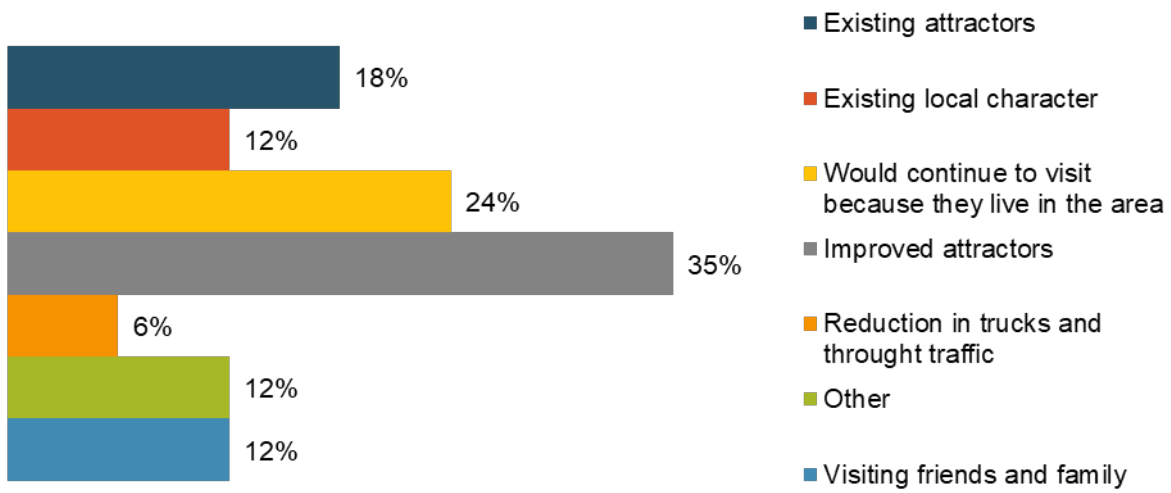


**Figure 132 What would make respondents in Mount Victoria visit in the future**

**Little Hartley**

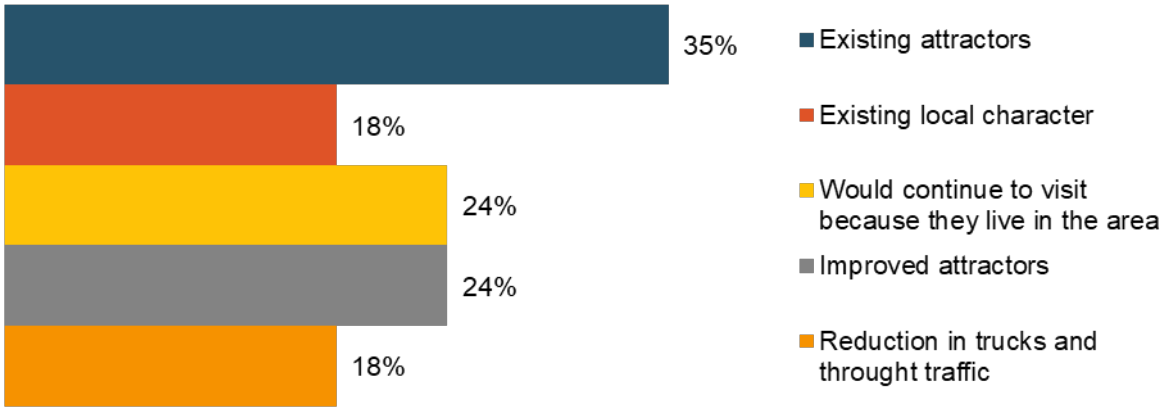


**Figure 133 What would make respondents in Little Hartley visit in the future**

## 4.17 Measures to attract future visitors

Respondents were asked: *'What do you think would attract shoppers and visitors to continue to stop in this location if tunnels were in place that bypassed this town?'*

This was an open-ended question to capture a broad range of responses. Responses were categorised into themes which reflect the most common responses. These included:

- **existing attractors**, for example, businesses, tourist attractions, bushwalking, natural environment
- **improved attractors**, for example, businesses, tourist attractions, bushwalking, natural environment
- **existing local character**, for example, village atmosphere, charm of local businesses
- **improve signage and access from the highway**, for example, big signs in the tunnel for towns, ability to access towns from the tunnel
- **improved amenities and social infrastructure**, for example, playground for the kids, petrol stations and rest stops
- **unsure**.

Some respondent's answers fell within more than one theme. One respondent chose not to answer this question.

Key trends from responses included:

- in Blackheath and Little Hartley, the majority of respondents (67 and 71 per cent respectively) indicated that existing attractors would attract shoppers and visitors to continue to stop in the location if tunnels were in place that bypassed the town
- in Blackheath and Little Hartley, a high percentage of respondents (35 and 29 per cent respectively) indicated that the existing local character would attract shoppers and visitors to continue to stop in the location if tunnels were in place that bypassed the town
- in Mount Victoria, the majority of respondents (80 per cent) indicated that improved attractors would attract shoppers and visitors to continue to stop in the location if tunnels were in place that bypassed the town.

## Blackheath

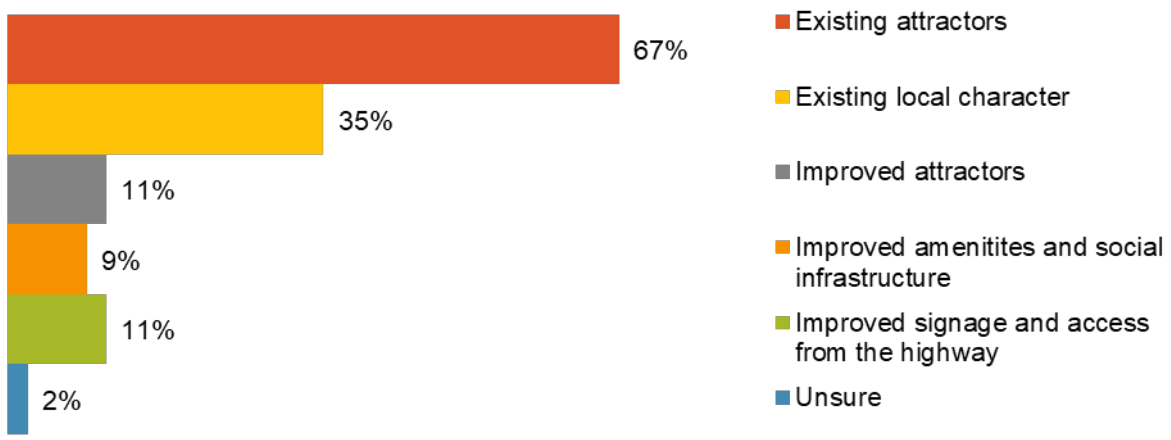


**Figure 134 What respondents in Blackheath think would bring people to the town if a tunnel bypass were in place**

## Mount Victoria

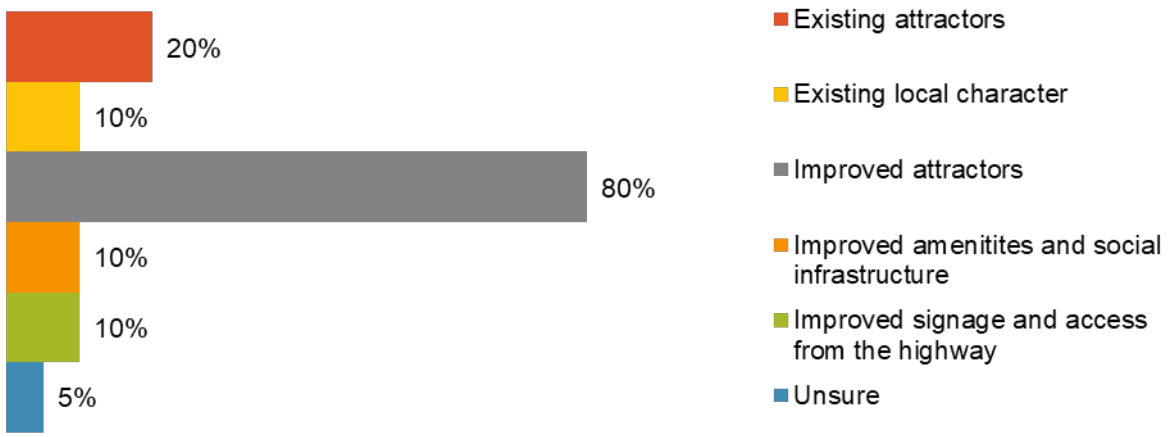


**Figure 135 What respondents in Mount Victoria think would bring people to the town if a tunnel bypass were in place**

**Little Hartley**

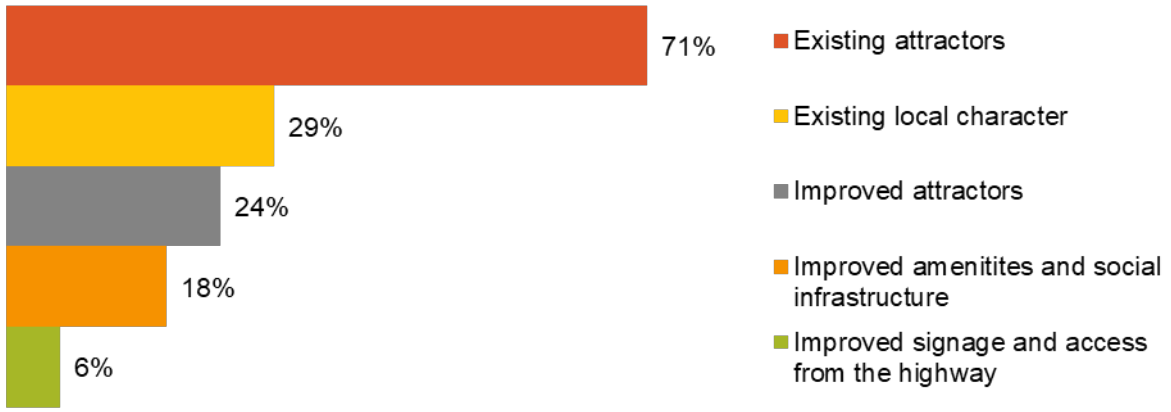


**Figure 136 What respondents in Little Hartley think would bring people to the town if a tunnel bypass were in place**

## 4.18 The project and town character

Respondents were asked: *'How do you think the project will change the character of the town?'*

This was an open-ended question to capture a broad range of responses. Responses were categorised into themes which reflect the most common responses. These included:

- **return of the local village feel/character**, for example, the project would enable the area to return to a 'village atmosphere' and/or 'bring it back to how it was' in the past
- **improvements to traffic**, for example, less traffic, reduce congestion
- **improvements to noise**, for example, make the town quieter, less noise
- **improvements to safety**, for example, reduce number of accidents, take trucks off the roads
- **improvements to tourism**, for example, increase number of tourists, increase time tourists will spend here
- **reductions in passing trade**
- **other adverse outcomes**, reduced access and connectivity during construction, threat to town ambience, reduction in tourist attractions, traffic bottlenecks
- **noted no change**
- **unsure.**

Some respondent's answers fell within more than one theme. One respondent chose not to answer this question.

Key trends from responses included:

- in all three suburbs, improvements to traffic were the most common answers for how respondents think the project will change the character of the town (25 to 53 per cent)
- in all three suburbs, a high percentage of respondents (18 to 22 per cent) indicated that the project would result in reductions in passing trade
- in Mount Victoria, 25 per cent of respondents indicated that the project would enable a return of the local village feel/character, compared to 17 per cent in Blackheath and none in Little Hartley.

## Blackheath

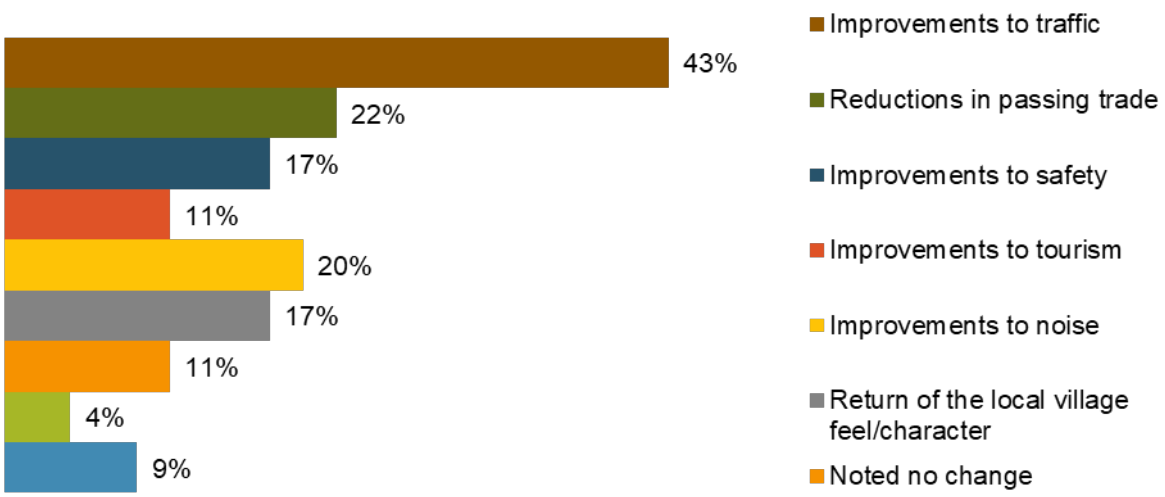


**Figure 137 How respondents in Blackheath think the project will change the character of the town**

## Mount Victoria

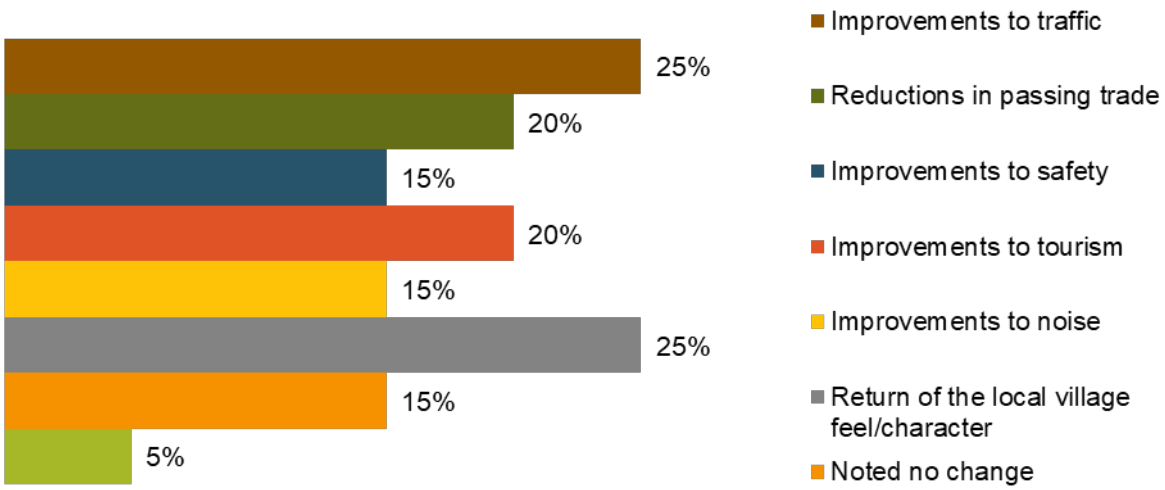


**Figure 138 How respondents in Mount Victoria think the project will change the character of the town**

**Little Hartley**

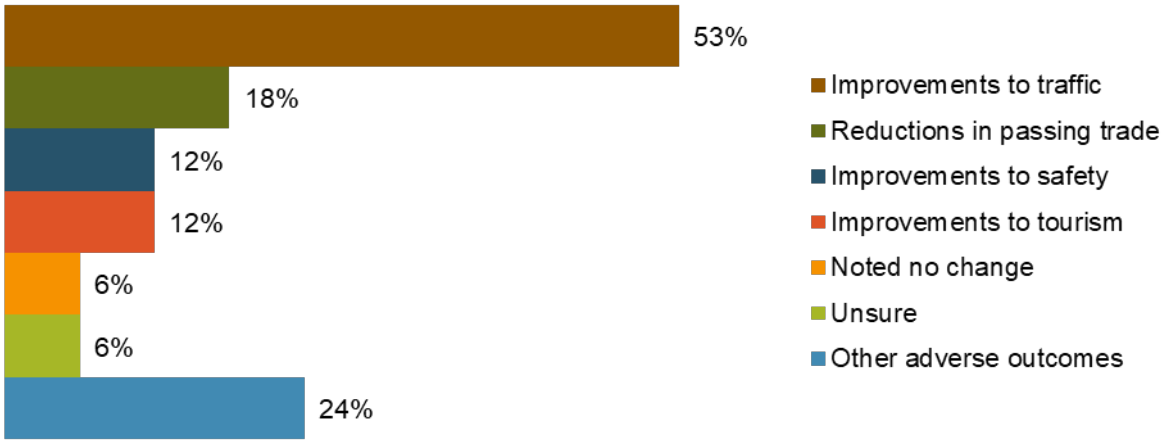


**Figure 139 How respondents in Little Hartley think the project will change the character of the town**

## 4.19 Further comments

Respondents were able to provide other comments for consideration. These are listed below.

**Blackheath**

- respondent noted “the quicker the better” in regard to the delivery of a tunnel bypass
- respondent noted that Blackheath is a beautiful spot, and the preservation of the environment should be paramount
- respondent noted that it was good to see a lot of tourists. Respondent noted that the town needs the tunnel, but people also need to be able to visit the town too
- respondent noted the increase in traffic over the years has been huge, and noted that they wanted to get rid of the trucks
- respondent noted that the road has really degraded in the rain, and that there is too much heavy traffic for the state of the roads. Respondent noted that the traffic stops when the trucks stop, and that the trucks travel too fast and damage the roads
- respondent noted that it was difficult to imagine impacts when they personally did not have much information on the project
- “tunnel please”
- “was concerned initially but the long tunnel is a good option and will preserve the town”
- many respondents provided further comments regarding their appreciation of the local area
- respondent provided further comment unrelated to the project regarding the lack of retail offering and social infrastructure in the town.

**Mount Victoria**

- respondent noted they want a longer tunnel to Medlow Bath.
- two respondents noted that they are ‘pro-tunnel’
- respondent noted that locals need to get through traffic, particularly at Blackheath. Respondent noted that they had moved out of Blackheath due to the traffic. Respondent suggested starting the

tunnel at Katoomba, and was concerned about the lengthy duration of traffic impacts. Respondents noted that locals cannot travel on Saturdays and Sundays after 10am. Respondent noted that Blackheath will benefit from the tunnel

- respondent provided further comment regarding the quaint nature of the town
- respondent provided further comment unrelated to the project regarding the lack of social infrastructure in Mount Victoria, and the need for more to be done to support the town.

**Little Hartley**

- respondent noted that the tunnels should be for trucks, while cars should use the surface roads to create a better traffic flow
- respondent noted that the tunnel would be great as an alternate route
- respondent noted their concern over a 100 km/h speed limit for the highway, and stated it should be 80 km/h to make it easier to access businesses
- respondent provided further comment unrelated to the project regarding the need for public transport improvements
- respondent provided further comment unrelated to the project regarding their observation that potholes were not being fixed.

## 4.20 Key findings

Key findings from the stopper surveys include:

- the majority of respondents surveyed indicated that they were aware of the project
- respondents most commonly indicated that they both began and intended to end their journey in one of the suburbs of Blackheath, Mount Victoria, Little Hartley or Kanimbla
- between 68 and 94 per cent of respondents travelled using their car or motorbike
- about a third of respondents in Blackheath and Little Hartley visit the area every day, whereas respondents in Mount Victoria indicated that they visit the area less frequently
- over half the respondents in Blackheath gave shopping as their reason for stopping. In Mount Victoria, holidaying was one of the most common reasons among respondents, and in Little Hartley, 59 per cent of respondents indicated that their stop was simply a rest/meal break while passing through
- the majority of non-local residents indicated that their visit was a planned stop on their journey
- in Blackheath, the majority of respondents indicated that they planned to spend up to three hours in the area, with 60 and 78 per cent of respondents planning to visit retail and food and beverage businesses respectively
- in Mount Victoria and Little Hartley, most respondents planned to spend less than one hour in the area, with 40 per cent of respondents in Mount Victoria stopping for fuel
- in all three suburbs, the majority of respondents indicated that they planned to spend less than $50 in the area, however respondents in Blackheath were more likely to spend a higher amount compared to respondents in Mount Victoria and Little Hartley
- over 76 per cent of respondents in all suburbs indicated that they would still visit the town if a tunnel bypass were in place
- in Blackheath and Little Hartley, the majority of respondents indicated that existing attractors such as the natural environment and existing businesses would continue to attract visitors if a tunnel bypass were in place, while Mount Victoria respondents emphasised the need for improved attractors in the town to attract visitors

- when asked how the project could change the town's character, about half of all respondents in Blackheath and Little Hartley noted improvements to traffic. In Mount Victoria, a quarter of respondents thought the project would lead to a return of the local village feel and character.

# 5.0 Limitations

The time of day for the interviews and surveys generally ranged from 9am to 6pm, and these were undertaken on weekdays. This may have limited opportunities to interview and/or potential survey participants who were not available in this time (for example, those who work full time outside of their home during the week, or businesses which are open only on weekends). Additionally, for the stopper surveys, while the school holiday period was selected to reach a higher number of potential stoppers, the time of year in which the surveys were undertaken (April) may not have been reflective of the busiest season for tourists and visitors, compared to warmer months.

Consultation to inform the SIA has been based on targeted, random sampling, which has been assumed to provide a representative overview of the broader community's attitudes. However, the volume of people engaged may not reflect the full range of views and attitudes present within the broader community.

Notwithstanding, the SIA-specific consultation captured a range of views within the community and has been considered in the SIA alongside consultation for the broader project. There are opportunities for further community and stakeholder engagement throughout design and construction of the project, including outside of the time periods utilised for SIA-specific consultation.