New Richmond Bridge and Traffic Improvements Stage 2

Socio-economic impact assessment

Transport for New South Wales

Reference: 523584

Revision: E

10-December-2024

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Document control record

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Document control		aurecon			
Report title		Socio-economic impact assessment			
Document code		NRBS2-AURC-NWW-EN-RPT-000003-SEIA	**Project number**		523584
File path		pw:\\aurecon-au-pw.bentley.com:aurecon-au-pw-13\Documents\Projects\523xxx\523584 - New Richmond Bridge - Concept Design and REF\3 Develop\NRBS2-AURC-NWW-EN-RPT-000003-SEIA			
Client		Transport for New South Wales			
Client contact		Gene Gill	**Client reference**		P.0058815
Rev	**Date**	**Revision details/status**	**Author**	**Verifier**	**Approver**
A	2024-02-07	Draft	L. Peña	L. Coletta	L. Coletta
B	2024-08-07	Final Draft	L. Peña	L. Coletta	L. Coletta
C	2024-10-02	Final Draft post-client review	O. Zhang	L. Coletta	L. Coletta
D	2024-11-27	Final	Y.S. Tan, L. Coletta	L. Coletta	L. Coletta
E	2024-12-10	Updated final	L. Coletta	L. Coletta	L. Coletta
Current revision		**E**			

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Glossary

TERM	DEFINITION
ABS Local Government Areas (LGA)	Local Government Areas are an ABS Mesh Block approximation of gazetted local government boundaries as defined by each state and territory. Mesh Blocks are allocated to Local Government Areas primarily based on where population is located. ABS approximations of gazetted local government administrative boundaries area used for statistical purposes to inform the community profile in Section 5 of this report.
Amenity	Amenity often refers to the quality of life, character and elements in a community that make it a more pleasant and comfortable place to be a part of. Impacts of a proposal such as traffic, perceived air quality impacts, noise and visual impacts can affect the amenity of an area.
Broader study area	The broader study area for the assessment of socio-economic impacts has been chosen based on the proposal's likely area of social influence. Consequently, the broader study area comprises the Suburbs and Localities (SALs per the Australian Bureau of Statistics) of North Richmond, Richmond, Agnes Banks and Hobartville. Census data information from this area is compared with the local government area (LGA) that the proposal is in (Hawkesbury City Council) as well as with Greater Sydney. The investigation of the areas outside of the direct study area and socio-economic study area is important to understand the range of services and facilities within the community and the lifestyles of community members. Key features of the surrounding area such as train stations, shopping/town centres and places of special interest contribute to developing the context of the existing environment. By understanding the broader study area, movements through and around the proposal area can be assessed to determine the potential impacts of the proposal.
Community values	As stated in Transport's *Environmental Impact Assessment Practice Note – Socio-economic Assessment (EIA-N05),* community values are those elements held as being important to quality of life and wellbeing.
Cumulative impacts	Cumulative impacts can occur when the impacts of a proposal add to other past, present, or future proposals/developments (Transport, 2020). Collectively, cumulative impacts have the potential to result in substantial changes to the socio-economic environment of communities (Transport, 2020).
Direct study area	Direct impacts would be assessed based on a buffer around the design of 200 metres. Receivers within and immediately surrounding the proposal area would be assessed to determine direct impacts. Direct impacts are most likely to include potential amenity impacts in the form of noise and vibration, visual, property and access impacts.
Level of assessment	Transport undertakes socio-economic impact assessment at three levels depending upon the complexity of the proposal and the sensitivity of the existing environment: basic; moderate; and comprehensive. The moderate level of assessment is used as it reflects the scale and magnitude of potential impacts to the socio-economic environment for the proposal.
Proposal area	The proposal area is the area that encompasses the proposal operational design as well as land required for construction works and construction ancillary facilities
Socio-economic Indexes for Areas (SEIFA)	Socio-economic Indexes for Areas are rankings of relative socio-economic status -advantage and disadvantage- for different geographic areas. The indexes rank areas against others of the same geographic type based on specific socio-economic metrics, selected based on the SEIFA index. The lower the SEIFA score, the higher the disadvantage. The scoring system has a mid-point of 1000; scores above 1000 indicate less disadvantage and those below 1000 indicate more disadvantage. The lower the SIEFA percentile (ranging from 1-100), the higher the disadvantage.
(Stage 2) the proposal.	Transport for NSW proposes to upgrade Bells Line of Road / Kurrajong Road between Crooked Lane, North Richmond and Old Kurrajong Road, Richmond and construct a new bypass south of Richmond town centre. This is known as New Richmond Bridge and traffic improvements – Stage 2 (the proposal).

TERM	DEFINITION
Stage 2A	Stage 2A of the proposal includes a new four-lane bridge over the Hawkesbury River about 30 metres downstream of the existing Richmond Bridge, widening of Bells Line of Road through North Richmond to provide two lanes in each direction between the new bridge and the Terrace Road / Grose Vale Road intersection and a new bypass to the south of the Richmond town centre. The bypass would extend about 1.7 kilometres across the floodplain between the Kurrajong Road / Old Kurrajong Road intersection and Castlereagh Road / Inalls Lane / Southee Road intersection. Stage 2A of the proposal would also provide an active transport corridor between North Richmond and Richmond. This would include a new shared path on the southern side of Kurrajong Road between Old Kurrajong Road and Chapel Street and the conversion of the existing Richmond Bridge into an active transport connection across the Hawkesbury River.
Stage 2B	Stage 2B of the proposal includes widening of Bells Line of Road between the Terrace Road / Grose Vale Road intersection and west of Charles Street and at its intersection with Crooked Lane. The bypass would also be extended 1.3 kilometres east from Castlereagh Road to Londonderry Road and would be a new road alignment to the south of Southee Road. Southee Road would connect to the bypass opposite Valder Place. The Londonderry Road / bypass / Vines Drive intersection would also be upgraded.
Sensitive receptor	Stakeholder, facilities, locations where land use is of sensitive nature, or where there may be a particular focus on protecting land use for human health and wellbeing, local amenity, and aesthetic enjoyment. Sensitive receptors include, but are not limited to educational facilities, health and community facilities, public facilities and services, recreational areas. Sensitivity is determined by their capacity to adapt to changes brought about by the proposal or adverse impacts caused by the proposal. Adverse impacts could include environmental or amenity nuisance issues such as noise, vibration, dust, light and odour, access impacts, and parking areas impacts, potentially impacting the traders, business staff or visitors to the establishment or the way the business operates. Sensitive business receptors are any location registered as a commercial or retail premise where routine or normal activities occurring at reasonably expected times would experience adverse impact(s) from the proposal. These are businesses where the occupants, visitors, and workforce are more susceptible to adverse effects from the proposal. Sensitivity is determined by their proximity to the proposal and construction areas as well as the nature of the business and their operating requirements. Sensitive receivers near the proposal comprise residential properties, users of recreational space and social infrastructure facilities, and businesses. Residential receivers are in North Richmond along Bells Line of Road and on nearby local roads, in Richmond along Kurrajong Road and in Hobartville along Inalls Lane and Southee Road.
Social impact	Intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, proposals) and any social change processes invoked by those interventions.
Socio-economic Impact assessment	The impact assessment involves identifying and evaluating changes to or impacts on, communities, business and industry that are likely to occur because of the proposal, to mitigate or manage impacts and maximise benefits. This report assesses the socio-economic impacts of the proposal.
Study area	The study area for this SEIA are the custom geographies that align with the identified proposal alignment, the proposal area of influence, and likely construction and operation impact zone. These custom geographies were defined to provide context about the local community, liveability, and characteristics of the local environment within the immediate area of the proposal likely to experience some of the localised social impacts or changes to existing conditions. The selection of these study areas facilitated comprehensive data collection from the ABS 2021 Census. The study areas for this SEIA are described in detail in Section 2.1.2
Socio-economic study area	The socio-economic study area would be used to assess indirect impacts. Indirect impacts would involve those people who are not within the direct impact area but would interact with the proposal area either by driving, using public transport or using active transport. Indirect impacts are likely to include amenity impacts and access and connectivity impacts. The socio-economic study area would be indicatively based on a 400-metre buffer from the direct impact area. This area has been selected as a representation of the area surrounding the proposal and it is acknowledged that some indirect impacts may not extend that far, while others may extend further afield.
Transport	Transport for NSW

Abbreviations

ACRONYM	DEFINITION
ABS	Australian Bureau of Statistics
AEP	Annual Exceedance Probability
LGA	Local Government Area
CBD	Central Business District
EIA-N05	Environmental Impact Assessment Practice Note – Socio-economic Assessment (EIA-N05) (Transport, 2020).
LEP	Local Environmental Plan
LGA	Local Government Area
SEIA	Socio-economic Impact Assessment
SEIFA	Socio-economic Indexes for Areas
SHR	State Heritage Register
SOHI	Statement of Heritage Impact assessment

Executive summary

Proposal overview

Richmond Bridge is currently operating at capacity during peak periods and future traffic demand in the area will increase, driven by residential development west of the Hawkesbury River and background traffic growth. This is expected to further increase congestion and travel times along this arterial corridor.

The Australian Government and the NSW Government are funding traffic improvements between North Richmond and Richmond including a new bridge over the Hawkesbury River. The proposal is being carried out as part of a wider program of traffic improvements between Richmond and North Richmond which is being delivered in two stages.

Stage 1 involves upgrading The Driftway between Londonderry Road and Blacktown Road to improve safety and flood resilience. This proposal has been separately determined by Transport for NSW (Transport) and is being delivered separately to the proposal. This proposal is Stage 2. Stage 2 aims to improve traffic efficiency, flood resilience, active transport connections and safety of the road network between Richmond and North Richmond. The proposal would be delivered in two stages, known as Stage 2A and Stage 2B.

The proposal is about 50 kilometres north-west of the Sydney Central Business District (CBD) and about 33 kilometres north-west of Parramatta. It is in the Hawkesbury City Council local government area (LGA).

The key features of Stage 2A of the proposal would include a new four-lane bridge over the Hawkesbury River about 30 metres downstream of the existing Richmond Bridge, widening of Bells Line of Road and Kurrajong Road, and a new two-lane bypass south of the Richmond town centre. The bypass would extend about three kilometres across the floodplain between the Kurrajong Road / Old Kurrajong Road intersection and just east of the Castlereagh Road / Inalls Lane / Southee Road intersection. The proposal would also provide an upgraded active transport corridor between Richmond and North Richmond. This would include a new shared path on the southern side of Kurrajong Road between the existing Richmond Bridge and Chapel Street and the conversion of the existing Richmond Bridge into an active transport only connection across the Hawkesbury River.

The key features of Stage 2B of the proposal would include localised widening of Bells Line of Road, widening of Bells Line of Road to two lanes in each direction from west of Charles Street to the Terrace Road / Grose Vale Road intersection in North Richmond, an upgraded shared path on the northern side of Bells Line of Road from west of Charles Street to the Terrace Road / Grose Vale Road intersection in North Richmond and the extension of the bypass (one lane in each direction) between the Castlereagh Road roundabout and just south of the Londonderry Road / Southee Road intersection.

Stage 2A is expected to be completed by 2029, and Stage 2B is expected to be delivered once additional funding is approved.

Methodology

Socio-economic impacts from construction and operation of the proposal have been assessed in accordance with the *Environmental Impact Assessment Practice Note – Socio-economic Assessment (EIA-N05)* (Transport for NSW, 2020) (the Practice Note). The Practice Note outlines the requirements for establishing the socio-economic baseline and guides the process for assessing socio-economic impacts of proposals undertaken by Transport for NSW (Transport).

This SEIA has considered the Practice Note in developing the assessment methodology and during the assessment of socio-economic impacts. The assessment of potential socio-economic impacts arising from the proposal included the following key steps:

- scoping of potential socio-economic impacts
- identification of the SEIA study area
- describing the existing socio-economic environment of the study area to establish a baseline
- evaluation of identified socio-economic impacts of the proposal's construction and operation on property, local amenity, social infrastructure, and access.

- identification of recommended measures to avoid, minimise, manage, or mitigate the identified proposal's impacts.

Existing environment

Study area

The proposal is in the Hawkesbury Local Government Area (LGA). It passes through North Richmond along Bells Line of Road, across the Hawkesbury River and through Richmond and Hobartville. Three study areas have been used to assess the proposal.

The direct and socio-economic study area (being within 600 metres of the proposal) is the area expected to experience the most social change due to the proposal during construction and/or operation.

The broader study area for the SEIA, provides an overview of the general area around the proposal and those people commuting through and living nearby. The broader study area has been defined using the Australian Bureau of Statistics (ABS) geographic boundaries of Suburbs and Localities (SAL). The selected SAL include North Richmond, Richmond, Agnes Banks and Hobartville.

Key social characteristics of the broader study area include:

- Largely rural and suburban areas with natural landscapes and farming areas, consisting of low-medium density housing.
- In 2021, a population of 15,484, around 23.0 per cent of the Hawkesbury LGA population. There was a higher proportion of people aged over 65 years (21.9 per cent), compared to Hawkesbury LGA (16.6 per cent) and Greater Sydney (15.2 per cent).
- The median age is forecast to increase in the study area and Hawkesbury LGA at a higher rate than Greater Sydney.
- In 2021, an overseas born population of 15.7 per cent, compared to 38.6 per cent in Greater Sydney.
- The proportion of people who required help or assistance with self-care, body movements or communication was higher (8.2 per cent) compared to Greater Sydney (5.2 per cent). This may be attributed to the older population.
- The most common type of dwellings in the study area and Hawkesbury LGA were separate houses, making up 74.6 per cent and 86.8 per cent of separate house structures respectively. This is representative of the suburban nature of the study area and LGA. Households were comprised predominantly of families (69.5 per cent).
- A higher reliance on motor vehicles, with 54.5 per cent of people travelling to work by car, compared to Hawkesbury LGA (53.6 per cent) and Greater Sydney (36.8 per cent).

Key economic characteristics of the broader study area include:

- The top industries of employment were Health Care and Social Assistance (13.7 per cent), Construction (12.1 per cent), and Retail Trade (9.8 per cent).
- The proportion of people looking for work was 4.0 per cent, which was higher than Hawkesbury LGA (3.2 per cent) and lower than Greater Sydney where 5.1 per cent of people were looking for work in 2021.
- Businesses mainly congregated around two town centres in Richmond and North Richmond.
  - The mix of businesses and services within the Richmond town centre suggests that Richmond's local economy is dependent on the accessibility of its surrounding commercial activities. The types of businesses and services can support Richmond's economy to be self-sustaining and unlikely to rely on pass-through trade.
  - The mix of businesses and services within North Richmond town centre suggests its economy operates on a smaller local scale, with a greater dependency on pass-through trade. Most businesses are clustered around dedicated off-street car parks and, therefore, more likely reliant on car-based trips.

Potential socioeconomic impacts

Property acquisition

The proposal would require partial acquisition of 13 properties and two full acquisitions for Stage 2A and five properties for partial acquisition and one for full acquisition for Stage 2B. The proposal has been designed to minimise the need for land acquisition and to reduce the potential for severance of private properties, as far as practical.

The three properties that would be fully acquired are currently zoned for Classified Roads, Rural Landscape and Primary Production purposes and one property contains a residence. The rural landscape and primary production landowners would be required to relocate from their place of residence or their farming property which may lead to loss of social and cultural connections to the property where they live or work. The residential landowner would have to source alternative accommodation in the area, or may choose to leave the area altogether if they are unable to source available accommodation. Sourcing accommodation may also place stress and financial burdens on the landowner. Furthermore, the loss of livelihood and economic stability as a result of property acquisition may also mean a loss of opportunity for their family aspirations to remain on the land and continue to expand for themselves and for their future generations.

Stakeholder consultation will be undertaken by Transport. Transport will consult with affected landowners individually prior to determination of the REF. Land acquisition will be carried out in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* and the Land Acquisition Information Guide (Transport for NSW, 2014).

Access and connectivity

Construction of the proposal would temporarily increase traffic volumes on local roads and may impact travel times, resulting in road safety changes and minor traffic disruptions. Construction would also affect access to properties, businesses, and local streets, and increase traffic particularly around ancillary facilities. Appropriate mitigation and management measures for property access impacts are included in the Traffic and Transport Impact Assessment carried out for the proposal to make sure access to these properties would be maintained during construction where reasonable and feasible, or to provide alternate access arrangements.

Existing public transport and carparking arrangements would be altered because of the proposal. However, the proposal would result in travel time savings which would benefit public transport users. The operation of the proposal would increase accessibility, reduce congestion, improve traffic efficiency, flood resilience, active transport connections and safety of the road network between Richmond and North Richmond. These improvements could lead to residents feeling more connected to their community while improving overall health, wellbeing and quality of life.

The proposal would align with the themes and direction explored in NSW and local strategic planning documents with a focus on safety, efficiency and meeting the future needs of local and regional motorists. The proposal would support Hawkesbury City Council's long-term vision for both Richmond and North Richmond town centres to achieve their community aspirations on matters concerning flood resilience, decreased congestion, improved road network and increased active transport options.

Construction of new footpaths and shared user paths would improve pedestrian connectivity in the area. This may provide greater incentive for the use of public transport through better access opportunities to the surrounding neighbourhoods and business centres. The proposal would also result in travel time savings which would benefit public transport users.

Key features of the proposal include enhancements to existing shared paths and construction of new paths. An upgraded active transport network would improve the perceived and actual safety and quality of experience for cyclists and therefore encourage mode shift towards active transport. Converting the existing Hawkesbury River Bridge into an active transport connection would allow pedestrians and cyclists to safely cross the Hawkesbury River separate from vehicular traffic.

Social infrastructure

There would be some permanent direct impacts to social infrastructure facilities from the proposal footprint. This would include reduction in playing fields and parking for the Colo Soccer Club, impacts to Western Sydney University leased land and to long-term experiments being undertaken on that land, and impacts to Hanna Park due to the new bridge structure.

Hanna Park would also be affected temporarily during construction, with an ancillary facility potentially being constructed on the site. In addition, during some periods of construction, access to social infrastructure facilities would be disrupted in the vicinity of ancillary facilities, due to access changes or amenity impacts that could affect the enjoyment for users. Transport and the construction contractor would continue to consult with affected landowners throughout the proposal to mitigate access and amenity issues where feasible.

Business and industry

Construction activities may impact business access, customer patronage, deliveries, and the ability of customers and business staff to enjoy their workplace and daily activities. Access to businesses would be maintained during construction.

Construction activity would benefit the local, regional and state economies. Some local businesses are likely to benefit from the construction of the proposal through employment opportunities. The proposal would provide jobs in the local area for tradespeople and create business opportunities for suppliers of materials and rental of construction equipment. However, business activity may be adversely impacted during construction due to the presence of construction activity and machinery, noise and vibration, and dust and odour, particularly affecting businesses in North Richmond.

The proposal would provide a safer, more efficient route for passing traffic to bypass the Richmond town centre, which is already occurring via Inalls Lane and Southee Road. Consequently, the bypass would not substantially decrease traffic numbers through the Richmond town centre but would reduce traffic growth along Kurrajong Road. By reducing traffic growth on Kurrajong Road, the need to widen through the Richmond town centre would be avoided, retaining parking in the town centre and maintaining accessibility to businesses and services. This would also preserve the amenity of the town centre, and with the new active transport link from North Richmond, encourage greater access from pedestrians and cyclists. The proposal would therefore support Hawkesbury City Council’s rejuvenation plans for the town centre.

The proposal would also support North Richmond's town centre businesses by maintaining passing trade and access to Bells Line of Road traffic. The additional capacity improvements to Bells Line of Road provided by the proposal would enhance access to North Richmond's commercial and industrial zone, which accommodates a range of commercial uses.

The proposed new bridge over the Hawkesbury River and the bypass of Richmond would be built above the 1 in 20 chance per year flood event level. This would reduce the risk of the bridge being overtopped, resulting in reduced closure times, disruption, and costs during flood events. Flooding events and bridge closures have impacted the area’s residents and agricultural businesses. Therefore, increased flooding resilience can positively impact agricultural business operations and benefit the local economy by reducing the frequency of traffic interruptions.

The proposed central median on Bells Line of Road would restrict the right turn from Bells Line of Road into the WestRock business. This could result in slight increase in travel times as customer and staff vehicles would need to go to the Bells Line of Road / Terrace Road intersection to access WestRock via the existing heavy vehicle access and new light vehicle access on Beaumont Avenue. In addition, this central median would also affect the right turn-in to the BP service station. Access to the service station would be left in and left out only, and the right out movement onto Bells Line of Road would remain closed (as per the existing situation).

The proposal would benefit agricultural businesses within and travelling between Richmond and North Richmond through improved flood resilience, increased road capacity and improved travel times.

Community values, liveability and amenity

During the construction period there would be impacts to community values and amenity in the form of noise, visual and vegetation removal impacts for residents, businesses, services, and social infrastructure.

Construction works for the proposal can adversely impact on the health and wellbeing of sensitive receivers, particularly if construction periods outside of standard construction hours occur for long periods of time without mitigation. The highest impacts are expected to occur when noise intensive equipment is being used. Several sensitive receivers are considered eligible for consideration of property treatments and additional noise mitigation, due to the increases in traffic noise during the construction and operational phases of the proposal. Appropriate avoidance, mitigation and management measures for predicted noise impacts are included in the Noise and Vibration Impact Assessment carried out for the proposal.

There may be moderate to high landscape character impacts around river, estuary and open space areas and rural areas adjoining the town of Richmond based on their current undeveloped character. There may also be high visual impacts that affect recreational users of Hanna Park, as well as residents, pedestrians, motorists, and cyclists because of the proposal. The establishment of temporary ancillary facilities to support construction, have the potential to temporarily have impacts on visual amenity and access for Colo Soccer Club and residential properties near Hanna Park, including light spill and noise impacts. Appropriate avoidance, mitigation and management measures for predicted visual impacts are included in the Landscape Character and Visual Impact Assessment.

The ongoing development in the area and anticipated population growth will increase the need for enhanced connectivity and safety in the area to cater for all residents and visitors. Building the proposed bridge to provide additional capacity over the Hawkesbury River, bypassing Richmond town centre and upgrading other major intersections would reduce congestion, improve connectivity, and reduce crash rates.

The proposal would result in improvements to pedestrian safety and could encourage more road users to shift to active modes of transport, therefore improving social connectivity and community wellbeing. Upgrades to existing shared paths and new shared paths would bring benefits for the safety and quality of experience for pedestrians and cyclists. Additionally, the upgraded active transport network would optimise access to open space such as Hanna Park, which could also encourage greater use of existing community infrastructure.

Cultural heritage – Aboriginal and non-Aboriginal

The Statement of Heritage Impact Assessment carried out for the proposal notes that works for the proposal would encroach on heritage curtilages of identified heritage items. The proposed works do not seek to alter any of the existing gazetted heritage curtilages and all curtilages would remain unchanged.

State Heritage Register listed ‘Hobartville, including outbuildings’ is located in the direct study area. There are three listed items on the State Heritage Register near the direct study area including Bowman House, Mountain View homestead, and St Peter’s Anglican Church Group. There are also some locally significant items listed on Schedule 5 of the Hawkesbury Local Environmental Plan 2012, including St Phillip’s Anglican Church (now in private ownership).

The proposed works impact the northeast post and mesh fence at Hobartville. These are recent fabrics and could be removed without causing an adverse physical impact on heritage significance. However, the proposal would adversely impact the views of Hobartville and the Avenue of Trees on the east and west sides of the street (LEP I408). In both cases, removing trees would have an adverse visual impact. Recommendations to mitigate the impacts have been made in the Statement of Heritage Impact. Appropriate avoidance, mitigation and management measures for predicted cultural heritage impacts are included in the Statement of Heritage Impact.

Consultation with the Aboriginal community has identified that the direct study area has cultural heritage value (social value) to the local Aboriginal community.

The Aboriginal Cultural Heritage Assessment (Kelleher Nightingale Consulting, May 2024) carried out for the proposal identifies seven Aboriginal archaeological sites that would be at least partially impacted by the proposal. Most of these sites are considered to display low significance based on the disturbed nature of the area. Therefore, archaeological mitigation is not required within the impacted areas of these sites. Two of the identified sites have moderate significance, based on scientific value and potential to inform on Aboriginal landscape use within the northwestern Cumberland Plain, and require mitigation through salvage excavation. Management measures, including archaeological impact mitigation (salvage excavation) have been recommended where sites of at least moderate archaeological significance are to be impacted. Appropriate

avoidance, mitigation and management measures for predicted cultural heritage impacts are included in the Aboriginal Cultural Heritage Assessment Report.

Cumulative impacts

Proposed developments in the direct study area could potentially lead to social impacts during the construction phase of the proposal if there is an overlap of construction activities. Impacts could include increased noise and dust emissions, which may affect health and well-being, and safety risks due to heightened traffic. It's important to note that these impacts would be a result of concurrent construction activities. This would be for a period of three years for Stage 2A construction and another two years for Stage 2B.

Furthermore, the cumulative traffic and access impacts could indirectly affect social conditions. Travel time delays could lead to increased anxiety, stress, and frustration during the construction period, impacting the overall well-being of the community.

The cumulative impact of the proposal and other road development in the area would result in a substantial net benefit for the local and state community. These benefits would include improved accessibility and connectivity within the broader study area. Improved access and connectivity for agricultural businesses and employment areas would enable economic activity, business and employment opportunities.

Proposed management and mitigation measures.

Adverse impacts during construction and operation would be mitigated through a range of measures, including:

- Implement a Community and Stakeholder Engagement Plan to communicate with surrounding residents, school communities, businesses, workers, and visitors to the area to ensure that all stakeholders are aware of the timing and likely impacts of the construction period. Fostering consistent and meaningful community consultation before and throughout the proposal construction period so that community stakeholders are aware of design changes and construction activities. Transport would work with the community, stakeholders, and Council to mitigate potential impacts, including community impacts during construction such as noise, visual and access impacts.
- Consultation with landholders to discuss proposed temporary and permanent changes in access on the local road network, followed up with a community engagement program supported by notifications/ letterbox drops to notify the broader community, recreational groups, businesses, and other stakeholders. Landholder consultation must continue during construction should arrangements change. Targeted landholder engagement is recommended with the landowners potentially subject to partial and full acquisition.
- Ensure alignment with property acquisition requirements including private and crown land acquisition, in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* and the *Crown Lands Management Act 2016*.
- Promote business engagement to proactively inform traders about construction activities and mitigate potential impacts associated with alternative traffic arrangements and potential construction traffic impacts.
- Implement Management Plans e.g., Construction Environment Management Plan and Traffic Management Plan to reduce the impacts to residents, businesses, and visitors associated with disruption during the construction phase. Provide traffic management for all road users, including pedestrians and cyclists and alternative routes for active transport users.
- Notify public transport providers and users in advance of any changes to bus stop locations through signage at the existing bus stops.
- Collaborate with the Council, relevant developers and adjacent educational, sporting, and recreational facilities and other stakeholders to minimise cumulative impacts.
- Consult with the community facilities in the direct study areas to understand periods in which they may be more sensitive to impacts and explore opportunities to undertake works outside these periods to minimise disruption, e.g., during school holidays.

- Safety mitigation for flooding impacts during construction and operation would be maintained, including evacuation routes and procedures for residents, businesses, and stakeholders.

A comprehensive list of management and mitigation measures required for the proposal is provided in Chapter 8 of this report.

1 Introduction

1.1 Proposal identification

Transport for NSW (Transport) proposes to upgrade Bells Line of Road / Kurrajong Road between Crooked Lane, North Richmond and Old Kurrajong Road, Richmond and construct a new bypass south of Richmond town centre. This is known as New Richmond Bridge and traffic improvements – Stage 2 (the proposal). The new route between Richmond and North Richmond would provide a minimum five per cent annual exceedance probability (AEP) flood resilience (equivalent to the 1 in 20 chance per year flood event). The proposal is about 50 kilometres north-west of the Sydney Central Business District (CBD) and about 33 kilometres north-west of Parramatta. It is in the Hawkesbury City Council local government area (LGA).

The proposal would be delivered in two stages, known as Stage 2A and Stage 2B. Should this REF be determined, and the already committed funding by the Australian Government and NSW Government released, Stage 2A would be constructed. This is expected to be complete by 2029. The timing of Stage 2B would be subject to available funding and Transport will continue to seek funding in upcoming State and Federal budgets to deliver the rest of the upgrades.

Stage 2A of the proposal includes a new four-lane bridge over the Hawkesbury River about 30 metres downstream of the existing Richmond Bridge, widening of Bells Line of Road through North Richmond to provide two lanes in each direction between the new bridge and the Terrace Road / Grose Vale Road intersection and a new bypass to the south of the Richmond town centre. The bypass would extend about 1.7 kilometres across the floodplain between the Kurrajong Road / Old Kurrajong Road intersection and Castlereagh Road / Inalls Lane / Southee Road intersection. Stage 2A of the proposal would also provide an active transport corridor between North Richmond and Richmond. This would include a new shared path on the southern side of Kurrajong Road between Old Kurrajong Road and Chapel Street and the conversion of the existing Richmond Bridge into an active transport connection across the Hawkesbury River.

Stage 2B of the proposal includes widening of Bells Line of Road between the Terrace Road / Grose Vale Road intersection and west of Charles Street and at its intersection with Crooked Lane. The bypass would also be extended 1.3 kilometres east from Castlereagh Road to Londonderry Road and would be a new road alignment to the south of Southee Road. Southee Road would connect to the bypass opposite Valder Place. The Londonderry Road / bypass / Vines Drive intersection would also be upgraded.

1.2 Proposal background

Richmond Bridge is currently operating at capacity during peak periods and future traffic demand in the area will increase, driven by residential development west of the Hawkesbury River and background traffic growth. This is expected to further increase congestion and travel times along this arterial corridor.

Richmond Bridge is closed in moderate flood events when flood levels reach about eight metres Australian Height Datum (AHD), which is at about the 50 percent AEP flood level. Since 2020, Richmond Bridge has closed multiple times due to flooding. The closure of this bridge results in disruption to travel between North Richmond and Richmond and disrupts regional traffic using the Bells Line of Road corridor.

The Australian Government and NSW Government are funding traffic improvements between North Richmond and Richmond including a new bridge over the Hawkesbury River. This initiative is part of a wider program of traffic improvements between North Richmond and Richmond which includes previous intersection improvements at three key intersections on the approach to the existing Richmond Bridge, including Bells Line of Road / Grose Vale Road intersection in North Richmond as well as Kurrajong Road / Old Kurrajong Road intersection and March Street / Bosworth Street intersection in Richmond. The proposal builds on the previous intersection improvements and is being carried out as part of a wider program of traffic improvements between Richmond and North Richmond which is being delivered in two stages (Stage 1 and Stage 2). They are:

- **Stage 1** involves upgrading The Driftway between Londonderry Road and Blacktown Road to improve safety and flood resilience. This proposal has been separately determined by Transport and is being delivered separately to the proposal.
- **Stage 2** is the proposal and it aims to improve traffic efficiency, flood resilience, active transport connections and safety of the road network between Richmond and North Richmond.

1.3 Proposal overview

The key features of Stage 2A of the proposal would include:

- a new four-lane bridge over the Hawkesbury River (about 360 metres long) about 30 metres downstream of the existing bridge, with two eastbound and two westbound lanes and the road level at a height to provide a five per cent AEP flood immunity
- widening of Bells Line of Road and Kurrajong Road to two lanes in each direction from the Terrace Road / Grose Vale Road intersection in North Richmond to just east of the Kurrajong Road / Old Kurrajong Road intersection in Richmond
- a new two-lane bypass south of Richmond town centre (one lane in each direction) between the Kurrajong Road / Old Kurrajong Road intersection and just east of the Castlereagh Road / Inalls Lane / Southee Road intersection, including:
  - a three-way signalised intersection connecting Kurrajong Road and the new bypass, including closure of the existing northern and southern legs of Old Kurrajong Road at Kurrajong Road
  - a two-way gated emergency driveway access connecting the northern leg of Old Kurrajong Road and Kurrajong Road, to be opened during flood evacuation events
  - a 150-metre-long bridge over a tributary to Mareh-Mareh Lagoon (near Inalls Lane)
  - a 120-metre-long bridge over the floodplain parallel to Inalls Lane
  - a roundabout at the Castlereagh Road / Inalls Lane / bypass intersection, with a local road connection to Southee Road
  - local road connections to Yarramundi Lane and Victoria Place from the bypass
  - truncation of Inalls Lane near Mareh-Mareh Lagoon, with local road connections to Inalls Lane from the bypass via Yarramundi Lane and near Drift Road
  - closure of the existing Drift Road intersection with Inalls Lane, with a new local road connection to Drift Road from the bypass
  - footpaths along the southern side of the of the bypass between Drift Road and Castlereagh Road and on each side of the roundabout
- an upgraded active transport network between Richmond and North Richmond, including:
  - a new shared path along the southern side of Kurrajong Road between the existing Richmond Bridge and Chapel Street, Richmond, a distance of about two kilometres, connecting to existing paths along March Street, Richmond
  - conversion of the existing Richmond Bridge and approaches into an active transport only connection

  - active transport connections from the existing Richmond Bridge through Hanna Park to an upgraded shared path on the northern side of Bells Line of Road until east of the Bells Line of Road / Terrace Road / Grose Vale Road intersection
- retention of bus stops along Bells Line of Road and Kurrajong Road
- new drainage infrastructure, including swales and water quality basins
- utilities connections and upgrades (including electrical, gas, water and telecommunications)
- new intelligent transport systems including closed-circuit television (CCTV) cameras to monitor traffic flow and assist with emergency management
- new maintenance access to the three new bridge structures
- permanent retaining walls near the approach to the new four-lane bridge in North Richmond and along Kurrajong Road near the new shared path
- driveway adjustments and tie-ins, including along Bells Line of Road, Beaumont Avenue, Kurrajong Road, Old Kurrajong Road, Inalls Lane, Drift Road and Castlereagh Road
- eight new parking spaces on the northern side of Beaumont Avenue, near its intersection with Terrace Road to replace parking spaces removed on Bells Line of Road
- finishing works, including kerb and gutters, signs, landscaping, lighting and line marking
- construction activities, including:
  - early work, including the establishment of a new compliant handrail on the existing Richmond Bridge
  - geotechnical, contamination and utility investigations which may be carried out as early work
  - a temporary roundabout at the Kurrajong Road / Chapel Street intersection
  - civil earthworks, bridge structural works, retaining walls, drainage work, utilities relocations and tie-in work and adjustments to adjoining sections of road
  - establishment of temporary ancillary facilities to support construction, including compound sites, site offices, stockpile and laydown locations, temporary access tracks and water quality devices
  - demolition work for structures and property features that fall in the proposal area.

The key features of Stage 2B of the proposal would include:

- localised widening of Bells Line of Road to provide a dedicated right-turn lane into Crooked Lane
- widening of Bells Line of Road to two lanes in each direction from west of Charles Street to the Terrace Road / Grose Vale Road intersection in North Richmond
- additional capacity improvements to the Bells Line of Road / Terrace Road / Grose Vale Road intersection, including an additional eastbound through lane at the intersection
- an upgraded shared path on the northern side of Bells Line of Road from west of Charles Street to the Terrace Road / Grose Vale Road intersection in North Richmond
- extension of the bypass (one lane in each direction) between the Castlereagh Road roundabout and just south of the Londonderry Road / Southee Road intersection, including:
  - a new signalised intersection at the junction of Londonderry Road, the new bypass and Vines Drive
  - closure of the Southee Road local road connection from Castlereagh Road and closure of Southee Road at Londonderry Road
  - a new local road connection to Southee Road opposite Valder Place, with left and right turn lanes provided at this intersection
  - two new bus stops along the bypass near Hill Avenue (one eastbound and one westbound), with a footpath connection to Southee Road
- retention of bus stops along Bells Line of Road and Londonderry Road

- new drainage infrastructure, including swales and a water quality basin on Londonderry Road
- noise screening mounds, walls and/or additional attenuation between the bypass and Southee Road along the extended section of the bypass between Castlereagh Road and Londonderry Road
- utilities connections and upgrades (including electrical, gas, water and telecommunications)
- new intelligent transport systems at the Londonderry Road / bypass / Vines Drive intersection including closed-circuit television (CCTV) cameras to monitor traffic flow and assist with emergency management
- driveway adjustments and tie-ins, including along Bells Line of Road, the bypass and Londonderry Road
- finishing works, including kerb and gutters, signs, landscaping, lighting and line marking
- construction activities, including:
  - geotechnical, contamination and utility investigations which may be carried out as early work
  - civil earthworks, retaining walls, drainage work, utilities relocations and tie-in work and adjustments to adjoining sections of road
  - establishment of temporary ancillary facilities to support construction, including compound sites, site offices, stockpile and laydown locations, temporary access tracks and water quality devices
  - demolition work for structures and property features that fall in the proposal area.

An overview of the proposal (Stage 2A and 2B) is provided in Figure 1-1 and Figure 1-2.

1.4 Purpose and scope of this technical report

The purpose of this Socio-economic Impact Assessment (SEIA) is to document the likely socioeconomic impacts of the proposal during construction and operation of both Stage 2A (opening in 2029) and Stage 2B and to detail appropriate mitigation measures to address the identified impacts.

The proposal is subject to environmental assessment under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), which requires Transport to prepare of a Review of Environmental Factors (REF) for the proposal.

This SEIA technical report has been prepared to support the REF for the proposal. It has been prepared in accordance with the Transport for NSW (Transport) *Environmental Impact Assessment Practice Note – Socio-economic Assessment (EIA-N05)* (2020) (the Practice Note).

Consequently, this technical report includes the following scope of works:

- Support the planning and design activities of the proposal through identification of socio-economic risks, constraints, and areas of sensitivity.
- Investigate and discuss potential direct, indirect and cumulative social impacts due to the proposal through assessment and analysis of the existing socio-economic environment.
- Make recommendations for the avoidance or minimisation of potential impacts in accordance with the relevant environmental assessment requirements of Division 5.1 of the EP&A Act.

1.5 Technical report structure

The structure of this technical report is consistent with a 'moderate' level assessment (see Section 2.1.1) as specified in the Practice Note. It is structured as follows:

- Chapter 1 – Proposal description outlining the overall proposal objectives and construction outline
- Chapter 2 – Description of the methodology to undertake the assessment of socio-economic impacts
- Chapter 3 – Review of relevant policy context and planning strategies for the Hawkesbury LGA
- Chapter 4 – Summary of the stakeholder engagement outcomes that are relevant to the assessment
- Chapter 5 – Description of the study area and assessment of the existing socio-economic environment

- Chapter 6 – Description of potential impacts from construction and operation of the proposal
- Chapter 7 – Impact assessment summary and significance
- Chapter 8 – Description of the safeguards and management measures to mitigate identified impacts

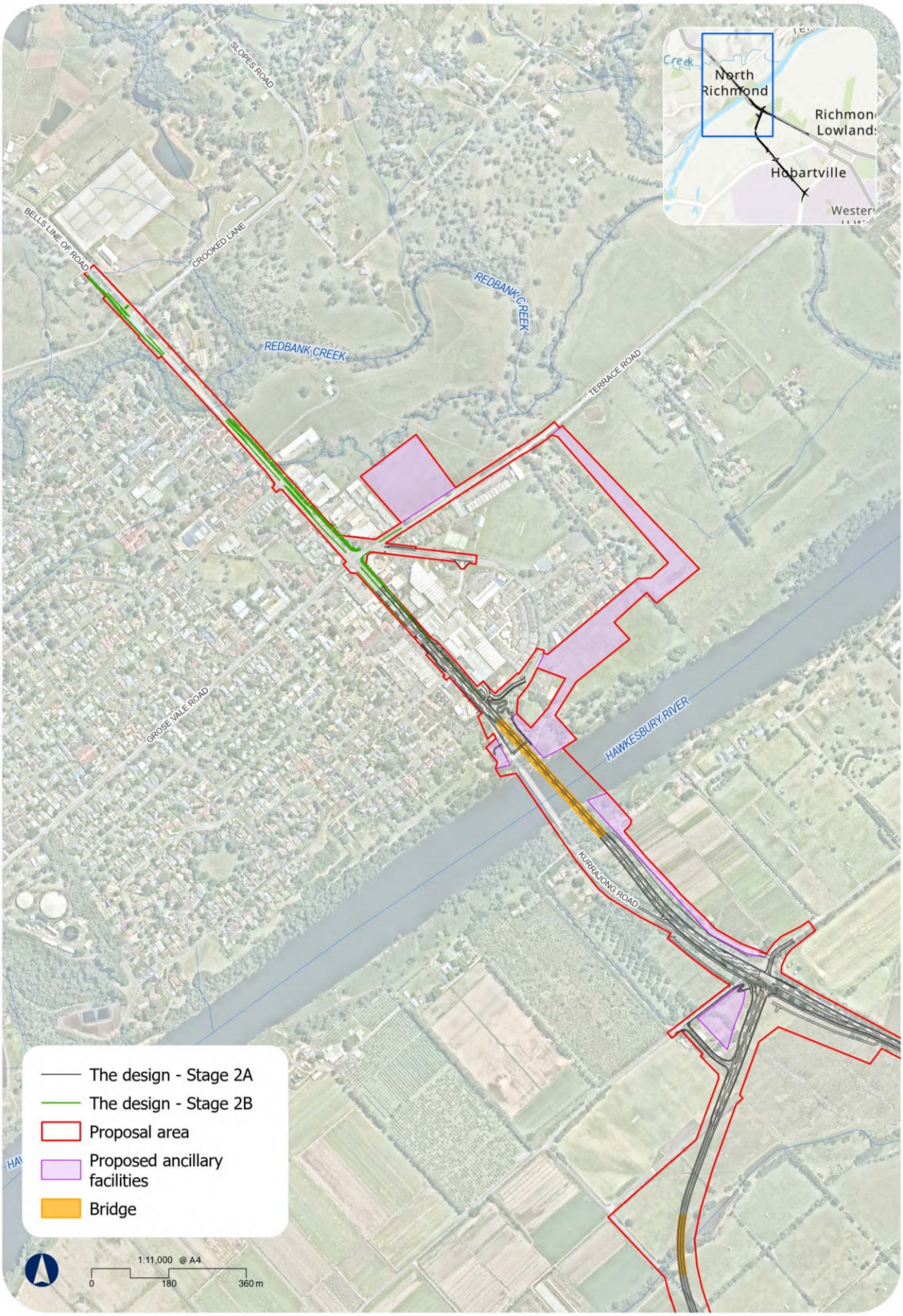

Figure 1-1 The proposal

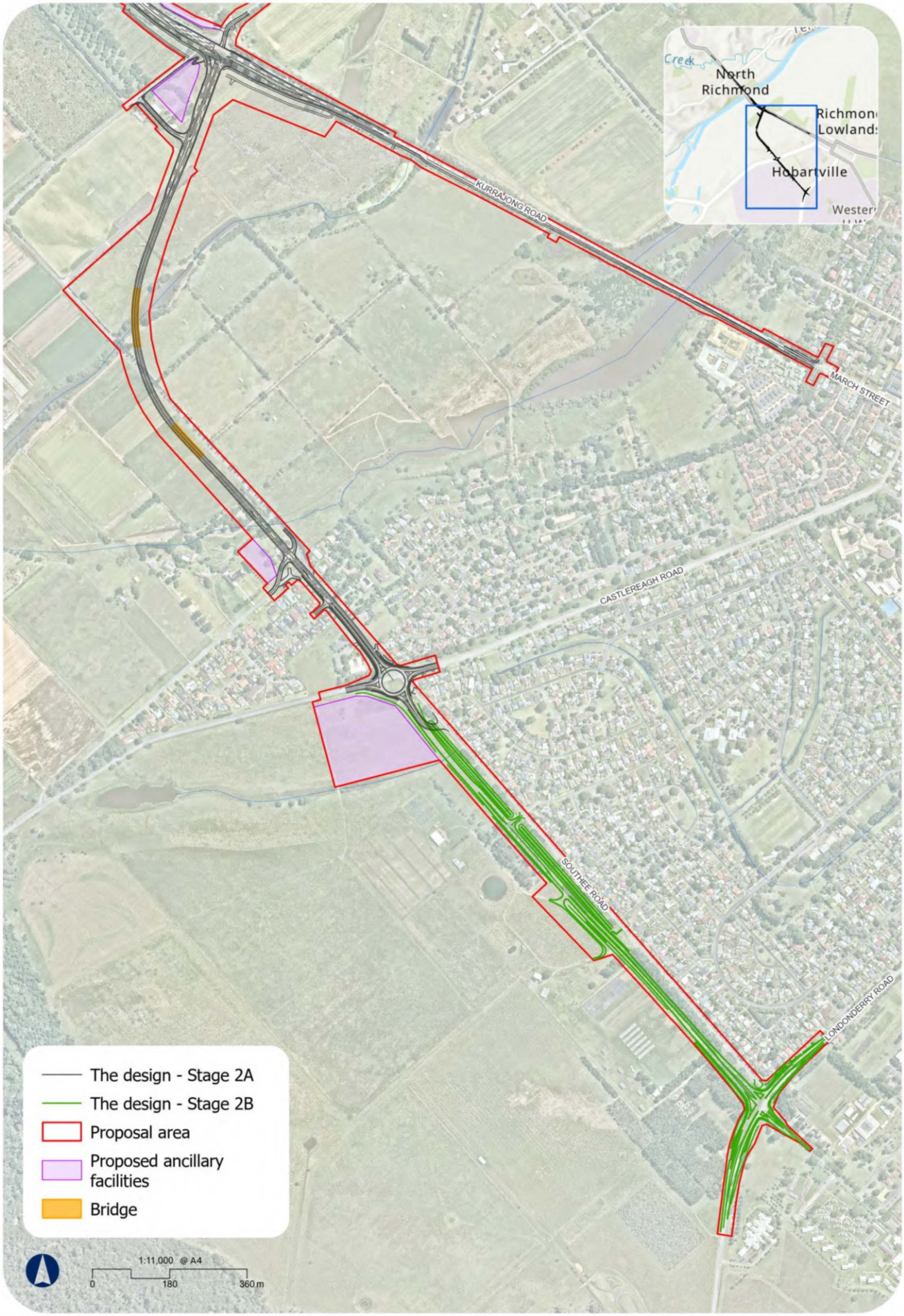

Figure 1-2 The proposal

1.6 Proposal construction

1.6.1 Construction activities

The proposal can be divided into seven distinct work areas summarised in Table 1-1.

Construction of Stage 2A could commence in 2025 with early work, however the main construction is anticipated to commence from 2026 subject to funding and last for a period of about three years. Construction of Stage 2B would take about two years and would be delivered once additional funding is approved.

Construction activities would be carried out in accordance with a construction environmental management plan (CEMP) to make sure work complies with Transport's commitments and legislative requirements.

Table 1-1 Proposal work areas

Work area	Indicative duration (days)	Stage of the proposal
Bells Line of Road upgrade - North Richmond	660	Stage 2A and Stage 2B
New bridge over the Hawkesbury River	370	Stage 2A only
Kurrajong Road upgrade – Old Kurrajong Road to Chapel Street	450	Stage 2A only
New bypass – Old Kurrajong Road to Castlereagh Road	370	Stage 2A only
Castlereagh Road intersection upgrade	400	Stage 2A only
New bypass – Castlereagh Road to Londonderry Road	270	Stage 2B only
Londonderry Road intersection upgrade	360	Stage 2B only

Construction activities for the proposal would include, but are not limited to:

- Project start-up activities including:
  - Precondition land surveys
  - Survey set-up
  - Ancillary facilities establishment
  - Environmental control establishment such as erosion and sediment controls and exclusion zones
  - Site investigations
  - Utility search and potholing
- Clearing and grubbing of vegetation
- Earthworks including demolition
- Kerb and stormwater drainage
- Electricity utilities relocation (HV and LV)
- Sewage protection and relocation
- Water protection and relocation
- Gas protection and relocation
- Optical fibre relocation
- Abutment and bridge, noise wall and retaining wall construction
- Pavement construction including asphalt and concrete pavement
- Footpath construction, landscaping and finishing works including asphalt concrete surfacing

Construction activities for Stage 2A of the proposal would include:

- early work, including the establishment of a new compliant handrail on the existing Richmond Bridge
- geotechnical, contamination and utility investigations which may be carried out as early work
- a temporary roundabout at the Kurrajong Road / Chapel Street intersection
- civil earthworks, bridge structural works, retaining walls, drainage work, utilities relocations and tie-in work and adjustments to adjoining sections of road
- establishment of temporary ancillary facilities to support construction, including compound sites, site offices, stockpile and laydown locations, temporary access tracks and water quality devices
- demolition work for structures and property features that fall in the proposal area.

Construction activities for Stage 2B of the proposal would include:

- geotechnical, contamination and utility investigations which may be carried out as early work
- civil earthworks, retaining walls, drainage work, utilities relocations and tie-in work and adjustments to adjoining sections of road
- establishment of temporary ancillary facilities to support construction, including compound sites, site offices, stockpile and laydown locations, temporary access tracks and water quality devices
- demolition work for structures and property features that fall in the proposal area.

1.6.2 Construction hours and duration

Most of the construction works for the proposal would be carried out within standard construction hours, to minimise the impacts to the surrounding residential areas and road network, however nightworks would be required for difficult access works for:

- North Richmond (Stage 2A and Stage 2B)
- Kurrajong Road upgrade – Old Kurrajong Road to Chapel Street (Stage 2A only)
- Castlereagh Road intersection upgrade (Stage 2A only)
- Londonderry Road intersection upgrade (Stage 2B only)

Standard construction hours and out-of-hours work (OOHW) hours are shown in Table 1-2. Relevant respite mitigation measures in line with relevant guidelines would be implemented for any out of hours works.

Table 1-2 Construction hours

Period of work	Monday to Friday	Saturday	Sunday and Public Holidays
Standard hours	7.00 am – 6.00 pm	8.00 am – 1.00 pm,	No work
OOHW	6.00 pm – 10.00 pm	7.00 am – 8.00 am	8.00 am – 6.00 pm
		1.00 pm – 10.00 pm	
	10.00 pm – 7.00 am	10.00 pm – 8.00 am	6.00 pm – 7.00 am

Source: Construction Noise and Vibration Guidelines (Roads and Maritime, 2016)

1.6.3 Construction workforce

Construction of the proposal would likely require an average of about 100 construction staff working on the proposal per day, with about 200 staff during peak construction periods, such as during construction of the bridges. However, the number of construction workers at any one time would vary depending on the stage of construction and the final methodology that would be identified during detailed design.

1.6.4 Ancillary facilities

Temporary ancillary facilities would be established to support construction of the proposal, including:

- site compounds that incorporate site offices, car parking, sheds, workshops, and storage
- areas for the delivery and storage of bridge structural elements and construction of the bridge over the Hawkesbury River
- areas for capturing and treating water from construction areas.
- stockpile sites for materials, spoil, and mulch

Seven potential ancillary facilities have been identified within the proposal area. The ancillary facilities locations are shown in Figure 1-3.

The proposed ancillary facilities are as follows:

A. Terrace Road, North Richmond

B. Hanna Park (east)

C. Hanna Park (west)

D. Eastern side of the Hawkesbury River

E. Old Kurrajong Road

F. Inalls Lane

G. Castlereagh Road, Richmond

These sites were identified as areas that maximised the use of existing infrastructure, buildings or land that did not contain remnant native vegetation and were readily accessible from other parts of the proposal area. However, the contractor would need to assess which or if all seven sites are to be used during construction.

Initial work at these sites would be required at the start of construction. It could include vegetation clearing, environmental control installation, hardstand areas and access roads, and provision of additional or augmented utilities and services (where required). Ancillary facilities would be returned to pre-existing conditions or rehabilitated upon completion of construction in agreement with the landowner.

During construction of Stage 2A, all seven ancillary facilities would be used. During construction of Stage 2B, only ancillary facilities A (at Terrace Road, North Richmond) and G (at Castlereagh Road, Richmond) would be used to support construction activities for the proposal.

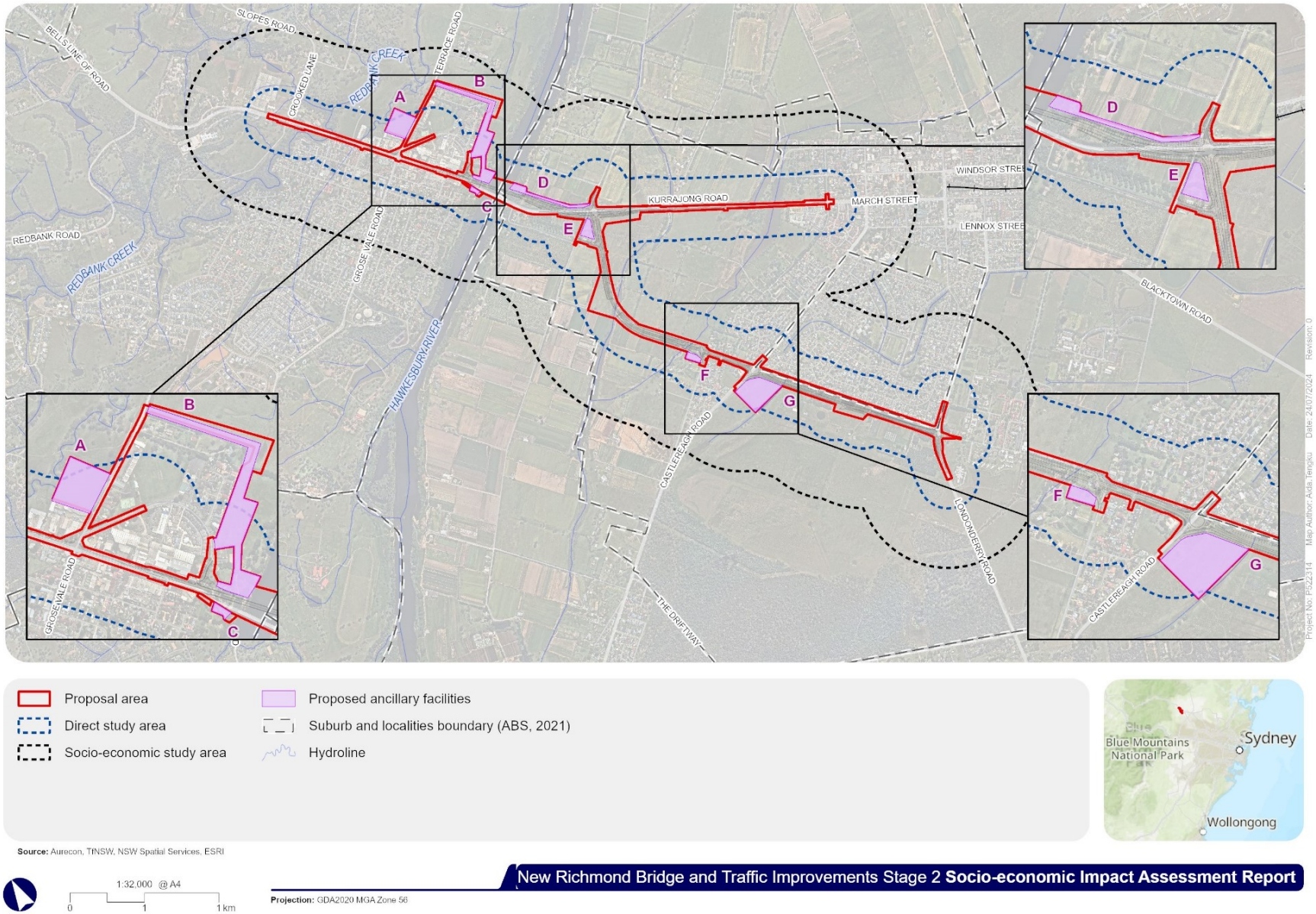

Figure 1-3 Proposed ancillary facilities

2 Methodology

2.1 Overview

The methodology employed in preparing this SEIA was designed to ensure that the socio-economic environment of communities potentially impacted by the proposal is properly accounted for and recorded, and anticipated impacts are adequately assessed.

In accordance with the Practice Note, this SEIA was prepared using the following methodology:

- scoping of potential socio-economic impacts
- identification of the SEIA study area
- Review of statutory planning and legislative requirements, including a review of existing State and local government strategies relevant to the social and economic environment of the study area
- Identification of the appropriate level of assessment for the SEIA according to the Practice Note. The appropriate level of assessment identified for this assessment was 'moderate'
- A review of community consultation for the proposal including the analysis of key community issues relevant to the socio-economic impact assessment (refer to Chapter 4).
- Development of a baseline profile of the existing socio-economic environment based on a desktop review and demographic information from the Australian Bureau of Statistics (ABS) 2021 Census. The exiting socio-economic environment is described in terms of:
  - Key population and demographic indicators
  - Existing data and information on local business and industry, employment and income, and dwelling characteristics
  - Existing community facilities, public services and places of special interest drawing on Council's database to identify likely locations of community activity, and the distribution of services and facilities that are likely to be accessed by communities within the broader study area.
  - Existing industrial zones and retail centres drawing on government and council databases to identify likely locations of businesses and traders.
- Identification and assessment of the potential direct, indirect and cumulative impacts of the proposal on the socio-economic matters of property, local amenity, social infrastructure, and access. The impact assessment considers sensitivity and magnitude to determine potential significance of impacts prescribed in the Practice Note.
- Identification of management and mitigation measures to avoid, minimise, manage, or mitigate the proposal's impacts.

These steps are further described in the following sections.

2.1.1 Scoping

Scoping for the proposal was carried out in accordance with the Practice Note to identify the appropriate level of SEIA required.

The Practice Note specifies three levels of socio-economic assessment (basic, moderate, and comprehensive) depending on the nature and scale of potential impacts and whether these impacts can be appropriately managed. Based on the review of the Practice Note it was determined that the 'moderate' level of assessment would most appropriate.

This is defined as applying to "…*proposals with several impacts, medium duration impacts or impacts on groups of people. Moderate level assessments would usually require proposal specific mitigation measures to ensure impacts are acceptable to the community.*"

The moderate level of assessment, as described in Table 2-1 reflects the scale of the proposal and magnitude of potential impacts to the socio-economic environment. Refer to Chapter 6 for the assessment of socio-economic impacts.

Table 2-1 SEIA level of socio-economic impact assessment

Level of assessment	Scale of impacts	Magnitude of impacts	Information expectations	Socio-economic baseline content
Moderate	Several impacts OR Two or more medium or high impacts OR Impacts on groups of people	Impacts of a moderate nature OR Impacts of moderate duration Impacts that require specific mitigation measures	Desktop research Quantitative information from secondary sources Limited primary research Targeted consultation with some key community and government stakeholders to identify specific impacts and mitigation measures	ABS Census data, describing key population characteristics Local community structure and patterns Relevant business and economic data Stakeholders and interest groups and outcomes of targeted consultation

Source: EIA-N05 (c, 2020)

2.1.2 Study area

The study areas for the assessment has been defined using an 'area of influence' approach, which reflects the areas likely to experience socio-economic impacts associated with the proposal. The SEIA study areas include three areas of influence, as described in Table 2-2 and shown on Figure 2-1 and Figure 2-2.

Table 2-2 Study area used in the assessment

Area	Definition
Direct study area	The direct study area covers an area within 200 metres of the proposal design as shown in Figure 2-1. It is representative of the construction footprint, excluding ancillary facilities locations, where mostly direct impacts to receivers are expected. These impacts include amenity impacts (noise and visual impacts) and access / connectivity impacts.
Socio-economic study area	The socio-economic study area would be indicatively based on a 400-metre buffer from the direct study area, as shown in Figure 2-1. This area has been selected as a representation of the area surrounding the proposal. It is used to assess indirect impacts. Indirect impacts would involve those people who are not within the direct study area but would interact with the proposal area either by driving, using public transport or using active transport. Indirect impacts are likely to include amenity impacts and access and connectivity impacts. It is acknowledged that some indirect impacts may not extend that far, while others may extend further afield.
Broader study area	The broader study area comprises four suburbs (SAL per ABS) North Richmond, Richmond, Agnes Banks and Hobartville. The Broader study is shown in Figure 2-2. The broader study area has been selected to include people commuting through and living near the proposal and to understand the range of services and facilities within the community and the lifestyles of community members. Indirect impacts to surrounding receivers in the form of amenity, access and connectivity impacts are also assessed.

In addition to the above, the report will sometimes refer to the proposal area. This is the land footprint directly impacted from the proposal design, construction work areas and ancillary facilities.

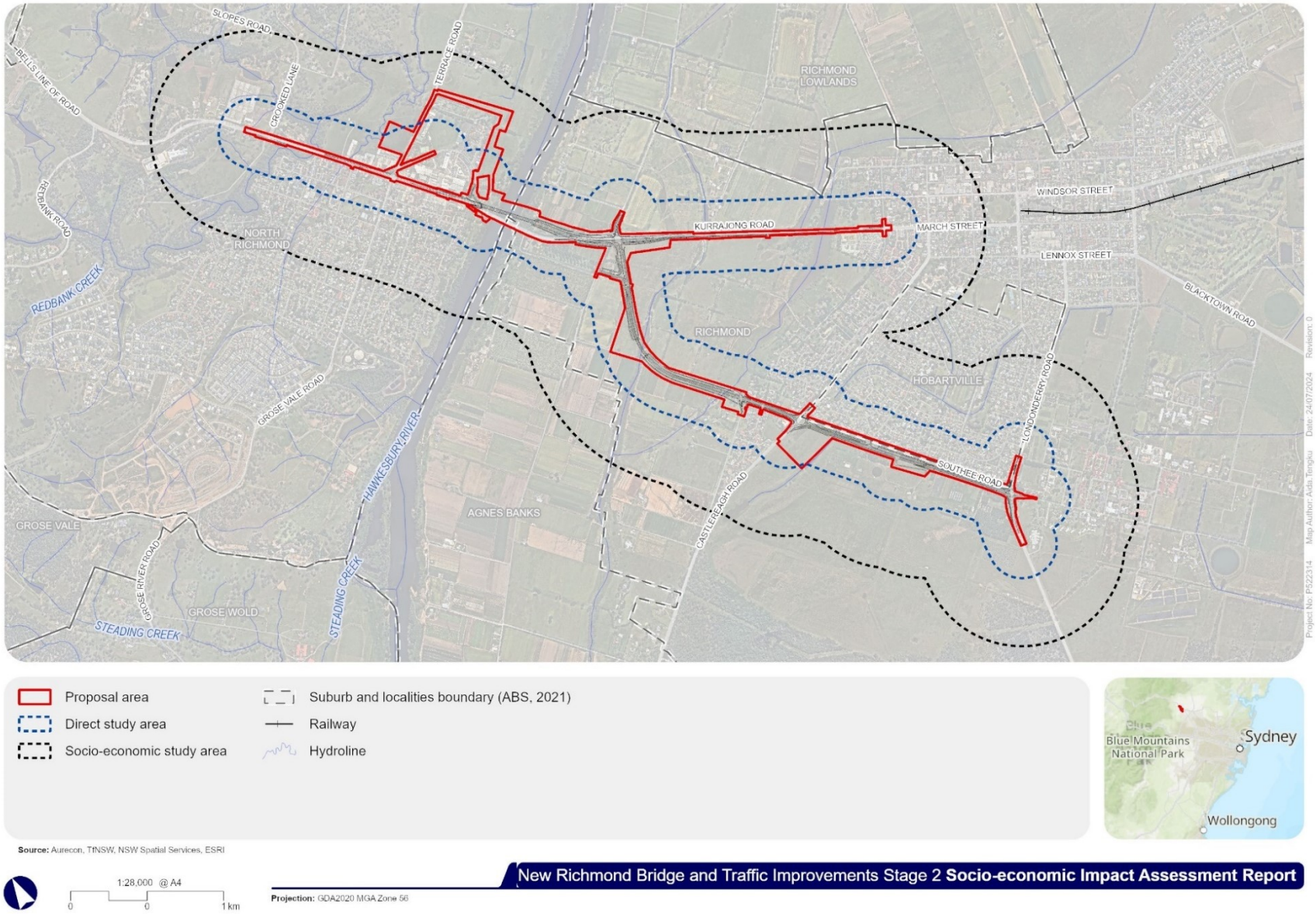

Figure 2-1 Direct and socio-economic study areas

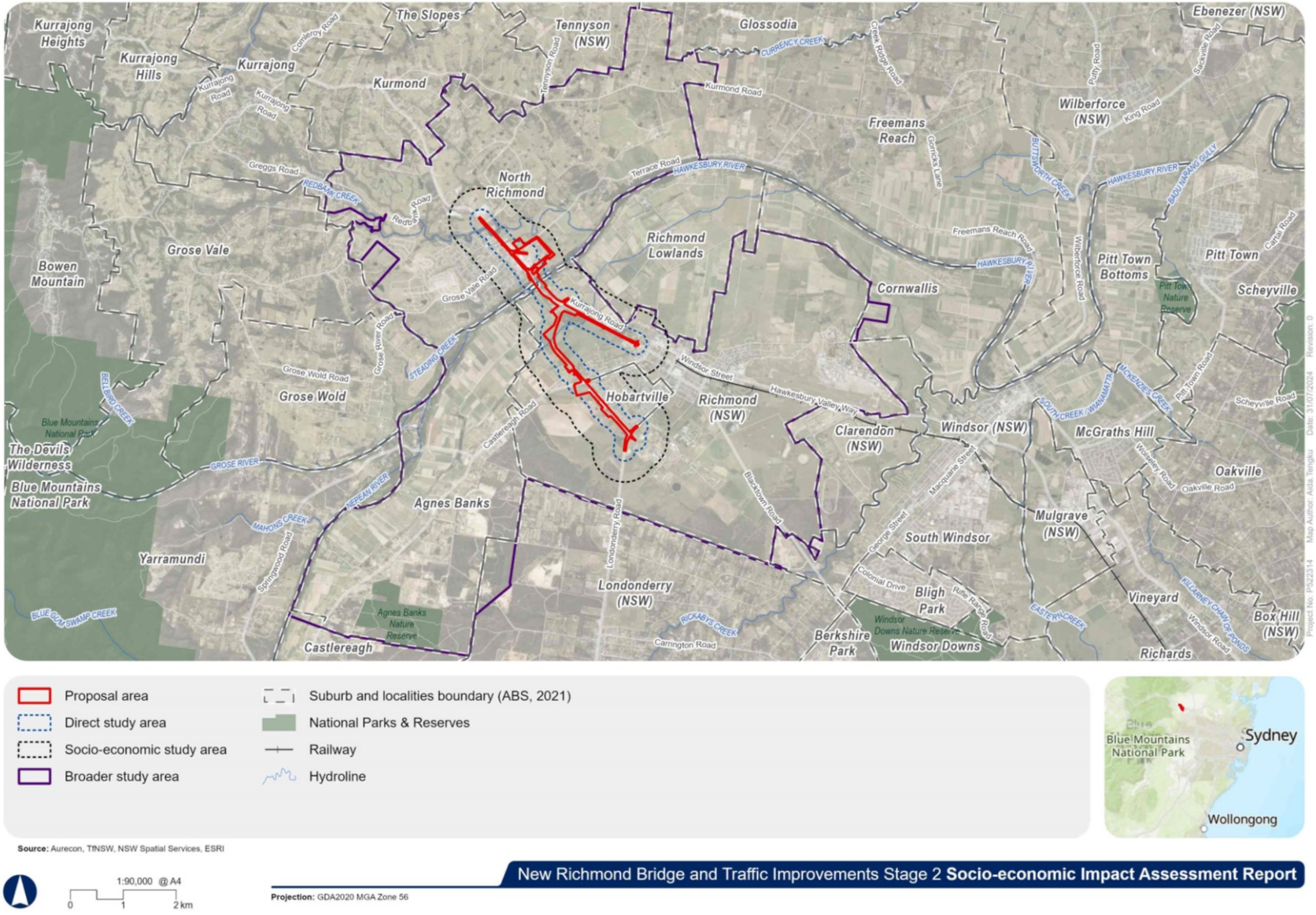

Figure 2-2 Broader study area

2.1.3 Stakeholder consultation

Transport has been engaging with the community and stakeholders throughout the planning, scoping, and design process for the proposal. Various stakeholder engagement methods have been employed to gather stakeholder feedback on the proposal.

Chapter 4 of this SEIA describes the engagement activities undertaken, the community and stakeholders that have been consulted and outcomes of the consultation program.

The SEIA has been informed by stakeholder and community consultation carried out for the proposal. Stakeholder consultation undertaken for the proposal is the best source of information on community values and perceptions regarding the proposal impacts and opportunities.

Findings from the business impact surveys undertaken by Transport at the preferred option stage of the proposal were also incorporated into the SEIA. Information from this survey assisted in confirming the types of businesses through the North Richmond area and obtaining feedback on business sentiment.

However, as the proposal would not result in a substantial decline in traffic through the Richmond town centre compared with current traffic levels, business surveys through Richmond town centre were not required to inform the SEIA.

2.1.4 Description of the socio-economic environment

This SEIA describes the existing socio-economic conditions, including the baseline conditions of potentially affected groups or communities, to provide a basis for predicting likely changes arising from the proposal. The socio-economic baseline has been described based on matters concerning:

- Statutory planning and legislative requirements, including existing State and local government strategies relevant to the social and economic environment of the broader study area to better understand the key strategic drivers relevant to the proposal.
- The socio-economic profile for the broader study area, including an analysis of population and demographic characteristics and population growth and change.
- The socio-economic characteristics of the broader study area, including:
  - Income
  - availability and types of employment and labour force availability and flexibility
  - employment, unemployment rate
  - industry of employment
  - local businesses, industry.
- The existing social infrastructure and ‘sensitive receivers’ in the direct and socio-economic study area, including assessing access to the active transport network.

The baseline description relies on the review of publicly available information, and outcomes of stakeholder consultation undertaken by Transport. Data sources are listed in Section 2.2 below.

2.1.5 Assessment of impacts

The impact assessment identifies and analyses the likely changes to the socio-economic environment during construction and operation. The assessment of impacts addresses the Practice Note requirements by:

- Considering and integrating community and stakeholder views on perceived impacts by analysing and categorising stakeholder consultation findings (see Chapter 4)
- Analysing the extent and nature of social impacts in comparison to the baseline conditions and findings from other technical assessments (see Chapter 6 and Chapter 7)
- Proposing appropriate responses to avoid or mitigate the identified social impacts (see Chapter 8).

The socio-economic impacts have been categorised based on the Practice Note, grouping the matters to be considered into the following categories:

- Property acquisition
- Land use changes
- Access and connectivity
- Social infrastructure
- Business and industry
- Community values, liveability and amenity
- Cumulative impacts

Each of these categories is assessed based on tangible, observable impacts and the community's perceived impacts, derived from consultation undertaken to date.

To assess the potential liveability impacts from the proposal, impacts on residents are assessed separately from those on motorists and commuters travelling through the proposal area. The Greater Sydney Commission's *A Metropolis of Three Cities* defines liveability as the quality of life residents enjoy in their neighbourhoods (refer to Chapter 3). This SEIA report assesses liveability by exploring housing, infrastructure and the availability of facilities and services across the broader study area and the LGA. Section 5.6 explores the City of Hawkesbury's community values and goals for liveability.

Community values are also fundamental to the liveability of an area.

Significance of impacts

This SEIA applies the impact grading matrix presented in the Practice Note, see Table 2-3, to assess the significance for potential negative impacts only. Positive impacts are assessed and discussed as appropriate.

The significance of each potential socio-economic impact arising from the construction and operation of the proposal was assessed as a function of the magnitude of the impact and sensitivity of the receiver.

- **Magnitude** refers to the scale, duration, intensity, and scope of the overall proposal including how it will be constructed and operated. The magnitude of the proposal refers to its scale, duration, intensity, and scope, including how it would be constructed and operated. This can be influenced by such things as the geographical area affected, the type, frequency and duration of works, level of interest or concern from the community, and how adaptable or resilient the potentially affected people would be when exposed to the changes brought on by the proposal.

  The levels of magnitude also range from negligible to high. Negligible can be classified as having no distinct change caused by the impact (i.e., is like what is currently experienced at the social baseline). High magnitude is considered a change that dominates over existing social baseline conditions. The change is widespread or persists over many years or is effectively permanent.

- **Sensitivity** refers to the qualities of the receptor which influence its vulnerability to change and capacity to adapt. Sensitivity ranges from negligible to high. If impacts to sensitivity are considered negligible, this means that no vulnerability is expected and/or receptors are likely to be able to absorb or adapt to change. High sensitivity is when there is the potential for multiple vulnerabilities to occur and/or receptors would have very little capacity to absorb or adapt to change.

Each identified socio-economic impact has been given an overall significance rating based on the 4-point scale as per the impact grading matrix. Ratings of both sensitivity and magnitude take into consideration both subjective and objective components, depending on people's individual experiences and/or perceptions, background data and professional judgement. Refer to Chapter 7.

Table 2-3 Grading matrix to assess the level of significance as per EIA-N05

		Magnitude level			
		High	**Moderate**	**Low**	**Negligible**
Sensitivity	**High**	High	High - Moderate	Moderate	Negligible
	Moderate	High - Moderate	Moderate	Moderate - Low	Negligible
	Low	Moderate	Moderate - Low	Low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

Sensitivity	**Meaning**
Negligible	No vulnerability and able to absorb or adapt to change.
Low	Minimal areas of vulnerability and a high ability to absorb or adapt to change.
Moderate	A number of vulnerabilities but retains some ability to absorb or adapt to change.
High	Multiple vulnerabilities and/or very little capacity to absorb or adapt to change
Magnitude level	**Example**
Negligible	No discernible positive or negative changes caused by the impact. Change from the baseline remains within the range commonly experienced by receptors.
Low	A discernible change from baseline conditions. The tendency is that the impact is on a small proportion of receptors over a limited geographical area and mainly within the vicinity of the proposal. The impact may be short term, or some impacts may extend over the life of the proposal.
Moderate	A clearly noticeable difference from baseline conditions. The tendency is that the impact is on a small to large proportion of receptors and may be over an area beyond the vicinity of the proposal. The duration may be short to medium term, or some impacts may extend over the life of the proposal.
High	A change that dominates over existing baseline conditions. The change is widespread or persists over many years or is effectively permanent.

Source: *Environmental Impact Assessment Practice Note – Socio-economic assessment (EIA-N05) (Transport, 2020).*

2.1.6 Cumulative impact assessment

A search of the NSW Department of Planning, Housing and Industry's Major Projects Portal was undertaken to identify large developments planned for the broader study area. The search gave an indication of the level of growth and development occurring within the broader study area to determine proposals that have the potential to result in cumulative impacts alongside the proposal.

The review considered proposals that have been approved but where construction has yet to commence and proposals that have begun construction. Refer to Section 6.1.7 for the cumulative impacts of the proposal.

2.1.7 Identification of management and mitigation measures

The proposed measures to avoid, minimise, mitigate, or manage the identified socio-economic impacts are listed in Chapter 8. These measures were formulated based on the findings of the socio-economic baseline study and outcomes of stakeholder consultation, and were developed using adaptive management principles, recognising that impacts may change over time, and that ongoing monitoring of impacts would provide the flexibility to accommodate such changes. The process for identifying recommended management measures included:

- a review of management measures provided by other technical specialists informing the proposal REF.
- consideration of stakeholder feedback to identify suggested opportunities to mitigate perceived impacts, if any.

2.2 Data sources

Information used to inform the socio-economic assessment is from the following sources:

- *Environmental Impact Assessment Practice Note on Socio-economic assessment (EIA-05)* (Transport, 2020a)
- Census of Population and Housing (ABS, 2016 and ABS, 2021). ABS Table Builder Datasets (socio-economic indicators have been benchmarked against the City of Sydney LGA and Inner West LGA Census data)
- NSW Government strategic planning reports and plans
- NSW Government Sydney housing supply forecast (Department of Planning and Environment, 2021)
- NSW Department of Planning and Environment population projections (Department of Planning and Environment, 2022)
- NSW and Hawkesbury City Council reports and strategies
- NSW Government strategic planning reports and plans
- NSW Department of Planning and Environment population and dwelling projections
- Specialist reports, including:
  - Noise and Vibration Impact Assessment. (SLR Consulting, July 2024)
  - Traffic and Transport Impact Assessment. (Aurecon, July 2024)
  - Biodiversity assessment report. (Wedgetail, July 2024)
  - Landscape Character and Visual Impact Assessment. (Scape Design, July 2024)
  - Statement of Heritage Impact. (Artefact, July 2024)
  - Aboriginal Cultural Heritage Assessment Report. (Kelleher Nightingale Consulting, May 2024)
- A media scan, which involved gathering and analysing information from traditional and non-traditional media, including print, broadcast, social media, was undertaken to better understand community sentiment on the proposal.
- Stakeholder consultation reports have informed this assessment on matters concerning community views on the proposal.

2.3 Assumptions

Assumptions applied to complete this SEIA include:

- The key findings of the background studies and technical reports are accurate.
- Socio-economic data for the identified study areas accurately reflects the community demographic profile.
- Outcomes of the community consultation and engagement undertaken to date by Transport accurately reflect community views.
- All potential social impacts to the local community and special interest groups that can be reasonably identified have been included in this report.

2.4 Limitations

Data from the 2021 ABS Census of Population and Housing is the most up-to-date and comprehensive source of demographic data to understand the social baseline for the identified study areas. Consequently, this data has been used to inform the existing socio-economic environment in this SEIA report (Chapter 5).

The 2021 Census was conducted during the COVID-19 pandemic, when many parts of Australia were in lockdown, and movements were tightly controlled. This led to a significant increase in people working from home.

These changes in population movement, coupled with various access restrictions caused by the pandemic and associated health orders, may have impacted Census results and may not be illustrative of typical statistics shown in previous census data. For instance, the increase in people working from home might have affected the accuracy of the 'Method of Travel to Work' (see Section 5.5) variable as it relates specifically to Census Day and may not represent a 'usual' method of travel.

The results presented in Section 5.5 for the identified study area are not incorrect but reflect the short-term effects of lockdowns rather than long-term baseline changes.

3 Policy context

Road safety, planning for growth, improving connectivity, and facilitating active and healthy communities are key themes within the strategies reviewed in this chapter. The proposal would contribute to the safety and efficiency of the road network of the broader study area through the improvements to road infrastructure within the Hawkesbury region, while also providing active transport options.

The proposal would align with the themes in NSW and local strategic planning documents with a focus on safety, efficiency and meeting the future needs of local and regional motorists and pedestrians.

The following sections provide an overview of these strategic plans and describes how the proposal would align with key themes and strategic aspirations for NSW and the Hawkesbury LGA.

3.1 NSW strategic planning

3.1.1 NSW 2021: A plan to make NSW number one

The NSW Government's *NSW 2021: A plan to make NSW number one*[1] (NSW Department of Premier and Cabinet, 2011) is a 10-year plan that sets goals and identifies actions in four key areas:

- Rebuild the economy
- Return quality services
- Renovate infrastructure
- Strengthen our local environment and communities

The plan aims to deliver strategic infrastructure proposals and better coordinate different transport modes to provide clean, reliable, safe, efficient and integrated transport services.

The proposal would align with this plan as the proposal aims to reduce congestion and travel times through the widening of Bells Line of Road and Kurrajong Road to two lanes in each direction from Terrace Road / Grose Vale Road intersection in North Richmond to just east of the Kurrajong Road / Old Kurrajong Road intersection in Richmond, as well as the two-lane bypass. The widening of roads would allow more vehicles to travel through the area, increasing efficiency and decreasing congestion during peak periods. Importantly, the proposal would contribute to Goal 10 Improve Road Safety, through the provision of enhanced road infrastructure and improving network reliability, connectivity and safety within the area.

3.1.2 Greater Sydney Region Plan: A Metropolis of Three Cities

The Greater Cities Commission (formerly Greater Sydney Commission) released the updated *Greater Sydney Region Plan (GSRP): A Metropolis of three cities – connecting people*[2] in March 2018. The GSRP integrates land use, transport, and infrastructure planning between the three tiers of government and across State agencies.

The *GSRP* highlights the opportunities, challenges, and vision for each of the three cities discussed in the plan. The three cities that make up the Greater Sydney Region are defined in the plan as:

- The established Eastern Harbour City – building on its recognised economic strength and addressing liveability and sustainability
- The developing Central River City – investing in a wide variety of infrastructure and services and improving amenity
- The emerging Western Parkland City – establishing the framework for the development and success of an emerging new city

1 NSW Government 2011, *NSW 2021: A Plan to Make NSW Number One*, viewed 15 October 2023, <https://www.opengov.nsw.gov.au/publications/1445>

2 Greater Sydney Commission 2018, *Greater Sydney Region Plan*, viewed 13 November 2023, <https://greatercities.au/strategic-planning/region-plans/metropolis-three-cities>

The *GSRP* highlights the importance of providing infrastructure to support cities, while also having the ability to adapt to meet the needs of future growth. The broader study area falls into the Western Parkland City district. The proposal aligns with two directions and six objectives of the *Greater Sydney Region Plan*. These are:

- 'A city supported by infrastructure'
  - Objective 1: Infrastructure supports the three cities
  - Objective 2: Infrastructure aligns with forecast growth – growth infrastructure compact
  - Objective 3: Infrastructure adapts to meet future needs
  - Objective 4: Infrastructure use is optimised
- 'A city for people'
  - Objective 6: Services and infrastructure meet communities' changing needs
  - Objective 7: Communities are healthy, resilient, and socially connected.

The proposal addresses the objectives within the plan by improving connectivity of Richmond with the surrounding region and improving road safety, flood resilience and efficiency along the corridor for motorists and pedestrians. This is achieved by upgrading the capacity of Bells Line of Road and Kurrajong Road by widening the road to two-lanes in each direction and by providing a bypass of Richmond town centre which achieves 1 in 20 chance per year flood resilience. In doing so, the proposal aims to meet the needs of the current and future population and subsequent traffic flow increases in the region by making structural changes to key roads and infrastructure. The proposal would also strategically connect the Hawkesbury region to the Blue Mountains. This increased connectivity would allow commuters to travel faster and more efficiently to their place of work, family, friends, and wider community.

Liveability is a key goal within the plan and is defined as the '*quality of life that residents enjoy in their neighbourhoods, workplaces, and cities*' (Greater Sydney Commission, 2018a). The proposal supports this goal by investing in road infrastructure, supporting quality of life through active transport offerings, and increasing community connectivity. The proposal would support network efficiency and moves towards reaching the Plan's over-arching goal of a '30-minute' city network by making traffic flow improvements.

The proposal would directly contribute to *Objective 7 - Communities are healthy, resilient, and socially connected*, by implementing active transport networks including new shared paths and conversion of the existing Richmond Bridge into an active transport connection. The road network between Richmond and North Richmond is located within low-lying land exposing the connection to a high flood risk. The proposal aims to enhance the flood resilience of the road network while catering for congestion ahead of the Hawkesbury's anticipated growth.

Six Cities Region Discussion Paper

In September 2022, the Greater Cities Commission released the *Six Cities Region Discussion Paper*[3], which outlines the Commission's vision for developing Australia's first global multi-city region.

Between August and December 2022, the Commission undertook stakeholder consultation for the *Six Cities Region Discussion Paper.* However, the Greater Cities Commission was dissolved on 1 January 2024 with its strategic planning functions moved to the new Department of Planning, Housing, and Infrastructure (DPHI). At the time of preparing this assessment, the Six Cities Region plan had not been released.

The Six Cities Region is comprised of Lower Hunter and Greater Newcastle City, Central Coast City, Illawarra-Shoalhaven City, Western Parkland City, Central River City, and Eastern Harbour City. Between August and December 2022, the Commission undertook a consultation and engagement process for this Discussion Paper.

The new *Six Cities Region Plan* builds on the *GSRP A Metropolis of Three Cities*' progress. The paper acknowledges COVID-19 has accelerated some trends and started others, such as the altered living and travel patterns associated with hybrid working. It acknowledges the challenge of ensuring infrastructure

3 Greater City Commission 2018, *Six Cities Region Discussion Paper*, viewed 13 November 2023, < https://greatercities.au/strategic-planning/region-plans/six-cities-region>

aligns with growth as a critical factor for metropolitan planning. To realise the new Plan vision and capture the benefits of the Six Cities Region, the Commission is proposing six Region Shapers – a set of priorities that would frame the 2023 Region Plan (Greater Sydney Commission, 2018b). The proposal aligns with three Region Shapers:

- A connected Six Cities Region
- Inclusive places connected to infrastructure
- Powering local jobs and economies

The new Six Cities Region Plan discussion paper highlights the need to improve connectivity within the broader region, as well as to ports and airports to improve access to global markets and planning for improved bus services to connect communities within and between cities so that people and goods can travel across the Six Cities Region in a safe, sustainable, and convenient way.

The proposal aligns with these goals through improved infrastructure. The proposal would improve peak period network performance and improve connectivity between Bells Line of Road and the arterial road by bypassing Richmond town centre and providing intersection improvements where the bypass intersects with Castlereagh, Londonderry and Blacktown Roads. The proposal would enhance the traffic and flood resilience of the road network, cater for congestion ahead of the Hawkesbury's anticipated growth and improve road safety and efficiency along the corridor for motorists and pedestrians.

The proposal would contribute to powering jobs and economies directly and indirectly with jobs created through construction and increased business patronage from construction workers in the area. The proposal would aim to improve network efficiency allowing commuters heading to their place of work, residents, and visitors to the area to connect with services, recreational facilities and the wider community, more efficiently.

3.1.3 Western City District Plan: Connecting communities

The *Our Greater Sydney 2056 Western City District Plan – connecting communities*[4] (*Western City District Plan)* (Greater Sydney Commission, 2018c) is a 20-year plan to manage growth in the context of economic, social and environmental matters to achieve the 40-year vision for Greater Sydney. It is a guide for implementing the Greater Sydney Region Plan, A Metropolis of Three Cities, at a district level and is a bridge between regional and local planning.

The vision for the *Western City District Plan* is to transform the district over the next decades to provide residents with quicker and easier access to a wider range of jobs, housing types and activities, while improving the District's lifestyle and environmental assets. This would be achieved by building on natural and community assets and developing a more contained Western City District with a greater choice of services aligned with growth and providing access to infrastructure.

The proposal aligns with Planning Priority W1 Planning for a city supported by infrastructure and with the following associated objectives from the Western City District Plan:

- Objective 1 – Infrastructure supports the three cities
- Objective 2 – Infrastructure aligns with forecast growth – growth infrastructure compact
- Objective 3 – Infrastructure adapts to meet future needs.

The *Western City District Plan* sets out planning priorities and actions that seek to integrate the District's challenges and opportunities with the Greater Sydney vision of the metropolis of three cities.

- Planning Priority W7 - establishing the land use and transport structure to deliver a liveable, productive and sustainable Western Parkland City
- Planning Priority W10 - maximising freight and logistics opportunities and planning and managing industrial and urban services land.

The proposal aligns with Planning Priority W7 and Planning Priority W10. Both priorities have the objective of ensuring the freight and logistics network is competitive and efficient.

4 Greater Sydney Commission 2018, *Western City District Plan*, viewed 22 July 2024 < https://greatercities.au/strategic-planning/city-plans/western>

3.1.4 Future Transport Strategy: Our vision for transport in NSW

The Transport for NSW's *Future Transport Strategy*[5] (Transport for NSW, 2022) is part of a suite of government strategies, policies and plans that integrate and guide land use and transport planning across NSW. The *Future Transport Strategy* sets the strategic directions for Transport to achieve world-leading mobility for customers, communities, businesses and people.

The *Future Transport Strategy* brings the NSW Government's Six Cities vision to life by connecting regional communities, encouraging thriving local neighbourhoods and strengthening NSW's economy. It recognises the importance of transport and the role it plays in a social and economic context.

Future Transport's focus is to enable people and goods to move safely, efficiently and reliably around Greater Sydney. The Strategy proposes a unified, multimodal approach to managing transport in NSW based on Transport's three outcomes which progress in achieving the Strategy would be tracked and measured. From this, the vision for the *Future Transport Strategy* outlines several outcomes and strategic directions:

- Connecting our customers' whole lives
  - Connectivity is improved across NSW.
  - Multimodal mobility supports end-to-end journeys.
  - Equitable, accessible and secure transport for all.
  - Our transport networks are safe.
- Successful places for communities
  - Supporting growth through smarter planning.
  - Transport infrastructure makes a tangible improvement to places.
  - Transition to net zero greenhouse gas emissions.
  - Transport minimises environmental impacts.
  - Transport is resilient and adaptable to shocks and stresses.
- Enabling economic activity
  - Freight networks and supply chains are efficient and reliable.
  - Existing infrastructure is optimised.
  - Transport supports the visitor economy.
  - The transport system is financially sustainable.
  - Leverage our procurement power for better outcomes.

The proposal would contribute to the Strategy's goals by improving connectivity and increasing travel efficiency. These changes would allow both residents and visitors to connect with the surrounding region and NSW more broadly. The proposal would improve connectivity between North Richmond and Richmond and the connecting arterial road network for motorists, cyclists, and pedestrians. It is also designed to be operational in floods up to the 1 in 20 chance per year flood level.

The *Future Transport Strategy* promotes the need to optimise existing infrastructure. The proposal would meet this outcome by reducing congestion and overall traffic delays through upgrades to existing infrastructure and changes in traffic flow.

Importantly, the strategy discusses delivering benefits for transport customers and the community, including providing safe traffic networks. The proposal would directly contribute to this goal by improving road infrastructure, including additional turning lanes, widening of roads, a continuous active transport route between North Richmond and Richmond, and addition of the Richmond Bypass / Kurrajong Road intersection bypass.

5 Transport for NSW 2022, *Future Transport Strategy*, viewed 29 November 2023, https://www.future.transport.nsw.gov.au/sites/default/files/2022-09/Future_Transport_Strategy_lowres_2.pdf. The NSW Government's Future Transport Strategy (2022) replaces Future Transport 2056: Shaping the Future, which was published in 2018.

These changes would also aid in the successful transition towards net zero greenhouse gas emissions and minimising environmental impacts, by providing carbon neutral travel options. Therefore, the proposal would contribute to the goal of successful places for community by improving the wellbeing and health of residents.

3.1.5 Active Transport Strategy

NSW Government's Future Transport Strategy sets the vision for safe, healthy, sustainable, accessible and integrated journeys in NSW.

The *Active Transport Strategy*[6] (2022) (Transport for NSW, 2022) draws on the Future Transport Strategy and its vision for walking, bike riding and personal mobility. The Strategy provides a plan to guide planning, investment and priority actions for active transport across NSW.

The Active Transport Strategy sets out the NSW Government's vision to double active transport trips in 20 years. The Active Transport Strategy promotes:

- Delivering connected and continuous cycling networks
- Providing safer and better precincts and main streets
- Walking and cycling and encouraging behaviour change

The proposal would provide an active transport network between North Richmond and Richmond. This would include a new shared path on the southern side of Kurrajong Road between Old Kurrajong Road and Chapel Street and the conversion of the existing Richmond Bridge into an active transport connection across the Hawkesbury River.

3.1.6 Greater Sydney Services and Infrastructure Plan

The *Greater Sydney Services and Infrastructure Plan*[7] (Transport for NSW, 2018) establishes six state-wide transport outcomes for NSW that provide a framework for network planning and investment which will address rapid change and innovation within transport and infrastructure. Other goals of the Plan include supporting the growth of the area and maintaining resident quality of life through investing in a 30-minute city. The plan highlights this may be achieved by reducing the need for long commutes and strategically managing congestion. (Transport, 2018a).

As part of the *Greater Sydney Services and Infrastructure Plan for NSW*, population and economic growth is projected to occur within three cities: Eastern Harbour City; the Central River City and the Western Parkland City. The proposal would satisfy this outcome as it would support the proposed growth of the Western Parkland City district. Improvements to the roads in Richmond and North Richmond would accommodate for the expected population increase and service greater population movement between the cities and surrounds, including the Blue Mountains region.

The proposal would also improve the safety of the region through intersection and capacity upgrades.

The Hawkesbury Nepean Valley has a high risk of flooding and a history of flood events, which can result in road closures and disruption for residents. The existing Richmond Bridge is built below the 1 in 2 chance per year probability flood event level and is closed in moderate flood events. The new bridge over the Hawkesbury River and bypass of Richmond town centre is proposed to be built substantially above this level. This would reduce the risk of the bridge being overtopped, resulting in reduced closure times during flood events, with the entire route between Richmond and North Richmond achieving a minimum 1 in 20 chance per year flood resilience.

6 *Transport for NSW, Active Transport Strategy, 2022, viewed 22 July 2024,* <https://www.future.transport.nsw.gov.au/sites/default/files/2022-12/Active_transport_strategy_0.pdf>

7 Transport for NSW, *Greater Sydney Services and Infrastructure Plan, 2018,* viewed 29 November 2023, <https://www.future.transport.nsw.gov.au/sites/default/files/2022-06/greater_sydney_services_and_infrastructure_plan.pdf>

3.1.7 NSW Freight and Ports Plan 2018-2023

The *NSW Freight and Ports Plan 2018-2023 (FPP)* (Transport for NSW, 2018) sets out the State government's objectives on the long-term investment in the freight and logistics network, with the aim to provide assurance to the industry that these investments would benefit the industry and support the state economy. The *FPP* aims to provide a network to move goods in an efficient, safe and environmentally sustainable manner, providing successful outcomes for communities and industry. It also aims to ensure safe, efficient and sustainable freight access to places.

The Greater Sydney freight network supports the demands of its growing population and plays a role in connecting the State and Australia to global markets. The FPP states that most freight movement across NSW is by road, with 80 per cent of the Greater Sydney freight task being undertaken by road (Transport, 2018b). It is projected that a 50 per cent freight task increase by 2036 will occur within the Greater Sydney area (Transport, 2018b).

The *FPP* details 70 initiatives to be delivered by 2023, with a focus on achieving five key objectives. These are:

- Economic growth
- Efficiency, connectivity and access
- Capacity
- Safety
- Sustainability.

To achieve the objective of State economic growth, the plan recognises the need to invest in freight infrastructure. This can be accomplished by improving the efficiency of existing infrastructure, creating greater connectivity, and improving access along key freight routes. The proposal is consistent with the *FPP* aims as it would assist the safe and efficient freight movements along the B59 road network, a secondary freight route which provides B-Double access for freight and industrial type business operations in the direct study area on Bells Line of Road up to North Richmond.

3.1.8 Tourism and Transport Plan

The *Tourism and Transport Plan*[8] (Transport for NSW, 2022) provides a framework for customer outcomes for visitors and initiatives over ten years. Customer outcomes listed in the plan are as follows:

- Enhancing the visitor experience
- Greater access to more of NSW
- Making transport the attraction
- A seamless experience.

The proposal aims to enable 'greater access to more of NSW'. Under this customer outcome, the *Tourism and Transport Plan* states that new corridor strategies, regional road upgrades and improved signage can enhance the visitor experience. The proposal would improve journey time reliability and road safety outcomes for all road users, while also providing greater access to NSW. These improvements would benefit local businesses, social infrastructure, and community facilities.

8 Transport for NSW 2022, *Tourism and Transport Plan*, viewed 29 October 2023, <https://www.monarorailtrail.com.au/assets/documents/Reports/NSW_Tourism_and_Transport_Plan.pdf>

3.1.9 Staying Ahead - State Infrastructure Strategy 2022 – 2042

The Staying Ahead - State Infrastructure Strategy 2022 – 2042[9] (SIS) (Infrastructure NSW, 2022) is a 20-year strategy that makes recommendations on policies and proposals for NSW's key infrastructure sectors to provide a positive impact on the future of the State. The SIS discusses predictions for rising congestion on parts of the road network, which would increase travel times and affect the reliability of the system. The SIS is framed around nine objectives, with the relevant objectives to the proposal being:

- Boost economy-wide productivity and competitiveness
- Service growing communities
- Embed reliability and resilience
- Achieve an orderly and efficient transition to Net Zero
- Integrate infrastructure, land use and service planning.

The proposal would make structural improvements on existing road assets to address current network inefficiencies, as well as accommodating predicted traffic increases of growing communities within the region. The decrease in congestion would contribute to regional productivity by reducing journey time and allowing road users to get to their places of employment faster. Overall, the proposal would improve the reliability and resilience of the area by improving road infrastructure safety and efficiency and raising the level of new bridges and roads relative to existing infrastructure. The proposal also contributes to transitioning to net zero targets by encouraging carbon neutral travel options through active transport offerings including shared paths and footpaths.

3.1.10 2026 NSW Road Safety Action Plan: Toward zero trauma on NSW roads

The *2026 Road Safety Action Plan: Toward zero trauma on NSW roads*[10] (Transport for NSW, 2022) features proven safety initiatives that enhance existing programs and includes new road trauma targets for 50 per cent fewer deaths and 30 per cent fewer serious injuries by 2030. The *Road Safety Action Plan* sets out a Road Safety Delivery framework with five priority areas to action between now and 2026:

- Creating safer country roads and urban places
- Enhancing road safety in local communities
- Increasing the safety of light vehicles, heavy vehicles, and protective equipment
- Making safer choices in our roads
- Ensuring the safety of vulnerable and other at-risk road users.

The *Road Safety Action Plan* includes new targets to halve road deaths and reduce serious injuries by 30 per cent by 2030. The Plan is based on the proven Safe Systems approach to road safety so that initiatives to deliver safer roads, speeds, people, and vehicles work together to keep patrons safe. The proposal aligns with the road safety initiative identified in the *Road Safety Action Plan*. Reducing congestion while improving safety on road corridors between and around Richmond and North Richmond are among the key proposal objectives.

9 Infrastructure NSW 2022, *Staying Ahead - State Infrastructure Strategy 2022 – 2042*, viewed 29 November 2023, <https://www.infrastructure.nsw.gov.au/media/onmb3hy5/state-infrastructure-strategy-2022-2042-full-report.pdf>

10 Transport for NSW 2022, *NSW Road Safety Action Plan 2026*, viewed 29 November 2023, <https://towardszero.nsw.gov.au/sites/default/files/2023-05/TNSW10046-Road-Safety-Action-Plan-2026_1.pdf>

3.2 Local strategic planning

The following section provides insight into the strategic planning objectives and goals of the direct study area. The strategic planning documents include similar themes and aspirations for the broader study area, focusing on the liveability of places and the provision of upgraded infrastructure to form integrated networks. Many of the strategic plans also acknowledge surrounding development and infrastructure proposals, explaining how major proposals and infrastructure upgrades are contributing to the movement and place framework[11].

3.2.1 Hawkesbury City Council Community Strategic Plan 2022 – 2042

The *Hawkesbury Community Strategic Plan 2022-2042*[12] (Hawkesbury City Council, 2022)[13] is a roadmap to achieve the Councils' goals and aspirations over the next 20 years. The Plan was constructed through community engagement and input. The *Hawkesbury Community Strategic Plan* sits above all other Council Plans and Policies. The plan is divided into four community outcomes:

- Community outcome 1 - Great place to live
- Community outcome 2 - Protected environment and valued history
- Community outcome 3 - Strong economy
- Community outcome 4 - Reliable Council.

The proposal would directly contribute to the goals of this plan. The proposal aligns with the Community Outcome 1 'Great place to live' by working with community and transport services across the Hawkesbury to improve road and transport infrastructure. The proposal would also encourage and enable residents to live a healthy active lifestyle by improving active transport options within the area. Likewise, the proposal would contribute to the Community Outcome 2 by providing carbon neutral transport options through active transport.

The proposal directly contributes to Community Outcome 3 building a 'strong economy' by improving transportation networks for cars and pedestrians, through additional lanes and improved traffic flow. These changes would reduce congestion and improve travel time between Richmond and North Richmond, allowing workers and residents to get to their place of work faster. Enhanced transportation networks increase opportunities for existing businesses to capture more passing trade from residents, tourists and visitors. The proposal would support businesses in North Richmond town centre by maintaining passing trade.

3.2.2 Hawkesbury Local Strategic Planning Statement 2040

The *Hawkesbury Local Strategic Planning Statement (LSPS)*[14] outlines the long-term visions and planning priorities for the Hawkesbury LGA. The LSPS provides a framework for managing growth throughout the area, as it sets out strategic directions and actions which help steer decision making towards defined community goals.

11 Movement and Place aims to achieve roads and streets that contribute to the public space network within a location where people can live healthy, productive lives and interact, and roads and streets that are enhanced by transport and have the appropriate space allocation to move people and goods safely and efficiently and connect places. NSW Government, Movement and Plance, *2032 Practitioner's guide to Movement and Place Implementing Movement and Place in NSW. Viewed 22 July 2024.* <https://www.movementandplace.nsw.gov.au/sites/default/files/guides/pdf/practitioners-guide-to-movement-and-place.pdf>

12 Hawkesbury City Council 2022, *Community Strategic Plan 2022-2042,* viewed 29 November 2023, <https://www.hawkesbury.nsw.gov.au/__data/assets/pdf_file/0020/57521/Hawkesbury-City-Council-Community-Strategic-Plan-2022-2042-Adopted-14-June-2022.pdf>

13 *At the time of writing this assessment, the Community Strategic Plan (CSP) – Our Hawkesbury 2042 was open for community and stakeholder consultation, aimed to inform the New Community Strategic Plan, which is to be adopted in June 2025. < https://www.yourhawkesbury-yoursay.com.au/our-hawkesbury-2045-community-strategic-plan-review>.*

14 Hawkesbury City Council, *Hawkesbury Local Strategic Planning Statement 2040*, January 2021, viewed 22 July 2024. <https://www.hawkesbury.nsw.gov.au/__data/assets/pdf_file/0005/178349/LSPS-February-2021.pdf>

To achieve the desired community outcomes, the LSPS introduces a series of planning priorities and actionable measures. Priorities and actions relevant to the proposal include:

- Ensure infrastructure aligns with current needs and future growth.
  - Council would work with Transport for NSW to ensure that transport decisions enable and support liveability, employment and long-term community outcomes.
  - Identify the shortfall of infrastructure to meet the social, economic and environmental needs of the growing community.

The proposal would enhance the traffic and flood resilience of the road network, cater for congestion ahead of the Hawkesbury's anticipated growth and improve road safety and efficiency along the corridor for motorists and pedestrians.

3.2.3 Hawkesbury Active Transport Plan

The *Hawkesbury Active Transport Plan*[15] (Hawkesbury City Council, 2024) provides a high-level framework to enable planning for an integrated, connected walking and cycling infrastructure network. The plan assists the Council in delivering mobility links throughout Hawkesbury to connect centres, parks and facilities for the community. Following extensive community consultation, the Hawkesbury City Council adopted the plan on 16 July 2024.

The *Hawkesbury Active Transport Plan* is consistent with the long-term community objectives as outlined in the *Hawkesbury Community Strategic Plan 2022-2042*, to make Hawkesbury a great place to live. These include encouraging and enabling the local community to participate in a healthy lifestyle and providing the right places and spaces to serve the community.

The *Hawkesbury Active Transport Plan* provides an opportunity to review and align priorities developed by the *Hawkesbury Mobility Plan 2010 (Bike Plan and Pedestrian Access and Mobility Plan P.A.M.P.)*[16] and set the direction for the next 10 years across the LGA.

The *Hawkesbury Active Transport Plan* highlights *Route 3B* as a direct route that connects Richmond to North Richmond via Kurrajong Road/Bells Line of Road. This route would provide residents of North Richmond access to Richmond via cycling. As the route connects directly to the Richmond town centre, travellers from North Richmond would be provided the opportunity to access Richmond Train Station, providing access to a wider range of public transport.

As such, the proposal is consistent with the objectives set out in the *Active Transport Plan* to provide a better standard of road with active transport links. The proposal would provide an active transport network between North Richmond and Richmond. This would include a new shared path on the southern side of Kurrajong Road between Old Kurrajong Road and Chapel Street and the conversion of the existing Richmond Bridge into an active transport connection across the Hawkesbury River.

15 Hawkesbury City Council, *Active Transport Plan February 2022,* viewed 22 July 2024, <https://www.yourhawkesbury-yoursay.com.au/92377/widgets/431347/documents/281509>

16 Hawkesbury Mobility *Plan 2010 Bike Plan and Pedestrian Access and Mobility Plan (P.A.M.P., Adopted 11 May 2010,* viewed 22 July 2024, <*https://www.hawkesbury.nsw.gov.au/__data/assets/pdf_file/0018/23283/HawkesburyMobilityPlan2010_FinalAdoptedVersion.pdf*

4 Community and stakeholder engagement

As stated in the Practice Note, a moderate level of socio-economic assessment requires consultation and community engagement due to the nature and context of the proposal. The proposed community engagement strategy for this proposal includes publicly displaying the REF for comment and targeted engagement with key stakeholders. Consultation with the community has been ongoing since investigations for the proposal started in 2013.

This chapter has been developed based on consultation to date and expected future consultation activities.

4.1 Key stakeholders

The proposal would impact stakeholders in different ways. Key stakeholders associated with the proposal include:

- Department of Planning, Housing, and Infrastructure
- Hawkesbury City Council
- Infrastructure NSW
- Local community including property owners around Bells Line of Road, Inalls Lane, Southee Road, Kurrajong Road, and Old Kurrajong Road
- Property owners of land identified for property leasing and land acquisition during construction and operation as stated in Section 6.1.1 and Section 6.2.1
- Local businesses, sporting, and community groups, including Hawkesbury City Chamber of Commerce, North Richmond Post Office, WestRock, service stations, polo and soccer clubs, Busways and other businesses with frontage on Bells Line of Road, North Richmond
- Educational facilities including Western Sydney University, Hawkesbury Campus, and local schools and childcare centres
- State and local emergency services
- Utility authorities
- Wider community including local interest groups such as Richmond Bridge Traffic Action Group, Kurrajong-Comleroy Historical Society, and Landcare groups
- Deerubbin Local Aboriginal Land Council and Registered Aboriginal Parties
- Local members of parliament: the Federal member for Macquarie and NSW member for Hawkesbury
- Internal stakeholders including Transport.

4.2 Consultation

4.2.1 Consultation during the options stage

The proposal has been in development since 2013 and ongoing community and stakeholder consultation has been carried out. Consultation undertaken is presented in the following sections.

Richmond Bridge and Approaches Congestion Study

In 2012 Roads and Maritime prepared the *Richmond Bridge and Approaches Congestion Study* to assess the conditions of the existing Richmond Bridge, undertake an analysis of eight short-term improvement options for future development of the bridge and detail an assessment of traffic conditions around the bridge and options for addressing congestion. The study identified the need for three intersection upgrades to be

completed in the short term and additional bridge capacity was required in the long term to improve travel times, journey time reliability and provide for future growth. Roads and Maritime sought community feedback on the options included in the study; the issues raised by the community are documented in the *Richmond Bridge and Approaches Congestion Study – Community Issues Report* (Roads and Maritime Services, 2012). Some key community issues that emerged from this consultation includes:

- A total bypass and a second river crossing are favoured to address long term traffic congestion.
- Support for banning right turns out of Old Kurrajong Road into Kurrajong Road at a minimum during peak hours.
- Support for alternative routes to Bells Line of Road and Kurrajong Road via Yarramundi Lane and Inalls Lane.
- Suggestion for a roundabout at the intersection of Grose Vale Road and Bells Line of Road.
- Suggested improvements to public transport and cycling facilities as well as bus frequency.
- Concerns regarding the timing of future development on road and transport improvement works.

Consultation on route options

Community consultation on the route options and preferred option for the proposal was carried out in two phases in 2019 and 2021.

The following key consultation and engagement activities were carried out for the optioneering phase of the proposal:

- Forming a Community Working Group in 2019 to provide local knowledge to assist in developing a range of potential routes for the proposal. The group was identified from key stakeholders within the community, and is made up of local community, business, environmental, heritage and flood advisory groups.
- Interactive map located on the website where the community could provide feedback on route options.
- In person community information sessions held in North Richmond in December 2019 focused on gathering stakeholder feedback on five potential route options.
- Feedback from the community, stakeholder groups and residents helped to progress a preferred option. General community feedback indicated values including improve connectivity between Bells Line of Road and Sydney's arterial road network, maximise flood resilience, active transport options and safety improvements.

Consultation on the preferred option

Transport invited the community and stakeholders to provide feedback on the preferred option from June to September 2021. Refer to Table 4-1 for issues and concerns raised by stakeholders during the consultation activities.

A preferred option which bypassed North Richmond to the north was displayed for community feedback from 7 June to 17 September 2021. The community had no consensus regarding support or opposition to the then-preferred option. Still, key feedback showed the community's significant concerns related to amenity and property impacts, flood resilience, economic effects on businesses, the local polo community, and traffic.

Stakeholder consultation activities on the preferred option included:

- A social media campaign which included 12 ads over 11 weeks, with an average reach of 100,000 people, and three Facebook Live public broadcast and Q&A sessions that reached 11,982 viewers.
- A face-to-face community information session with over 200 people in attendance.
- Meetings with five property owners and doorknocks to 13 households.
- An online targeted information session with residents of Southee Road, The Driftway, Inalls Lane and a session with residents of Norfolk Place. A total of 33 households attended these online sessions.

- A business survey was sent to businesses within the North Richmond town centre to identify the key likely perceived impacts associated with the proposal from local businesses. This was undertaken as the options either retained traffic along Bells Line of Road through the North Richmond town centre or diverted traffic to the north. The survey methodology was developed in conjunction with Transport and Hawkesbury City Council. A total of 70 businesses were identified to participate in the survey. Businesses were sent, either via mail and/or email, a description of the proposal, an invitation to participate in a survey and a link to the online survey. The survey encompassed a range of questions relating to the respondents' trade catchment, level of trade captured from passing traffic and the likely perceived impacts of the proposal on the business. The surveys were sent in early December 2021 with responses collected until late January 2022. There were a total of 14 respondents. Survey respondents indicated they preferred an option to upgrade through North Richmond rather than a bypass of the town centre. This was because of the perception that a bypass would reduce the potential for capturing passing trade from residents, tourists and visitors. A survey of Richmond town centre businesses was not undertaken as it would not have provided information that would have assisted in the identification of a preferred route or option. Further, it was not anticipated that there would be a substantial reduction in traffic through the Richmond town centre due to the proposal.
- Further engagement was undertaken in early 2022 with community groups and stakeholders, including a meeting with Hawkesbury City Council and the community working group with 14 representatives in attendance, a targeted online information session with residents of Inalls Lane, Southee Road and Norfolk Place, and a meeting with the NSW Polo Association. Following this, Transport undertook additional assessments and investigations – including meetings and workshops with key stakeholders - to determine a revised preferred option that would deliver the best community outcome within the allocated funding for the proposal.
- A revised preferred option was announced in December 2022 at a media event, and the community was notified via both traditional and social media. Transport prepared a Revised Preferred Option Report that included details of community and stakeholder engagement undertaken during 2021 and 2022[17]. Refer to Table 4-1 for the main key issues raised by stakeholders.

Key issues raised by stakeholders on the preferred option

Transport invited the community and stakeholders to provide feedback on the preferred option from June to September 2021. Feedback on the preferred option identified that the community's key concerns related to amenity and property impacts, flood resilience, business and economic impacts, impacts to the local polo community and traffic. Detailed key issues raised by communities and stakeholders during this consultation period are summarised in Table 4-1. This summary table has been informed by the New Richmond Bridge and traffic improvements Consultation Report (Transport, October 2022)[18].

Table 4-1 Stakeholder feedback on the preferred option (June to September 2021)

Issues	Stakeholder feedback
Traffic and safety	▪ Some stakeholders were concerned that the proposal would not solve traffic issues and would shift congestion to new locations. ▪ Some stakeholders believed that funding would be better used to improve the safety and efficiency of the current road network. ▪ Some stakeholders believed that a bypass of both town centres would free up access to both North Richmond and Richmond shops and relieve congestion in those towns. ▪ Some stakeholders supported options that would bypass town centres.
Amenity and property impacts (noise, visual and acquisition)	▪ Some stakeholders shared a strong desire to reduce impacts on private property and avoid impacts to mature vegetation, such as the pecan trees along Southee Road ▪ Some stakeholders were concerned about amenity impacts particularly for residents in Norfolk Place, Inalls Lane and Southee Road. ▪ Some stakeholders were concerned about the visual design of noise walls and suggested that noise walls include measures that minimise the incidence of graffiti.

17 *Transport for NSW. New Richmond Bridge and traffic improvements Revised Preferred Option Report December 2022, Viewed 22 July 2024.* <https://www.transport.nsw.gov.au/system/files/media/documents/2023/new-richmond-bridge-revised-preferred-option-report-03.pdf>

18 *Transport for NSW. New Richmond Bridge and traffic improvements Revised Preferred Option Report December 2022, Viewed 22 July 2024.* <https://www.transport.nsw.gov.au/system/files/media/documents/2023/new-richmond-bridge-revised-preferred-option-report-03.pdf>

Issues	Stakeholder feedback
Flooding	▪ Some stakeholders were concerned that the proposal would not address flood issues and that the available funding could be used differently to improve flood resilience.
Economic impacts to businesses	▪ Some stakeholders shared concerns that the proposal and bypassing North Richmond would have negative economic impacts on the shops in North Richmond, which benefit from passing trade, and felt that more analysis was needed on this issue. The proposal design has been revised, including keeping the Bells Line of Road alignment, so that there is no bypass of North Richmond in response of stakeholders' feedback.
Impacts to community recreational areas.	▪ Some stakeholders shared a strong desire to minimise impact to sporting facilities in the local area. ▪ Some stakeholders stressed the importance of minimising impacts to the local polo industry, which the community feel contributes greatly to the Richmond area and surrounds. ▪ Some stakeholders were concerned regarding the potential for increased traffic on Old Kurrajong Road and the safety of vehicles interacting with horses and how this would be managed. ▪ Some stakeholders were concerned regarding the separation and loss of polo fields and the potential flow on impacts to the polo community was also raised.
General heritage and environmental impacts	▪ Some stakeholders were concerned that the proposal would have direct impact to heritage listed buildings and endangered ecological communities. ▪ Some stakeholders were concerned about the proposal impacts to the local character and heritage of the area. This included avoiding direct impacts to heritage properties and avoiding construction vibration impacts on important heritage items such as Mountain View on Inalls Lane. ▪ Some stakeholders highlighted the importance of maintaining current views and avoiding possible impacts to the current character of the area.
Active transport options	▪ Some stakeholders acknowledged of the lack of active transport connections between Richmond and North Richmond. ▪ Some stakeholders suggested Transport to work with Hawkesbury City Council, local bicycle user groups and the community to determine options for active transport connections between the two town centres.

Source: New Richmond Bridge and traffic improvements Revised Preferred Option Report. Appendix 1: Consultation Report (Transport, October 2022).

4.2.2 Consultation during the preparation of the REF and concept design

Consultation activities

Further consultation following the announcements of the revised preferred option has included:

- meetings with major stakeholders including Westrock, Western Sydney University, Hawkesbury City Council, Colo Soccer Club, Killarney Polo Club and Richmond Bridge Traffic Action Group to discuss impacts and the proposed mitigation measures
- Discussions with Department of Planning, Housing and Infrastructure (former DPE) about the proposal, planning approvals and flooding criteria.
- community notifications and updates associated with the preliminary site investigations being undertaken as part of the design development
- targeted consultation with Southee Road residents regarding potential noise mitigation measures through an online information session on 11 December 2023. About 40 participants attended the online meeting which included a presentation that provided an overview of the proposal and the proposed noise mitigation measures. During the session, Transport received a range of questions from the attendees, covering topics such as the design of the noise wall, local road impacts and the design of the bypass. Responses to these questions were published on the project website's Frequently Asked Questions page.
- meetings with Hawkesbury City Council, State Emergency Services (SES), Hawkesbury Rural Fire Service (RFS), Fire and Rescue NSW and property owners in the Richmond Lowlands regarding the

proposed gated emergency only access for the Old Kurrajong Road/Kurrajong Road intersection in November and December 2023.

- Aboriginal Stakeholders and Community in the preparation of the Aboriginal Cultural Heritage Assessment Report (ACHAR) and Connecting with Country Report.

Issues raised during community and stakeholder consultation

Issues raised by stakeholders as part of the consultation outlined above is included in Table 4-2.

Table 4-2: Stakeholder feedback

Stakeholder	Issue raised
Property owners	■ Property impacts ■ Compensation process ■ Amenity impacts ■ Property access changes
General community	■ Options selection process ■ Property access ■ Local road network impacts ■ Traffic performance ■ Flooding impacts and resilience ■ Heritage item impacts ■ Noise and visual impacts and mitigation ■ Street parking loss ■ Vegetation loss, particularly pecan trees
Hawkesbury City Council	■ Agreed on a consultation area boundary for Transport to consult with properties regarding the closure of Old Kurrajong Road ■ Requested that Transport supply traffic modelling to show the impacts of the closure of Old Kurrajong Road ■ Requested that details of the Old Kurrajong Road closure be displayed as part of the REF
NSW DPE	■ Discussion around the potential flood impact criteria to use in any flooding assessment. DPE referred to Understanding and Managing Flood Risk (DPE 2023) and Flood Impact and Risk Assessment (DPE 2023) for preparing the flood assessment and developing impact criteria ■ Noted that appropriate criteria needed to be adopted regarding impacts to habitable floors.
Heritage NSW	■ Requested that the Noise and Vibration Impact Assessment (NVIA) and/or Statement of Heritage Impact (SoHI) consider potential impacts of operational vibration on the Mountain View residence in addition to a construction vibration assessment. ■ Heritage NSW confirmed that a Section 60 approval would not be required for work impacting any State Heritage Register (SHR) property, unless that work occurs inside the curtilage of that property. ■ Heritage NSW confirmed that a Section 60 approval would be required for any at property noise treatments in SHR listed properties, and the SoHI should take this into consideration. ■ To support recommendations for s140s, the SoHI should include clear mapping of where project excavation intersects with areas of high archaeological potential and significance. Depth and size of utility/drainage trenching, light/power poles and foundations requiring excavation should be considered. Based on this, the SoHI should then state where, and for what, an Archaeological Research Design and Excavation Methodology (ARDEM) would be required.

Stakeholder	Issue raised
SES	■ Requirement for emergency access during flooding to be provided if the Old Kurrajong Road leg is closed and discussed a flood evacuation gate design for emergency access from Old Kurrajong Road ■ Requested Transport consult with the Hawkesbury and Wilberforce RFS on the proposal for consideration of emergency access during times of bushfire ■ Suggested for Transport to socialise the closure of Old Kurrajong Road proposal at a Local Emergency Management Committee meeting ■ Consider the impact of flooding on the infrastructure ■ Pursue, if relevant, site design and stormwater management that minimises any risk to the community ■ Ensure workers and people using the site (during and after the proposed work) are aware of the flood risk ■ Requested notification be provided where significant delays in the operation of roads affected by the proposed work are likely.
Hawkesbury RFS	■ No objection to the proposal ■ Suggested consulting with Fire and Rescue NSW
Fire and Rescue NSW	■ No immediate impact to the current incident response methodology of Fire and Rescue NSW is expected, given the current location of Richmond Fire Station ■ There may be potential future impact depending on the Fire and Rescue NSW resource allocation strategy for the North Richmond area ■ Requested the ability to provide comment in the future as the project progresses

4.2.3 Future consultation following REF public display

Following the public display period, Transport will collate and consider the submissions received. Transport would then determine whether the proposal should proceed as described in the REF and if applicable any Submissions report, or whether any changes are required. A submissions report would then be published, which will respond to the comments received.

The community would be informed of any major design changes that are required to address concerns raised in submissions. Transport will notify those who made submissions and distribute a community update. The update will summarise the submissions report and the actions that Transport took to address these comments.

Should the proposal be determined to proceed, the community would continue to be updated prior to and during construction, including notification of any road closures or night work in advance of the work occurring. Direct consultation would continue with affected landholders and stakeholders.

The aims of ongoing communications and consultation are to provide the community with:

- accurate and accessible information regarding the processes and activities associated with the proposal
- information in a timely manner
- appropriate avenues for providing comment or raising concerns, and to ensure they are aware of the avenues
- a high level of responsiveness to their issues and concerns throughout development and delivery of the proposal.

Community engagement through the construction phase for both stages of the proposal would be carried out by Transport and the construction contractor. Activities/notifications that could occur include:

- advanced/start of work notifications
- traffic management notifications, including any lane closures
- night time work notifications and consultation
- quarterly project updates
- responding to enquiries and complaints

- end of construction
- ongoing construction communications.

Other activities include (but are not limited to) separate engagement with local residents, businesses and stakeholders on specific or sensitive aspects of the proposal. To effectively manage consultation during the construction stage of the proposal a Community and Stakeholder Engagement Plan would be developed and implemented by the construction contractor.

- Following completion of construction of Stage 2A, Transport would continue to update the community about the planning and construction of Stage 2B of the proposal, including to provide notification as identified in this section.

4.2.4 Summary stakeholder engagement outcomes

Stakeholder feedback has informed the preferred option and current proposal design. In response to the stakeholder feedback on the preferred option in 2021, Transport undertook further design work to develop a revised option that responded to constraints and feedback from the community. The revised preferred option was selected as it would deliver similar traffic benefits to the previously announced preferred option, but with lower property acquisition impacts, improved flood resilience and lesser impact to North Richmond businesses.

This revised option has been further developed into the proposal assessed in this SEIA. Transport will invite further feedback on the proposal from the community when the REF is placed on public display.

Transport will continue to consult with the community and relevant stakeholders during the detailed design phase and will facilitate various consultation activities in line with the New Richmond Bridge and traffic improvements - Stage 2: Community & Stakeholder Engagement Plan.

5 Existing socio-economic environment

As mentioned in Section 2.1.2, the broader study area for the socio-economic impact assessment is comprised of four suburbs: North Richmond, Richmond, Agnes Banks and Hobartville (SSC, ABS 2021). These areas were chosen as the representative study area as they are expected to experience the most direct and indirect socio-economic impacts as a result of the proposal.

The broader study area has been assessed in comparison to the Hawkesbury City Council LGA and Greater Sydney to capture existing conditions and stakeholders from outside the representative study area.

Appendix A of this report provides the resident demographic profile for the study areas as per the Census of Population and Housing (ABS 2021).

5.1 Community profile

5.1.1 Demographic data

The population of the broader study area was 15,484 in 2021, which is around 23.0 per cent of the Hawkesbury LGA population. The median age of the population in the broader study area was 40, compared to 39 in the Hawkesbury LGA. There is a higher proportion of people aged over 65 years (21.9 per cent), compared to the Hawkesbury LGA (16.6 per cent) and Greater Sydney (15.2 per cent). The median age is projected to increase in the broader study area and the Hawkesbury LGA at a higher rate than Greater Sydney.

There was a higher proportion of Aboriginal and Torres Strait Islander people in the broader study area and Hawkesbury LGA (4.8 per cent) in comparison to Greater Sydney (1.7 per cent). In 2021, the broader study area had an overseas born population of 15.7 per cent, compared to 38.6 per cent in Greater Sydney. The top five languages other than English are Punjabi, Macedonian, Nepali, Italian, Spanish.

The proportion of people who require help or assistance with self-care, body movements or communication was higher in the broader study area (8.2 per cent) compared to Greater Sydney (5.2 per cent). A need for assistance requires increased access to health care and assistance facilities for the community. This may be attributed to the older population. It was noted by the Hawkesbury City Council in 2020 that there were "questions whether adequate community facilities exist in the LGA to cope with this developing demographic trend". [19] Access to health care and facilities would improve the degree of liveability for residents within the broader study area.

Table 5-1 shows population growth forecasts for the broader study area, as presented in the 2022 Travel Zone Projections (TP22)[20]. Information for Agnes Banks was not available at the time of writing this assessment. The projections do not incorporate results from the 2021 ABS Census, as the relevant data had not been released at the time of TZP22 production.

Table 5-1 Population growth forecasts for the broader study area

Travel zone (TZ)	2022	2031	2041	% Change (2022 – 2041)
North Richmond	4,622	5,395	5,962	29%
Richmond	4,860	5,017	5,154	6%
Agnes Banks	-	-	-	-
Hobartville	3,585	3,561	3,546	-1%
Hawkesbury (LGA)	68,400.28	71,133.19	77,320.10	13%

Source: *2022 Travel zone projections (Transport for NSW)*

19 Hawkesbury City Council 2020, *Hawkesbury Demographics Study*, viewed 30 November 2023, <https://www.hawkesbury.nsw.gov.au/__data/assets/pdf_file/0018/151164/20200526AT1toItem095.pdf>

20 *Transport for NSW, Travel Zone Projections 2022 (TZP22)*, viewed 24 July 2024, <https://www.transport.nsw.gov.au/data-and-research/reference-information/travel-zone-proposalions-2022-tzp22>

The level of growth and proposed development occurring in the LGA, which primarily consists of residential, commercial and infrastructure developments could result in more activity on the local road network. Within the broader study area, the Redbank development is expected to add an estimated 3,900 new residents to North Richmond once it is fully developed.

5.1.2 Housing

In 2021, the broader study area had a total of 5,861 occupied dwellings, comprising 25.4 per cent of dwellings in the Hawkesbury LGA. The most common type of dwellings in the broader study area and the Hawkesbury LGA were separate houses, making up 74.6 per cent and 86.8 per cent of dwelling structures respectively. This is representative of the suburban nature of the broader study area and LGA.

The average household size for the broader study area was 2.4 people per household, slightly less than Greater Sydney's 2.7 people per household. Households comprised predominantly of families (69.5 per cent). There was also a significant share of lone person households (30.2 per cent) compared to Greater Sydney (23.2 per cent). House ownership was on par with Greater Sydney, with 61.2 per cent of houses owned either outright or with a mortgage. Of the population of the broader study area, 44.6 per cent of residents had the same address as five years ago. Residents of Greater Sydney had a higher proportion of residents that had the same address as five years ago at 50.4 per cent. People living in the broader study area had a high reliance on motor vehicles for getting around, with 54.5 per cent of people travelling to work by car.

Table 5-2 shows the household dwelling projections for the broader study area. The number of family households is expected to increase from 4,073 to 4,663 in 2041. The number of non-family households is expected to increase from 1,788 to 2,514. The existing composition of households indicates a continued higher portion of family households in the broader study area. Family households can include couples, couples with children, single parent households, other family households and multi-family households. Non-family households are usually lone person households or group households (ABS, 2021). For the purposes of this analysis, dwelling projections have been sourced from the NSW Planning Portal's population and dwelling projections. However, because dwelling projections are not available at the suburb level and therefore the broader study area, these have been estimated based on the SA2s within which the broader study area is located.

Table 5-2 Household dwelling projections for the study area 2021 - 2041

Study area	2021	2026	2031	2036	2041
Total family households	4,073	4,211	4,387	4,511	4,663
Total non-family households	1,788	1,991	2,198	2,363	2,514
Total households	5,861	6,208	6,598	6,891	7,199
Implied dwelling demand*	6,301	6,675	7,098	7,417	7,751

Source: NSW Department of Planning, Industry and Environment (2022)[21]

* Implied dwelling demand is the number of dwellings required to house the projected population, 2016-2041

In June 2024 the NSW Government announced the first stage of an incentive scheme to encourage councils to meet new housing targets. The target for Hawkesbury Council is 1,300 new homes completed by 2029.[22] The NSW Government's program will reserve $200 million in grants for councils to fund more green space such as parks, sporting facilities and smaller pocket parks, plus maintenance of local streets and footpaths which councils maintain. This funding is reserved by the NSW Government to help fund schools, hospitals and roads to support the population growth that comes with new housing.

In July 2024 the NSW Department of Planning, Housing and Infrastructure determined to exempt the Hawkesbury LGA from its proposed Low-and Mid-Rise Housing State Environmental Planning Policy (SEPP). The Hawkesbury City Council rejected the plan to allow low-and mid-rise housing in local town centres, including Richmond, on the basis of flood risk, local heritage and insufficient infrastructure to

21 NSW Department of Planning, Industry and Environment 2022, *Population and Dwelling Projections,* viewed 30 November 2023, <https://www.planning.nsw.gov.au/research-and-demography/population-proposalions/explore-the-data>

22 Hawkesbury Council's housing snapshot . https://www.planning.nsw.gov.au/policy-and-legislation/housing/housing-targets/hawkesbury-councils-housing-snapshot

support a significant increase in population and population density. Furthermore, Council identified this proposal would undermine the unique character of the Hawkesbury and add extra pressure to road and public transport congestion.

Furthermore, a media scan indicated there are plans by property developers to construct housing estates spanning more than 1,500 acres of land in North Richmond, Glossodia, Freemans Reach, and Grose Wold. These proposed developments, except for a Redbank extension, fall under the Primary Production zoning. Overall, the surge in development west of the Hawkesbury River could potentially see more than 7,000 new dwellings in the Hawkesbury LGA.[23]

Increased developments, including from the proposed Redbank development which would enable the development of approximately 1,400 residential dwellings[24], could result in population growth, increased demand for social and community services, and added pressure on the Hawkesbury LGA local road network.

5.2 Economic profile

5.2.1 Employment and income

Around 96.0 per cent of the labour force were employed in 2021 in the broader study area.

Median household income in the broader study area ranged between $1,353 to $2,454, with Agnes Banks having the highest median household income, as compared to the median household income in Greater Sydney ($2,077). Richmond had the lowest median household income ($1,353).

The proportion of people looking for work in the broader study area was 4.0 per cent, which was slightly less than Greater Sydney where 5.1 per cent of people were looking for work in 2021.

The top industries of employment in the broader study area were Health Care and Social Assistance (13.7 per cent), Construction (12.1 per cent), and Retail Trade (9.8 per cent).

Health care, social assistance, construction, and retail are highly mobile professions that do require travel to a centralised work location. An important aspect to consider is the ability of employees in these industries to connect to work sites or where there is demand for their services. Therefore, travel patterns for people working in these industries can be significantly impacted by traffic delays.

5.2.2 Socio-economic Indices for Areas

The Socio-economic Index for Areas (SEIFA) index is used by the ABS to measure aspects of socio-economic advantage and disadvantage across NSW. The index uses a range of variables to develop a score for each area in the index. These scores reflect 2021 Census Data and are used to measure aspects of socio-economic advantage and disadvantage across the broader study area, in terms of people's access to material and social resources, and their ability to participate in society.

The SEIFA publication consists of four indexes. The Index of Relative Socio-economic Advantage and Disadvantage (IRSAD) and the Index of Economic Resources (IER) have been used for this assessment in accordance with guidance presented in the Practice Note.

An index score of 1,000 represents the median score across Australia. A lower score may infer more households with low incomes and less skilled occupations while higher scores indicate greater advantage and a relative lack of disadvantage.

Index of Relative Socio-economic Advantage and Disadvantage (IRSAD)

Index of Relative Socio-economic Advantage and Disadvantage (IRSAD) includes factors such as income, education and employment.

23 Hawkesbury Post, June Edition 2024. “Hawkesbury Braces for 7,000 Strong Housing Onslaught”. https://issuu.com/hawkesburypost/docs/hawkesbury-2024_june

24 Planning Proposal Report – Redbank, North Richmond. Prepared by Ethos Urban, November 2023. Submitted to Hawkesbury City Council, viewed 22 July 2024. <https://www.hawkesbury.nsw.gov.au/__data/assets/pdf_file/0016/250342/20231212AT3toItem4.1.2.pdf>

The IRSAD statistics identify Richmond as scoring 964 indicating a higher level of disadvantage on both indexes, and a lack of advantage on the IRSAD compared to the Australian median. The IRSAD statistics identify Agnes Banks with a score of 1053, Hobartville with a score of 1003 and North Richmond with a score of 1017, indicating a lower level of disadvantage or (in the case of IRSAD only) a higher level of advantage compared to the Australian median.

Index of Economic Resources (IER)

The Index of Economic Resources (IER) focuses on the financial aspects of relative socio-economic advantage and disadvantage, by summarising variables related to income and wealth. This index excludes education and occupation variables because they are not direct measures of economic resources. A high IER score indicates that an area has greater access to economic resources and a low IER score indicates more limited access. The ordered areas are divided into 100 equally sized percentile groups, with percentile one comprising the most disadvantaged 1 per cent of areas and percentile 100 comprising the most advantaged 1 per cent.

The suburb of Richmond has a 11 IER percentile and Hobartville has a 33 IER percentile. Both are in the 'disadvantaged' range. North Richmond has a 59 IER percentile which is in the middle of the disadvantaged to advantaged' range. Agnes Banks has a 94 percentile, which is close to the 'most advantaged' range.

Table 5-3 SEIFA within the broader study area and the Hawksbury LGA

Area	2021 Usual Resident Population	Index of Relative Socio-economic Advantage and Disadvantage	Index of Economic Resources	
		Score	Score	Percentile
Richmond	5,418	964	933	11
North Richmond	6,358	1017	1039	59
Agnes Banks	996	1053	1110	94
Hobartville	2,712	1003	995	33

***Source**: Census of Population and Housing: SEIFA (ABS, 2021)*

5.2.3 Commercial operations

Businesses within the broader study area are mainly congregated around two town centres in Richmond and North Richmond. Hobartville is mainly a residential area, housing some businesses.

As a key town within the region, Richmond is home to numerous commercial businesses. Richmond has traditionally provided accommodation and rural services (agricultural supplies, professional services as well as mechanical and other similar trade services). However, the role and function of the Richmond town centre has changed over time to include retail and commercial services. Businesses in the town centre are mainly located between Francis and Lennox streets and Chapel and Bourke Street. This area is also a convergence of key arterial roads with Blacktown Road, Castlereagh Road and Londonderry Road/ Paget Street connecting into Lennox Street (and through to Kurrajong Road via Bosworth Street) and Hawkesbury Valley Way connecting into Windsor Road (and through to Kurrajong Road via East Market Street). However, it is noted that some regional traffic whose destination is not Richmond, use Southee Road and Inalls Lane, to access the Richmond bridge or Castlereagh and Londonderry roads, effectively bypassing the Richmond town centre.

A review of businesses via Google Earth business search, indicates that there are a range of businesses across North Richmond and Richmond, with Richmond containing more than double the number of businesses compared to North Richmond. The majority of businesses across both of the town centres are shops/ services and cafes/restaurants, however within these categories, Richmond provides a much more diverse shopping and food experience, for example clothing, home furnishing, hobby and florist shops. In addition, Richmond contains specific categories of stores such as jewellery and discount stores, a clear indication of a larger and more settled residential / suburban catchment for the town centre. In addition, almost 10% of Richmond businesses and services in the town centre include government and council services, entertainment and travel services. These businesses and services are not present within North Richmond.

The mix of businesses and services within the Richmond town centre includes:

- major supermarkets, shops and a variety of cafes and restaurants (76% of businesses)
- government services (such as a Service NSW hub, post office, courthouse, and library) (around 10% of businesses)
- professional services including medical services, travel services, finance and insurance providers (around 10% of businesses)
- Other business types such as senior and assisted living and entertainment making up 5% of businesses

Richmond has a number of shopping centres (such as Richmond Mall and Richmond Marketplace) that also support a diversity of businesses. This mix suggests that Richmond's local economy is more dependent on local and regional area business and residential customers with a lesser dependency on passing trade.

The mix of businesses and services within North Richmond town centre includes:

- major supermarkets, shops and a variety of cafes and restaurants (86% of businesses)
- professional services including medical services, real estate services, finance and insurance providers (around 10% of businesses)
- Other business types such as industrial and senior and assisted living making up 5% of businesses.

Within North Richmond, businesses are mainly located on and around Bells Line of Road and the North Richmond Shopping Village. The businesses along Bells Line of Road include general industrial equipment, petrol stations, general consumer businesses, and health and recreation and commercial establishments. This mix suggests North Richmond's economy operates on a smaller local scale, with a greater dependency on pass-through trade. This is supported by feedback received from business owners to the North Richmond business survey undertaken in 2021.

There are other businesses towards the Hawkesbury River. Across the Hawkesbury River towards Richmond, there are several Polo Clubs including Windsor Polo Club, Sydney Polo Club, Arunga Polo Club and Killarney Polo Club.

Much of the rural landscape in the broader study area is primary production land used for horse studs and other agricultural activities including cropping and horticulture.

5.3 Land use

5.3.1 Land use and zoning

Land zoning relevant to the proposal area and direct study area is summarised in Table 5-4 and shown in Figure 5-1.

While most of the proposal area is within the SP2 Infrastructure – Classified Road zone, there is a large proportion of the proposal footprint that traverses land zoned RU2 Rural Landscape and SP1 Special Activities – Education Agriculture. Within the direct study area there is a mix of zones such as residential, local centre, industrial and recreational. Sections of the direct study area in the Richmond and Hobartville suburbs also includes three public places of worship (Hawkesbury Valley Baptist Church, Richmond Anglican Church, The Church of Jesus Christ of Latter-day Saints) and the Richmond Anglican Cemetery.

Table 5-4 Land use zones relevant to the proposal area

Suburb	Land use zone within the proposal area	Land use zone within the direct study area
North Richmond	■ SP2 Infrastructure – Classified Road ■ RU1 Primary Production ■ RU2 Rural Landscape ■ W1 Natural Waterways ■ E4 General Industrial	■ SP2 Infrastructure – Sewerage System ■ RU1 Primary Production ■ RU2 Rural Landscape ■ R2 Low Density Residential ■ R3 Medium Density Residential ■ E1 Local Centre ■ E3 Productivity Support ■ E4 General Industrial ■ RE1 Public Recreation ■ RE2 Private Recreation
Richmond	■ SP2 Infrastructure – Classified Road ■ RU2 Rural Landscape ■ R2 Low Density Residential	■ C2 Environmental Conservation ■ SP1 Special Activities - Cemetery ■ SP2 Infrastructure – Place of Public Worship ■ R1 General Residential ■ R2 Low Density Residential ■ RU2 Rural Landscape ■ RE1 Public Recreation
Hobartville	■ SP1 Special Activities – Education Agriculture ■ SP2 Infrastructure – Classified Road ■ R3 Medium Density Residential ■ RE1 Public Recreation	■ SP2 Infrastructure – Place of Public Worship ■ R2 Low Density Residential ■ RU2 Rural Landscape ■ RU4 Primary Production Small Lots

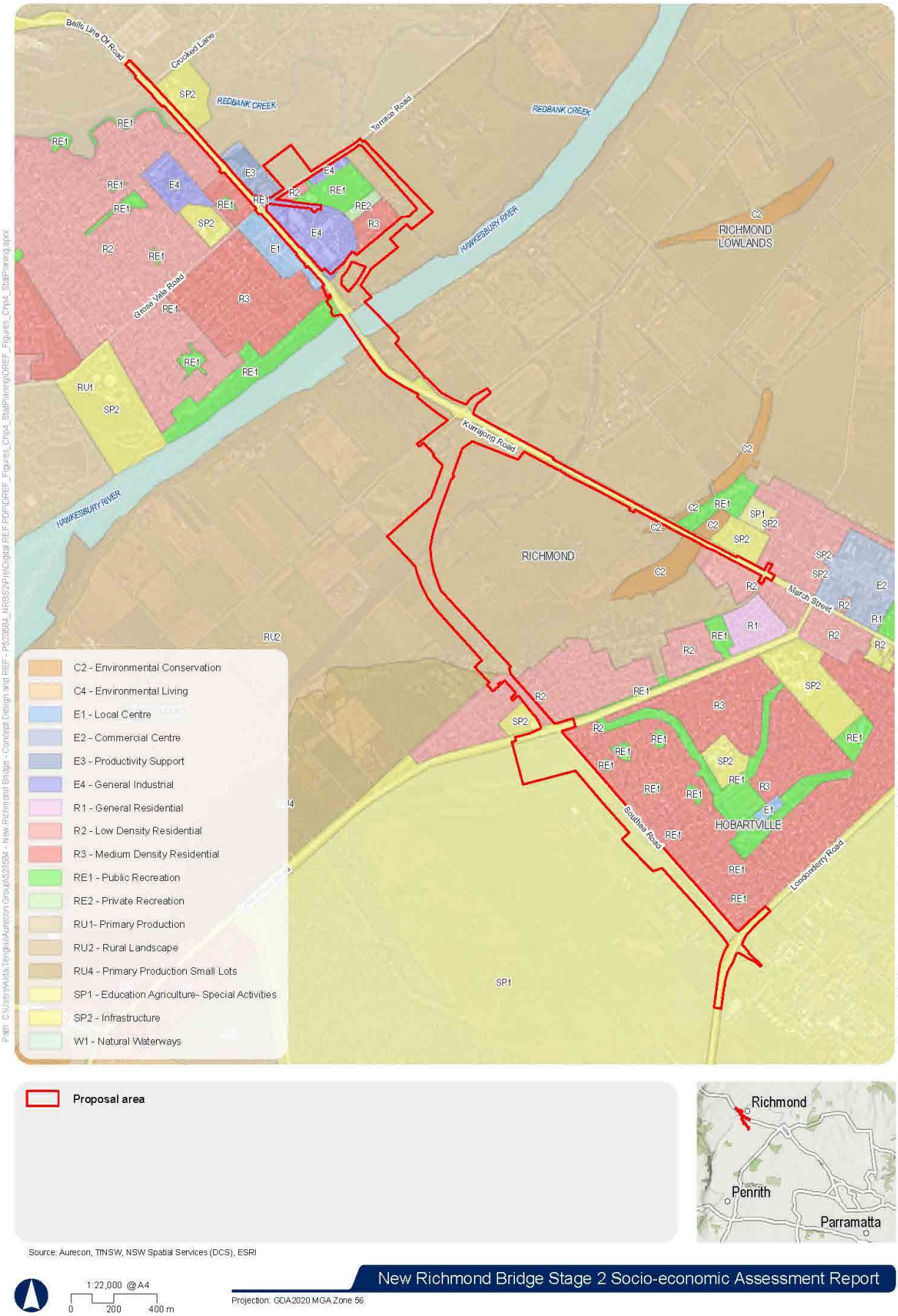

Figure 5-1 Land zoning within and surrounding the proposal footprint

The proposal passes through North Richmond along Bells Line of Road, across the Hawkesbury River and passes through the outskirts of the Richmond and Hobartville suburban areas. Most of the land needed in the north of the proposal is contained within the existing road corridor that is already zoned SP2 infrastructure with some strip acquisitions required. The bypass also passes through privately owned recreational, farming, residential and educational areas.

The broader study area includes the suburbs of North Richmond, Richmond and Hobartville and Agnes Banks which consist of low-medium density housing. In both Richmond and North Richmond, there is mostly residential zoning, however there are also areas with a commercial and agriculture zoning. In the southern portion of the broader study area there is a special activities zoning for education and agriculture. Currently the land to the western side of Southee Road is being used by Western Sydney University for experimental agricultural practices. There is a variety of rural land uses at Agnes Banks.

The socio-economic study area includes rural areas with natural landscapes, farming areas, heritage properties, and recreational clubs including Colo Soccer Club, Windsor Polo Club and Killarney Polo Club. The broader study area includes major open spaces areas, National Parks and Nature Reserves including Yarramundi Reserve, Windsor Beach, Governor Phillip Park, and Hanna Park. Land zoned for special activities (education and agriculture) in the southwest is currently leased by Western Sydney University for experimental agricultural practices.

In North Richmond, to the north of Bells Line of Road, the socio-economic study area is mainly zoned for primary production and as Rural Landscapes along the Hawkesbury River. Within this area, there is also sewerage system infrastructure, a general industrial area, residential housing, commercial premises, public and private recreational areas and a retirement village. Notable areas of community interest include Riverside Gardens Retirement Community, Hanna Park, Panthers North Richmond and Turnbull Oval, a highly utilised sporting facility within North Richmond as the only field west of Hawkesbury that hosts rugby league competitions.

To the south of Bells Line of Road, land use is mainly zoned low to medium density residential housing with public recreational spaces, including Hawkesbury Park along the Hawkesbury River, Morunga Park and Peel Park. The re-zoning of land uses occurring within the Redbank development would enable the development of approximately 1,400 residential dwellings. Lot sizes within this residential precinct would range from R2 Low-Density Residential, R3 Medium-Density Residential and R5 Large Lot Residential[25].

The area also houses essential infrastructure including the North Richmond Water Treatment Plant off Grose Vale Road. Towards Bells Line of Road, there are general industrial areas that are home to North Richmond Community Centre and Chas Perry Community Hall, Richmond North Public School, and a local shopping centre with Coles and Aldi.

To the south of the Hawkesbury River, between the river and Chapel Street, the direct study area is mainly zoned RU2 Rural landscape. Notably, closer towards Richmond Village is Pughs Lagoon which is zoned as C2 Environmental conservation.

To the north of Windsor Street in Richmond (between Chapel Street and Paget Street), there are a number of land use zones covering residential and business/ commercial centre uses. There are also a number of social facilities along Windsor Street including St Peters Anglican Church and Cemetery and the Richmond Ambulance Station. This connects to commercially zoned areas, housing, local businesses and restaurants and banks, as well as Richmond Park which is zoned as a public recreation area. Continuing east is Richmond Railway Station, general residential areas, Richmond Public School, and St Monica's Primary School. Further east, to the north of Hawkesbury Valley Way is RAAF Base Richmond. Further north of Richmond town centre is mainly Rural landscape, and Bakers Lagoon which is classified as an environmental conservation area.

To the south of Richmond town centre, is Hobartville, a largely residential area with low to medium density housing, several parks, including Tamplin Field and Richmond Golf Course. The area houses primary and secondary educational infrastructure including Richmond High School and Hobartville Public School. A large majority of the area is zoned SP1 Education agriculture, housing the Western Sydney University

25 Planning Proposal Report – Redbank, North Richmond. Prepared by Ethos Urban, November 2023. Submitted to Hawkesbury City Council, viewed 22 July 2024. <https://www.hawkesbury.nsw.gov.au/__data/assets/pdf_file/0016/250342/20231212AT3toItem4.1.2.pdf>

Hawkesbury agricultural campus, and TAFE NSW Richmond. Further to the east, in Clarendon, is the Hawkesbury Showground and Hawkesbury Racecourse.

Specific to agricultural activities, in North Richmond there is a large hydroponics farm, poultry egg farm and cattle grazing operations, as well as some rural residential development. North Richmond also includes some productive land near the Hawkesbury River as well as rural residential development, with some intensive plant and animal production.

Land uses in the Richmond Lowlands include turf farming, vegetable farms, orchards, horse studs, and polo fields. The Western Sydney University has some high-tech greenhouses which are used to grow crops for research purposes, and they are then passed on to food charities such as Foodbank. The resource in the Richmond Lowlands covers 2,275 ha of class one and two agricultural land and this equates to 25 per cent of the total area of class one and two agricultural land in the Hawkesbury LGA. (Hawkesbury Rural Land Strategy, 2021).

5.3.2 Major proposals and development

An initial search of the NSW Department of Planning Housing and Infrastructure Major Projects Register was undertaken on 29 November 2023 to identify large developments planned for the broader study area. Another search of the Major Projects Register was undertaken on 01 October 2024 to capture recent proposals in the broader study area. The search gave an indication of the level of growth and development occurring within the broader study area.

Key major proposals located within the broader study area are summarised in Table 5-5.

Table 5-5 Key proposals within the broader study area

Proposal	Location compared to the proposal	Timing	Proposal description
South Windsor Liquid Waste Facility Upgrade (SSD-54414956) (in planning)	South Windsor, approximately 9km east of the proposal (Southee Road and Londonderry Road)	Construction timeline currently unknown	The proposal would involve demolition, excavations, concrete work, civil work, mounting fixtures, and tank foundations to upgrade existing and install new infrastructure. Once operational, the facility would process more waste, accommodating five heavy vehicles per day.
Hawkesbury Centre of Excellence (SSD-15001460) (EIS Determined in 2022, in planning)	Western Sydney University Hawkesbury campus, approximately 920m south east of the proposal (Southee Road)	Construction timeline currently unknown	The proposal would include classrooms, science labs, an administration building, farm shed, kitchen, greenhouse, short term residential accommodation, and other amenities.

A desktop and media scan, which involved gathering and analysing information from traditional media and the *Your Hawkesbury Your Say* webpage, gave an indication of the proposed development located within the broader study area as follows:

- Redbank residential development - Located one kilometre west of the North Richmond town centre along Grose Vale Road, the Redbank development is proposed as a sustainable and innovative residential community. The broader Redbank Communities site has an area of 180 hectares and is in the process of being progressively subdivided. Once completed the development will consist of about 1,400 lots for an estimated 3,900 residents once fully developed[26]. Additionally, Redbank includes a Village Centre, with an approved masterplan, that provides for a range of local retail, commercial and community facilities, as well as a series of open spaces. Construction of the Redbank Shopping Village commenced in 2023. A rezoning is being proposed as part of a November 2023 Planning Proposal which would affect all nine precincts within the broader Redbank site. Most precincts contain lots with residential zoning, a network

26 Planning Proposal Report – Redbank, North Richmond. Prepared by Ethos Urban, November 2023. Submitted to Hawkesbury City Council, viewed 22 July 2024. <https://www.hawkesbury.nsw.gov.au/__data/assets/pdf_file/0016/250342/20231212AT3toItem4.1.2.pdf>

of open spaces and dams. Located within the broader Redbank site and in proximity to Bells Line of Road is the RSL LifeCare - Kingsford-Smith retirement village.

- Extension of Grose River Road, Grose River Bridge – Redbank Communities proposes to extend Grose River Road, generally between Ashtons Road, Grose Wold, and Springwood Road, Yarramundi, and the construction of a new concrete bridge spanning the Grose River. The Grose River Bridge is being proposed to provide alternative vehicle access across the Grose River to link with the existing bridge across the Nepean River on Springwood Road and to deliver traffic benefits in the context of future growth associated with the Redbank residential development at North Richmond, especially during peak periods. A new crossing of the Grose River would also improve connectivity and traffic efficiency during emergencies such as flood events. Once completed, the concrete bridge would allow those who live at Redbank, Kurrajong, Bowen Mountain, Grose Vale, and Grose Wold to travel to Penrith or the Blue Mountains without going through North Richmond. As of July 2024, a proposal delivery timeline has not been announced.
- Kurrajong to Kurmond Cycleway Project - Hawkesbury City Council plans to improve active transport in the LGA, including the recently proposed Kurrajong to Kurmond Cycleway. The Cycleway includes a shared pedestrian and cycle path alongside Bells Line of Road and Old Bells Line of Road, between Kurmond and Kurrajong. The concept designs include plans for crossings at road junctures, and updated signalling and retaining walls along some stretches of the 2.5-metre-wide concrete path. These works aim to complete a continuous off-road link between North Richmond and Kurrajong, supporting Council's goal to increase active transport and recreation use by residents and tourists. As of July 2024, a proposal delivery timeline has not been announced.
- North Richmond Community Centre redevelopment - The State Government proposal for redevelopment would create a location that would serve as a meeting and cultural space and a social and recreational hub. It would be an emergency evacuation centre for the community west of the Hawkesbury River. The redevelopment includes a branch library service, performing arts and rehearsal space with a mobile stage for musical and theatre productions as an extension to the existing Youth Centre, multipurpose art studio space, indoor sports stadium and precinct grounds improvements which would create a mix of active and passive outdoor spaces, including seating, shaded areas, barbecues, a shared bike path, and additional car parking. The redevelopment proposal would be funded through the NSW Government's Western Sydney Infrastructure Grants Program. As of July 2024, a proposal delivery timeline has not been announced.
- Sydney Water's Richmond Water Recycling Plant and the North Richmond Wastewater Treatment Plant currently service two independent systems separated by the Hawkesbury River. Sydney Water has commenced upgrades to the Richmond Water Recycling Plant to improve its wastewater network, provide circular economy benefits and accommodate a rapidly growing population. The upgrades, worth $185M, would create close to 200 jobs during construction and double the capacity of the facility. The proposal includes the construction of a new 7km main which transfers wastewater from North Richmond to Richmond, construction of a new wastewater pumping station, and upgrades to the three existing wastewater facilities in the area. Upgrade works started in late 2023 and are set to be completed by 2025.

Of these planned developments, the re-zoning of land uses in North Richmond occurring within the Redbank development is expected to realise substantial population growth within the Hawkesbury LGA over the coming years. The Hawkesbury Housing Strategy has identified that Richmond has sufficient land to accommodate future residential development by increases in residential density as well as utilising other housing options, therefore it is expected residential development will continue over the coming years.

Furthermore, the degree of redevelopment could result in more activity on the local road network.

5.4 Social infrastructure and areas of community interest

5.4.1 Social infrastructure

The broader study area is a mix of urbanised and rural landscapes comprising of low to medium density residential dwellings, open parklands, commercial and industrial areas, environmental conservation reserves, sports and recreational facilities. Key social infrastructure in the direct and socio-economic study area is reflective of this context and is summarised in Figure 5-2.

Public reserves, parklands and sporting facilities

There are a number of public reserves, open spaces, and parklands within the direct and broader study area. The area is abundant in rural landscapes both to the north and the south to the proposal.

Within the direct study area, there are several public reserves, including Hanna Park and Turnbull Oval which are located in North Richmond. The reserves, in addition to other large open spaces, support recreational activities such as sporting associations and privatised activities. The sporting facilities within the direct study area include:

- Colo Soccer Football Club
- Windsor Polo Club
- Killarney Polo Club

The sporting facilities within the broader study area include:

- Hawkesbury Showground and Hawkesbury Racecourse
- Richmond Golf Course
- Richmond Park Cricket Ground
- Inside the Lines Tennis Courts
- Lowland Wanderers Soccer Club
- Hawkesbury Baseball Club
- Hawkesbury Cricket Club

There are also several small neighbourhood pocket parks and reserves throughout the broader study area which residents can access within a walkable distance, such as Morunga Park and Hawkesbury Park in North Richmond, and Smith Park in Richmond.

Educational facilities

Educational facilities within the broader study area include the WSU Hawkesbury agricultural campus (to the south-east of the proposal area) which is bound by Londonderry Road and Blacktown Road. Within the campus is the WSU Graham Swain Library, WSU Student Services Hub, WSU Campus Living Village for student accommodation, Hawkesbury Institute for the Environment, Hawkesbury Agriculture College and WSU School of Nursing and Midwifery.

Real Estate Training Solutions (RETS) is also located within the WSU campus. TAFE NSW Richmond, which includes Richmond TAFE Library and Richmond TAFE Equine Unit, is closely located to the north-east.

There are several other preschools, primary and high schools, and tertiary facilities within the broader study area. Within the direct study area, there is one school, Richmond North Public School, located about 155 metres west of the proposal along Grose Vale Road North Richmond. Within the broader study area, the schools located in North Richmond include Colo High School and Community Kids North Richmond Early Education Centre. To the south-east in Richmond and Hobartville, the educational facilities within the broader study area include Hannah Early Learning Centre, Hobartville Long Day Preschool, Richmond Preschool Kindergarten, Kids Only Preschool, Teach-A-Tot Preschool, Hobartville Public School, St Monica's

Primary School, Richmond Public School, Richmond High School, and Centre of Excellence in Agricultural Education.

Health care services

Several healthcare facilities are located throughout the broader study area. Within North Richmond, healthcare and allied services are located off Bells Line of Road, including North Richmond Family Medical Practice, Myhealth North Richmond, and Hawkesbury Dentistry. To the south of Grose Vale Road, there is St John of God Richmond Hospital.

Within Richmond, key healthcare facilities are mainly located on and around Windsor Street, including Greater Western Health providing Podiatry, Physiotherapy and Chiropractic services and Windsor Street Family Practice.

Emergency services

Key emergency services are also positioned in Richmond including a NSW Ambulance Station, positioned off Windsor Street and Richmond Fire Station, located on March Street.

The nearest hospital is the Hawkesbury District Hospital, located in Windsor.

Richmond RAAF base, located to the east of the proposal also serves as a flying base for emergency services, including firefighting and flood relief services.

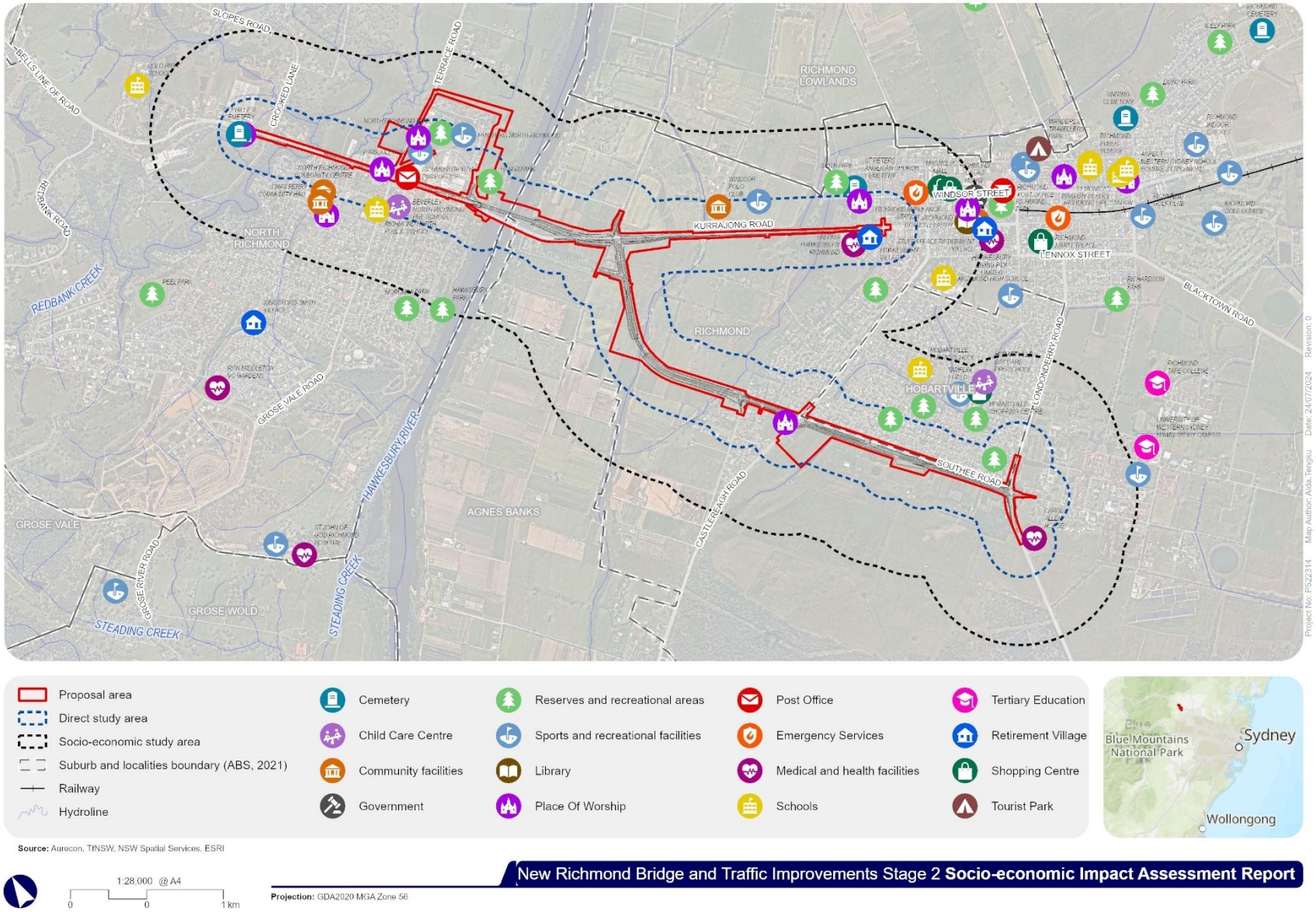

Figure 5-2 Community facilities and services

5.4.2 Areas of community interest

Within the local community there are areas that hold value and are appreciated by the community. This includes local spaces, areas of ecological and environmental importance, gathering areas, and other places that are valued by the local community.

There are several areas of community value located within the direct study area. Proposal construction activities and community engagement activities to support the proposal must highlight and recognise key areas of community importance, including:

- Hawkesbury River: The Hawkesbury River is located through the middle of the direct study area, travelling from north-east to south-west. The Hawkesbury River originates from the Nepean River and Grose River, and travels for 120 kilometres to Broken Bay and a further 15 kilometres to the Tasman Sea. The catchment supports large agricultural and tourism industries. The areas surrounding the river range from private land to public parks including Hanna Park and Hawkesbury Park. The area is sparsely vegetated in most places. The river is used for recreational activities, including fishing, swimming, kayaking, speed boating, jet and water skiing. The area of the Hawkesbury River, including the riverbanks and parkland areas of Hanna Park are also used for recreational activities including walking, skateboarding and cycling.

  As part of the Hawkesbury-Nepean River system, the Hawkesbury River is critical for its contribution to irrigation purposes as well as the drinking water for North Richmond which is extracted from the Hawkesbury River. The remainder of the Hawkesbury LGA has water supplied from Prospect Reservoir via Warragamba Dam and the Upper Nepean water supply system.

- Hawkesbury River Road Bridge (Register of the National Estate[27] Place ID. 15946). The structure is listed as a local and state heritage item, is one of the earliest surviving reinforced concrete road bridges in NSW and is an important example of development within NSW's cultural history.[28] The bridge has been an essential item of transport infrastructure in the history of the Hawkesbury district and has made a significant contribution to the commercial and social development of the Hawkesbury Valley. For over 117 years, it ensured access to the interior via the Bell's Line of Road, the only alternative crossing to the west of the Blue Mountains from the Sydney Basin.

- Pughs Lagoon: Pughs Lagoon is located within the Richmond Lowlands, north of Kurrajong Road and next to Smiths Park (. The lagoon has grassy banks and mature trees which are used recreationally by locals for picnicking, barbequing, fishing, and bird watching. Pughs Lagoon is considered an ecological wetland and is home to plants, birds, ducks, and swans. The area is a zoned as Environmental Conservation[29].

- The Mareh-Mareh Lagoon is a lagoon in Richmond near the Hawkesbury River (Dyarubbin). It is named in McGarvie's 1829 list of Aboriginal names for landmarks along the Hawkesbury River.

- St Peter's Anglican Church Group (SHR No. 02023) and Cemetery: St Peters Cemetery is located on Windsor Street in Richmond opposite St Peter's Anglican Church (now in private ownership). The first burial took place in 1810 and the church finished construction in 1841. The church's position was chosen in 1810, on a prominent, isolated site at the end of the ridge in town. The church bears a strong English-style relationship between church, cemetery, rectory, stables, and township. The Church has a state significance for its relationship to Governor Lachlan Macquarie who laid out the town of Richmond. There are also several pioneers who came with the First Fleet in 1788 buried in the cemetery[30].

- Mountain View (Durham Bowes) is a State listed heritage item (SHR No. 00044) and is located at 22 Inalls Lane, Richmond. This historic homestead is highly valued by the local community due to its age, architectural qualities, and integrity—as well as being a rare early 19th century survivor with later period

27 The RNE is no longer a statutory list; however, it remains available as an archive of heritage items around Australia. New Richmond Bridge and Traffic Improvements Stage 2, Statement of Heritage Impact. Artefact Heritage and Environment and Environment, 2024

28 Hawkesbury People & Places n.d., Richmond Bridge, viewed 29 November 2023, <https://www.hawkesbury.org/name/richmond-bridge.html>

29 NSW Government n.d., Pugh's Lagoon - Smith Park, viewed 29 November 2023, <https://www.nsw.gov.au/visiting-and-exploring-nsw/locations-and-attractions/pughs-lagoon-smith-park>

30 Richmond Anglican Church n.d., *History*, viewed 29 November 2023, <https://richmondanglican.com.au/history/>

layering. A program of essential conservation works was undertaken with funding from the NSW Heritage Grants Program from 2021 to 2023.

- Bowman House (SHR No. 00468), located at 368-370 Windsor Street, Richmond, and Building, outbuildings, grounds, trees (SHR No. 00753), located at 49-51 Bosworth Street, Richmond, is a heritage-listed former residence and now Hawkesbury Area Office of the National Parks and Wildlife Service. It was built from 1817 to 1820 by James Blackman. It is also known as Bowman's Cottage. The Cottage has strong or special association with the Bowman family, which has a long history of distinction and influence in the Hawkesbury region. Bowman Cottage is one of the oldest surviving homes in New South Wales and was in the ownership of the Bowman family until its subdivision and sale in 1930. It was also the preferred and chosen residence of George Bowman, the first Mayor of Richmond.
- Hobartville Estate (SHR No. 00035), located between Kurrajong Road and 36-86 Inalls Lane, Richmond, has heritage significance at the State level for its historic, associative, aesthetic, social, and scientific values and at the local level for its social and research values. The homestead is valued by the local community as a historical landmark and example of colonial architecture. The place is also regarded by the horse racing community for its long-standing reputation as a premier horse stud.
- Outdoor recreational clubs in the direct study area including:
  - The Colo Soccer Club, located in the corner of Inalls Lane and Yarramundi Lane, is the largest club in Hawkesbury. It boasts a community of over 1500 players annually[31]. The club hosts sport and other events such as the Festival on The Fields. Stakeholder consultation on the proposal indicates this soccer club is highly valued by the local community.
  - The Windsor Polo Club, located at 33 Old Kurrajong Road, Richmond has been operating since the seventies as an open sports and recreational venue. It hosts several polo events in Autumn and Spring, including the International Polo Test and The Spring Polo Carnival.
  - The Killarney Polo Club located is a horse race training and breeding facility located at 49 Old Kurrajong Road, Richmond. The Club's field hosts two major annual tournaments – one in Spring and one in Autumn. It was established in 1994 and remains a private Club since then. The Killarney facilities include an exercise track, stabling and turnout paddocks.

Transport has been engaging with the Colo Soccer Club and the polo clubs since 2019 to manage potential impacts to fields because of the proposal. Refer to Section 4.2 for further information on stakeholder consultation on the proposal.

5.5 Access and connectivity

5.5.1 Travel patterns

Table 5-6 provides a summary of vehicle ownership and Table 5-7provides a list of other transport methods used in the broader study area (comprising the four suburbs of North Richmond, Richmond, Agnes Banks and Hobartville), as well as the Hawkesbury LGA and Greater Sydney.

In 2021, vehicle ownership in the broader study area averaged 1.8 vehicles per household, with 54.1 per cent of households having two or more motor vehicles. In comparison, 68.6 per cent of households in the Hawkesbury LGA and 48.0 per cent in Greater Sydney had access to two or more motor vehicles. Only 6.7 per cent of households in the broader study area had no motor vehicles registered.

31 Colo Soccer Club, *Our* Committee, Our Club. https://colosoccer.com.au/committee/

Table 5-6 Vehicle ownership in 2021

Indicator	Broader study area		Hawkesbury LGA		Greater Sydney	
	Number	%	Number	%	Number	%
Households with no vehicles	392	6.7%	884	3.8%	203,081	11.1%
Households with one vehicle	2,221	37.9%	6,100	26.5%	722,036	39.5%
Households with two vehicles	2,015	34.4%	8,434	36.6%	590,650	32.3%
Households with three or more vehicles	1,157	19.7%	7,392	32.1%	287,171	15.7%
Average motor vehicles per dwelling	1.8	-	2.1	-	1.6	-

Source: Census of Population and Housing (ABS 2021)

Table 5-7 Travel to work data in 2021

Indicator (travel to work - (one method)	Broader study area		Hawkesbury LGA		Greater Sydney	
	Number	%	Number	%	Number	%
Train	83	1.2%	211	0.6%	60,858	2.5%
Bus	10	0.1%	32	0.1%	28,786	1.2%
Ferry	0	0.0%	6	0.0%	954	0.0%
Tram/light rail	0	0.0%	3	0.0%	1,243	0.1%
Taxi/ride-share service	8	0.1%	16	0.0%	3,367	0.1%
Car, as driver	3,627	51.6%	16,881	50.6%	832,277	34.2%
Car, as passenger	205	2.9%	987	3.0%	63,954	2.6%
Truck	100	1.4%	754	2.3%	14,203	0.6%
Motorbike/scooter	20	0.3%	114	0.3%	9,757	0.4%
Bicycle	29	0.4%	54	0.2%	8,990	0.4%
Walked only(b)	175	2.5%	552	1.7%	56,206	2.3%
Worked at home	1,640	23.3%	8,440	25.3%	944,501	38.9%

Source: Census of Population and Housing (ABS 2021)

Note: Method of travel to work relates to Census day, which for the 2021 Census occurred during COVID-19 lockdowns. In lockdown, many occupations were required to work from home if possible, and some industries were closed, so people did not go to work. For this reason, these categories may have increased, with corresponding declines in other methods of travel.

The following travel patterns were identified from the review of ABS data:

- There is a higher proportion of residents in Greater Sydney (3.8 per cent) who commute to work by public transport (train, bus, ferry, tram/light rail) when compared to the broader study area (1.3 per cent).

The preferred method of travel to work in the broader study area, Hawkesbury LGA and Greater Sydney was travel to work by car (as driver) and (as passenger). The high vehicle ownership in the broader study area may be reflective of the levels of advantage or disadvantage in the local community, the reliance on private motor vehicles to travel to work, and lack of public transport or active transport mode choice for residents.

- Travel to work by walking was the third most used method of travel to work in the broader study area (2.5 per cent).
- Due to the Stay-at-Home orders in place due to the COVID-19 pandemic, many occupations were required to work from home. In 2021, 1,640 people (23.6 per cent) in the broader study area worked from home. This proportion was, however, lower than that of the Hawkesbury LGA and Greater Sydney.

5.5.2 Roads

As per Transport' s Schedule of Classified Roads and Unclassified Regional Roads, there are three key road classifications in NSW:

- State Roads, including freeways, State Highways and main roads which form the primary routes for the movement of people and goods within and between major urban centres.
- Regional Roads, which provide for travel between smaller towns and districts, as well as perform a sub-arterial function within major urban centres.
- Local Roads, including collector and local access roads, provide for local circulation and access to properties.

The key roads within the direct study area are summarised in Table 5-8and shown in Figure 5-3.

Table 5-8 Key roads within the direct study area

Road	Description
Bells Line of Road	Bells Line of Road is a State Road that runs generally in an east-west direction from the intersection with Kurrajong Road and Old Kurrajong Road, to the intersection with Darling Causeway and Chifley Road in the township of Bell. It forms part of the B59 arterial route which connects the township of Mulgrave to the township of Lithgow.
Crooked Lane	Crooked Lane is a local road that runs predominantly in a north-south direction from the intersection with Bells Line of Road to the intersection with Kurmond Road, in the township of North Richmond.
Grose Vale Road and Terrace Road	Grose Vale Road and Terrace Road are regional roads that runs north-south from its intersection with Bells Line of Road north to the intersection with Kurmond Road in Freemans Reach.
Kurrajong Road	Kurrajong Road is a State Road that runs generally in an east-west direction from the intersection with March Street and Chapel Street, to the intersection with Bells Line of Road and Old Kurrajong Road. It forms part of the B59 arterial route within the township of Richmond.
Old Kurrajong Road	Old Kurrajong Road is a local road that runs in an east-west direction at its western extent until the intersection with Yarramundi Lane. At this point it bends to run in a north-south direction until the intersection with Ridges Lane, where it bends again to run in an east-west direction, until the intersection with Francis Street and Windsor Street, in the township of Richmond.
Castlereagh Road	Castlereagh Road is a state road from the Castlereagh Road / Springwood Road intersection to the Castlereagh Road/Lennox Street/Bosworth Street intersection. It runs generally in a north-south direction from the intersection with Bosworth Street and Lennox Street to the intersection with the Great Western Highway in the township of Penrith.
Inalls Lane	Inalls Lane is a local road that runs predominantly in an east-west direction from the intersection with Castlereagh Road and Southee Road to the intersection with Yarramundi Lane.
Southee Road	Southee Road is a local road that runs predominantly in an east-west direction from the intersection with Londonderry Road to the intersection with Castlereagh Road and Inalls Lane. Southee Road currently serves as a through road between Londonderry Road and Castlereagh Road, and provides access to Hobartville to the north, as well as Western Sydney University (WSU) facilities to the south.
Londonderry Road	Londonderry Road is a State Road that runs generally in a north-south direction from the College Street / Paget Street intersection to the Londonderry Road / Cranebrook Road / The Northern Road roundabout.
March Street	March Street is a State and regional road that runs predominantly in an east-west direction. It is classified as a State Road between the intersection with Kurrajong Road and Chapel Street, and the intersection with East Market Street, where it transitions to a regional road until the intersection with Bourke Street.

Refer to the Traffic and Transport Impact Assessment (Aurecon, 2024) for further information on the road network configuration in the direct study area.

5.5.3 Freight

A range of vehicles including heavy vehicles travel throughout the road network of the broader study area. The B59 road network, comprising Bells Line of Road, Kurrajong Road, March Street, the Hawkesbury Valley Way, and segments of East Market Street and Windsor Street, is a key route for freight and industrial type business operations that connects urban centres within NSW. It allows B Doubles on Bells Line of Road up to North Richmond. Refer to Traffic and Transport Impact Assessment (Aurecon, 2024) for further information on the approved freight routes within Richmond and North Richmond.

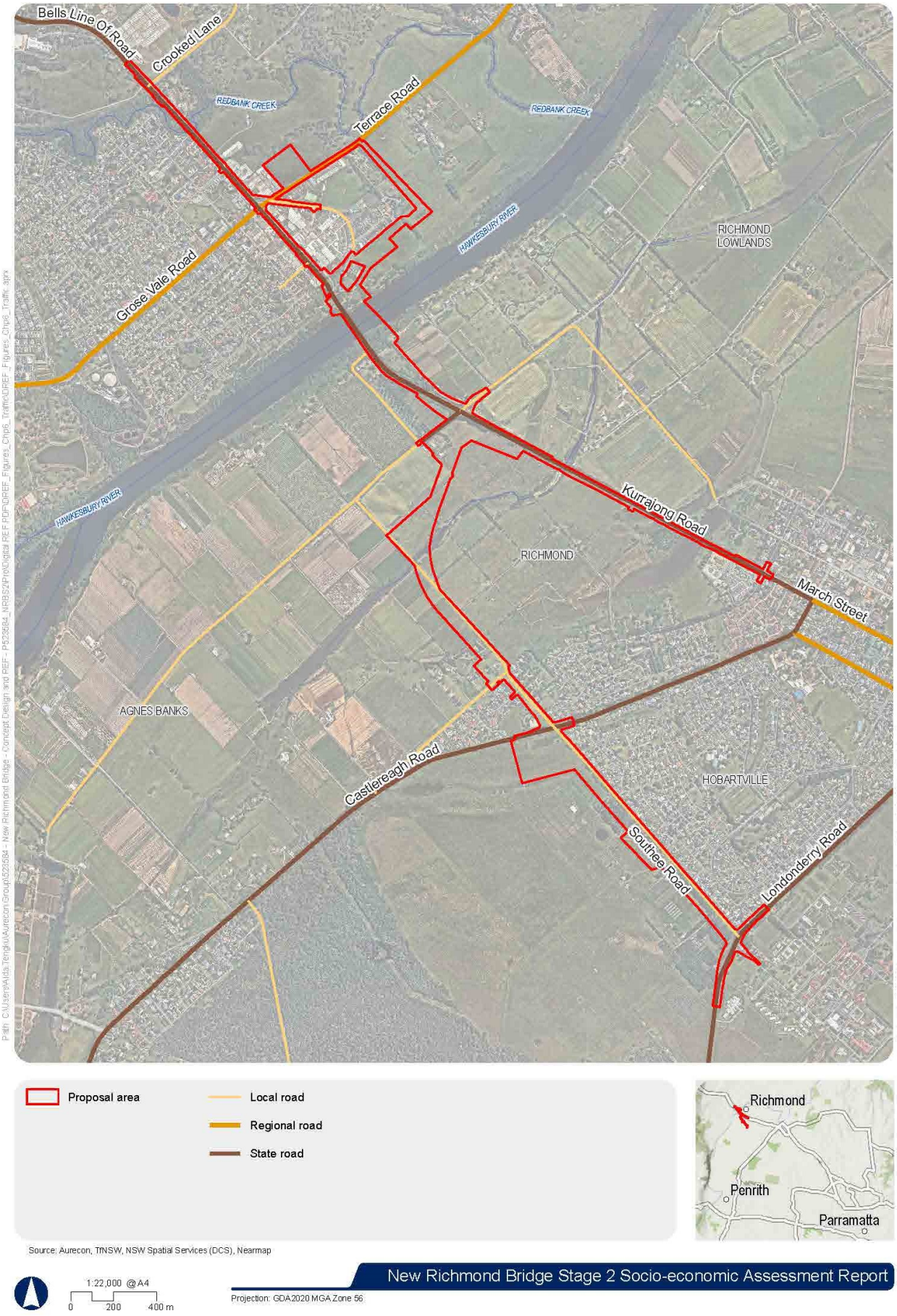

Figure 5-3 Road network within direct study area

5.5.4 Public transport

The ABS 2021 Census travel to work data indicated that 0.1 per cent of residents in the broader study area chose to use the bus to travel to work while 1.2 per cent of the residents chose to use the train to travel to work (see Figure 5-3).

The broader study area is connected primarily through buses and rail, including:

- Two rail stations:
  - Richmond Station services the T5 Cumberland line, connecting to Blacktown and Leppington. The station also services the T1 Richmond line, connecting to Strathfield and Central and the Sydney Metro serves lines T1, T2, T3, T4 & T8 lines.
  - East Richmond Station, located east of Bourke Street, between the March Street and Windsor Street intersections, services the T5 Cumberland line and T1 North Shore & Western Line which operates between Richmond Station in the north-west and Central Station in Sydney in the south-east.
- Bus routes, as shown in Figure 5-3, include:
  - 668: Windsor to Richmond via Wilberforce and Glossodia. It has 35 stops departing from Richmond Station, traveling to North Richmond along Bells Line of Road, and ending in Glossodia.
  - 675A / 675C: (Loop service) Operates between Windsor and Richmond via RAAF Base Richmond & Bligh Park.
  - 677: Operates between Richmond and Penrith via Londonderry. It has 17 stops departing from Richmond Station, travelling through Hobartville and towards Londonderry.
  - 678: Operates between Richmond and Penrith via Cranebrook. It has 51 stops departing from Richmond Station, traveling south through Hobartville and ending at Penrith Station.
  - 680: Richmond to Bowen Mountain via Grose Vale and Grose Wold loop services has 63 stops departing and ending at Richmond Station. The route travels up Bells Line of Road to North Richmond, through Agnes Banks towards Grose Wold.
  - 682: Richmond to Kurrajong via Berambing loop service with 32 stops departing from Berambing Picnic Area, Bells Line of Road, traveling through North Richmond on Bells Line of Road and ending at Richmond Station.
  - N71: (Night service) Operates between Richmond and City Town Hall via Parramatta.
- School bus route
  - Richmond Public School bus route 5014 operating westbound on Yarramundi Lane and Inalls Lane (not shown in Figure 5-3) and serving the Agnes Banks, Yarramundi and Richmond locations.

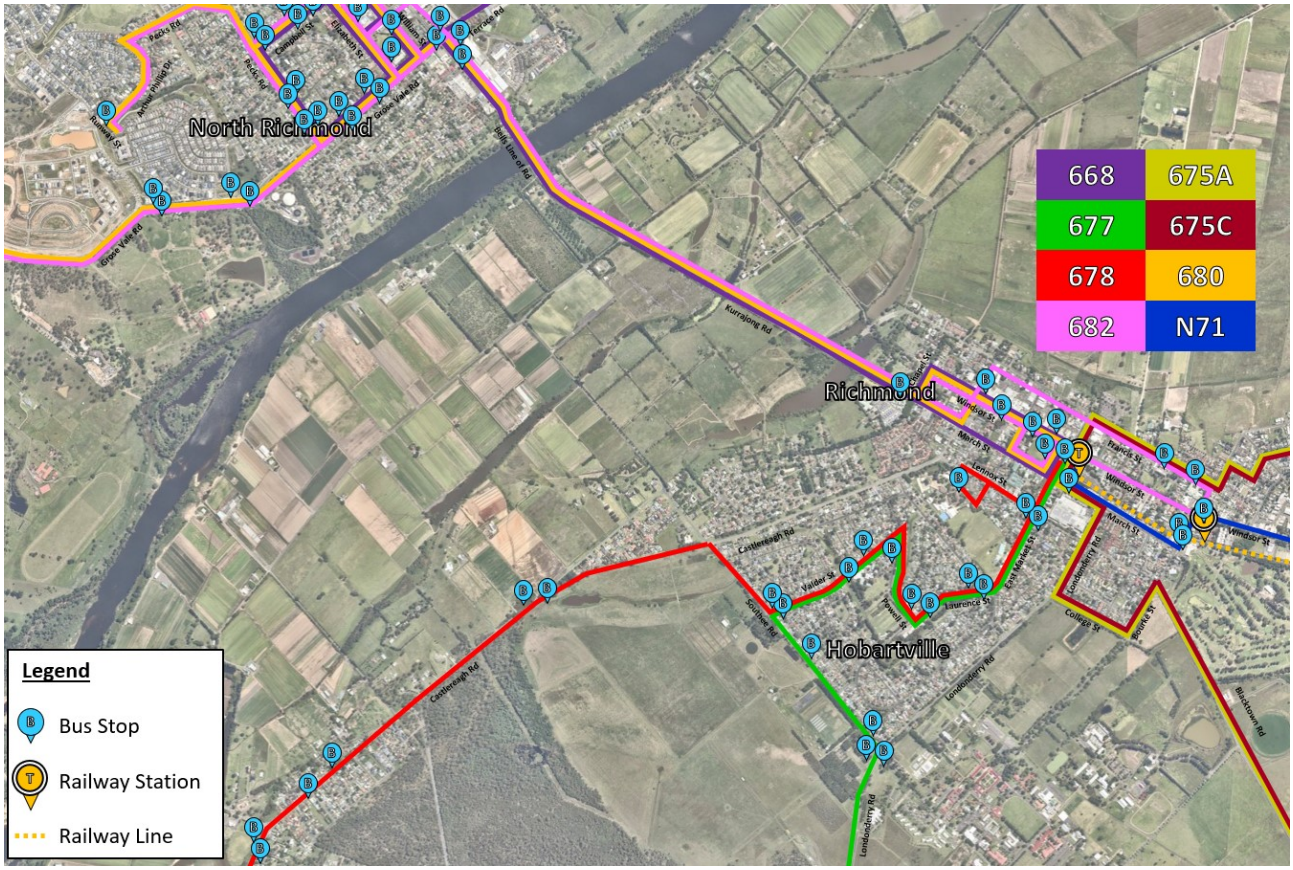

Figure 5-4 Public transport in the broader study area

Source: New Richmond Bridge Stage 2. Concept Design and REF Traffic and Transport Impact Assessment (Aurecon, 2024)

5.5.5 Active transport

The *Hawkesbury Community Strategic Plan 2022-2042* notes that the Hawkesbury LGA has 113 km of footpaths, 21 km of cycle paths and 4 km of bush tracks.

As per the *Hawkesbury Active Transport Plan*[32]*,* cycling infrastructure within Hawkesbury is primarily contained to on-road routes, through the provision of cycling road shoulders. These road shoulders exist on main roads which service relatively higher traffic volumes as they form connective routes (Hawkesbury City Council, 2024). Separated cycling infrastructure is limited in terms of overall provision and connectivity.

Connective pedestrian infrastructure within Hawkesbury LGA can primarily be seen in the town centres of Richmond and Windsor.

There are integrated networks of active transport connections in both Richmond and North Richmond along the main routes in the town centres. The broader study area consists of a mix of shared paths (used by both pedestrians and cyclists) and on-road cycling facilities, as follows.

Pedestrian infrastructure

Pedestrian infrastructure in North Richmond is limited and largely concentrated around North Richmond Shopping Village along Bells Line of Road. Footpaths along Grose Vale Road provide a connective route to the Redbank development in North Richmond, which is a growing residential centre. Pedestrian crossings are mainly provided in the form of Pedestrian Refuges, with one zebra crossing outside of Richmond North Public School and a signalised crossing at Bells Line of Road (Hawkesbury City Council, 2024).

Traffic signal-controlled pedestrian crossings are located at the March Street / Bosworth Street intersection in Richmond and the Bells Line of Road / Grose Vale Road / Terrace Road intersection in North Richmond.

32 Hawkesbury City Council, *Active Transport Plan February 2022,* viewed 22 July 2024, <https://www.yourhawkesbury-yoursay.com.au/92377/widgets/431347/documents/281509>

There are no formal pedestrian pathways along Southee Road, Castlereagh Road, Inalls Lane, Kurrajong Road, Old Kurrajong Road and sections of Bells Line of Road.

Richmond has a pedestrian network within its centre, supporting connections to surrounding areas. Pedestrian crossing facilities are widely present within the local centre, facilitating safe crossings to crucial locations such as Richmond Public School, Richmond Oval and between shops and eateries. All approaches to Richmond and East Richmond rail stations are serviced by functional infrastructure (Hawkesbury City Council, 2024).

A consistent footpath network connects Richmond Town Centre and Hobartville Shopping Centre. Besides the connection to Richmond and around the local centre, the footpath network in Hobartville is generally non-existent.

The existing pedestrian infrastructure is further described in the Traffic and Transport Impact Assessment (Aurecon, 2024).

Cyclist infrastructure

The cycling route options in the broader study area are dominated by on-street, mixed-traffic routes, which place cyclists amongst general traffic.

Transport maintains a database of cycleway infrastructure located throughout NSW. This database is publicly available through the interactive Cycleway Finder. This resource and the Hawkesbury Active Transport Plan (Hawkesbury City Council, 2024) have informed this section.

At the suburb level, North Richmond has a shared path along the eastern extent of Bells Line of Road, which connects to Kurmond Road. This shared path provides safe access to Colo High School.

On-road cycling is provided between Richmond and North Richmond and along Terrace Road to Freemans Reach. A series of shared paths are present in the newly built housing estate, which runs through Yobarnie Avenue.

A shared path follows the Hawkesbury River for around 700 metres in Hawkesbury Park. Bicycle parking facilities are not provided at North Richmond's local centre, as per the Hawkesbury Active Transport Plan. This is likely to deter users from cycling to the shopping precinct.

The cycling infrastructure surrounding Richmond and Hobartville is generally classified as on-road. There are no shared paths that run through the centre of Richmond, forcing users to share the road. There is no dedicated cycling/ shared path infrastructure linking Hobartville and Richmond.

Bicycle parking is available at Richmond station in security-locked storage, making it inaccessible to the casual user. No bicycle parking is provided at East Richmond station, with demand causing issues due to bikes being locked up in parking spots. An off-road cycleway runs from East Richmond Station to Clarendon Station.

Refer to the Traffic and Transport Impact Assessment (Aurecon, 2024) for further information on the cyclist infrastructure available within the broader study area.

5.6 Community values

As stated in the Practice Note, community values are those elements held as being important to quality of life and wellbeing. This includes physical elements such as parks and landscapes, and social elements, such as belonging and diversity.

Understanding the values of a community is fundamental in identifying what is essential for residents' quality of life and well-being and provides context and insight into how the community may perceive the impacts of the overall proposal. Values often relate to local amenity, social cohesion, and social well-being and can be associated with social infrastructure.

5.6.1 Local community values

As discussed in Section 3.2.1, the *Hawkesbury City Council Community Strategic Plan 2022-2042* (Hawkesbury City Council Plan, 2022) was informed by extensive community consultation with Hawkesbury residents. The plan defines the vision and priorities of the community and is designed to improve life for the residents. Ninety-three per cent of residents were somewhat satisfied with the rural character of the area, and 76 per cent were somewhat satisfied with the infrastructure that the Council provides. Key themes from the plan highlighted residents were eager to maintain this rural character and for the continued improvement of facilities and infrastructure.

Residents also voiced that road maintenance, road safety, and emergency services are the most important service and facilities provided by the government. Currently, the residents would like to see these services and facilities improved. They also noted that they would like improvements to footpaths and cycleways.

The community value the protection of bushland, open spaces, and natural habitats. Residents also noted that a healthy and sustainable Hawkesbury river and waterways were important.

Based on feedback from the community, the plan was divided into four key community outcomes:

- **Great place to live:** supporting a connected, healthy and inclusive Hawkesbury region.
- **Protected environment and valued history:** ensure that Hawkesbury's natural and historic built environment are protected and enhanced.
- **Strong economy:** be a place that is vibrant, attractive, and welcoming to residents and visitors and celebrates a strong local economy.
- **Reliable Council:** through consistent, transparent, and engaged decision making the community can understand.

The Hawkesbury City Council plan highlights the importance of enabling community resilience and active and healthy lifestyles, protecting, and enhancing the environment, including achieving net zero.

The community also highlighted the importance of balancing the unique identity of Hawkesbury with future growth, supporting tourism, creating successful town centres, and improving transport connectivity for cars, cyclists, and pedestrians. As per the Hawkesbury City Council plan, a long-term objective is to support the revitalisation of the town centres and the business community's growth. Success indicators include more businesses and industries established in the Hawkesbury and an increased residential population in Richmond and North Richmond, which are supported by more diverse retail, cultural, and service opportunities.

Community consultation undertaken on the design for the proposal indicated that the local community values as they relate to the proposal are as follows:

- Avoiding amenity impacts and minimising impact on private property.
- Preserving local character and avoiding disruption to rural views where possible.
- Avoiding impacts to mature vegetation, such as pecan trees along Southee Road.
- Minimising impacts to sporting facilities in the local area, including soccer and polo fields, which the community feel contributes greatly to the Richmond area and surrounds. Stakeholder concerns included economic impacts to the clubs, the potential for increased traffic on Old Kurrajong Road and potential safety issues with vehicles interacting with horses. Transport has been engaging with the Colo Soccer Club and polo clubs since 2021 to manage potential impacts that may arise because of the proposal.
- Ensuring the local character and heritage of the area are maintained. This includes not only avoiding direct impacts to heritage properties but also considering potential construction vibration impacts on important heritage items such as the Mountain View property on Inalls Lane.
- Stakeholders raised active transport as a topic during the consultation activities on the preferred option. Refer to Section 3.2.3 for community aspirations concerning active transport in the LGA, as expressed in the Hawkesbury Active Transport Plan.

5.6.2 Agricultural values

Hawkesbury LGA has a significant rural economy. The rural lands of the LGA contain agricultural activities, scenic rural landscapes, native vegetation, biodiversity corridors and areas for rural living. There are a variety of land uses within the rural parts of the LGA. They include intensive and extensive agriculture, native vegetation, rural residential, urban, extractive industries, commercial and light industrial uses.

The LGA has significant agricultural land as well as riverine and mountainous rural landscapes. There is also a considerable horse industry, including thoroughbred and recreational horses. The Hawkesbury River provides a broad floodplain of rich alluvial soils, where substantial amounts of vegetables and turf are grown. The Hawkesbury River and the mountainous vegetated landscapes also provide a significant tourism sector linked to agricultural produce.

Stakeholder consultation with key stakeholders from Government Agencies and the community including agricultural producers, and farmer groups informed the 2021 Hawkesbury Rural Lands Strategy. The Council and the community identified agriculture as a crucial economic component. The Rural Lands Strategy highlights the importance of preserving the productive agricultural landscape in the LGA while empowering current and future agricultural enterprises. The Strategy identifies the linkages to economic development, the need for farming infrastructure, and educating the community of the benefits of preserving farmland as key considerations to ensuring the future of agriculture in the Hawkesbury LGA.

However, the Rural Lands Strategy indicates there are a number of development and planning issues that have an impact on the sustainability of agriculture in the LGA. The rural land in the LGA is highly fragmented and the mixture of rural residential use amongst agricultural uses such as vegetables, fruit and poultry can cause land use conflict. The pressure for rural residential and urban development, change of land use from agriculture to rural residential by sale of farms and the ongoing rural residential development are some of the challenges the Rural Lands Strategy highlights.

The Rural Lands Strategy highlights the challenges caused by flooding events in the LGA, specifically the effect of the most recent floods in the Hawkesbury River in February 2020, which caused moderate flooding with some inundation of the low-lying land at several locations including Richmond Lowlands, and the closure of the Bells Line of Road at North Richmond and Richmond Bridge. This caused disruption to the people who live on the western side of the Hawkesbury River. According to the Rural Land Strategy, there were a total of approximately 260 agricultural businesses that were impacted by the bridge closures, and this is approximately 58 per cent of all the agricultural businesses in the LGA. It was reported that residents were unable to access work and more than half of the agricultural businesses were unable to transport their produce to the markets.

The Rural Land Strategy highlights the need to balance planning policy and regulation with incentives, economic development initiatives and infrastructure as well as community engagement, communication and education. Other key recommendations contained within the Rural Land Strategy to address the identified challenges include:

- Encouraging and promoting the farmers of the Hawkesbury LGA and encouraging farmers to sell local produce to local shops under the brand of ‘Hawkesbury Harvest’.
- Encouraging the retention and promotion of the existing agricultural sectors of vegetable and turf farming, nurseries, egg production and poultry meat production in the LGA.
- Encouraging and promoting the agricultural processing sector to expand in the LGA as well as attracting other processing industries to establish in the LGA.
- Encouraging and promoting the horse sector, for example horse studs, polo clubs and the recreational horse riding.
- Promoting agritourism as a key economic development component of the rural sector, focusing on the Bells Line of Road in Kurrajong Heights to Bilpin, Berambing and surrounding areas.

5.7 Summary of the existing environment

Socio-economic characteristics of the broader study area, as per the ABS 2021 Census, are summarised as follows:

- A total population of 15,484 people in 2021, which is around 23 per cent of the Hawkesbury LGA population.
- Low proportion of people born overseas in comparison to Greater Sydney.
- Around 44.6 per cent of residents in the broader study area had the same address as five years ago[33], compared to 50.4 per cent in Greater Sydney.
- The most common type of dwellings in the broader study area and Hawkesbury LGA were separate houses, making up 74.6 per cent and 86.8 per cent of dwelling structures respectively. This is representative of the suburban nature of the broader study area and the LGA.
- There is a mix of urban and agricultural/rural landscapes comprising of low to medium residential dwellings, open parklands, commercial and industrial areas, environmental conservation reserves and sports and recreational facilities.
- From 1947 until the present, the suburbs of Richmond and North Richmond have been subdivided and developed. While most of the land has retained its agricultural and pastoral function, Richmond town has sprawled to the southwest. Similarly, North Richmond town has spread to the northeast and southwest. The developments have mainly consisted of residential dwellings and commercial sites to service the expansion of the town centres.
- Businesses within the broader study area are mainly congregated around two town centres in Richmond and North Richmond:
  - The mix of businesses and services within the Richmond town centre includes government services (such as a Service NSW hub, post office, courthouse, and library), medical services, finance and insurance providers (including multiple banks), major supermarkets, and a variety of cafes and restaurants. This mix suggests that Richmond's local economy is more dependent on local and regional area business and residential customers with a lesser dependency on passing trade.
  - The mix of businesses and services within the North Richmond town centre is dominated by supermarkets, grocery stores, agricultural and automotive services, and trades servicing a largely local customer base. This mix suggests North Richmond's economy is more locally focused, with a greater focus on pass-through trade. Most businesses are clustered around dedicated off-street car parks and, therefore, more likely reliant on car-based trips.
- The top industries of employment were Health Care and Social Assistance (13.7 per cent), Construction (12.1 per cent), and Retail Trade (9.8 per cent). The agriculture, forestry and fishing industry employed 2.1 per cent of the population in North Richmond and 2.5 per cent in Richmond, compared to 3.0 per cent in the LGA.
- At the 2021 census, the population of the broader study area had a high reliance on motor vehicles for transport, with majority of the population choosing to travel to work by car or working from home. However, this would be attributed to the Stay-at-Home orders in place due to the COVID-19 pandemic.
- In 2021, the proportion of people working from home in the broader study area was considerably lower than that of Greater Sydney. The socio-demographic characteristics of workers play an important role in explaining lower working from home outcomes. Work from home uptake and capability are more common in white-collar occupations and office-based service industries. In 2021, the top industries of employment in the broader study area were health care and social assistance, construction, and retail trade. These are highly mobile professions.

33 *The level of population migration in the broader study area can indicate whether the population is sedentary and likely to be in the area for a long time (and perhaps have significant ties to the community), or transient, and likely to move on.*

- Within the local community there are areas that hold value and are appreciated by the community. This includes recreational spaces, areas of ecological and environmental importance, and historical and social facilities that are valued by the local community.
- The Hawkesbury Rural Lands Strategy[34] highlights that the LGA attracts people who move away from the "hustle and bustle of the city" to a more rural lifestyle, whilst still having the ability to go to the city for business and leisure. These people seek to live in rural and urban settings. The landscape character of the Hawkesbury LGA is a visual resource as it generates tourism and development. The main contributor to the scenic amenity is the natural landscape as well as the productive agricultural landscapes.
- Residents are eager to maintain the area's rural character and continue to improve facilities and infrastructure. The community value the protection of bushland, open spaces, and natural habitats.

34 *Hawkesbury Rural Lands Strategy, 2021. Viewed 21 July 2024, < https://www.hawkesbury.nsw.gov.au/__data/assets/pdf_file/0011/178328/Adopted-Hawkesbury-Rural-Lands-Strategy.pd>f*

6 Impact assessment

This chapter provides an assessment of the potential social and economic impacts of the proposal. In some instances, impacts may be applicable across both the construction and operation phases.

6.1 Construction

6.1.1 Property acquisition

As shown in Table 6-1, the proposal would require partial acquisition of 13 properties and two full acquisitions for Stage 2A and five properties for partial acquisition and one for full acquisition for Stage 2B. Of the three properties proposed for full acquisition, one is a portion of the Bells Line of Road road reserve. The other two full property acquisitions are:

- a semi-rural landholding on the south-eastern side of the Kurrajong Road / Old Kurrajong Road intersection, located on Lot 1 DP 742541, which would be acquired as part of the proposal due to the bypass alignment and to be used as an ancillary facility during construction. This property is currently zoned for Rural Landscape land use purposes.
- a residential property on Drift Road, Richmond (Lot 1 DP743909) which would be acquired due to direct impact of the proposal and used as an ancillary facility during construction. Access to this ancillary facility would be via Drift Road and the offline construction area. This property is currently zoned Rural Landscape and Primary Production Small Lots and contains a residence.

Table 6-1 Property acquisition information

Lot and DP	Type of acquisition or lease	Stage of the proposal	Current owner	Land use zone (LEP)
Lot 22 DP1057115	Partial acquisition	Stage 2A	Private	SP2 Classified Road
Lot 31 DP841742	Partial acquisition	Stage 2A	Private	RU2 Rural Landscape
Lot 351 DP1112862	Partial acquisition	Stage 2A	Private	RU2 Rural Landscape
Lot 34 DP1118821	Partial acquisition	Stage 2A	Private	RU2 Rural Landscape
Lot 1 DP744222	Partial acquisition	Stage 2A	Private	RU2 Rural Landscape
Lot 1 DP738865	Partial acquisition	Stage 2A	Private	RU2 Rural Landscape
Lot 1 DP738865	Lease	Stage 2A	Private	RU2 Rural Landscape
Lot 1 DP1089457	Partial acquisition	Stage 2A	Private	RU2 Rural Landscape
Lot 2 DP212692	Partial acquisition	Stage 2A	Private	RU2 Rural Landscape
Lot 130 DP752032	Partial acquisition	Stage 2A	Private	SP2 Classified Road / SP2 Place of Public Worship
Lot 2 DP228966	Partial acquisition	Stage 2A	Private	RU2 Rural Landscape
Lot 1 DP743909	Full acquisition	Stage 2A	Private	RU2 Rural Landscape / RU4 Primary Production Small Lots
Lot 3 DP325771	Lease	Stage 2A	Crown land	R2 Low Density Residential
Lot 1 DP742541	Full acquisition	Stage 2A	Private	RU2 Rural Landscape
Lot 3 DP596558	Lease	Stage 2A	Private	RU2 Rural Landscape
Lot 2 DP1038199	Partial acquisition	Stage 2A	Private	E4 General Industrial
Lot 2 DP1038199	Lease	Stage 2A	Private	E4 General Industrial
Lot 1 DP744222	Lease	Stage 2A	Private	RU2 Rural Landscape
Lot 3 DP596558	Lease	Stage 2A	Private	RU2 Rural Landscape
Lot 2 DP596558	Partial acquisition	Stage 2A	Private	RU2 Rural Landscape
Lot 120 DP1133879	Lease	Stage 2A	Private	RU1 Primary Production

Lot and DP	Type of acquisition or lease	Stage of the proposal	Current owner	Land use zone (LEP)
Lot 34 DP1118821	Lease	Stage 2A	Private	RU2 Rural Landscape
Lot 10 DP1293174	Lease	Stage 2A	Crown land	SP1 Education Agriculture
Lot 10 DP1293174	Partial Acquisition	Stage 2A	Crown land	SP1 Education Agriculture
SP57720	Lease	Stage 2A	Private	R3 Medium Density Residential
Lot 47 DP787272	Lease	Stage 2A	Private	RE1 Public Recreation
Lot 12 DP586827	Lease	Stage 2A	Private	RU2 Rural Landscape
Lot 32 DP841742	Lease	Stage 2A	Private	RU2 Rural Landscape
Lot 31 DP841742	Lease	Stage 2A	Private	RU2 Rural Landscape
Lot D DP3377	Lease	Stage 2A	Private	RU2 Rural Landscape
Lot 1 DP1222316	Partial acquisition	Stage 2B	Private	SP2 Classified Road
Lot 40 DP1216036	Partial acquisition	Stage 2B	Private	SP2 Classified Road
Lot 2 DP1051798	Partial acquisition	Stage 2B	Crown land	SP1 Education Agriculture
Lot 1 DP57082	Partial acquisition	Stage 2B	Private	SP2 Classified Road
Lot 41 DP1216036	Full acquisition	Stage 2B	Private	SP2 Classified Road
Lot 10 DP1029331	Partial acquisition	Stage 2B	Private	RU1 Primary Production

The proposal would result in a relatively small number of partial and full property acquisitions relative to the availability of similar land holdings within the direct study area. Given that much of the properties / land to be used for the proposal in North Richmond is contained within the existing road corridors, there would be minimal disruptions to the livelihoods of private landowners, residents and businesses. There is a larger proportion of the proposal towards Richmond along Kurrajong Road, Inalls Lane and Southee Road that would affect private properties.

Property acquisition would be undertaken in accordance with the Land Acquisition Policy and the *Land Acquisition (Just Terms Compensation) Act 1991* and Land Acquisition Reform 2016. During detailed design, the extent of property acquisition would be refined and consultation with relevant property owners would occur to develop property adjustment plans.

In addition, land would be acquired and leased for ancillary facilities. Ancillary facilities are listed in Section 1.6.4 of this SEIA report and shown in Figure 1-3.

Temporary lease arrangements would include:

- a semi-rural property on Terrace Road, North Richmond. The ancillary facility would be on cleared land, bordered by a watercourse along the north-western boundary of the ancillary facility. It is also opposite residential and commercial receivers and the Hawkesbury Valley Baptist Church on Terrace Road and adjacent to a commercial precinct.
- a section of privately-owned semi-rural property, part of Hanna Park (east of the new four-lane bridge over the Hawkesbury River) to be used during construction of the new bridge over the Hawkesbury River for an access track and ancillary facility.
- part of Hanna Park would be leased during construction to locate ancillary facility C on the western side of Bells Line of Road.
- a semi-rural landholding located on the south-western corner of the Castlereagh Road / Southee Road intersection, which is a Crown Reserve currently leased by Western Sydney University.

Potential impacts associated with permanent property acquisition can impact both the immediate property landowners / occupiers as well as those near the land acquired for the proposal. Two properties that would be fully acquired are currently zoned for Rural Landscape and Primary Production purposes. For these landowners, they would be required to relocate from their place of residence or their farming property which may lead to loss of social and cultural connections to the property they live on. For the residential landowner, they would have to source alternative accommodation in the area or may choose to leave the area altogether if they are unable to source available accommodation. Sourcing accommodation may also place stress and

financial burdens on the landowner. Furthermore, the loss of livelihood and economic stability as a result of property acquisition may also mean a loss of opportunity for their family aspirations to remain on the land and continue to expand for themselves and for their future generations. The final property to be fully acquired is zoned as Classified Road.

Significance of property acquisition and adjustment impacts: Of the properties to be fully acquired, one resident would need to relocate, and one landowner would be unable to farm their property. The majority of properties to be fully or partially acquired are non-residential, meaning the livelihoods of landowners are less likely to be impacted. Moreover, partial acquisition would result in relatively small reductions to the overall size of properties, and fair market compensation would be provided to affected landowners. Therefore, sensitivity[35] of stakeholders in the direct study area is considerate to be **moderate**.

The overall magnitude of the impact of the acquisition process is considered **low** given that partial acquisition would result in relatively small reductions to the overall size of properties and fair market compensation would be provided to landowners affected by the partial and full acquisition.

Th significance of impact is considered to be a **moderate-low** impact.

6.1.2 Land use changes

Construction activities for the proposal would result in temporary changes to existing land use within the direct study area, including changes along the bypass alignment to the south of the Richmond town centre, as well as near Hanna Park.

The road corridor along Bells Line of Road / Kurrajong Road between Crooked Lane, North Richmond and Old Kurrajong Road, Richmond, within the direct study area, would transform into a temporary construction zone. In addition, the area within the proposal construction footprint would become a construction site. The proposal would also result in some changes in land use in the road corridor. Areas that were previously partially vegetated land or verge would form part of the road footprint.

The following proposed ancillary facilities located north and south of the Hawkesbury River (Figure 1-3) would cause temporary land use changes:

- A: Ancillary facility at 94 Terrace Rd. This is currently a semi-rural property which would be temporarily converted into a compound site.
- B and C: Two proposed ancillary facilities are located either side of Bells Line of Road directly adjacent to the north abutment of the Hawkesbury River Bridge. Both ancillary facility areas either side of Bells Line of Road are public parks, including Hanna Park, with access to be provided around the outer edge of the residential and commercial area to Terrace Road. The compound area to the west of Bells Line of Road would not encompass the Hanna Park playground set.
- D: The compound site adjacent to the southeast riverbank to the east of Bells Line of Road at 148 Old Kurrajong Road. The property has been cleared and is currently used for agricultural purposes. Other land uses in the vicinity include seasonal horticulture and the cultivation of seasonal vegetables and herbs.
- E: The compound area adjacent to the Colo Soccer Club is edged by dense boundary tree plantings to the northwest which has been cleared.
- F: The compound located within Lot 1 of DP 743909 and adjacent to Drift Road. At present, the property is a residential lot that has been predominantly cleared of trees.
- G: The compound area south of the Hawkesbury River and located southwest of the Castlereagh Road and Southee Road intersections is land that has been cleared.

[35] *Sensitivity is considered in terms of socio-economic advantage and disadvantage as per SEIFA scores. SEIFA scores indicate that the broader study area has close to average economic and social conditions for people and households when compared to the LGA and NSW scores. Income, unemployment rate and tertiary qualifications are some of the factors considered.*

If any additional ancillary facilities are required, further consultation would be carried out by Transport to identify the suitability of ancillary facility locations and whether any additional environmental controls or assessments are necessary.

Changes in land use would primarily occur on land that is not currently zoned as road corridor. The proportion of the proposal towards Richmond / Hobartville along Kurrajong Road, Inalls Lane and Southee Road which is currently predominantly zoned as RU2 Rural Landscape and SP1 Education Agriculture – Special Activities (used by Western Sydney University) would experience the most land use changes. Further discussion of impacts to land use in the vicinity of the Western Sydney University is provided in Section 6.1.4.

As much of the proposal footprint along Bells Line of Road and Kurrajong Road is already used as a road corridor, the proportion of land use changes is expected to be minor. Impacts of these proposed land use changes with respect to the existing land use zones can be from both the direct reduction in land size on the affected properties, as well as indirect implications on the land adjacent to the proposal area.

Direct reduction in land availability in turn reduces the capacity for activities and land uses to occur for which it is zoned for. For example, proposed ancillary facilities A and B in North Richmond are currently zoned as Primary Production and Rural Landscape, as well as part of Hanna Park. Ancillary facility C encroaches into Hanna Park. Public access to these areas in Hanna Park would be restricted due to safety and security concerns. It would also reduce the visual amenity when approaching these ancillary facilities, including for road users driving along Bells Line of Road who pass these ancillary facilities. There are also pockets of residential land immediately adjacent to ancillary facilities A and B on Terrace Road and Norfolk Place, which the presence of ancillary facilities and construction vehicle movements could potentially generate some temporary construction noise and vibration, light spill at night, as well as a change of visual amenity, particularly as the existing landscape is of an open rural character. Impacts would be minimised where possible, and consideration of mitigation measures such as appropriate noise mitigation and night light spill measures would be implemented during construction.

For the bypass along Southee Road and Londonderry Road, there would be changes in agricultural and rural landscape uses. The construction of the bypass and ancillary facility G may disrupt existing agricultural activities currently around these areas, potentially hindering land productivity. It may also impact the accessibility for staff and students travelling to and from WSU.

Changes to land use from the construction of the proposal may also temporarily disrupt the way of life of the residents directly located within or next to the proposal construction footprint. This includes potential impacts such as disruptions to vehicle access, changes in amenity (from presence of construction machinery and vehicles, noise and vibration and dust) and loss of privacy (from presence of construction workers). It is expected there would be subsequent impacts to amenity, discussed in Section 6.1.6.

Significance of land use impacts: Land use changes surrounding the proposal area during the construction phase would include temporary changes to roadside areas and ancillary facilities. Changes to land use from the construction of the proposal may also temporarily disrupt the way of life of the residents directly located within or next to the proposal construction footprint. This includes potential impacts such as disruptions to vehicle access, changes in amenity and loss of privacy.

The sensitivity of land occupiers, owners, and the direct study area to land use changes is **moderate**. However, impacts would be temporary and the ancillary facility sites (should they be used) would be returned to their current state at the completion of construction. Consequently, the magnitude of the changes would be **low** resulting in the significance of the impact being **moderate-low**.

6.1.3 Access and connectivity

The construction of the proposal would result in some temporary changes to access and connectivity within the direct study area. Construction activities and vehicle movements are likely to impact on access to residential and rural properties, businesses, local roads, parking, active transport and public transport. The proposal area is well-serviced by a road network suitable for heavy vehicles and is expected to be able to accommodate construction vehicles. Furthermore, while the construction workforce traffic would likely be noticeable, the additional volume of vehicles would be relatively small compared to the existing traffic volumes of vehicles within the proposal construction area.

The Traffic and Transport Impact Assessment (TTIA) prepared for the proposal has informed the assessment of impacts on access and connectivity.

Residential, rural and businesses access

Throughout the proposal area, there are accesses to residential, commercial, recreation and agricultural properties. The proposal would result in some temporary and permanent changes to access and connectivity within the direct study area.

Through North Richmond, commercial properties that predominantly front Grose Vale Road, Terrace Road, and Bells Line of Road may be impacted by construction activities. Where possible, access to these properties would be kept open for staff and customers unless discussed with business owners. There may be temporary disruptions as works progress along Bells Line of Road and may require changed traffic conditions to access businesses.

For residential properties on Beaumont Avenue and Terrace Road, it is likely there would be increased traffic volumes from construction vehicles accessing ancillary facilities A and B and access to the construction works area on Beaumont Avenue. However, these are considered minor as construction works are expected to be staged throughout the day to minimise continuous noise; and construction traffic would be staged throughout the day to further minimise peak construction vehicle volumes on the road network.

The BP service station on Bells Line of Road in North Richmond can currently be accessed via a right turn in and left turn in movement but exit only left out, with no right turn out traffic movement (towards Richmond) allowed. The right turn movement into the BP service station (eastbound direction) may continue to operate through the early stages of construction of Stage 2A, however would be closed as pavement works north of the bridge are undertaken. The closure of this right turn in movement from Bells Line of Road may impact on how customers access the business, with eastbound travelling vehicles unable to turn right into the BP service station. This may result in customers and delivery vehicles having to alter travel routes to access the business. Left turn into and out of the service station would be retained and as per the existing situation, no right turn out would be allowed.

Ancillary facility D, located off Old Kurrajong Road, east of the new Hawkesbury River bridge, would be accessed off an existing internal property access road. This would be in constant use through the Stage 2A construction. However, it is noted that there is alternative access in the property that could be used by the property owner. Property access would be maintained in consultation with property owners. In addition, this ancillary facility would only be used for Stage 2A construction, and there would be no impact on this access from Stage 2B.

Some residential properties and businesses in Richmond along Kurrajong Road and in Hobartville along Inalls Lane and Southee Road, are likely to experience changes in access. Access would be maintained where possible, with any disruptions discussed with property owners. Disruptions could be from the presence of construction activities requiring traffic control to gain property access, and interruptions due to construction of driveway adjustments. Any driveway adjustments would be discussed between Transport and the property owners during detailed design. Access disruptions would be temporary and localised through the construction period.

Changes or disruptions to property access can cause stress and anxiety for residents and business operators. For residents, impacts may include annoyance, traffic delays, increased travel times and potentially higher fuel consumption. These factors can lead to secondary effects such as stress and anxiety, as well as unintended financial impacts. This is particularly the case given there is a high proportion of vehicle ownership and a high reliance on private vehicle usage to travel to work in the broader study area (Section 5.5). For businesses, this could impact patronage levels, particularly if customers are unable to access the business with ease during construction. This could be mitigated by implementing clear signage to guide both customers and general road users to access the businesses. Any impacts to property and business access would be temporary and localised where works are in vicinity of that access.

Transport would consult with landowners to establish the necessary agreements and arrangements for access and continue consultation with landowners and occupiers through the development of the design to mitigate concerns and potential impacts of the proposal. Sufficient notification to residents and business and alternate access arrangements would be provided wherever possible. Transport and the construction

contractor would undertake early consultation with landowners, farmland owners and business staff to identify and minimise impacts.

Local roads and emergency vehicle access

Bells Line of Road and Kurrajong Road provide a crucial connection between North Richmond and Richmond and adjoining arterial roads Castlereagh Road, Blacktown Road, Londonderry Road and Hawkesbury Valley Way which connect with broader Sydney.

The proposal would generate light and heavy vehicle movements on the surrounding road network, associated with the delivery or removal of construction materials and equipment and construction worker movements to and from the proposal area. This would result in construction traffic impacts throughout the duration of the proposal's construction, which is estimated to be three years for Stage 2A and two years for Stage 2B. While the roads within the proposal area would remain open, there may be a need for temporary lane closures at times during construction of both Stage 2A and Stage 2B.

During Stage 2A, the northern leg of Old Kurrajong Road would be closed to traffic during construction and permanently converted to an emergency access gate. Traffic currently using this leg would be redirected through the March Street / Bosworth Street intersection. Additionally, a temporary roundabout would be installed during construction at the Kurrajong Road / Chapel Street intersection. This is expected to also improve accessibility to and from Chapel Street during construction and provide an alternative to Bosworth Street for the redirected traffic. Construction staging during Stage 2A would result in temporary changes to traffic movement along Kurrajong Road during peak periods.

During construction of Stage 2B, substantial traffic signal modifications would be required at the Bells Line of Road / Terrace Road / Grose Vale Road intersection to facilitate traffic switches as the intersection is widened. Stage 2B of the proposal would also upgrade the Bells Line of Road / Crooked Lane intersection. While access through these intersections would be maintained and the construction staged to minimise potential traffic disruption, there would be some disruptions and delays at these intersections, as construction zones are put in place and traffic conditions change.

Across the direct study area, road closures can cause disruption to access and a reduction in the amenity of the area during construction. Reduced speed, traffic signal modifications and traffic changes around construction sites may contribute to congestion and delays during the construction phase of the proposal. There may be short periods of time during construction where local roads may need to be closed or opened only for residents. These periods would, where possible, be undertaken outside of peak traffic periods. This would include avoiding road closures on Inalls Lane on weekends when the playing fields are in use for community sport activities. Access for emergency vehicles would also be maintained along roads within the proposal area during construction.

Construction related traffic would increase traffic volumes on the local road network, particularly within the direct study area. This may temporarily impact the efficiency of the local road network and result in road users using other roads to avoid construction areas while increasing pressure on surrounding streets, potentially impacting local amenity in quieter areas. However, construction vehicles accessing the proposal area are likely to have minor impacts on the existing traffic movements near the proposal site due to the relatively low number of construction vehicle movements compared to the existing traffic volumes. Construction traffic for delivery or removal of construction materials and equipment would be staged throughout the day to further minimise peak construction vehicle volumes on the road network. Moreover, the proposal area is well-serviced by a road network suitable for heavy vehicles and is expected to be able to accommodate construction vehicles. As a result, access to and use of public transport, active transport connections, local roads, local properties and intersections are expected to be relatively unaffected by construction vehicles accessing the proposal area.

Although the roads within the proposal area would remain open, temporary lane closures may be needed at times during the construction of both Stage 2A and Stage 2B. As construction progresses and sections of road are completed, traffic switches to shift traffic onto new sections of road would occur to enable work on the existing pavement to be completed. Traffic management measures would be implemented to minimise disruptions and to prevent public vehicles accidentally accessing the construction sites.

Additional construction traffic movements, including turning movements to access ancillary facilities and construction areas from Terrace Road, Bells Line of Road, Old Kurrajong Road, Drift Road and Castlereagh Road, may cause temporary delays for motorists using local roads in the direct study area, including emergency services.

Congestion and delays may occur around construction areas where closures are unavoidable. This would cause delays and inconvenience for road users, who may use alternate routes that would increase their travel time. Temporary closures would be managed through construction staging and detours. Larger trucks and deliveries may require traffic control to access the ancillary facilities.

Access for emergency vehicles through the proposal area would be maintained in accordance with emergency service provider requirements. Consultation would be undertaken, and all emergency services would be advised of all planned temporary changes to traffic arrangements during construction before they are implemented.

Temporary traffic management measures would be implemented as required during construction, including reduced speed limits, temporary lane closures and diversions.

Parking

Existing public parking arrangements would be altered along some sections of the proposal during Stage 2A and 2B to provide for new road and associated infrastructure. For both Stage 2A and Stage 2B construction, ample parking for construction workers would be accommodated at the two main ancillary facilities which are accessible from Terrace Road and Castlereagh Road. As such, it is expected that construction worker vehicles would not affect the availability of existing on-street parking spaces near the proposal.

Stage 2A

During Stage 2A, the proposal would permanently remove 23 on-street parking spaces. The majority of impacts would occur in North Richmond, where parking would be removed along Bells Line of Road. In additional a number of spaces on Drift Road, Inalls Lane and Southee Road, Hobartville would also be permanently impacted. Further details are provided in Section 6.2.3.

There would be temporary impacts to on-street parking during construction at the following locations:

- Indented on-street parking spaces along the northern side of Beaumont Avenue, North Richmond
- Unrestricted on-street parking spaces at the northern extent of Drift Road, Richmond
- Unrestricted on-street parking spaces at the northern extent of Victoria Place, Richmond
- Indented on-street parking spaces along the northern side of Inalls Lane near the Castlereagh Road intersection with Inalls Lane and Southee Road, Richmond
- Unrestricted on-street parking spaces on the northern side of Southee Road, Richmond near the Castlereagh Road intersection with Inalls Lane and Southee Road, Richmond and near the Londonderry Road intersection with Southee Road, Richmond

Permanent and temporary changes to on-street parking from the Stage 2A construction would not result in substantial impacts to parking availability in North Richmond as there is adequate unrestricted on-street parking in this area. The on-street parking on Bells Line of Road would be removed early in construction, however, nine new unrestricted on-street parking spaces would be constructed on the north side of Beaumont Avenue. These parking spaces may not be available until after the existing parking spaces are closed.

Through Richmond/ Hobartville, there would be few parking spaces temporarily impacted at Drift Road, Victoria Place, Inalls Lane and Southee Road due to these locations being close to intersections, which already would not permit parking. The parking demand in this area is mostly related to residential/ property owner access. While this would be a disruption for residents, there is ample on-street parking in surrounding areas. However, this disruption to travel may result in motorists needing to walk further to get to their destination.

Stage 2B

Construction of Stage 2B would temporarily impact a number of on-street parking spaces on Southee Road, near the Londonderry Road and Castlereagh Road intersections respectively. These parking spaces are used by nearby residences. As there is ample on-street parking in surrounding areas, there is not anticipated to be a substantial impact on parking availability. However, this disruption to travel may result in motorists needing to walk slightly further to get to their destination.

Active transport

The direct study area consists of a mix of shared use paths (used by both pedestrians and cyclists) and on-road cycling facilities. Refer to Section 5.5.5 for a description of existing active transport options in the broader study area.

Alterations to the walking and cycling networks have the potential to affect travel durations, movement patterns and accessibility during construction. The temporary closure or adjustment of pathways and shared user connections may affect accessibility, community cohesion and some resident and visitor enjoyment of public spaces in the direct study area.

Pedestrian access across the existing Richmond bridge would be maintained through construction where possible, however, would be closed during Stage 2A early work where compliant hand rails need to be installed along the existing pedestrian path. As this work would need to be undertaken at night, it is anticipated that there would be minimal impacts to connectivity.

During Stage 2A, large sections of Hanna Park would be converted into an ancillary facility to facilitate the delivery of girders and construction of the new bridge. While work is occurring at this location, the ancillary facility would be converted into a construction area and public access along existing active transport paths within the ancillary facility would be disrupted. This would be for the duration that the ancillary facility would be in use during the Stage 2A construction only.

In addition, upgrades to Bells Line of Road in North Richmond between the new bridge and the Grose Vale Road / Terrace Road intersection in Stage 2A would temporarily impact the footpath connections between the existing bridge and North Richmond town centre on both sides of the road. In particular, the footpath along the southern side of Bells Line of Road, would be impacted through the widening of the road. This could cause disruptions to residents that need to access social infrastructure and services in North Richmond such as North Richmond Community Centre, Richmond North Public School, Hanna Park and bus stops.

Detours through North Richmond would be implemented to maintain pedestrian and cyclist access and alternative arrangements would be managed through signage and wayfinding in this area. This detour would be implemented for up to 16 months during construction of the new bridge to maintain active transport connection between the existing bridge and North Richmond town centre.

In addition, during construction of Stage 2A, road shoulders along Bells Line of Road and Kurrajong Road used by cyclists would be disrupted by the establishment of construction areas. In these locations, a minimum 1.2 metre shoulder would be provided to accommodate cyclists wherever possible during construction.

Construction of Stage 2B may result in disruption to pedestrian use of the footpaths along Bells Line of Road in North Richmond west of the Grose Vale Road / Terrace Road intersection. Localised detour arrangements would be provided where possible so that impacts to pedestrian access along this section of Bells Line of Road are minimised.

On the eastern side of the existing Richmond bridge, the pedestrian path diverts away from Kurrajong Road along the property access road (Old Kurrajong Road) to Yarramundi Lane, where there is no active transport facilities beyond this point along the proposal area including Inalls Lane or Southee Road. As such, no additional impact on active transport is expected in the proposal area through Richmond and Hobartville.

Access changes may result in detours or delays for people walking or cycling, impacting travel times and connectivity during construction periods. This could lead to cyclist and pedestrian stress around uncertain or delayed travel. Pedestrian and cyclist access would be detoured, and alternative arrangements near the proposal would be managed through signage and wayfinding throughout the construction period as part of

the proposal's Traffic Management Plan (TMP) to avoid major delays in travel times and potential negative social impacts. For specific mitigation measures, refer to the TTIA report.

Public transport

Potential impacts to public transport during construction of the proposal would include longer travel times when travelling through construction areas as a result of speed reduction and additional construction vehicles. The potential delays in bus service reliability during construction congestion could have an impact on commuters who are delayed by construction work and result in stress that they cannot estimate accurate travel times.

There are 12 bus stops within the proposal construction footprint. While pedestrian access to existing bus services would be maintained during construction, impacts to commuters would include the temporary relocation of bus stops away from construction areas when work is occurring near bus stops. Ten bus stops would be relocated, and two bus stops would be retained at their current locations. The temporarily relocated bus stops include:

Stage 2A:

- Bells Line of Road after Terrace Road (ID 275455)
- North Richmond Village, Bells Line of Road (ID 275418)
- Kurrajong Road after Yarramundi Lane (ID 275317)
- Kurrajong Road before Yarramundi Lane (ID 275373)
- Hawkesbury Retirement Village, Kurrajong Road (ID 275372)
- Castlereagh Rd after Inalls Lane (ID 275331)

Stage 2B:

- Bells Line of Road opposite Crooked Lane (ID 275414)
- Bells Line of Road at Crooked Lane (ID 275422)
- Londonderry Road opposite Vines Drive (ID 275354)
- Londonderry Road at Vines Drive (ID 275341).

Changes to public transport facilities, including relocation of bus stops, would impact people travelling through the broader study area.

Bus passengers may need to walk further to relocated bus stops. Bus users may feel uneasy if their usual bus service needs to take an alternative route, and some may be inconvenienced by longer detours. Temporary relocation and closure of bus stops could cause confusion to bus patrons and result in added travel time for them to access their bus services. However, as indicated in Section 5.5, there is only 0.1 per cent of the broader study area population that takes the bus to work. It is therefore unlikely for changes to bus stops to have a substantial impact on those who travel to work. However, the temporary relocation and removal of bus stops may impact some vulnerable public transport users, particularly those who do not own a vehicle, the elderly and school children. Bus customers would be kept informed of any changes to bus stop locations.

For management and mitigation measures, refer to the TTIA report.

Significance of access and connectivity impacts: Based on the nature of the proposal's likely impacts on access and connectivity, the magnitude of impact is **moderate** due to the potential for traffic delays and disruptions. The sensitivity of road users to changes in access and connectivity is **moderate**. This rating of sensitivity has been selected considering all road users including motorists, pedestrians, cyclists, bus users and freight drivers that would be using the direct study area during construction. The significance of the impact is **moderate**.

This takes into consideration the potential access and connectivity impacts to residences, community facilities, and businesses, as well as the proposed mitigation that would be implemented during construction.

6.1.4 Social infrastructure

Key social infrastructure in the direct study area is comprised of small to large businesses, educational facilities, medical centres, and supermarkets. There are also pockets of recreational space, although these areas are relatively limited and fragmented throughout the broader study area (refer to Section 5.4.1).

Social infrastructure are often places with high social, recreational, and historical significance to residents and have therefore higher sensitivity to construction impacts. Access to social infrastructure facilities within the direct study area would be impacted during construction activities as there are limited alternative roads to access existing facilities.

Social infrastructure facilities within the direct study area that would be impacted during construction include:

- **Hanna Park (east)**. The ancillary facility B area includes private property off Terrace Road linking to Norfolk Place, a residential road servicing residential properties with rear gardens backing onto the Hawkesbury River, and the open space areas of Hanna Park, including the northeastern riverbank. The ancillary facility would be used for access, principally at night, for the delivery of large bridge components for the new four-lane bridge. This would have amenity and visual impacts such as light spill and noise impacts for residential properties on Norfolk Place, for a limited number of nights during deliveries. Additionally, this area would be used for constructing the new four-lane bridge and would involve the removal of a number of existing mature trees. These disruptions would not occur for the full duration of construction and would only occur during construction of the new bridge.
- **Hanna Park (west)**. Ancillary facility C is near residential receivers on Shortland Close and is within the recreational spaces of Hanna Park. Access to the ancillary facility would be via Bells Line of Road or via the section of Hanna Park within the proposal area. The ancillary facility boundary has been defined to minimise impacts to social infrastructure and to minimise the removal of established trees in Hanna Park. Access to the carpark, skate park and small section of Hanna Park would be maintained during construction of the bridge. There would be disruptions to users accessing and using the BBQ facilities, sundial, and parts of Hanna Park during construction. These disruptions would not occur for the full duration of construction and would only occur during construction of the new bridge.
- Potential amenity impacts on **Turnbull Oval** which is further north of Hanna Park and is encompassed within the direct study area. It is located immediately adjacent to the proposed new parking spaces to the north of Beaumont Avenue. This may reduce the enjoyability of the facilities here and users may choose to go to other sporting facilities. However, the scale of the work on Beaumont Avenue is not expected to generate more than minor impacts to Turnbull Oval. In addition, hours of construction occurring here is not likely to be continuous over long periods of time and therefore unlikely to conflict with the hours when Turnbull Oval is at peak usage.
- **Colo Soccer Club**. Ancillary facility D is adjacent to the Colo Soccer Football Club. Access to this ancillary facility would be via Old Kurrajong Road and the offline construction area. The construction of the new elevated bypass and its embankments would lead to a direct impact on the Colo Soccer Club affecting one soccer field and about 80 carparking spaces (car park linemarked for around 260 spaces). This would mean, with the current layout, a reduced number of playing fields and parking spaces, which would impact patrons, particularly on peak sporting days. Transport has been engaging with the Colo Soccer Club since 2019 to manage potential impacts to fields. Consultation would continue to identify safeguards and opportunities to minimise impacts, for example limiting construction work on gamedays (typically on weekends) and additional parking. This would reduce any construction impacts such as traffic disruption, noise and vibration, dust, and visual amenity for users of the soccer field.
- **Killarney Polo Club and Windsor Polo Club.** Construction activities have the potential to impact community enjoyment and attractiveness of these sporting facilities. The polo community in Richmond Lowlands has shared concerns over the possibility of increased traffic, including heavy vehicles along Old Kurrajong Road, which could create risks for riders and horses who use these roads daily. In response to this, Transport has incorporated the closure of the northern leg of Old Kurrajong Road from Kurrajong Road into the proposal. However, this access restriction may result in changes to travel routes for members and visitors to access the properties, increasing travel time to the clubs. If the proposal construction work coincides with sporting events, this may add pressure to the road network, in the form of traffic congestion, delays and access impacts. Construction works for the proposal would occur during peak periods. Transport has been engaging with the Polo Clubs since 2021 to manage potential impacts

as a result of the proposal. Consultation would continue to identify safeguards and opportunities to minimise impacts.

- **Hawkesbury Valley Baptist Church**, **Church of Jesus Christ of Latter-day Saints** and **Richmond Anglican Church.** Access and amenity impacts (such as disruptive noise and vibration) associated with construction activities for Ancillary facility A on Terrace Road, the upgraded Castlereagh Road intersection and along Kurrajong Road may affect churchgoers. However, it is expected that these churches usually operate for mass services predominantly on Sundays when construction activities are not anticipated to occur regularly, thereby minimising adverse impacts. However, other social or pastoral activities that would take place in these churches and associated buildings through the week may be affected by construction activities.
- **Western Sydney University (WSU):** During Stage 2A and Stage 2B, it is proposed to use part of Western Sydney University leased land as a temporary construction compound at the corner of Castlereagh Road, which would affect the use of the land for current university activities. This would reduce the land available for these activities. However, this impact would be temporary, and land would be returned upon completion of construction. The proposal footprint and construction activities for Stage 2A and 2B would directly impact land used for agricultural activities including a number of water ponds. The proposal would impact on land available to undertake the activities (including associated water ponds). Transport is discussing the relocation of the water ponds with WSU to make sure that activities are able to continue on the campus. The Stage 2B proposal footprint and construction activities would impact on part of the Hawkesbury Forest experiment (including the irrigation and fertilisation experiment at the Southee Road/ Londonderry Road intersection). In addition, the potential changes to the surrounding environment from increased construction activities such as tree removal, dust and vehicle emissions may affect the underlying conditions of the experiment. This impact could lead to loss of continuity of data expected from the experiments. Where possible, the proposal has been designed to limit impacts to WSU leased land and these experiments. Transport has committed to working with WSU to relocate experiments. There would be no impact to the long-term experiments during Stage 2A.
- **North Richmond Community Centre** and **Richmond North Public School** along William Street (both of which are partially within the direct study area) may experience potential amenity and access impacts. The works along Bells Line of Road may impact travel times to these facilities via Grose Vale Road. However, access to the Bells Line of Road/ Grose Vale Road intersection would be maintained and the construction staged to minimise potential traffic disruption. There may also be visual, noise and vibration impacts felt by users of the Community Centre and students who attend the school.
- **Richmond Anglican Cemetery,** located along Windsor Street around 200 metres from Kurrajong Road. Cemeteries are often considered places of peace and often hold sentimental value for people. Construction noise may disturb cemetery visitors, who may be particularly sensitive. However, impacts are expected to be negligible as the only construction works occurring nearby (on Kurrajong Road) would be the construction of the shared user path. Construction noise mitigation measures would be implemented to minimise noise impacts on the Cemetery. The presence of large mature trees between the Cemetery and Kurrajong Road would also screen any visual amenity impacts from construction works.

Social infrastructure within the direct study area is highly valued by the local community and potential access and amenity impacts could lead to decreased opportunities for community interactions and social cohesion. Visual and / or amenity impacts during construction activities could reduce some residents' and visitors' enjoyment of social infrastructure, such as when accessing and using recreational, spiritual and educational facilities within the direct study area. These may affect the ability for park users to access some areas of Hanna Park. It would also reduce the visual amenity when approaching these ancillary facilities, including for road users driving along Bells Line of Road who drive past these ancillary facilities. The reduction in available playing fields of the Colo Soccer Club could impact enjoyment of activities and reduce the number of games played concurrently. There would also be a reduction in the number of carparking spaces. This may mean that during peak user hours, some users may have to seek alternative carparking locations potentially on nearby streets. However, it is noted that the Soccer Club may reconfigure the playing fields to maximise use of the land.

Users of the churches, Community Centre, Richmond North Public School and Richmond Anglican Cemetery may be affected on a more personal level, however impacts can be mitigated by way of staged

construction hours and presence of trees as visual buffers from construction works. Any access impacts to social infrastructure are expected to be mitigated by implementing proposed traffic and access management measures listed in Section 6.1.3 and the TTIA prepared for this proposal.

Significance of social infrastructure impacts:

Based on the assessment of impacts to the community's enjoyment and the attractiveness of social infrastructure facilities during construction, the magnitude of impacts is **moderate**. The overall sensitivity of social infrastructure to potential impacts of construction, including access, amenity, visual and noise impacts which may impact the operation of facilities is **moderate**. Therefore, the overall level of significance would be **moderate**.

6.1.5 Businesses and industry

Businesses within and surrounding the proposal area may experience impacts to amenity, particularly for established commercial areas on Bells Line of Road, such as the WestRock facility. This includes visual, noise and air quality, and amenity impacts during construction.

Access to WestRock westbound along Bells Line of Road would be closed, and traffic would be directed to new access into WestRock via Beaumont Avenue. This is due to the right turn access from Bells Line of Road being restricted due to the construction of a central median on Bells Line of Road. Heavy vehicles would turn into the existing Beaumont Avenue access, while light vehicles would access a new property access near Hanna Park.

The BP service station in North Richmond can be accessed from Bells Line of Road via a right turn in and left turn in movement but exit only left out, with no right turn out traffic movement allowed. The right turn movement into the BP service station (eastbound direction) may continue to operate through the early stages of construction of Stage 2A, however would be closed as pavement works north of the bridge are undertaken. The closure of this right turn in movement from Bells Line of Road may impact on how customers access the business, with eastbound travelling vehicles unable to turn right into the BP service station. This may result in customers and delivery vehicles having to alter travel routes to access the business. Left turn into and out of the service station would be retained and as per the existing situation, no right turn out would be allowed.

Within the proposal area in North Richmond, commercial properties predominantly front Grose Vale Road, Terrace Road and Bells Line of Road and access to these properties would be maintained where possible.

Through the Richmond town centre, there may be additional traffic arising from construction heavy vehicle movements. The capacity of the roads is sufficient to handle the increase in traffic. In addition, at the Kurrajong Road / Chapel Street intersection, a temporary roundabout would be constructed to allow construction vehicles to turn around to further assist in reducing the number of travel movements through the town centre.

Business activity for businesses in proximity to construction works such as interactions with customers/clients, office and restaurant environments and the productivity of workers may be impacted during construction due to noise and vibration impacts.

The reduction in visual and noise amenity may also result in customers being less inclined to visit local businesses. The presence of construction equipment and machinery may impact the patronage to some businesses on Bells Line of Road. These businesses may also have concerns about loss of passing trade during construction due to perceived inconveniences such as perceived lack of parking and / or lack of visibility of the business.

Other land uses and businesses east of the Hawkesbury River bridge include horse studs and polo clubs. Intensive construction noise activities may impact on the anxiety and behaviour of horses that are in the near vicinity (Riva et al, 2022).

The bypass would require the partial acquisition of small sections of land used for agricultural enterprises. Impacts to these properties would include minor reductions in the availability of land for agricultural purposes. However, construction works would not sever or affect the viability of any agricultural properties as most works are along existing property boundaries.

Employment opportunities

During construction, there is expected to be an overall increase in workers in the area (such as construction workers and site engineers). This could have a positive impact on local businesses who may benefit from an increase in business from construction worker expenditure, particularly for hospitality and some retail businesses.

Construction of the proposal would provide additional employment opportunities in the area and opportunities for businesses involved in earthworks, roadworks, bridge construction and material supply. The proposal may also result in construction worker expenditure at local shops and businesses during the construction period.

Businesses near ancillary facilities

Businesses located closest to the ancillary facilities near Terrace Road and Hanna Park, and other businesses with frontage on Grose Vale Road, Terrace Road, and Bells Line of Road in North Richmond may be temporarily impacted by construction activities. Specifically, access to these businesses may be impacted by the presence of construction vehicles entering the ancillary facilities. During construction of Stage 2A, all ancillary facilities would be used. During construction of Stage 2B, only ancillary facilities at Terrace Road, North Richmond and Castlereagh Road, Richmond would be used, which would limit impacts to adjoining businesses.

The light industrial premises of WestRock is located at the southern end of Bells Line of Road, on the approach to the existing Richmond Bridge, and near the proposed ancillary facility B. The proposal includes access to ancillary facility B off Terrace Road to limit the use of local roads by construction traffic, and therefore reduce access impacts to WestRock and nearby residents.

See Section 6.1.3 for potential impacts on business access and parking. Access to commercial properties would be maintained, unless agreed with business owners. Furthermore, potential disruptions would be minimised through signage and wayfinding. A coordinated effort would avoid construction and consultation fatigue.

Significance of social infrastructure impacts:

The operation of businesses and industry in the direct study area is not expected to be significantly impacted during construction as access would be maintained. Amenity impacts on businesses associated with the proposal would be localised and temporary in nature. Access would be maintained with management plans, including a TMP, put in place and proactive consultation with businesses would continue though construction.

The magnitude of the impact of the acquisition process is **low**, considering that partial acquisition would result in relatively small reductions to the overall size of properties. The sensitivity of the affected businesses would be **moderate**, considering the potential for disruption to business operations, noting that the businesses would likely have some capacity to adapt to change. As a result, the significance of impact is considered to be a **moderate-low** impact.

6.1.6 Community values, liveability, and amenity

As stated in the Practice Note, community values are those elements held as being essential to quality of life and wellbeing (Transport, 2020a). This includes physical components, such as parks and landscapes, and social elements, such as belonging and diversity.

Amenity often refers to the quality of life, character and elements in a community that make it a more pleasant and comfortable place to be a part of. Impacts of a proposal, such as traffic, perceived air quality impacts, noise, and visual impacts, can affect the amenity of an area. Visual changes because of the presence and use of construction plant and machinery could also impact those living within, visiting, and travelling through the direct study area. The combination of these factors could impact residents' perceived liveability and enjoyment of an area. Furthermore, when considering perceptions of adverse impacts on amenity, an evaluation must be made of the reasonableness of those perceptions. Consequently, stakeholder consultation and a media scan informed this SEIA on potential perceived amenity impacts.

Feedback from residents in Norfolk Place, Inalls Lane and Southee Road noted concerns around construction traffic accessing the worksite affecting property access and construction amenity impacts. There were also concerns around the increased traffic volumes travelling along Bells Line of Road and the impacts this may have on the amenity and urban design for the North Richmond town centre.

As discussed in Section 5.3 of this SEIA, the areas surrounding the proposal are predominantly rural areas with natural landscapes and farming areas but also include residential development in North Richmond, Richmond, Hobartville and Agnes Banks. Furthermore, as Chapter 3 and Chapter 4 of this SEIA outline, the local community values protecting the environment and the history of the area.

Overall, it is expected there would be a reduction of local amenity in the direct study area (such as visual, noise, traffic and air quality impacts), during construction which, for Stage 2A is expected to take three years. Construction of Stage 2B would take about two years.

Community values and heritage impacts

The Statement of Heritage Impact report (SOHI) (Artefact Heritage, 2024) prepared for this REF identified heritage items which have the potential to be impacted by the proposal. These heritage items include State significant 'Hobartville' (SHR #00035), 'Bowman House' (SHR #00468), Mountain View (SHR #00044) and some locally significant items listed on Schedule 5 of the Hawkesbury Local Environmental Plan 2012 (HLEP 2012), including St Phillip's Anglican Church (now in private ownership). Refer to Section 5.4 for items that hold social significance and are valued by the local community.

The SOHI report concluded that Stage 2A would result in minor adverse impacts to heritage items that are valued by the local community, including:

- Hawkesbury River Bridge
  - Negligible physical impact. The proposed works would physically and visually alter elements on the deck of the bridge, including replacement of existing metal handrails which are not original. This would not detract from the technical or historic values of the bridge. The new handrails would not impact the aesthetic values the bridge holds which is tied to its concrete Monier arch structure. Conversely, adapting the bridge for a new use as an active transport connection, would be a positive heritage outcome for the fabric and useful life of the bridge.
  - Moderate adverse visual impacts to the visual character of the Hawkesbury River Bridge surrounds and obstructed views to the east of Hawkesbury River. The proposed bridge would be supported by four large columns which would be visible at eye level from the existing bridge's viewing deck and would interfere with the significant views of the river towards the east.
- McMahon Homestead
  - The proposed works would be located about 180m north-east of the McMahon Homestead heritage item. Based on this the proposed works would result in a neutral physical impact.
  - Minor adverse impacts to the visual character of the McMahon Homestead landscape as the proposed works, including the construction of the Richmond bypass and two bridges that would cross over the watercourses that run into the Mareh-Mareh Lagoon, would introduce visible prominent and major infrastructure, a road corridor and bridge, which would interfere with the existing view and sight lines.
- Mountain View
  - Neutral physical impact as the proposed works would not encroach on the curtilage of Mountain View. However, due to the closeness of the buildings on Mountain View to the proposed works, the Noise and Vibration Impact Assessment carried out for the proposal recommends that the property undergo Level 1 noise treatments. Further assessment of any noise treatments should be undertaken once known.
  - Minor adverse visual impact as the proposed works would require the demolition of the existing dwelling on Lot 1 of DP 743909 (located opposite to the northwest of the heritage item, the dwelling itself is not a heritage listed item). This demolition would further open the view of the Richmond lowlands, which has been assessed as a significant view for the heritage item and is therefore a positive impact.

- The proposed works would also include the construction of two bridges over the flood plains which would be visible in the distance depending on the viewpoint in the property. Some tree coverage exists between Mountain View and the proposed bridges which would obscure these views to a degree. The bridges, although approximately 700m away would alter views towards the Richmond lowlands, a view considered of high significance to the property.

- St Peter's Anglican Church
  - Neutral physical impact as the proposed works would terminate at the edge of the heritage curtilage of the locally listed item and would not encroach within the heritage curtilage.
- Avenue of trees east and west side of street
  - Minor adverse physical impact. The proposed works would require the removal of a singular mature English Plane tree located at the northwest corner of Kurrajong Road and Chapel Street. This tree is significant as it is a part of the row of trees that form the 'Avenue of trees' heritage item, these trees used to line the Avenue that led to Hobartville (SHR No. 00035). The removal of this tree would result in impact to the heritage item itself and detract from the heritage significance of the Avenue of trees.
  - Minor adverse visual impact due to the removal of the singular mature English Plane tree located at the northwest corner of Kurrajong Road and Chapel Street. The removal of this tree would be obvious and detrimental to the heritage item, altering the visual character of the heritage item and cause a large gap in the avenue and overarching canopy. It is however one of many trees which remain on the avenue.
- Hobartville (including outbuildings)
  - Minor adverse physical impacts. The proposed shared path works along Kurrajong Road, which would allow pedestrians and cyclists to travel along this section of Kurrajong Road safely, separate from the vehicular traffic, would encroach onto the curtilage of the State listed Hobartville (including outbuildings) item. The proposed works in this area would require the removal of all the trees that line the northeast curtilage along Kurrajong Road. The trees are relatively recent plantings located outside of the State curtilage area, and contribute to the amenity of the heritage item.
  - The proposed shared path works along Kurrajong Road have the potential to visually impact the heritage items within the vicinity of the direct study area and within the heritage buffer zone.
  - Moderate adverse visual impacts due to the removal of the trees lining the north-eastern border of Hobartville's State curtilage along Kurrajong Road. These trees are not identified as being significant, nor are they within the Hobartville's State curtilage. However, they contribute to the amenity of the heritage item. Their removal would alter the visual character of Hobartville, as many paddocks are lined with trees. The removal of these trees would open the north eastern frontage of Hobartville to the road corridor visually, which would detract from the existing visual character of Hobartville. The SOHI report recommends that where possible removed trees should be reinstated like for like upon the completion of the works.

The proposed works on the road corridor north of the Hawkesbury River, as part of Stage 2B, have been designed to avoid physical impacts on the heritage curtilage of the following locally listed heritage items:

- St Phillip's Anglican Church (LEP I408)
- House (LEP I410)
- Former Police Station and Residence (LEP I406)
- Seventh Day Adventist Church (LEP I407)
- House (LEP I495)
- Sunnyside (Former O'Dea's Dairy) (LEP I413)
- House (LEP I493)

Stage 2B works would not encroach within the heritage curtilages, and therefore, it is considered that the proposed works would result in a neutral physical impact and neutral visual impacts.

Potential construction impacts on heritage items can affect an individual's and / or community's connection to place and sense of identity due to changes to the appearance of heritage items. The presence of nearby construction works surrounding heritage sites would be within the viewpoints of users visiting these items, such as Hawkesbury River Bridge, McMahon Homestead, and Mountain View. This may also contribute to perceived negative impacts to connection to place for local residents and visitors.

For management and mitigation measures, refer to the SOHI report.

Cultural heritage

Consultation with the Aboriginal community has identified that the broader study area has cultural heritage value (social value) to the local Aboriginal community. Regarding the Aboriginal archaeological sites identified within the study area, no specific cultural/social, historic, aesthetic values expressed by these sites have been identified to date.

The Aboriginal Cultural Heritage Assessment (ACHA) (Kelleher Nightingale Consulting, May 2024) carried out for the proposal identified seven Aboriginal archaeological sites that would be at least partially impacted by the proposal in or near Beaumont Avenue, Inalls Lane, Norfolk Place, Southee Road and Terrace Road .

As per the ACHA report, the impacted portions of Aboriginal heritage sites named Beaumont Avenue (BA-OS-1), Inalls Lane Richmond AFT 1 and AFT 2, Southee Road Richmond AFT 1 and Terrace Road Hawkesbury River AFT 1, are considered to display low significance based on the disturbed nature of the area. Therefore, archaeological mitigation is not required within the impacted areas of these sites.

Terrace Road Redbank Creek AFT 1, Norfolk Place Hawkesbury River AFT 1 are considered to display moderate significance based on scientific value and potential to inform on Aboriginal landscape use within the northwestern Cumberland Plain. Archaeological impact mitigation (salvage excavation) is recommended where sites of at least moderate archaeological significance are to be impacted to recover a suitable sample of the information they contain.

An application for an Aboriginal Heritage Impact Permit should be made under section 90A of the *National Parks and Wildlife Act 1974* for the proposal area prior to the commencement of pre-construction or construction activities. Barrier fencing should also be erected at identified site boundaries to ensure that no construction impact extends beyond the boundaries.

Amenity impacts

During construction there would be a temporary localised reduction of amenity around the area. The amenity impacts associated with construction including noise, visual, air quality and perceived safety impacts, would impact residential dwellings and sensitive receivers near the construction and may also deter the use of parks and social infrastructure in the direct study area.

Noise

Based on the Noise and Vibration Impact Assessment (NVIA) (SLR, 2024) carried out for the proposal, residents closest to Bells Line of Road, Southee Road, Inalls Lane and Kurrajong Road would experience noise impacts. The NVIA report applies the worst-case scenario criteria to these residential receivers due to these being identified as sensitive receivers.

Highest noise levels and impacts would be experienced by adjacent receivers when noisy construction work is nearby, especially during the use of chainsaws, chippers or concrete saws. Where receivers are further away, or when less noise intensive work is being completed, the predicted noise impacts are correspondingly lower. However, these items of equipment would only be required occasionally and are unlikely to be used for long periods of time. Construction noise during the day is likely to disrupt residents' and employees' work performance and communication. As the work is expected to be staged, the number of affected residential receivers at any time would be limited.

Highest night-time construction noise impacts are predicted during out-of-hours road works when noise intensive equipment such as a concrete saw is in use. Out-of-hours work would likely be required at some of the compounds to support out of hours work.

Certain commercial/industrial and other sensitive receivers are predicted to be impacted during the construction of Stage 2A, including various commercial buildings on Bells Line of Road, The Church of Jesus Christ of Latter Day Saints, St Peters Anglican Church, Hawkesbury Dentistry and Community Kids, North Richmond Early Learning Centre. However, this may be mitigated through the staging of construction hours and high noise intensive works.

Certain commercial/industrial and other sensitive receivers are predicted to be impacted during Stage 2B, including various commercial buildings on Bells Line of Road, Elizabeth Street Extended Hours Preschool, Caring 4 Kids – Child Care North Richmond, Riverlands Dental, Community Kids, North Richmond Early Education Centre, The Church of Jesus Christ of Latter Day Saints, St Phillips Public Cemetery (currently closed), and Western Sydney University. However, this may be mitigated through the staging of construction hours and high noise intensive works.

Increased noise has the potential to impact on people's experience of privacy, peace, and quiet enjoyment. Health impacts, and concerns/fears about health impacts, are generally associated with increased noise and dust. Increased noise at night can cause sleep disturbance or discomfort for residential receivers closest to the proposal. This can have an adverse impact on the health and wellbeing of sensitive receivers, particularly if construction periods outside of standard construction hours occur for long periods of time without adequate mitigation. Within the broader study area, there is a higher proportion of people aged over 65 years, and require assistance with self-care, body movements or communication (Section 5.1.1). These vulnerable groups may be more sensitive to construction noise and vibration, particularly if they are living in close proximity of the work.

The implementation of the proposed noise and vibration mitigation measures would minimise and manage noise and vibration impacts on noise-sensitive receivers. Mitigation measures include the preparation of a Construction Noise and Vibration Management Plan (CNVMP) prior to the commencement of works. Specific management and mitigation measures are detailed in the NVIA report.

Vibration

Based on the Noise and Vibration Impact Assessment (SLR, 2024) carried out for the proposal, certain sensitive receivers in the direct study area are within the human comfort minimum working distance, including front-row receivers near to Bells Line of Road, Kurrajong Road, Innis Lane, Londonderry Road and Castlereagh Road. These sensitive receivers may be able to perceive vibration impacts at times when vibration intensive equipment is in use. There are common perceptions that exposure to vibration can impact human health, particularly impacts on sleep disturbance, cardiovascular diseases, cognitive effects and annoyance (EN Health, 2018). The perceived health risks associated with construction vibration can also cause stress and anxiety, in turn affecting one’s wellbeing.

However, where impacts are perceptible, they would likely only be apparent for relatively short durations when vibration intensive equipment is nearby. The main potential source of vibration during construction of the proposal would be from vibratory rollers.

The NVIA identified that there are heritage structures that are within the minimum working distances for cosmetic damage and human comfort. Impacts on community valued features, such as heritage items or buildings, or any potential impact to aesthetics of a place and how people use or appreciate it, may affect sense of identity with a place. See Section 5.6 for a discussion of community value and impacts.

The following heritage items or areas may be within the recommended minimum working distance for cosmetic damage during Stage 2A:

- Former police station and residence at 39 Bells Line of Road, North Richmond
- Former house at 190 March Street, Richmond
- Mountain View at 22 Inalls Lane, Richmond
- House at 32 Inalls Lane, Richmond

The following heritage items or areas may be within the recommended minimum working distance for cosmetic damage during Stage 2B:

- St Philip’s Anglican Church and cemetery at 151 Bells Line of Road, North Richmond

- House at 101A Bells Line of Road, North Richmond
- House at 91 Bells Line of Road, North Richmond
- Seventh Day Adventist Church at 54 Bells Line of Road, North Richmond
- Former police station and residence at 39 Bells Line of Road, North Richmond

A media scan undertaken to inform this SEIA indicated that residents worry the proposal construction, and the proposed road widening plans would damage important heritage sites, including Durham Bowes and Hobartville Stud, Hobartville. Stakeholders are concerned that construction of the bypass would move the road corridor along Inalls Lane closer to the historic home's (Durham Bowes) front fence.

For specific management and mitigation measures, refer to the NVIA report.

Visual amenity

Visual amenity is described as the pleasantness of the view or outlook of an identified receptor or group of receptors. The main contributor to the scenic amenity of the Hawkesbury LGA is the natural landscape as well as the productive agricultural landscapes.

Visual changes from vegetation removal and the presence and use of construction plant and machinery would impact those living within, visiting, and travelling through the direct study area. However, visual impacts associated with the presence and use of construction plant and machinery would be temporary. They would move around the site, with some impacts only present for part of the construction period. Transport would liaise with the community before the commencement of construction to mitigate the adverse effects.

Businesses and residential receivers in the direct study area are expected to experience temporary impacts to visual amenity due to the presence of ancillary facilities, workforce parking, plant, and machinery during construction.

During construction of Stage 2A, all seven ancillary facilities would be used. During construction of Stage 2B, only the ancillary facilities at Terrace Road and Castlereagh Road would be used to support construction activities for the proposal. Ancillary facility areas have been located where there would be minimal disruption to the existing landscape and features, and therefore minimal visual amenity impact. However, existing vegetation, including some mature trees would require removal for both stages of construction.

Stakeholder consultation undertaken through the proposal development indicated that some residents on Southee Road are concerned about the loss of views of open paddocks and the Blue Mountains due to the construction of a potential noise mound or wall. The proposal would see a vegetated noise mound with an associated noise wall separating a section of the Richmond Bypass and the residential areas of Southee Road.

The Landscape Character and Visual Impact Assessment (LCVIA) (Scape Design, July 2024) carried out for the proposal identified the visual impacts associated with the proposed ancillary facilities as follows:

- Moderate to low visual impact associated with ancillary facility A - Terrace Road, North Richmond located in a semi-rural area, but with nearby light industrial and commercial facilities. The visual impact would be limited to the hoarding surrounding the site area and the passage of vehicles into and out of the site.
- High to moderate visual impact associated with ancillary facility B - Hanna Park (east) which would be used for access, principally at night, for the delivery of large bridge components for the new four-lane bridge. This would have visual impacts for residential properties on Norfolk Place, for a limited number of nights during deliveries. Additionally, this area would be required for the construction of the new four-lane bridge and involve elevated working platforms as the bridge components are assembled in place. This would likely involve some existing mature trees being removed.
- High to moderate visual impact associated with ancillary facility C - Hanna Park (west) This area comprises the open space areas of the Hawkesbury River Park. The area would be required for access of construction vehicles for the construction of the new bridge. The removal of existing mature trees would impact visual amenity, notably for park users and the residents of the adjoining Shortland Close.

- High to moderate visual impact associated with ancillary facility D - Eastern side of the Hawkesbury River This area would be used for water-based construction activities, such as piling, and for the construction of the widened road on its approach to the intersection with Old Kurrajong Road, Kurrajong Road and the new bypass. The removal of existing mature roadside vegetation would be required to facilitate modification of the existing roadside embankment.
- Low visual impact associated with ancillary facility E - Old Kurrajong Road and ancillary facility F – Inalls Lane, where visual impacts would be restricted to the access of vehicles.
- Moderate visual impact associated with ancillary facility G - Castlereagh Road. The area comprises rural land adjoining the south western side of the proposed upgraded intersection of the bypass with Castlereagh Road, close to Southee Road. The visual impact would be restricted to the access of vehicles; however, it is a relatively large area that would be visible from some residential properties of Hobartville (on the eastern side of the existing Southee Road) and to a lesser extent the properties of Inalls Lane (Richmond) including the church property, at the intersection with Castlereagh Road.

For management and mitigation measures, refer to the LCVIA report.

Vegetation removal

Changes to natural and built features that people value, including vegetation removal, could adversely impact enjoyment, local character or a community's shared identity and attributes. The existing vegetation within the direct study area retains high amenity value and is highly valued by the local community. For example, vegetation along the edge of the corridor provides screening between adjoining properties and the road network. Vegetation removal would result in amenity impacts to surrounding receivers and users of the direct study area.

Based on the Biodiversity Impact Assessment (TfNSW, 2024), vegetation removal would be required at the following locations:

- Removal of the tree plantings lining the north eastern border of Hobartville’s State curtilage along Kurrajong Road. As per the SOHI report (Artefact Heritage, July 2024), although these tree plantings are not located within the heritage curtilages and are not identified as being significant, they contribute to the amenity of the heritage item and therefore contribute to the site enjoyment. The trees form a partial visual barrier between Hobartville and the existing road corridor, the removal of these trees would open the north eastern frontage of Hobartville to the road corridor. Their removal would alter the visual character of Hobartville, as many paddocks are lined with trees.
- Per the SOHI report, the proposed removal of the singular mature English Plane tree at Chapel Street would detract from the physical and visual character of the Avenue of trees east and west side heritage item, these trees formerly lined the avenue that led to Hobartville; however, the function of the avenue has changed over time to serve local residential dwellings.
- Ancillary facility C would be located within the recreational spaces of Hanna Park. The facility would be positioned in a way that vegetation removal impacts are minimised. The removal of existing street trees and mature trees in Hanna Park increases the potential for negative visual impact. The construction of the new four-lane bridge over the Hawkesbury River about 30 metres downstream of the existing Richmond Bridge would result in the removal of the existing mature trees in the foreground of the view. The new four-lane bridge would dominate the view because of the foreground tree removal.
- Vegetation removal would be required to facilitate the establishment of the ancillary facility D including access tracks for bridge construction, located between Old Kurrajong Road and the Hawkesbury River, specifically native vegetation along the Hawkesbury River.
- A line of Pecan trees is located adjacent to the westbound carriageway of Southee Road, between the intersection of Anderson Avenue and Londonderry Road. These trees are considered significant to retain. It is proposed to locate the Richmond Bypass and any construction works at a sufficient distance away from these existing Pecan trees to ensure their retention. A noise wall is proposed along the length of the existing Pecan trees with a transparent top section to maintain views from the existing residential properties on Southee Road.

- The construction of the new four-lane bridge over the Hawkesbury River about 30 metres downstream of the existing Richmond Bridge would result in the removal of the existing mature trees in the foreground of the view. The new four-lane bridge would dominate the view because of the foreground tree removal.
- Westbound carriageway of Kurrajong Road, Richmond. At this location the road corridor would be widened to the west to accommodate the proposed shared use path to be installed parallel to the westbound carriageway, resulting in the removal of the western embankment, and associated mature vegetation. However, the vegetation that would be removed is overgrown roadside vegetation.

Landscaping works and the proposed urban design features would reduce the visual impacts associated with vegetation removal. Targeted consultation and a tree protection plan would be recommended to identify specific protection measures for trees and significant vegetation. Appropriate mitigation measures to reduce potential impacts of the construction phase of the proposal would be required. A Flora and Fauna Management Plan (FFMP) will also be prepared and implemented as part of the Construction Environment Management Plan (CEMP). Mitigation measures to maintain community amenity during the construction phase may include arranging ancillary facilities in a way to reduce impacts of light spill on nearby receivers and providing temporary barriers to reduce noise impacts.

Significance of community and amenity impacts: The sensitivity of the community to changes in amenity and values is **moderate**. The magnitude of the impacts during construction is **moderate**, resulting in the level of significance being **moderate**.

Overall, measures to minimise and mitigate adverse impacts on community values and amenity include the preparation of relevant management plans (such as CNVMP and FFMP), Aboriginal Heritage Impact Permit, specific landscape and urban design recommendations in the concept and detailed design phases, and for all construction works to be undertaken in accordance with relevant statutory guidelines.

6.1.7 Cumulative impacts

Construction of Stage 2A is anticipated to commence from 2026 subject to funding and last for a period of about three years. Construction of Stage 2B would take about two years and would be delivered when additional funding is approved.

This cumulative impact analysis relates to construction impacts where there is potential for the proposal construction activities to occur concurrently with other developments in the broader study area, as described in Section 5.3.2.

The developments near the proposal (both in terms of location and timing) that may give rise to cumulative social impacts include the construction works associated with the Richmond System Wastewater Upgrade, which may occur at the same time as Stage 2A and may contribute to cumulative amenity and traffic impacts at some receivers to the north of Bells Line of Road in North Richmond and in Richmond if works occur at the same time. The Richmond System Wastewater Upgrade commenced in 2023 and is expected to be completed in 2025.

Construction works associated with the Redbank development, the Grose River Bridge, the North Richmond Community Centre Redevelopment and the Kurrajong to Kurmond Cycleway Project had not been announced at the time of writing this assessment. If construction activities for these proposals overlap with either Stage 2A or 2B, potential cumulative social impacts during construction could include amenity impacts arising from increased noise, visual change, and health and well-being impacts from construction fatigue.

Cumulative impacts would include accessibility and way of life impacts, if extended periods of construction and associated disruption (i.e. increased dust, noise, traffic changes, congestion, changed wayfinding) add to the overall count of sensitive receptors. Other impacts could include potential traffic congestion, road closures, traffic congestion and heavy vehicle usage. Ambulance vehicles, patient transport vehicles, and other traffic may be impacted by changed traffic conditions including road closures, construction, and traffic congestion.

Cumulative safety, traffic, and access impacts could lead to delays in travel time or difficulties accessing public transport during construction. This could also lead to indirect social impacts such as construction fatigue, anxiety, stress, and frustration during construction. Stakeholder consultation with proposal

developers and proponents would be required if construction activities overlap, to coordinate works while minimising the potential for cumulative impacts.

Works for the proposed South Windsor Liquid Waste Facility Upgrade are set to be completed by 2026, but a construction start date has not been confirmed. The facility is located about nine kilometres east of the proposal within the broader study. Due to this distance cumulative impacts would be unlikely.

The Hawkesbury Centre of Excellence is currently still in the planning stage and the project progress timeline is not clear. There is the likelihood that the project progresses to construction phase in 2026 which coincides with the construction phase of Stage 2A of the proposal, however this cannot be determined based on currently available information. However, given that the WSU site is adjacent to the Londonderry Road portion of the proposal, there is the likelihood of cumulative impacts.

As the proposal forms part of a broader program of works to provide traffic improvements including Stage 1, as described in Section 1.2, construction fatigue and consultation fatigue may be experienced by the community and people that travel the area frequently. Impacts could result in feelings of constant disruption and disturbance within communities, altering the amenity of suburbs and the enjoyment of areas.

Significance of cumulative impacts: The sensitivity of the community to cumulative impacts is **low** as works for the proposed developments and updates are underway, on hold or not yet announced. The magnitude of the impacts during construction is **moderate**, especially if construction activities for the proposed development are concurrent with construction activities for the proposal, resulting in the level of significance being **moderate-low.**

6.2 Operation

6.2.1 Property acquisition

Additional property acquisition and adjustments are not expected during operation of the proposal, with all impacts to be realised during construction of the proposal.

6.2.2 Land use changes

The proposal has been designed to minimise impacts associated with land acquisition. Stakeholder consultation has continued to refine the design and reduce the need for land acquisition, as far as practical. Properties to be partially or fully acquired generally accommodate a range of activities, including agricultural / horticultural, residential, recreation and educational land uses.

During operation, the proposal would result in the following land use changes:

- The Colo Soccer Club would affect one playing field and remove around 80 parking spaces, changing the land use to road corridor in this area.
- A small area of Hanna Park would have abutments for the new elevated four-lane bridge located there, with adjoining areas remaining as parkland including underneath the new bridge structure.
- Part of Western Sydney University (WSU) educational agricultural land would be changed to road corridor for the proposed bypass.
- The existing Richmond Bridge over the Hawkesbury River and the existing eastern approach of Bells Line of Road would be converted into a dedicated active transport connection.

During consultation, stakeholders have shared feedback that the proposal should minimise impacts to the Colo Soccer Club and fields. This demonstrates the soccer club facility is valued by the local community due to its contribution to recreational uses and community wellbeing. However, while the proposal would impact on facilities at the Soccer Club (one playing field and removing 80 out of 260 parking spaces, the remaining available land could still continue to be used as its existing purpose. Transport would continue to engage with the Club to discuss how to further minimise operational impacts, including compensation or reconfiguration of the site.

Changes to land use affecting agricultural land may be perceived as detrimental to the LGA's aspirations to preserve the productive agricultural landscape while empowering current and future agricultural enterprises. However, the proposal requires the partial acquisition of small portions of agricultural land compared to the agricultural land remaining in the surrounding area; therefore, the potential impact on farmland is low. Impacts to WSU are discussed further in Section 6.2.4.

The proposal would complement and support land use changes within the broader study area by increasing the road capacity, including a new bridge over the Hawkesbury River between Richmond and North Richmond, and improving safety for road users in the area. The proposal would support future growth through the City of Hawkesbury LGA and enhance the road network flood resilience.

Transport would undertake landowner engagement to identify measures to mitigate impacts due to land use changes.

Significance of land use impacts:

Overall, the magnitude of land use changes and sensitivity of receptors would be highly dependent on the specific land use and the reliance of the owner/occupier/ users on that land. Given current uses which would be affected by land uses changes, including social infrastructure and small agricultural land parcels, the sensitivity of affected landowners is **moderate**. Given that the proposal footprint largely runs along existing road corridors, the operational land use changes would not be too different than the existing land uses. Additionally, the number of affected landowners due to property acquisition and associated land use changes is low. As such the magnitude of these changes is **low**, resulting in the level of significance being **low**. Transport will continue to consult with affected landowners to minimise land use impacts.

6.2.3 Access and connectivity

Changes to access can lead to indirect social impacts such as anxiety, stress and frustration or impacts to business operations. Access changes can also have social impacts on residents who may experience increased vehicular traffic and associated noise and pollution.

Residential access

The access of several properties located in the vicinity of the bypass / Drift Road intersection and realigned Drift Road would be permanently altered by the bypass during operation of Stage 2A, including:

- **3 Drift Road:** vehicular access would be provided via a new access road off Drift Road (near the proposed cul-de-sac)
- **2, 4, 6 and 8 Inalls Lane**: vehicular access would be provided via a new single access road off the bypass on the existing Inalls Lane alignment to maintain access to all four properties.

The new access road for 2, 4, 6 and 8 Inalls Lane would operate as left-in left-out only. This would reduce the current accessibility to these properties as residents can currently enter and exit their properties via all turning movements. Residents approaching from the north or south along Castlereagh Road, or from the east along the bypass, would need to detour via Drift Road to access their properties. These residents may experience increased travel times to access their properties and may need to adjust their routes or allow extra travel time.

Businesses and community facilities access

In North Richmond, the proposal would modify access to the WestRock light industrial facility. Currently, the WestRock facility is accessed via a combined entry / exit driveway, and a dedicated exit driveway, off Bells Line of Road. A secondary entry point located on Beaumont Avenue would be augmented as part of Stage 2A for heavy vehicles to turn around.

During Stage 2A, the proposal would create a central median on Bells Line of Road which would block the right turn from Bells Line of Road into the WestRock facility near Pitt Lane. As a result, all vehicles coming from the east would need to turn right at the Terrace Road intersection and access WestRock via Beaumont Avenue. Heavy vehicles would turn into the existing WestRock access, while light vehicles could access the

car park via a new access near Hanna Park. These changes to WestRock access could result in changed traffic movements to the site for staff and deliveries but would maintain access for customers and staff during business operating hours. The new vehicular connection to Beaumont Avenue near Hanna Park would require the gate to Hanna Park to be relocated to allow 24-hour access to WestRock while restricting access to Hanna Park in line with current operating hours.

Stage 2A of the proposal would relocate the existing dedicated exit driveway on Bells Line of Road about 50 metres west and the existing combined entry / exit driveway would be reconfigured to an entry only driveway.

For the BP service station in North Richmond, as noted in Section 6.1.5, the left turn into and out of the service station would be retained and as per the existing situation, the no right turn out would be retained. The right turn movement into the BP service station (eastbound direction) would be permanently closed due to the widening of the road. The closure of this right turn in movement from Bells Line of Road may impact on how customers access this business, with eastbound travelling vehicles unable to turn right into the BP service station. This may result in customers and delivery vehicles having to alter travel routes to access the business.

During Stage 2B, with the extension of the bypass parallel to Southee Road, access to Hobartville would be provided via a local road connection from the bypass at Valder Avenue. A cul-de-sac would also be provided on the eastern end of Southee Road near its intersection with Londonderry Road. The bypass would also adjust access to the WSU facilities which currently have direct driveway access off Southee Road. A new driveway would be provided from the bypass to WSU between Valder Avenue and Hill Avenue.

Local roads and emergency vehicle access

The Traffic and Transport Assessment carried out for the proposal indicates that the existing road network surrounding the proposal area would be unable to cope with increasing traffic demand in future years. The proposal would improve travel time for motorists and alleviate congestion between Richmond and North Richmond during peak periods and would redistribute traffic onto the new bypass. Improved road network conditions and efficiency would have a positive impact on community vehicle movements, especially for a community with high motor vehicle reliance.

Overall, the proposal would provide improved travel times between Richmond and North Richmond, including along the new bypass. Positive impacts to the road network would include:

- Catering for future demand for private, public, and active transport and support future growth in the immediate and adjacent areas.
- Improving access during flood events from the current 1 in 2 chance per year to 1 in 20 chance per year flood resilience.
- Contributing to the strategic planning of the broader Richmond area, through timely planning and development of integrated and optimised road, bus, and active transport networks.
- Increased capacity of the road network between Richmond and North Richmond, reducing congestion and improving travel times (especially in peak hour traffic) and journey reliability for residents and visitors travelling through the broader study area. It would also reduce stress and frustration for road users associated with congestion while improving community sense of place and well-being.
- Assist in the reduction of traffic growth due to passing traffic along Kurrajong Road in Richmond town centre. This would avoid the need to widen Kurrajong Road and avoid removing parking to maintain accessibility, as well as amenity of the town centre, supporting Hawkesbury City Council's rejuvenation plans for the town centre.
- Reducing traffic volumes on some local roads including Southee Road, due to the construction of the new bypass.
- Reducing travel times for motorists travelling towards Blacktown and Sydney.

During operation, the proposal would maintain access to all local roads, although some access may be altered, which could lead to increased travel times to get to destinations. Changes to local roads include:

- During Stage 2A, the northern leg of Old Kurrajong Road would be closed to traffic and permanently converted to an emergency access gate. Traffic along Old Kurrajong Road would be redirected through other intersections along March Street (including the March Street / Bosworth Street intersection) to access Kurrajong Road. The emergency access gate would be opened during emergencies such as flood events, allowing Old Kurrajong Road to be used as an evacuation route for local landholders.
- Stage 2A of the proposal would permanently close the southern leg of the Bells Line of Road / Kurrajong Road / Old Kurrajong Road intersection to create a three-way signalised intersection connecting Bells Line of Road, Kurrajong Road and the bypass. To maintain connection to Yarramundi Lane in this area, there would be a new an east-west connection provided between Yarramundi Lane and the bypass.
- During Stage 2A, the bypass would truncate Inalls Lane about 400 metres south-east of its intersection with Yarramundi Lane. A new intersection would be provided to connect the bypass, Drift Road and Inalls Lane. For sections of Inalls Lane west of the bypass, access would remain via Yarramundi Lane. For sections of Inalls Lane east of the bypass, access would be provided via a northern leg at the new proposed bypass / Drift Road intersection. A turning head would be provided on the existing Drift Road alignment to maintain access to residential properties.
- The proposal would connect Victoria Place with the bypass and would maintain all existing turning movements. During Stage 2A, Southee Road would be converted to a cul-de-sac near its intersection with Castlereagh Road. Local road access between Southee Road and the Castlereagh Road / bypass roundabout would be provided, with a stop-sign arrangement where the local road connection meets Southee Road.
- During Stage 2A, Southee Road would be converted to a cul-de-sac near its intersection with Castlereagh Road. Local road access between Southee Road and the Castlereagh Road / bypass roundabout would be provided, with a stop-sign arrangement where the local road connection meets Southee Road. During Stage 2B, this local road access would be closed, along with the existing intersection at Londonderry Road. Access into Hobartville would be provided via a local road connection from the bypass at Valder Avenue.

The proposal would improve the performance of the road network at key intersections within the direct study area, specifically at the Bells Line of Road / Grose Vale Road / Terrace Road intersection and Bells Line of Road / Kurrajong Road / Old Kurrajong Road intersection. There would also be travel time savings for westbound traffic travelling between Hobart Street, Richmond and Crooked Lane, North Richmond.

Overall, improvements in the road network operation would lead to a flow of benefits for the social environment. Improved road network conditions and efficiency would have a positive impact on amenity, especially for a community with a high reliance on motor vehicles. Increased capacity of the road network between Richmond and North Richmond, would reduce congestion and improve travel times for commuters and agricultural enterprises in the socio-economic study area (especially in peak hour traffic) and journey reliability for residents and visitors travelling through the direct study area.

The ease of commuting could lead to an improved sense of place and facilitate better access to social infrastructure in the direct and broader study areas, thus increasing community well-being, physical health and mental well-being. The proposal would enable the LGA's aspirations for reduced congestion, flood resilience, and improved road networks between Richmond and North Richmond.

It would also reduce stress and frustration for road users associated with congestion while improving community sense of place and well-being through improved access to social infrastructure in the broader study area.

Parking

During Stage 2A, the proposal would permanently remove 23 on-street parking spaces, as follows:

- 15 (¼ P) on-street parking spaces (eight eastbound and seven westbound) spaces on Bells Line of Road, between Grose Vale Road and Pitt Lane near North Richmond Shopping Village. To address this loss of parking, the proposal would provide about a 60-metre extension to the existing indented unrestricted

parking along the northern side of Beaumont Avenue. This would provide an additional nine unrestricted on-street carparking spaces. Given there is also off-street parking available at the North Richmond Shopping Village, the net removal of six parking spaces is not expected to result in a substantial impact on parking availability in North Richmond town centre.

- five spaces on Drift Road, south of Inalls Lane
- one space on Inalls Lane, west of Castlereagh Road
- two spaces on Southee Road.

Within the broader study area, travelling by car is the most common form of transportation, meaning there is an associated demand for parking in the local area. The closure of these 23 on-street carparking spaces may inconvenience commuters and customers who may have to travel further from their vehicle to their destination, particularly those visiting retail and businesses along Bells Line of Road between Grose Vale Road and Pitt Lane. The provision of nine new on-street carparking spaces along Beaumont Avenue would assist in maintaining parking opportunities in the area, however, would increase the walking distance to their destination, which may cause some difficulty for some customers particularly the less mobile, the elderly and people with prams. However, it is unlikely that all carparking spaces within the area would be constantly fully occupied throughout the day. Rather, these disruptions are more likely to occur during peak hours. As such, the impacts of removing on-street carparking spaces are minor. The provision of alternative carparking spaces along Beaumont Avenue and existing parking nearby is appropriate to meet the parking demand.

Transport would continue to consult with the community through the development of the proposal into construction.

Through Hobartville, parking demand is mostly related to residential/ property owner access. While the removal of a number of parking spaces on Drift Road, Inalls Lane and Southee Road would be a disruption for motorists, there is ample on-street parking in surrounding areas. However, this disruption to travel may result in motorists needing to walk further to get to their destination.

Active transport and pedestrian access

Existing footpath and cyclist routes are limited and disjointed between North Richmond and Richmond.

Stage 2A of the proposal would provide a continuous active transport connection between North Richmond and Richmond, including a shared path on the northern side of Bells Line of Road in North Richmond between the Terrace Road / Grose Vale Road intersection, conversion of the existing Richmond Bridge to an active transport connection, and a new shared path on the southern side of Kurrajong Road between the bypass / Bells Line of Road / Kurrajong Road intersection and the Kurrajong Road / Chapel Street intersection.

The conversion of the existing Richmond Bridge to a dedicated active transport connection would create a safer and more direct route for pedestrians and cyclists. In Hanna Park, there would be an underpass crossing under the new bridge connecting the existing bridge with a new shared path extension along the northern side of Bells Line of Road, enhancing access to Hanna Park.

At the Kurrajong Road / Chapel Street intersection, the shared path along the southern side of Kurrajong Road would connect with the existing footpaths in Richmond through the provision of a pedestrian refuge island along Kurrajong Road.

Footpaths and pedestrian refuge islands on all sides of the roundabout at the proposed bypass / Castlereagh Road intersection would provide safe movement and crossing for pedestrians. A new footpath would extend along the southern side of the bypass from the roundabout to just before Drift Road.

During Stage 2B, the proposal would extend the shared path on the northern side of Bells Line of Road from the Terrace Road / Grose Vale Road intersection to west of Charles Street.

In addition, as part of the extension of the bypass parallel to Southee Road, at the Southee Road / Hill Avenue intersection, there would be a new footpath connection between the new bus stop provided on the southern side of the bypass and Southee Road.

A pedestrian refuge island would also be provided along the new bypass to enable safe access to and from the westbound bus stop.

Overall, the proposal would provide greater connectivity between North Richmond and Richmond and better active transport opportunities. Active transport options can promote personal health and wellbeing as well as facilitate community cohesion and provide residents and visitors access to the broader community and facilities. By providing an improved active transport network, the proposal would contribute to the strategic objectives of the broader study area, increase local amenity and positively impact the existing local character and community wellbeing. The connections would enable people to go about daily activities more efficiently and contribute to the community's pride and sense of place.

Public transport

The operation of the proposal would not result in any changes to the two existing train stations, Richmond Station and East Richmond Station, nor the passenger train lines. However, the proposal would result in impacts to bus routes and stops that pass through the direct study area.

During Stage 2A, the Bells Line of Road upgrade and the construction of a new bridge and bypass would change the following existing public bus stops:

- The existing westbound bus stop along Bells Line of Road, between the intersections with Grose Vale Road and Terrace Road and the intersection with Pitt Lane, would be retained, and a short bus zone would be provided. The existing eastbound bus stop, currently located within a service road, would be relocated further east in front of the Westrock facility.
- The existing eastbound bus stop at the Bells Line of Road / Kurrajong Road intersection would be relocated further east, and a short bus zone would be provided. The existing bus stop for westbound buses would be relocated on the western side of the intersection and improve traffic flow and movement through this intersection. Furthermore, there would be active transport connections provided to these new bus stops.

Stage 2A of the proposal would impact school bus route 5014 operating westbound on Yarramundi Lane and Inalls Lane. This bus route would need to be rerouted to adapt to the proposed changes in the road network.

During Stage 2B, the following existing public bus stop locations would change:

- The westbound bus stop located on Bells Line of Road, at the Bells Line of Road / Crooked Lane intersection, would be relocated west of the intersection.
- The existing bus stop on the eastern side of Southee Road, at the Londonderry Road / Southee Road intersection, would be removed.
- The existing northbound bus stop on Londonderry Road would be removed and two new bus stops installed on the left turn slip lane and north of the intersection. These would only be accessible by school bus routes.
- The existing eastbound bus stop on Southee Road would be removed and a new eastbound bus stop provided on the bypass. A new westbound bus stop would also be provided on the bypass.

In addition, buses currently travelling along Southee Road would likely be rerouted due to the opening of the bypass.

Impacts to bus stops are expected to be minor, with bus stops relocated close to their existing locations. However, the permanent relocation of the bus stop may mean a change in access and travel time for some people to access bus services in the area. The changes may also cause confusion or anxiety, which is more likely for elderly bus users who are less adaptable to changes in the built environment (Zhang et al, 2021). Informative communication regarding changes in bus stop location should be undertaken with the communities prior to the commencement of these changes to allow bus users sufficient time to adapt.

New bus stops on the bypass and active transport connections would improve access to existing public transport options for residents and visitors. More accessible bus stops would allow existing and future residents to access public transport easily and allow for the independence of those who may not drive.

To facilitate adapting to the proposed changes in the road network, consultation with the relevant bus operator and the educational facilities in Richmond serviced by bus route 5014 would be required.

Significance of access and connectivity impact: The sensitivity of local road users and those travelling through the direct study area to changes in access and connectivity is **moderate**. This rating takes into consideration the value the community places on access and connectivity. The magnitude of the changes during operation would be **moderate** based on the assessment of benefits and potential adverse impacts, resulting in the significance of the impact being **moderate**.

6.2.4 Social infrastructure

The proposal would provide additional connections and greater opportunities for social infrastructure within the direct study area and local areas. This would result from improved access to services and social infrastructure surrounding the proposal including health and education services (e.g. Hawkesbury Hospital), sporting and recreation facilities and parks such as Hanna Park.

New shared user paths proposed on Bells Line of Road, across the existing Richmond Bridge and the southern side of Kurrajong Road would allow a continuous active transport route between North Richmond and Richmond. This would improve access to parks, open spaces and playing fields within the direct study area.

Permanent visual or landscape character impacts on areas valued within the local community due to their contribution to community wellbeing, may impact community wellbeing and amenity. Visual or amenity impacts could reduce some residents' and visitors' enjoyment of social infrastructure and recreational spaces and impact usage and community wellbeing, such as Hanna Park and Colo Soccer Club. For users of Hanna Park, the permanent removal of existing mature trees may detract from the visual character of the park, but these impacts are expected to be minor. Landscaping is proposed as a means of mitigation. Furthermore, the new operational active transport pathways through Hanna Park would connect to the existing Richmond Bridge, ultimately improving the accessibility of Hanna Park for local residents and recreational visitors.

The proposal would impact the Colo Soccer Club by reducing the number of playing fields by one and removing about 80 out of 260 parking spaces. While there would be an impact to facilities, the Soccer Club can continue to operate, and Transport would continue to engage with the Club to discuss how to further minimise operational impacts, including compensation or reconfiguration of the site. The road infrastructure near the Colo Soccer Club would change the landscape character of the soccer field, particularly compared with the existing expansive open field landscape. The presence of the bypass would have some visual dominance over the surrounding landscape which may impact the enjoyment for users. Moreover, there may also be perceived safety concerns of playing soccer adjacent to the presence of ongoing traffic along the bypass, which may deter some users of the field from using this facility.

The Stage 2A and 2B proposal footprint would impact on WSU leased land, on land being used for agricultural activities, including part of the Hawkesbury Forest experiment (the irrigation and fertilisation experiment at the Southee Road/ Londonderry Road intersection). The potential changes to the surrounding environment from the addition of new road infrastructure are perceived to potentially affect the underlying conditions of the experiment. This impact could lead to loss of continuity of data expected from the experiments. Where possible, the proposal has been designed to limit impacts to WSU leased land and these experiments. Transport has committed to working with WSU to relocate experiments.

Stage 2A of the proposal would provide an active transport corridor between North Richmond and Richmond and active transport connections from the existing Richmond Bridge through Hanna Park. These active transport connections are likely to be of high quality design that offers visually aesthetic features which contributes to the enjoyment of user experience, thereby offsetting any losses of visual amenity elsewhere. By providing active transport connections to existing open space, the proposal would provide additional opportunities for residents and visitors to enjoy recreational opportunities within the direct study area, thus improving sense of wellbeing and satisfaction.

Significance of social infrastructure impact: The sensitivity of existing social infrastructure during the operation of the proposal is **moderate**. This is based on the social infrastructure within the direct study area and community reliance on the road network and available parking spaces for access to these facilities. Permanent impacts to social infrastructure such as Hanna Park and Colo Soccer Club may change the way

users enjoy and appreciate these facilities and in turn can impact on both personal and community livelihoods, as well as community cohesion. The magnitude of the operation of the proposal on social infrastructure is **moderate** resulting in a **moderate** impact of significance.

6.2.5 Business and industry

The proposal is expected to increase business exposure and visibility in the North Richmond town centre. This is due to the increased number of residents and tourists likely to use the improved road networks with reduced travel times and congestion, creating potential for retailers to increase their capture of trade and improving local livelihoods.

The proposal would provide a safer more efficient route for which passing traffic can bypass the Richmond town centre. The bypass is located along parts of Inalls Lane and parallel to Southee Road, which are currently being used as a detour around Richmond, so the bypass would not result in a large reduction of traffic numbers through the Richmond town centre but would reduce traffic growth along Kurrajong Road. People, particularly in the local and regional area, would continue to travel into Richmond to visit a range of retail, medical, financial, legal and entertainment services, grocery stores, cafes and restaurants. By reducing traffic growth on Kurrajong Road, the need to widen through the Richmond town centre would be avoided and parking in the town centre would be retained which would maintain accessibility to the businesses and services in the town centre. This would also maintain the amenity of the town centre, and with the new active transport link from North Richmond, encourage greater access from pedestrians and cyclists. The proposal would therefore support Hawkesbury City Council's rejuvenation plans for the town centre.

The proposal would support businesses in North Richmond town centre by maintaining passing trade. The proposal would support the North Richmond Village shops on the south-western side and the commercial/industrial businesses on the north-eastern side, by maintaining access for Bells Line of Road traffic. Furthermore, the additional capacity improvements to the Bells Line of Road provided by the proposal would enhance access to the commercial and industrial zone of North Richmond, which accommodates a range of commercial uses including WestRock, petrol stations, retail outlets, the local Post Office, and small businesses within the area.

The proposal would create a central median on Bells Line of Road which would restrict the right turn from Bells Line of Road into the WestRock business near Pitt Lane. This would result in a slight increase in travel times as customer and staff vehicles need to go to the Bells Line of Road / Terrace Road intersection to access the WestRock facility via the existing heavy vehicle access and new light vehicle access on Beaumont Avenue. Transport has been consulting with WestRock since the early design phases of the proposal to talk through impacts and identify appropriate alternative accesses to maintain business operations. The BP service station in North Richmond access change for eastbound vehicles would necessitate a change in travel route for customers wanting to access that business.

During consultation, the local community has expressed a preference for the protection of the polo industry, due to its long presence in the area and its contribution to the Richmond area and surrounds. The design has been revised to minimise impacts to the industry and the nearby polo clubs located within the direct study area.

The proposal would improve traffic efficiency and safety of the road network between Richmond and North Richmond. It would provide an improved transport network that supports agricultural and industrial uses in the socio-economic study area.

Significance of commercial operations and businesses impact: Landowners and nearby businesses of the operational proposal would be consulted about any potential impacts to access. Consultation would be undertaken well in advance of property accesses being impacted. The sensitivity of businesses during operation of the proposal is **moderate**. The magnitude of the operation of the proposal on businesses is **moderate**, resulting in a **moderate** impact of significance.

6.2.6 Community values, liveability and amenity

Community values include local valued features, the soundscape, and the aesthetics of places within the broader study area. Changes to such community values could impact how the residents, road users and visitors use or appreciate the local community, including social infrastructure, heritage items and natural assets, and their sense of place.

Once operational, the proposal would provide improved landscaping, new shared path and footpaths that would positively impact surroundings through amenity, aesthetic, and natural environment improvements. The proposal may increase opportunities to refine a sense of place of the Richmond and North Richmond town centres through strategic planning and in close consultation with Council. Additional positive community values, liveability and amenity impacts during the proposal operational phase would include:

- Improved climate change preparedness and enhanced flood resilience of the road network which could improve robustness and accessibility to essential services during flood events.
- Increased community health and wellbeing due to the upgraded and new active transport networks, new and upgraded shared paths and additional active transport connections. An improved active transport network would result in improvements to pedestrian safety and could encourage more road users to shift to active modes of transport, therefore improving social connectivity and community wellbeing.
- Better active transport opportunities through the construction of new footpaths, shared paths and two new bus stops would improve pedestrian connectivity and liveability. This aligns with and supports the expected population growth in Richmond.
- Improved local character by repurposing the existing Richmond Bridge for active transport which would positively impact the local amenity. This may provide greater incentive for the use of public transport and less private vehicle reliance through better public transport access opportunities to the surrounding residents and businesses.

Community values and heritage impacts

Impacts during the operational phase of the proposal would include:

- Changed local rural character around the zones of the river / estuary / open space areas of Hawkesbury River, Hanna Park, and the rural Richmond areas of Kurrajong Road (from Old Kurrajong Road to Chapel Street) and the bypass from Old Kurrajong Road including a shared path to the southern side of Kurrajong Road, and a new two-lane road for the Richmond bypass.
- Changes around highly valued heritage items may be perceived by the local community as an adverse impact to local amenity and local values. Identified impacts to heritage items would include:
  - The proposed works would adversely impact the views of Hobartville and Avenue of trees east and west side (Chapel Street). Although the trees along the north side are not within the Hobartville curtilage and are recent plantings, their loss would alter the existing visual character of the place and detract from the visual amenity. The proposed removal of the singular mature English Plane tree at Chapel Street would detract from the physical and visual character of the Avenue of trees east and west side heritage item.
  - Mountain View: The proposal would remove a separate residence on Drift Road near the heritage item. The proposal would also include the construction of a bridge over the flood plains which would be visible in the distance depending on the point of view as some tree cover exists between Mountain View and the proposed bridges.
  - McMahon Homestead. The proposal would introduce a road corridor and bridge that would interfere with the existing view and sight lines. Specifically, Richmond bypass and two bridges that would cross over the watercourses that run into the Mareh-Mareh Lagoon further northeast of the heritage item would alter the visual character of the wide-ranging paddocks.

Overall, the proposed works would introduce visible infrastructure which would alter the landscape vistas at certain locations. The local community values existing views towards the lowlands and pastoral land parcels. Local character changes and impacts on natural features, due to vegetation removal for example, and

changes on built features, e.g. heritage items, that the local community value can have an adverse effect on the local community's shared identity and attributes.

Amenity impacts

Adverse amenity impacts during the proposal operational phase would include:

Noise

The proposal may impact sensitive receivers' amenity due to increased operational road traffic noise levels once Stage 2A is constructed, which is expected to be completed by 2029. The proposal is predicted to alter operational road traffic noise levels for many receivers in the direct study area, particularly on the southern side of the Hawkesbury River due to the new Richmond Bypass. Specifically, Stage 2A of the proposal is predicted to result in:

- 95 residential receivers experiencing increases in traffic noise of greater than 2.0 dB and above the base criteria
- 24 residential receivers experiencing noise levels above the cumulative limit criteria
- 12 residential receivers experiencing acute noise levels

Consequently, for Stage 2A, a total of 101 residential and three 'other sensitive' receiver buildings are predicted to experience noise levels that exceed the operational road traffic noise criteria. The following residential sensitive receivers have been identified as being eligible for consideration of additional noise mitigation:

- One residential receiver to the north of Bells Line of Road
- Two residential receiver and two other sensitive receivers to the south of Bells Line of Road
- One residential receiver to the north of Bells Line of Road
- 13 residential receivers and one other sensitive receiver to the south of the proposed Richmond Bypass (south of Inalls lane)
- 16 residential receivers to the north of the proposed Richmond Bypass (north of Inalls Lane)
- 68 residential receivers to the south of Southee Road

'Other sensitive' receiver buildings include Hawkesbury Dentistry, Advanced Podiatry and the Church of Jesus Christ of Latter-day Saints. Heritage receivers that are predicted to have exceedances include Mountain View at 22 Inalls Lane, Richmond, and House at 32 Inalls Lane, Richmond.

The proposal may impact sensitive receivers' amenity due to increased operational road traffic noise levels once Stage 2B is constructed. Specifically, Stage 2B of the proposal is predicted to result in:

- A total of 159 receiver buildings (142 residential and 17 'other sensitive' buildings) predicted to experience noise levels that exceed the operational road traffic noise criteria. These sensitive receivers have been identified as being eligible for consideration of additional noise mitigation. The receivers predicted to exceed the criteria for Stage 2B include all receivers that are predicted to exceed for Stage 2A.
- 119 residential receivers experiencing increases in traffic noise of greater than 2.0 dB and above the base criteria
- 110 residential receivers experiencing noise levels above the cumulative limit criteria
- 23 residential receivers experiencing acute noise levels

'Other sensitive' receiver buildings include:

- Riverlands Dental
- North Richmond family Medical Practice
- Elizabeth Street Extended Hours Preschool
- Richmond North Public School

- Caring 4 Kids - Child Care North Richmond
- Hawkesbury Dentistry
- Community Kids, North Richmond Early Education Centre
- Advanced Podiatry
- The Church of Jesus Christ of Latter-day Saints
- Hobartville Long Day Preschool
- Hobartville Public School
- Western Sydney University

Heritage receivers that are predicted to have exceedances include House at 101A Bells Line of Road, North Richmond, Mountain View at 22 Inalls Lane, Richmond, and House at 32 Inalls Lane, Richmond.

Residential properties close to the operational road would experience vehicular traffic and associated noise and pollution, as well as potential loss of privacy. Increased noise levels have the potential to impact on sensitive receivers' ability to sleep, people's general health and wellbeing, and overall community health. Consequently, these sensitive receivers would be eligible for consideration of additional noise mitigation.

The NVIA carried out for the proposal identifies a series of mitigation measures, including at-property treatment mitigation. As per the assessment, noise barriers would not be feasible in between the proposed bypass and Southee Road for Stage 2A (expected to be completed by 2029), given traffic on Southee Road causes the exceedances and property access requirements prohibits a barrier between residential receivers and Southee Road. Therefore, at-property treatments would likely be the most feasible mitigation for receivers on Southee Road.

The use of noise barriers around Southee Road, along with at property treatment of sensitive receivers with residual impacts, is considered a feasible noise mitigation for Stage 2B. Other feasible options could include at-property treatments. The final noise mitigation strategy would be determined during detailed design for Stage 2A and 2B.

Visual amenity

Permanent visual amenity impacts on areas valued within the local community may impact community wellbeing. Visual or amenity impacts could reduce some residents' and visitors' enjoyment of social infrastructure and recreational spaces and impact usage and community wellbeing. Reduced amenity and enjoyment of activities at surrounding social infrastructure and recreation facilities within the direct study area could lead to decreased opportunities for community interactions potentially leading to diminished social cohesion.

For adjacent and nearby residential and businesses, being located closer to the presence of road infrastructure would mean being closer to vehicular traffic and noise, potential air pollution and loss of aesthetic landscapes. However, the impacts are not expected to be more than minor, given that the proposal footprint largely runs along existing road corridors so the operational character would not be too different to the existing character.

The proposed removal of vegetation, including tree removal and modifications to the public open space of Hanna Park would reduce visual amenity and potentially affect enjoyment of activities at surrounding social infrastructure and recreation facilities. However, the proposal includes revegetation where possible along its length. Specifically, key features of Stage 2A of the proposal would include landscaping and use of predominantly endemic plant species for replacement planting to retain the local biodiversity of remnant bushland areas. Visual amenity would improve over time as vegetation matures. Stage 2A would also provide enhanced community assets, and enhanced liveability, in the form of an upgraded active transport network between Richmond and North Richmond, which would add to overall community amenity.

The proposal would reduce visual amenity around the Hawkesbury River, including the riverbanks and parkland areas of Hanna Park with the addition of the new four-lane bridge, and reduce visual amenity at Inalls Lane, where the new elevated Richmond Bypass would remove existing mature roadside trees and dominate the existing view, particularly for motorists and cyclists.

The intersection with Castlereagh Road is proposed to be replaced with a large roundabout, which would impact the character of properties surrounding the existing intersection, as verges are adjusted, and existing trees removed.

Significance of community and amenity impacts: The sensitivity of the community to changes in community values, liveability, and amenity is **moderate**. This is due to shared community values around heritage items, recreational areas and rural areas of Richmond, which include two areas that the proposal would influence, specifically Kurrajong Road (from Old Kurrajong Road to Chapel Street) and the bypass from Old Kurrajong Road, joining with the existing Inalls Lane at Drift Road.

The magnitude of the operation of the proposal on community values, liveability and amenity is **moderate**, based on:

- Proposed vegetation removal which would result in reduced visual amenity affecting heritage items and social infrastructure.
- Increase of built infrastructure in a mostly rural setting, including a new bridge and bypass.
- Increased noise levels closer to adjacent receivers.

Changes to local character and visual impacts on items of community value, including on heritage items and recreational spaces, could impact how the local community use or appreciate these assets, and could lead to decreased social infrastructure use and therefore, cause reduced community wellbeing and sense of place. Moderate sensitivity and moderate magnitude would result in a **moderate** impact of significance.

7 Impact assessment summary and significance

Table 7-1 and Table 7-2 provide a summary of the impact assessment by assigning a sensitivity and magnitude rating to negative impacts only to determine overall significance.

Table 7-1 Summary of level of significance of impact assessment – Construction impacts

Issue category	Impact / Comment	Sensitivity	Magnitude	Level of significance
Property acquisition and adjustments	▪ The proposal would require partial acquisition of 13 properties and two full acquisitions for Stage 2A and five properties for partial acquisition and one for full acquisition for Stage 2B. This includes two partially acquired lots that are Crown Land (including land used by University of Western Sydney), while the rest are privately owned properties used for residential, recreational or agricultural purposes. Of the fully acquired properties, one is a residential property, one is a rural/ agricultural property and another is a property intended to be part of the road corridor. ▪ In addition, part of 15 lots would be temporarily leased for construction activities for Stage 2A and the establishment of ancillary facilities. This includes 13 privately owned lots and two Crown land lots. Access to these properties may be temporarily disrupted intermittently through the construction period.	Moderate	Low	Moderate - Low
Land use changes	▪ The proposed construction activities would temporarily change existing land use within the direct study area to accommodate construction zones and ancillary facilities. The proposed construction activities would lead to land use changes along the bypass alignment to the south of the Richmond town centre and small sections of Hanna Park. ▪ Temporary changes to land use would primarily occur on land not zoned as a road corridor, particularly land use that is currently zoned as rural landscape and education, agriculture or recreation. The impacts include reduction in land size of affected properties, which would decrease the capacity for activities and land uses to occur for which they are zoned. ▪ Changes to land use may also disrupt the way of life of the residents adjacent to the proposal area, with potential impacts including disruptions to vehicle access, changes in amenity (from presence of construction machinery and vehicles, traffic, visual, noise and vibration, air quality and light spill at night) and loss of privacy (from presence of construction workers). However, these impacts would be temporary as the sites used as ancillary facilities would be reinstated after construction.	Moderate	Low	Moderate-low
Access and connectivity	▪ Some residential properties and businesses, including WestRock and the BP service station, in North Richmond (along Bells Line of Road, Grose Vale Road, and Terrace Road) Richmond (along Kurrajong Road) and Hobartville (along Inalls Lane and Southee Road) are likely to experience changes in access and parking. Access during construction to these properties and businesses would be maintained (either in its current form or with some adjustments) in consultation with property owners and business operators. However, permanent access changes would occur to WestRock and the BP service station.	Moderate	Moderate	Moderate

Issue category	Impact / Comment	Sensitivity	Magnitude	Level of significance
	▪ Closure of the Old Kurrajong Road (northern leg) at the Kurrajong Road/ Old Kurrajong Road intersection. This would be a permanent change and would direct people further along Kurrajong Road to be able to access Windsor Road and Old Kurrajong Road. ▪ The proposal would generate light and heavy vehicle movements on the road network surrounding the proposal area. Disruptions from the delivery or removal of construction materials and equipment as well as construction worker movements to and from the proposal area, may temporarily affect the efficiency of the local road network. This could lead to road users using alternative routes to avoid construction areas, increasing pressure on surrounding streets and potentially impacting the local amenity in quieter areas. ▪ Additional traffic movements required for construction around Terrace Road, Bells Line of Road, Old Kurrajong Road, Drift Road and Castlereagh Road may result in temporary delays for motorists. Access for emergency vehicles travelling through the proposal area would be maintained. ▪ Traffic signal modifications, temporary lane closures, and reduced travel speeds would be implemented along existing roads in the proposal area during construction progressively. While the roads would remain open, changed traffic conditions may result in detours or delays for road users, impacting travel times and connectivity during construction. ▪ Existing parking arrangements would be altered along some sections of the proposal to facilitate construction activities. This would include to existing parking on northern side of Beaumont Avenue, North Richmond, and Drift Road and Victoria Place near Inalls Lane and Inalls Lane near Castlereagh Road, Hobartville. There is sufficient parking in North Richmond to accommodate any temporary disruption, and impacts in Hobartville would be minor as areas impacted are near existing intersections where parking is not permitted. ▪ Changes to access around construction areas and ancillary facilities would result in detours or delays for people walking or cycling, impacting travel times and connectivity during construction. Specifically, upgrades to Bells Line of Road between the new bridge and the Grose Vale Road / Terrace Road intersection in Stage 2A would impact the footpath connections between the existing bridge and North Richmond town centre. Additionally, road shoulders along Bells Line of Road and Kurrajong Road used by cyclists would be disrupted by the establishment of construction areas. ▪ During Stage 2A part of Hanna Park would be converted into an ancillary facility to facilitate the delivery of girders and construction of the new bridge. While work is occurring at this location, the ancillary facility would be converted into a construction area and public access along existing active transport paths and parkland within the ancillary facility would be disrupted. ▪ Construction of Stage 2B may result in disruption to pedestrian use of the footpaths along Bells Line of Road in North Richmond west of the Grose Vale Road / Terrace Road intersection. ▪ Changes to public transport facilities, including relocation of bus stops, would impact people travelling through the direct study area. While pedestrian access to existing bus stops would be maintained during construction, impacts to commuters using these bus services would include the temporary relocation of bus stops away from construction areas when work is occurring near the bus stops, which may require passengers to walk further to relocated bus stops. Potential impacts to public transport during construction would include longer travel times through construction areas due to speed reductions and the presence of construction vehicles on the local road network.			

Issue category	Impact / Comment	Sensitivity	Magnitude	Level of significance
Social infrastructure	▪ Ancillary facilities may be located on areas on social infrastructure facilities (including Hanna Park and WSU leased land) resulting in this land not being temporarily available for its existing purpose. However, this impact would be temporary, and land would be returned to its existing use upon construction completion. ▪ During parts of the construction, users would experience disruptions in accessing and using Hanna Park, the BBQ facilities, and the sundial. Access to features including the carpark, skate park and part of Hanna Park would be maintained during construction of the bridge. ▪ The proposal would have a direct impact on the Colo Soccer Club affecting one soccer field and about 80 carparking spaces. This reduced number of playing fields and lack of parking would impact patrons, particularly on peak sporting days and construction activities may affect playing amenity. Consultation would continue to identify safeguards and opportunities to minimise impacts, for example limiting construction work on gamedays (typically on weekends) and additional parking. This would reduce any construction impacts such as traffic disruption, noise and vibration, dust, and visual amenity for users of the soccer field. ▪ During Stage 2A and Stage 2B, it is proposed to use part of Western Sydney University leased land as a temporary construction compound at the corner of Castlereagh Road, which would affect the use of the land for current university activities. This would reduce the land available for these activities. However, this impact would be temporary, and land would be returned upon completion of construction. ▪ The proposal footprint and construction activities for Stage 2A and 2B would directly impact land used for agricultural activities including a number of water ponds. The proposal would impact on land available to undertake the activities (including associated water ponds). Transport is discussing the relocation of the water ponds with WSU to make sure that activities are able to continue on the campus. ▪ Stage 2B proposal footprint and construction activities would impact on the Hawkesbury Forest experiment (a long term climate change experiment corner of Southee Road and Londonderry Road). In addition, the potential changes to the surrounding environment from increased construction activities such as tree removal, dust and vehicle emissions are perceived to potentially affect the underlying conditions of the experiment. This impact could lead to loss of continuity of data expected from the experiments. This in turn could affect the research teams and students studying at the university who have devoted a large portion of their careers or studies to these experiments. Where possible, the proposal has been designed to limit impacts to WSU leased land and these experiments. Transport has committed to working with WSU to relocate experiments. There would be no impact to the long term experiments during Stage 2A. ▪ Construction disruption and potential reduced amenity (noise, dust) impacts on social infrastructure may affect community well-being and amenity. Visual or amenity impacts during construction could reduce some residents' and visitors' enjoyment of social infrastructure and recreational spaces, thereby impacting social infrastructure usage and community well-being. This would include Hanna Park, Colo Soccer Football Club, Killarney Polo Club, Windsor Polo Club, Hawkesbury Valley Baptist Church, and Church of Jesus Christ of Latter-day Saints, WSU, would be impacted during construction.	Moderate	Moderate	Moderate

Issue category	Impact / Comment	Sensitivity	Magnitude	Level of significance
Businesses and industry	▪ Some businesses in North Richmond along Bells Line of Road and on nearby local roads, in Richmond along Kurrajong Road, and in Hobartville along Inalls Lane and Southee Road, are likely to experience changes to access and parking. This could result in changes of travel behaviour of customers frequenting these businesses. ▪ There are commercial properties that predominantly front Grose Vale Road, Terrace Road, and Bells Line of Road in North Richmond. Changed traffic conditions may affect the ability of these businesses to operate effectively if they require frequent access for delivery or distribution of goods and services. However, access to these properties would be maintained for trade unless discussed with business owners. Where alternate access arrangements would be required (for example, for the Westrock facility in North Richmond during Stage 2A), agreement would be sought from the business prior to implementation of the alternate access arrangement. ▪ An increase in the number of workers in the area during construction (such as construction workers and site engineers) may have a positive impact on local businesses due to increased patronage. Furthermore, construction of the proposal may provide additional employment opportunities and opportunities for businesses involved in earthworks, roadworks, bridge construction and material supply. ▪ Partial acquisition of some land for ancillary facilities and the bypass would result in a minor reduction in the availability of land for agricultural purposes, for example horse breeding.	Low	Moderate	Moderate-Low
Community values, liveability and amenity	▪ There would be a reduction of local amenity in the direct study area (such as visual, noise, traffic and air quality impacts), during construction. ▪ There would be visual impacts associated with the proposed ancillary facilities. During construction of Stage 2A, all seven ancillary facilities would be used. During construction of Stage 2B, only the ancillary facilities at Terrace Road and Castlereagh Road would be used to support construction activities for the proposal. The proposed ancillary facility at Hanna Park would have the highest visual impact due to its setting. This area comprises the open space areas of the Hawkesbury River Park. The area would be required for access of construction vehicles for the construction of the new bridge. The removal of existing mature trees would impact visual amenity, notably for park users and the residents of the adjoining Norfolk Place. ▪ Vegetation removal across the proposal would increase the potential for negative visual impact and reduced amenity. Landscaping works and the proposed urban design features would reduce the visual impacts associated with vegetation removal. ▪ The construction of the new four-lane bridge over the Hawkesbury River about 30 metres downstream of the existing Richmond Bridge would dominate the existing river view, potentially impacting visual amenity. ▪ The proposal works south of the Hawkesbury River would introduce visible prominent and significant infrastructure which would disrupt the integrity of the landscape vistas and, therefore, have the potential to visually impact three heritage items within the vicinity of the direct study area, including the Hawkesbury River Bridge, Avenue of trees, Hobartville, McMahon Homestead, and the State heritage listed Mountain View residence. ▪ There are seven Aboriginal archaeological sites that would be at least partially impacted by the proposal, with various heritage significance. This includes five sites with low significance and two sites with moderate significance.	Moderate	Moderate	Moderate

Issue category	Impact / Comment	Sensitivity	Magnitude	Level of significance
	▪ Residents and commercial/industrial sensitive receivers closest to Bells Line of Road, Southee Road and Castlereagh Road, Inalls Lane and Kurrajong Road would experience reduced amenity due to an increase in construction noise. The highest impacts would occur when noise-intensive equipment, such as chainsaws, chippers, or concrete saws, would be used. Increased noise can potentially impact people's experience of privacy, peace, and quiet enjoyment. ▪ Out-of-hours work would likely be required at some ancillary facilities to support out-of-hours construction work. Residential receivers surrounding the compounds are predicted to be impacted during noisy work, although the frequency of this type of work is expected to be relatively low. Increased noise can cause sleep disturbance or discomfort for residential receivers closest to the proposal. ▪ Sensitive receivers in the direct study area which are within the human comfort minimum working distance, and front-row receivers near Bells Line of Road, Kurrajong Road, Innis Lane, Londonderry Road, and Castlereagh Road, may experience vibration impacts at times when vibration-intensive equipment is in use.			
Cumulative construction impacts	▪ Extended periods of construction and associated disruption (e.g. increased dust, noise, traffic changes, congestion, and changed wayfinding) could increase the number of sensitive receptors, leading to cumulative impacts on accessibility and way-of-life. ▪ Cumulative socio-economic impacts may arise from other proposals and development occurring simultaneously in the broader study area. Nearby proposals, such as the Richmond System Wastewater Upgrade, Redbank development, the Grose River Bridge, the North Richmond Community Centre Redevelopment and the Kurrajong to Kurmond Cycleway Project. If construction activities for these proposals overlap with those for Stage 2A or 2B, potential cumulative social impacts during construction could include amenity impacts arising from increased noise, visual change, and health and well-being impacts from construction fatigue.	Low	Moderate	Moderate – Low

Table 7-2 Summary of level of significance of impact assessment – Operational impacts

Issue category	Impact / Comment	Sensitivity	Magnitude	Level of significance
Property acquisition and adjustments	▪ Additional property acquisition and adjustments are not expected during operation of the proposal, with all impacts to be realised during construction of the proposal.	Low	Moderate	Moderate – Low
Land use changes	▪ During operation, the proposal would result in land use changes associated with the new elevated bypass, which would reduce the Colo Soccer Club's playing field capacity, replace areas of Hanna Park with a new elevated four-lane bridge, and change small portions of agricultural land to a road corridor for the proposed bypass. ▪ Changes to land use affecting agricultural/ rural land may be perceived as detrimental to the LGA's goal of preserving the productive agricultural landscape and supporting current and future agricultural enterprises. However, the partial land acquisition of agricultural land is small compared to land used for that purpose remaining in the surrounding area. ▪ The proposal would complement and support land use changes within the broader study area by increasing road capacity, enhancing road efficiency, supporting future growth through the Hawkesbury LGA, and enhancing the road network's flood resilience.	Moderate	Low	Moderate – Low
Access and connectivity	▪ There are a number of properties on Inalls Lane near the Castlereagh Road intersection that currently have access directly off Inalls Lane. As part of the Stage 2A construction, a new single access road off the bypass on the existing Inalls Lane alignment would be implemented to maintain access to all four residential properties. ▪ During Stage 2A, Southee Road would be converted to a cul-de-sac near its intersection with Castlereagh Road. During Stage 2B, with the extension of the bypass parallel to Southee Road, access to Hobartville would be provided via a local road connection from the bypass at Valder Avenue. A cul-de-sac would also be provided on the eastern end of Southee Road near its intersection with Londonderry Road. All residential properties on Southee Road would maintain their existing access arrangements. ▪ The proposal is expected to improve the road network by upgrading the capacity of roads and improving intersections. Improved road network conditions and efficiency would improve amenity, especially for a community which relies on motor vehicle use. The proposal would increase capacity of the road network between Richmond and North Richmond, would reduce congestion and improve travel times (especially in peak hour traffic) and journey reliability for residents and visitors travelling through the broader study area. ▪ The widening of Bells Line of Road would impact up to 15 (¼ P) on-street parking spaces that support businesses which are accessed from Bells Line of Road. However, the proposal would create nine new unrestricted parking spots on Beaumont Avenue near the Terrace Road intersection. While this would provide additional parking, the location would result in a longer walk from vehicles to businesses on Bells Line of Road.	Moderate	Moderate	Moderate

Issue category	Impact / Comment	Sensitivity	Magnitude	Level of significance
	▪ Stage 2A of the proposal would provide a continuous active transport connection between North Richmond and Richmond. By improving the active transport network, the proposal would contribute to the strategic planning of the broader study area, increase local amenity by meeting stakeholder expectations on matters relating to active transport, and positively impact the existing local character. ▪ Better access to public transport would be provided by two new bus stops along the bypass near Hill Avenue (one eastbound and one westbound), with a footpath connection to Southee Road to improve public transport connectivity. Ten existing bus stops would be permanently relocated due to the widening of existing roads, one bus stop would be removed, and two retained at their current locations. Changes to public transport facilities and active transport connections would improve access to existing public transport options for residents and visitors. More accessible bus stops would allow existing and future residents to access public transport easily and allow for the independence of those who may not drive.			
Social infrastructure	▪ The proposal would provide additional connections and significant opportunities for social infrastructure and commercial operations in the direct study area. This would result from improved access to services and social infrastructure surrounding the proposal, including health and education services, commercial areas, and sporting and recreation facilities. ▪ The existing bridge would connect to footpaths in Hanna Park, enhancing active transport access to the park and along Bells Line of Road. ▪ The Hawkesbury River, including the riverbanks and parkland areas of Hanna Park, would experience a character change with the addition of the new four-lane bridge and the loss of some existing mature trees. ▪ The proposal would impact the Colo Soccer Club by reducing the number of playing fields by one and removing about 80 out of 260 parking spaces. While there would be an impact to facilities, the Soccer Club can continue to operate, and Transport would continue to engage with the Club to discuss how to further minimise operational impacts, including compensation or reconfiguration of the site. Amenity impacts from the presence of the proposal would also change the views of the area. ▪ Stage 2A and 2B proposal footprint would impact on WSU leased land, on land being used for agricultural activities, including part of the Hawkesbury Forest experiment (the irrigation and fertilisation experiment at the Southee Road/ Londonderry Road intersection). The potential changes to the surrounding environment from the addition of new road infrastructure are perceived to potentially affect the underlying conditions of the experiment. This impact could lead to loss of continuity of data expected from the experiments. Where possible, the proposal has been designed to limit impacts to WSU leased land and these experiments. Transport has committed to working with WSU to relocate experiments.	Low	Moderate	Moderate-low

Issue category	Impact / Comment	Sensitivity	Magnitude	Level of significance
Businesses and industry	▪ The proposal would provide a safer, more efficient route for which passing traffic can bypass the town centre. The bypass is located along parts of Inalls Lane and parallel to Southee Road, which are currently being used as a detour around Richmond, so the bypass would not result in a large reduction of traffic numbers through Richmond town centre but would reduce traffic growth along Kurrajong Road. People, particularly in the local and regional area would continue to travel into Richmond to a range of retail, medical, financial, legal and entertainment services, grocery stores, cafes and restaurants. By reducing traffic growth on Kurrajong Road, the need to widen through the Richmond town centre would be avoided and parking in the town centre would be retained which would maintain accessibility to the businesses and services in the town centre. This would also maintain the amenity of the town centre, and with the new active transport link from North Richmond, encourage greater access from pedestrians and cyclists. The proposal would support Hawkesbury City Council's rejuvenation plans for the town centre. ▪ The proposal would support the North Richmond businesses by maintaining passing trade. Furthermore, the additional capacity improvements to the Bells Line of Road provided by the proposal would improve access to the commercial and industrial zone of North Richmond ▪ The proposal would create a central median on Bells Line of Road, which would block the right turn in from Bells Line of Road into the WestRock business near Pitt Lane. Access would be altered to left-in, left out along Bells Line of Road, with alternative access provided on Beaumont Avenue. This could result in changes to travel routes / times to access the business. ▪ In addition, the right turn in movement into the BP service station for eastbound vehicles travelling on Bells Line of Road in North Richmond would be permanently closed. Changed access arrangements may result in changes to customer behaviour and travel movements.	Moderate	Low	Moderate-low T
Community values, liveability and amenity	▪ The proposal would provide improved landscaping, new shared paths and footpaths that would positively impact surroundings through amenity, aesthetics, and natural environment improvements in the direct study area. The construction of new footpaths, shared paths and two new bus stops would improve pedestrian connectivity and liveability, especially considering the expected population growth. ▪ The proposal would improve local character by repurposing the existing Richmond Bridge for active transport, which would positively impact the local amenity. Better public transport access opportunities to the surrounding residents and businesses may provide greater incentive for the use of public transport and less private vehicle reliance. ▪ The proposal would provide upgraded and new active transport networks, new and upgraded shared paths, and additional active transport connections. An improved active transport network would improve pedestrian safety and could encourage more road users to shift to active modes of transport, therefore improving social connectivity and community well-being. ▪ The proposal would allow climate change preparedness and enhanced flood resilience of the road network, which could result in reduced loss of access to essential services during flood events, reduced flood impacts on the agricultural enterprises in the direct study area and local economy and reduced personal and financial effects on local communities.	Moderate	Moderate	Moderate

Issue category	Impact / Comment	Sensitivity	Magnitude	Level of significance
	▪ The proposal would introduce visible infrastructure that would alter the landscape vistas at specific locations. The greatest impacts would be due to the new four-lane bridge over the Hawkesbury River and elevation of the bypass, along with locations where there would be removal of mature trees along the corridor as it would alter the rural landscape setting. The local community values existing views towards the lowlands and pastoral land parcels. Local character changes and impacts on natural features due to vegetation removal, for example, and changes on built features (e.g., heritage items), that the local community values can adversely affect the local community's shared identity and attributes. ▪ The proposal would change local rural character around the zones of the river/estuary / open space areas of Hawkesbury River, the estuary of Pughs Lagoon, Hanna Park and North Richmond Heritage Park and rural areas along Kurrajong Road (from Old Kurrajong Road to Chapel Street) and the bypass from Old Kurrajong Road via to the introduction of new infrastructure (built-up) form, including a shared use path to the southern side of Kurrajong Road, and a new elevated two-lane road for the Richmond bypass. ▪ Changes around highly valued heritage items may be perceived by the local community as adversely impacting local amenity and local values. Therefore, they may impact how the local community uses or appreciates them, reducing community well-being and sense of place. Indirect visual impacts could be perceived at Hobartville, Avenue of trees, State heritage listed Mountain View residence and McMahon Homestead. ▪ Reduced amenity for sensitive receivers due to increased operational road traffic noise levels. The proposal would alter operational road traffic noise levels particularly for sensitive receivers along the bypass south of Richmond. Increased noise levels have the potential to impact sensitive receivers' ability to sleep, people's general health and well-being, and overall community health. Additional noise mitigation would be provided for eligible receivers as identified in the noise and vibration impact assessment carried out for the proposal.			

8 Management and mitigation measures

Table 8-1 provides the recommended management and mitigation measures to be implemented during the construction and operation of the proposal.

The management and mitigation of other environmental impacts (such as noise and vibration, traffic and other amenity-related impacts) as identified in the REF would contribute to the management of social impacts, due to their interrelated nature and ability to influence individuals and communities.

Table 8-1 Mitigation measures

Potential impact	Mitigation measure	Responsibility	Timing
Community impacts during construction including noise, visual, amenity impacts	A Community Liaison Plan (CLP) will be prepared and implemented as part of the construction environmental management plan (CEMP) to help provide timely and accurate information to the community during construction. The CLP will include (as a minimum) mechanisms to provide details and timing of proposed activities to affected residents, including changed traffic and access conditions. The CLP will be prepared in accordance with *Transport's stakeholder engagement toolkit* and the *Transport for NSW Stakeholder and Community Engagement Policy 2019* and the proposal Community and Stakeholder Engagement Plan.	Transport and Construction Contractor	Detailed design/ pre-construction
Property impacts, including temporary access changes and property acquisition	Continued consultation with affected property owners and land occupiers to inform them about access changes and understand their access requirements until the completion of the overall proposal. Property acquisition will align with property acquisition requirements including private and crown land acquisition, in accordance with the Land Acquisition Policy and the *Land Acquisition (Just Terms Compensation) Act 1991* and Land Acquisition Reform 2016.	Transport/Construction contractor	Detailed Design/Pre-construction/ construction
Property impacts on the Colo Soccer Club	Ongoing consultation with the Colo Soccer Club to identify any mitigation measures required to reduce impacts on the playing fields.	Transport/Construction contractor	Detailed Design/Pre-construction/ construction
Access disruptions and access impacts	Continued consultation with emergency services will be undertaken to inform them about access changes and understand their access requirements, to ensure access is maintained throughout the construction period.	Transport and Construction Contractor	Detailed design / construction
Changes in access for all road users	The local community will be notified of temporary changes to local road intersections prior to works at those intersections commencing. Consultation will continue during construction.	Construction contractor	Pre-construction / construction
Construction traffic impacts on public transport	Consultation with bus operators on the construction traffic. The local community will be notified prior to changes in bus services. For mitigation measures, refer to the TTIA report.	Transport and construction contractor	Pre-construction/ construction
Construction traffic impacts on local businesses' operations/patronage	Businesses in North Richmond will be notified about the timing and scheduling of construction activities.	Construction contractor	Pre-construction/ construction
Construction traffic impacts on local businesses' operations/patronage	Communication with businesses regarding alternate access arrangements and notifications about changes to traffic conditions and parking arrangements will be carried out.	Transport and construction contractor	Detailed design/ /construction

Potential impact	Mitigation measure	Responsibility	Timing
Social infrastructure impacts including access and amenity impacts	Consultation with operators of sporting facilities, educational facilities, public transport providers and Council regarding construction activities and mitigation measures during busy periods and events will be conducted.	Construction contractor	Pre-construction/ construction
Relocation of bus stops during construction	Public transport providers and users will be notified in advance of any temporary or permanent changes to bus stop locations through signage at the existing bus stops. Adequate way finding signage will be installed.	Transport/ Construction contractor	Detailed design /Construction
Impacts on community values, heritage	All relevant construction staff, contractors and subcontractors should adhere to statutory obligations and best practice in accordance with the *NSW Heritage Act 1977* and The Burra Charter (Australia ICOMOS 2013). Refer to the SOHI report for specific mitigation measures.	Transport and construction contractor	Pre-construction/ construction
Impacts on cultural heritage	An application for an Aboriginal Heritage Impact Permit should be made under section 90A of the *National Parks and Wildlife Act 1974* for the land and identified sites/objects within the boundaries of the proposal area prior to the commencement of pre-construction or construction activities. Refer to the ACHA report for specific mitigation measures.	Transport and construction contractor	Pre-construction/ construction
Impacts on amenity including noise, vibration, visual and vegetation removal	Mitigation measures to maintain amenity during the construction phase may include arranging ancillary facilities in a way to reduce impacts of light spill on nearby receivers and providing temporary barriers to reduce noise impacts. Specific noise and vibration measures include the preparation of a CNVMP and site-specific construction noise and vibration assessments where the noise and vibration levels are exceeded. Monitoring should be conducted in accordance with the CNVG-R. Specific urban design and biodiversity measures are addressed in the Landscape Character and Visual Impact Assessment and the Biodiversity Assessment report prepared for the proposal.	Transport and construction contractor	Detailed design /Construction
Cumulative impacts	Consultation with Council, relevant developers and other stakeholders to minimise cumulative impacts.	Transport and construction contractor	Detailed design/ Construction

9 Conclusion

The SEIA assesses potential social impacts, including land changes, land acquisition, access arrangements, traffic changes, and amenity impacts. However, it also highlights positive outcomes, such as improved flood resilience, enhanced road network efficiency and improved active transport infrastructure. These improvements will support community well-being and stimulate current and future agricultural enterprises. Moreover, the proposal aligns with the LGA's long-term aspirations on access and connectivity and is designed to accommodate the expected growth in the Richmond and North Richmond suburbs.

The proposal has the potential to deliver lasting benefits while minimising adverse impacts, including:

- The completed proposal would improve flood resilience for North Richmond and Richmond, particularly given recent flooding events which has led to several bridge closures between North Richmond and Richmond.
- The completed proposal would also improve traffic efficiency, active transport connections and safety of the road network between Richmond and North Richmond.
- Construction activities would increase the number of workers in the area (such as construction workers and site engineers), which may positively impact local businesses due to increased patronage.
- Construction of the proposal may provide additional employment opportunities and opportunities for businesses involved in earthworks, roadworks, bridge construction and material supply.

Overall, the proposal would improve the flood resilience of the road network, and provide additional road capacity during climate events.

The proposal also aligns with the local strategic directions for Hawkesbury LGA as the new and upgraded infrastructure caters for future demand for active transport and support better connectivity within the broader study area. Active transport options can promote personal health and wellbeing as well as facilitate community cohesion and provide residents and visitors access to the broader community and facilities. By providing an improved active transport network, the proposal would contribute to the strategic objectives of the broader study area, increase local amenity and positively impact the existing local character and community wellbeing.

While the proposal would result in some adverse socio-economic impacts such as parking impacts and access and direct impacts to some businesses and social infrastructure, this SEIA identifies management and mitigation measures to manage or minimise these adverse impacts.

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Appendix A – Quantitative data

The following table provides a summary of data used to inform this SEIA. The data was collected from the Census of Population and Housing (ABS, 2021).

Location	Study area *North Richmond (SAL13012), Richmond (NSW) (SAL13375), Agnes Banks (SAL10021), Hobartville (SAL11924)*		Hawkesbury (LGA13800)		Greater Sydney (1GSYD)	
	Number	**Percentage**	**Number**	**Percentage**	**Number**	**Percentage**
Population, growth and projections						
Resident population (2021)	15,484	-	67,207	-	5,231,147	-
Past resident population (2016)	14,114	-	64,592	-	3,807,908	-
Average annual growth (2016-2021)	69	0.5%	131	0.2%	71,162	1.9%
Projected resident population (2041)	17,720	-	77,211	-	6,142,275	-
Projected average annual growth (2021-2041)	112	0.7%	500	0.7%	45,556	0.9%
Age and projections						
Median age	40	-	39	-	37	-
Projected median age (2041)	47	-	43	-	39	-
0-4 years	922	6.0%	4,152	6.2%	312,364	6.0%
5-14 years	1,688	10.9%	8,699	12.9%	650,843	12.4%
15-19 years	883	5.7%	4,391	6.5%	294,764	5.6%
20-24 years	923	6.0%	4,245	6.3%	343,064	6.6%
25-34 years	2,378	15.4%	8,834	13.1%	811,314	15.5%
35-44 years	1,760	11.4%	7,916	11.8%	777,748	14.9%
45-54 years	1,874	12.1%	9,184	13.7%	667,167	12.8%
55-64 years	1,644	10.6%	8,650	12.9%	579,166	11.1%

Location	Study area *North Richmond (SAL13012), Richmond (NSW) (SAL13375), Agnes Banks (SAL10021), Hobartville (SAL11924)*		Hawkesbury (LGA13800)		Greater Sydney (1GSYD)	
	Number	**Percentage**	**Number**	**Percentage**	**Number**	**Percentage**
65-74 years	1,582	10.2%	6,361	9.5%	439,467	8.4%
75-84 years	1,209	7.8%	3,560	5.3%	249,517	4.8%
85+ years	594	3.8%	1,215	1.8%	105,729	2.0%
Working aged population (15-64 years)	9,462	61.1%	43,220	64.3%	3,473,223	66.4%
Cultural diversity						
Aboriginal and Torres Strait Islander population	740	4.8%	3,252	4.8%	90,939	1.7%
Overseas born	2,430	15.7%	8,927	13.3%	2,021,079	38.6%
Speaks language other than English	1,014	6.5%	3,085	4.6%	1,438,287	27.5%
Speaks English not well or not at all	87	0.6%	369	0.5%	283,979	5.4%
Top five languages other than English	Punjabi, Macedonian, Nepali, Italian, Spanish		Punjabi, Italian, Arabic, Cantonese, Mandarin		Mandarin, Arabic, Cantonese, Vietnamese, Hindi	
Need for assistance						
People with need for assistance	1,267	8.2%	3,735	5.6%	270,665	5.2%
Health						
People with long-term health conditions (0-14 years)	255	9.8%	1,244	9.7%	71,317	7.4%
People with long-term health conditions (15-64 years)	2,831	29.9%	11,773	27.2%	715,820	20.6%
People with long-term health conditions (65-74 years)	916	57.9%	3,454	54.3%	220,649	50.2%
People with long-term health conditions (75-84 years)	802	66.3%	2,333	65.5%	154,733	62.0%

Location	Study area *North Richmond (SAL13012), Richmond (NSW) (SAL13375), Agnes Banks (SAL10021), Hobartville (SAL11924)*		Hawkesbury (LGA13800)		Greater Sydney (1GSYD)	
	Number	**Percentage**	**Number**	**Percentage**	**Number**	**Percentage**
People with long-term health conditions (85+ years)	380	64.0%	835	68.7%	70,016	66.2%
People with long-term health conditions (all ages)	5,184	33.5%	19,639	29.2%	1,232,535	23.6%
Top five long-term health conditions	Mental health condition (including depression or anxiety), Arthritis, Asthma, Diabetes (excluding gestational diabetes), Heart disease (including heart attack or angina)		Mental health condition (including depression or anxiety), Arthritis, Asthma, Diabetes (excluding gestational diabetes), Heart disease (including heart attack or angina)		Asthma, Arthritis, Mental health condition (including depression or anxiety), Diabetes (excluding gestational diabetes), Heart disease (including heart attack or angina)	
Families and households						
Total families	4,073	69.5%	18,453	80.0%	1,380,176	75.5%
Couple family with no children	1,555	38.2%	6,724	36.4%	480,444	34.8%
Couple family with children	1,626	39.9%	8,635	46.8%	667,760	48.4%
One-parent family	830	20.4%	2,903	15.7%	208,478	15.1%
Total private dwellings	6,240	-	24,485	-	1,993,486	-
Total households / occupied private dwellings	5,861	93.9%	23,060	94.2%	1,828,859	91.7%
Group households	154	2.6%	493	2.1%	76,558	4.2%
Lone person households	1,772	30.2%	5,019	21.8%	424,713	23.2%
Average household size	2.4	-	2.8	-	2.7	-
Housing						
Separate house	4,375	74.6%	20,015	86.8%	1,020,631	55.8%
Semi-detached, row or terrace house, townhouse etc	1,097	18.7%	2,198	9.5%	234,000	12.8%
Apartment, flat or unit	349	6.0%	660	2.9%	561,988	30.7%
Owned outright	1,803	30.8%	7,406	32.1%	507,635	27.8%
Owned with a mortgage	1,782	30.4%	9,424	40.9%	608,735	33.3%

Location	Study area *North Richmond (SAL13012), Richmond (NSW) (SAL13375), Agnes Banks (SAL10021), Hobartville (SAL11924)*		Hawkesbury (LGA13800)		Greater Sydney (1GSYD)	
	Number	**Percentage**	**Number**	**Percentage**	**Number**	**Percentage**
Rented	1,992	34.0%	5,536	24.0%	657,317	35.9%
Median mortgage repayment ($/monthly)	$2,135	-	$2,200	-	$2,427	-
Median rent ($/weekly)	$400	-	$400	-	$470	-
People mobility						
Lived at same address 1 year prior to 2021 Census	11,918	77.0%	55,269	82.2%	4,119,424	78.7%
Lived at a different address 1 year prior to 2021 Census	2,438	15.7%	8,107	12.1%	791,407	15.1%
Lived at same address 5 years prior to 2021 Census	7,220	46.6%	37,963	56.5%	2,635,497	50.4%
Lived at a different address 5 years prior to 2021 Census	6,370	41.1%	21,926	32.6%	2,016,262	38.5%
Education						
Has non-school qualification	7,750	60.3%	33,089	60.9%	2,808,034	65.8%
Bachelor's degree or higher	2,146	16.7%	8,618	15.9%	1,423,357	33.4%
Advanced diploma or diploma	1,291	10.0%	5,408	9.9%	412,740	9.7%
Certificate	3,092	24.1%	15,017	27.6%	629,524	14.8%
Income and employment						
Labour force	7,323	57.0%	34,476	63.4%	2,560,242	60.0%
Employed workers	7,028	96.0%	33,364	96.8%	2,430,704	94.9%
Unemployed workers	294	4.0%	1,109	3.2%	129,539	5.1%
Top three industries of employment	Health Care and Social Assistance, Construction, Retail Trade		Construction, Health Care and Social Assistance, Education and Training		Health Care and Social Assistance, Professional, Scientific and Technical Services, Retail Trade	
People on lower incomes ($20,800 or less per year)	2,858	22.2%	12,091	22.2%	1,042,112	24.4%

Location	Study area *North Richmond (SAL13012), Richmond (NSW) (SAL13375), Agnes Banks (SAL10021), Hobartville (SAL11924)*		Hawkesbury (LGA13800)		Greater Sydney (1GSYD)	
	Number	**Percentage**	**Number**	**Percentage**	**Number**	**Percentage**
People on higher incomes ($104,000 or more per year)	8,911	69.4%	38,833	71.4%	2,946,942	69.0%
Median weekly personal income	$799	-	$860	-	$881	-
Median weekly family income	$2,044	-	$2,272	-	$2,374	-
Median weekly household income	$1,631	-	$1,980	-	$2,077	-
Unpaid work						
Voluntary work	1,567	12.2%	7,073	13.0%	496,302	11.6%
Vehicles						
Households with no vehicles	392	6.7%	884	3.8%	203,081	11.1%
Households with one vehicle	2,221	37.9%	6,100	26.5%	722,036	39.5%
Households with two vehicles	2,015	34.4%	8,434	36.6%	590,650	32.3%
Households with three or more vehicles	1,157	19.7%	7,392	32.1%	287,171	15.7%
Average motor vehicles per dwelling	1.8	-	2.1	-	1.6	-
Travel to work - one method						
Train	83	1.2%	211	0.6%	60,858	2.5%
Bus	10	0.1%	32	0.1%	28,786	1.2%
Ferry	0	0.0%	6	0.0%	954	0.0%
Tram/light rail	0	0.0%	3	0.0%	1,243	0.1%
Taxi/ride-share service	8	0.1%	16	0.0%	3,367	0.1%
Car, as driver	3,627	51.6%	16,881	50.6%	832,277	34.2%
Car, as passenger	205	2.9%	987	3.0%	63,954	2.6%
Truck	100	1.4%	754	2.3%	14,203	0.6%

Location	Study area *North Richmond (SAL13012), Richmond (NSW) (SAL13375), Agnes Banks (SAL10021), Hobartville (SAL11924)*		Hawkesbury (LGA13800)		Greater Sydney (1GSYD)	
	Number	**Percentage**	**Number**	**Percentage**	**Number**	**Percentage**
Motorbike/scooter	20	0.3%	114	0.3%	9,757	0.4%
Bicycle	29	0.4%	54	0.2%	8,990	0.4%
Walked only	175	2.5%	552	1.7%	56,206	2.3%
Work from home						
Worked at home (noting Census was undertaken during COVID)	1,640	23.3%	8,440	25.3%	944,501	38.9%
SEIFA						
Index of Relative Socio-economic Advantage and Disadvantage	983	-	1,008	-	-	-

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