

Future Transit Corridor: Options Report – Summary

September 2024



Acknowledgement of Country

Transport for NSW acknowledges the traditional custodians of the land on which we work and live.

We pay our respects to Elders past and present and celebrate the diversity of Aboriginal people and their ongoing cultures and connections to the lands and waters of NSW.

Many of the transport routes we use today – from rail lines, to roads, to water crossings – follow the traditional Songlines, trade routes and ceremonial paths in Country that our nation's First Peoples followed for tens of thousands of years.

Transport for NSW is committed to honouring Aboriginal peoples' cultural and spiritual connections to the lands, waters and seas and their rich contribution to society.

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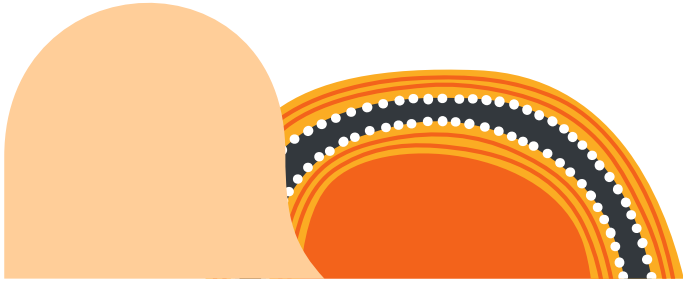
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Executive summary

Transport for NSW (Transport) investigated corridor design options for a possible extension of Newcastle Light Rail between Newcastle Interchange and the Broadmeadow Catalyst Area.

A long-list of 21 corridor design options was filtered to a short-list of six corridor design options using evaluation metrics based on key principles in the Future Transport Strategy, the Future Transport Newcastle Plan, and other local and state government strategic plans. Consideration of local constraints was also factored into the filtering process.

Figure 1 provides an overview of the six short-listed corridor design options. These were further refined against criteria such as the NSW Movement and Place Built Framework Indicators. This work identified Option 17 and Option 21 as the corridor design options most aligned with strategic and project objectives.



Figure 1: Short-listed corridor design options

Both options 17 and 21 provide a direct connection to the Newcastle Interchange, align with Newcastle City Council and Department of Planning, Housing and Industry aspirations for uplift along the Tudor Street corridor as well as linking to Broadmeadow. Further, both options avoid approved development sites at the eastern end, aligning with local and regional road corridors.

For the purposes of corridor identification, Transport will seek to protect a corridor from the Newcastle Interchange to the intersection of Tudor Street and Broadmeadow Street ('Nine Ways') to enable a wider stakeholder conversation as to how a future corridor will interact with the Broadmeadow Place Strategy, including the nationally significant sports and entertainment precinct. This approach protects a corridor common to both options 17 and 21.

1. Report Purpose

Greater Newcastle is a global gateway, the second largest city in NSW, and key metropolitan hub in the prosperous Hunter Region. The population of Greater Newcastle continues to grow, with the economy diversifying from its historical reliance on coal exports to a more knowledge and service-based industries.

Private vehicles are the predominant mode of travel in Greater Newcastle, accounting for the vast majority of work travel within the Hunter region. Without focus on improving multi-modal options Greater Newcastle will see increased congestion on the road network, increased travel times and reduced speed and reliability.

Newcastle Light Rail Stage 1 (operations commenced 2019) replaced 2.7km of former heavy rail corridor in Newcastle's CBD with Light Rail. Improving pedestrian permeability across the former heavy rail line improved connectivity between the Newcastle CBD and the Hunter River, releasing 1.4km of waterfront sites for redevelopment to support the more holistic renewal of the CBD.

In July 2023, the NSW Government directed Transport for NSW (Transport) to progress with planning of a future light rail transport corridor (preferred corridor) consistent with the Hunter Regional Plan. This is particularly relevant with regards to the action for further investigations on a potential light rail extension from the existing Newcastle Interchange to Broadmeadow. This report seeks to identify the preferred alignment of a future public transport corridor capable of supporting an extension of the existing Newcastle light rail, noting timing on both delivery of a transit system, including mode, is still to be determined.

Transport is looking to display the preferred corridor from Newcastle Interchange onto Broadmeadow only given the growth occurring in and around West Newcastle and the need to preserve an alignment to facilitate uplift along the corridor.

This report seeks to identify and protect a corridor of land needed for the possible future extension of a transit corridor capable of supporting a Light Rail system to Broadmeadow to reduce long-term infrastructure costs and community disturbance.

1.1 Project Objectives

The objectives of the Newcastle Light Rail Extension investigations are to:

1. Deliver reliable passenger transport services for the future
2. Align with the planned transport network
3. Enable people and goods to move efficiently through the network whilst ensuring local access and vibrant places
4. Support key places such as Newcastle's City Centre and Broadmeadow Catalyst Area
5. Enable economic development
6. Improve accessibility to employment and services such as health, education, retail and cultural activities

7. Minimise the impact of land acquisition
8. Minimise environmental impacts, including accounting for more extreme weather events.

It is important to note that this report does not confirm whether light rail is the correct transport intervention for the Study Area or the Metro Core as a whole. This question will be answered via other projects and investigations that take place in future.

Further, the connection of other transport modes in and around a future corridor will be considered as part of the Broadmeadow Place Strategy. Integration of these modes into any future light rail system will be considered in future work that further refines and develops the option for a light rail system, including location and design of stops.

1.2 Out of Scope

This Summary Report considered corridor options between Newcastle Interchange and Broadmeadow Catalyst Area only. The Report does not consider the following:

- if an extension of light rail is the right mode option to connect Newcastle Interchange and Broadmeadow Catalyst Area
- corridor design options beyond the Broadmeadow Catalyst Area
- detailed land and property acquisition
- detailed utility impacts
- detailed environmental impacts
- re-examination of the Cost Benefit Analysis undertaken in the Strategic Business Case released in 2019
- future government investments in land and transport, such as Broadmeadow Precinct and high speed rail
- Integration of other modes (eg walking and cycling) to future Light Rail stops

1.3 Next Steps

The next steps for Transport for NSW include:

- Finalising the preferred corridor alignment between the Newcastle Interchange and Broadmeadow for community consultation
- Identify mechanisms for corridor protection with key stakeholders including Newcastle City Council and Department Planning, Housing and Industry.
- Continue to support the Broadmeadow Catalyst Area planning exercise, including collaborating on future investment options for transport services to support the growth in and around Broadmeadow. This includes partnering with other agencies to explore future connections for transit including the Newcastle University and John Hunter Hospital as well as consideration of walking and cycling infrastructure connecting to future public transport nodes.

2. Background

Beginning operations in 2019, Newcastle Light Rail Stage 1 is a 2.7km light rail system serving six stops between Newcastle Interchange and Newcastle Beach. Operating services on average every 8 minutes (15 minutes on the weekend) between 5am and 1am, 7-days-a-week. Newcastle Light Rail operates within a wider public transport network with the light rail system integrating with buses and trains at Newcastle Interchange and ferries at Queens Wharf.

Replacing a former heavy rail corridor, Newcastle Light Rail Stage 1 was delivered as part of 'Revitalising Newcastle' a \$650 million program of work to stimulate urban renewal in Newcastle City Centre. Newcastle Light Rail now provides modern, high-capacity, reliable public transport connections to Hunter Street TAFE, the University of Newcastle, commercial and residential premises, and places of interest like Newcastle Beach.

2.1 Newcastle Light Rail Extension Strategic Business Case (SBC)

Released publicly in 2019², the Newcastle Light Rail Extension SBC evaluated four short-listed light rail extension corridors across Greater Newcastle. The SBC concluded the Newcastle Interchange to John Hunter Hospital via Broadmeadow option is the most suitable corridor for further assessment and development.

The SBC concluded the Newcastle Interchange to John Hunter Hospital via Broadmeadow corridor:

- supported development of the Broadmeadow Urban Renewal and Entertainment Precinct
- provided greater public transport accessibility to areas of high employment and job growth
- created opportunities for transit-orientated development in proximity to Newcastle City Centre
- was the best performing corridor based on economic evaluation results

The SBC suggested light rail extension to Broadmeadow as the first 'logical extension' before a full extension to John Hunter Hospital Health and Innovation Precinct. As the business case at the time had a BCR of less than 1, it was suggested there was 'no urgent' need to extend the Newcastle Light Rail, with opportunities to implement bus solutions in the shorter term with dedicated bus corridors being converted in the future to light rail.

2.2 Infrastructure and land use changes since the SBC

Since the release of the Newcastle Light Rail Extension SBC and the commencement of Newcastle Light Rail Stage 1 operation, Greater Newcastle and Newcastle City Centre have undergone urban renewal marked by improvements to civic and public spaces, population growth, and investment in skills and education such as the City Campus of the University of Newcastle.

NSW Government is committed to continued investment in improved transport infrastructure and services in Greater Newcastle. A high speed rail connection to Newcastle would provide fast, reliable, and sustainable train services to the wider Six Cities Region. Interchange between

¹ Revitalising Newcastle: <http://www.hccdc.nsw.gov.au/revitalising-newcastle>

² Newcastle Light Rail Stage 1: <https://www.transport.nsw.gov.au/projects/current-projects/newcastle-light-rail>

potential extension of Newcastle Light Rail and any potential future Fast Rail station would support the 30-minute metropolitan city concept.

Redevelopment along the preferred alignment increases the complexity and likely cost for extension of light rail at Newcastle Interchange if corridor preservation is not undertaken in the short term to protect a future corridor. This includes recent approvals for multi-storey apartments at 924 Hunter Street, Newcastle.

Mixed-use developments along the corridor have potential to generate transit-orientated development opportunities but also potentially constrain a new corridor due to land acquisition costs and construction feasibility if decision to proceed with future transit infrastructure is confirmed.

3. Alignment with strategic policy and planning

Economic and population growth in Greater Newcastle strengthens the need for NSW Government to invest in high-quality public transport infrastructure and services. Investment in public transport infrastructure (including potential extension of Newcastle Light Rail) in Greater Newcastle aligns with the Future Transport Strategy and other local and state government objectives such as those in the Hunter Regional Plan 2041 and City of Newcastle Council's Newcastle 2040 strategy.

3.1 Growth in the Lower Hunter and Greater Newcastle City

The Lower Hunter and Greater Newcastle is a global gateway for NSW and integral to the Six Cities Region. The city hosts an international freight port, international airport and has traditionally been a significant hub for heavy industry such as steel.

Progressively the city is changing with a diverse economy underpinned by the knowledge sector, growing hospitality and recreation opportunities, and regional visitors supporting local tourism. Economic growth is fuelling population growth, and vice versa, with the population of the Lower Hunter and Greater Newcastle, set to grow to nearly 775,000 by 2041, an increase of nearly 165,000 people from 2022³.

3.2 Alignment with local and state government strategic documents

A high-level summary of the strategic alignment has been completed as part of this Report. The summary highlights how an extension of Newcastle Light Rail could support key principles and directions within the different government strategies.

- **Future Transport Strategy (2022), TfNSW:** *Future Transport Strategy* is a vision and outcomes-led approach to continually improve the NSW transport system for the benefit of its customers, communities, and the economy. An extension of the Newcastle Light Rail aligns with the following outcomes and strategic responses
 1. Connecting our customers' whole lives
 - 30-minute city concept
 - support car-free, active, sustainable transport options
 - develop an inclusive transport system enabling access to services and places for all
 2. Successful places for communities
 - support growth around public transport
 - ensure public transport is available on day one
 - build well-designed transport infrastructure that makes places more liveable and successful
 3. Enabling Economic Activity

³ NSW Department of Planning, Housing and Industry; GCC Six Cities Population and Dwelling Forecast 2022; <https://www.planning.nsw.gov.au/Research-and-Demography/Population-Projections/Explore-the-data>

- improve the use and efficiency of our roads through road space allocation
 - improve access and experiences
- **Greater Newcastle Future Transport Plan (2018), TfNSW:** The Plan provided the context for Greater Newcastle based on the overarching vision of Future Transport 2056. Despite an update to Future Transport many of the principles and outcomes are still relevant to an extension of the Newcastle Light Rail including:
 1. Providing services convenient to customer needs
 2. Connecting people and places in growing areas
 3. Improving access to health, education, employment, and cultural activities
- **Hunter Regional Transport Plan (2018), TfNSW:** The Plan is a transport vision for the Hunter Region. The plan includes actions relating to infrastructure, services and policy interventions. An extension of Newcastle Light rail supports the plan by:
 1. Proportionally more people living in the Hunter choose to use public transport
 2. More travel choices supporting vibrant and accessible centres in which to live, work and visit
- **State Infrastructure Strategy 2022–2042 (2018), Infrastructure NSW (INSW):** The 20-year Strategy recommends reforms, policies and projects that respond to NSW’s changing economic, social, and environmental outlook. An extension of the Newcastle Light Rail aligns with the following principles and actions:
 1. Boost economy-wide productivity and competitiveness
 - improve public transport within the metropolitan cities of Newcastle
 2. Service growing communities
 - support housing growth in Greater Newcastle and Hunter Region
- **Six Cities Region Discussion Paper (2022), Greater Cities Commission (GCC):** The paper aims to start conversations between different groups within NSW as to the benefit of a Six Cities Region that includes the Lower Hunter and Greater Newcastle City, the Central Coast City, the Illawarra-Shoalhaven City, the Western Parkland City, the Central River City, and the Eastern Harbour City. The GCC estimates the Region Plan for the Lower Hunter and Greater Newcastle City will be released in 2023-2024. This will involve setting public transport targets which an extension of Newcastle Light Rail could support.
- **Hunter Regional Plan 2041:** The Hunter Regional Plan (regional plan) identifies Broadmeadow as a regionally significant growth area that can deliver exceptional place outcomes for Greater Newcastle. It sets the requirement for the preparation of this place strategy.

The regional plan sets objectives for the precinct including:

- central location will support new diverse and affordable housing
- become a significant sport and entertainment precinct
- respect the local character and celebrate its diverse past
- 15-minute neighbourhoods with diverse housing choice, ranging from low to high rise homes

The regional plan anticipates Broadmeadow to deliver exceptional place outcomes for Greater Newcastle, be well integrated, equitable and resilient, and foster new

neighbourhood identities. The place strategy builds on these priorities and outcomes and plans to deliver a holistic place-based framework for future growth, ensuring all matters are considered.

- **Greater Newcastle Metropolitan Plan 2036:** The Greater Newcastle Metropolitan Plan sets strategies for sustainable growth in Greater Newcastle. It envisions Broadmeadow as a nationally significant sport and entertainment hub that drives growth and transformation in surrounding areas.

Key priorities outlined include:

- Hunter Sports and Entertainment – diverse and commercially viable sports and entertainment
 - Nineways –office, retail, and medium-density housing, and identifying public transport corridors.
 - Lambton Road – light industrial business uses, and mixed use housing
 - Broadmeadow Station –medium to higher density housing
 - Broadmeadow Road –light industrial and walkable activity centres
 - Locomotive Depot –medium-density housing, business uses and heritage
 - Former Gasworks –mixed-use development
- **Newcastle 2040 (2021), City of Newcastle Council (CoN):** The vision document provides strategic guidance for policies and actions for Newcastle within the Lower Hunter and Greater Newcastle City. An extension of the Newcastle Light Rail relates directly to the following:
 1. Liveable Newcastle
 - support the implementation of regional strategies and plans and public transport network improvements to allow easy movement across the city
 - **Newcastle Local Strategic Planning Statement (LSPS)(2021), CoN:** The Plan aims to guide land use planning across Newcastle over a 20-year timeframe. The LSPS proposes to support an extension of the Newcastle Light Rail:
 1. Support public transport improvements with continued integration of land use and transport planning
 - collaborate with state government agencies for improved connection to and between Catalyst Areas and Strategic Centres
 - review internal documentation to reflect emerging transport opportunities

- **Broadmeadow Place Strategy (2023), CoN and DPE:** City of Newcastle Council, in partnership with the Department of Planning, Housing and Infrastructure, is preparing a place strategy to breathe new life into the Broadmeadow precinct.

The place strategy is being prepared in collaboration with key state agencies.

The place strategy provides an integrated 30-year vision that recognises the strategic attributes of the precinct and guides future land-use and infrastructure investment decisions, which can be delivered with the support of state and local agencies.

The development and renewal of the precinct presents an opportunity to address the housing crisis by enabling additional homes in the Newcastle area, leverage the nationally significant sports and entertainment facilities in Hunter Park (and the economic role they play), and deliver additional jobs in well-located areas.

Analysis undertaken so far with regards to transport indicated an extension of Newcastle Light Rail could support Broadmeadow by locating a light rail corridor along

Tudor Street to the precinct. The analysis states how light rail could facilitate high-density transit-oriented development, provide multimodal access to sporting and entertainment events, and provide an efficient alternative to car journeys.

- **Hunter Park Final Business Case Draft (2022) Venues NSW:** The report investigates how the proposed development of the various sporting and entertainment venues in Hunter Park within the Broadmeadow Catalyst Area can be integrated with the wider city of Newcastle. An extension of the Newcastle Light Rail could support Hunter Park by providing high-capacity, reliable, and sustainable public transport to cultural and sporting events reducing the need to for access by car.

3.3 Rationale

The rationale for the extension of the Newcastle Light Rail was framed in the Newcastle Light Rail Extension SBC. The SBC used strategic alignment, forecasted economic and population growth, and transport conditions i.e., high car mode share, to formulate a case for an extension of Newcastle Light Rail. A high-level summary of the need for investment follows:

- **Need to reshape Greater Newcastle:** Greater Newcastle's current transport network needs to be renewed and enhanced to reflect Greater Newcastle's significance as a city and its strategic direction to transform into a globally competitive economic centre.
- **Need to improve network visibility and reflect demand:** Insufficient public transport connectivity between Greater Newcastle's strategic centres and a strong need for public transport infrastructure to connect multiple transport modes (e.g., buses, light rail, heavy rail).
- **Need to manage future growth:** The transport network infrastructure reflects the growth of the population and workforce. This growth needs to be supported through substantial investment in public transport, so infill developments are amenable and offer an attractive environment to enhance Greater Newcastle's competitive offerings.
- **Need to promote economic connectivity and tourism:** The public transport network needs to shift towards a metropolitan style public transport network to support connectivity between economic, social, cultural and tourism hubs.

4. Consideration of constraints

There are some constraints across the Broadmeadow area which may impact development that would support light rail, as well as the construction and operation of a light rail extension. These need to be taken into consideration in any planning for the area, and include flash flooding as well as along the Styx Creek alignment, contaminated land, mine subsidence, heritage considerations, and growth in high-density mixed-use developments along the preferred corridor.

4.1 Consideration of constraints

There are numerous site constraints relating to a mix of social, economic, and environmental factors which will have to be taken into consideration in the development and operation of any transit system. The Report provides a summary of these factors. The factors were reviewed as part of a desktop analysis only and do not remove the need for detailed specialist investigations as part of progressing with delivery of a transit corridor. The constraints include:

- **Flooding:** Flooding impacts several zones within both study areas. Issues relating to flash flooding can occur within the Broadmeadow Catalyst Area. Further, any corridor which seeks to traverse through the site in the future may intersect Styx Creek, which could require additional flooding mitigation during construction and operation.
- **Contaminated land:** A desktop review of the Environmental Protection Agency (EPA) register indicates possible contaminated sites are present within the area. Regulatory and statutory requirements would need to be adhered to when interfacing with these sites.
- **Mine subsidence:** The suburb of Broadmeadow is affected by the Newcastle Mine Subsidence District. This means the area could suffer from potential subsidence risks due to being an area of previous underground coal mining. Development within the area would need to consider this in any construction activities, including light rail in collaboration with the NSW Subsidence Advisory agency.
- **Heritage:** Aboriginal and European heritage sites would need to be considered during construction. Any work would require collaboration between state government agencies, the local council, and the Awabakal Local Aboriginal Land Council.
- **Utilities:** There are utility infrastructure located across the site, such as sewers, telecommunications, culverts, and fuel lines, that could be impacted by construction and may need to be relocated. Alternatively, in the event a future transit corridor crosses an existing fuel line, the Government will work with industry to ensure this is carefully managed to avoid any disruptions of fuel sources as well as mitigation of any safety matters.
- **Local traffic conditions:** An extension of Newcastle Light Rail may lead to localised traffic displacement impacting the level of service on the road network within the study area. It is noted however any investment in a transit system would alleviate this somewhat in providing greater modal choice with a prioritised passenger service network that seeks to provide a similar level of service to trips undertaken in a private motor vehicle. Access to properties would also need to be thoroughly assessed.
- **Development Applications:** Proposed mixed-use development near the Newcastle Interchange coupled with the redevelopment of Hunter Park /Broadmeadow Catalyst Area has formed constraints for some of the options to extend the light rail. The preferred option alignment of a possible extension to Newcastle Light Rail has been undertaken to account for the recent mixed use development sites.

A further detailed assessment of the different factors is required to ensure any preferred corridor alignment does not negatively impact the local environment. Collaboration and consultation across a wide spectrum of stakeholders is required to inform any construction and operations feasibility assessment. This recommended to be completed through a future environmental assessment process once funding becomes available for further development of the corridor.

5. Preferred corridor selection process

A long-list of 21 corridor design options were identified which broadly aligned with strategic policy and planning, consideration of constraints and enabled a future possible extension beyond Broadmeadow to John Hunter Hospital Health or other major destinations including the Newcastle University campus. The options were assessed against key Transport for NSW principles such as Future Transport to score and compare the different options. The process produced a short-list of six options. These were further refined through a rapid assessment to identify how well the identified options align with government economic, environmental and social goals and as well as Transport's approved strategies and policies.

5.1 Data collection

The data used to make the informed options long-list development was a mixture of:

- Open-source data sets e.g., Movement and Place Built Environment Indicators
- Supporting investigations undertaken in the development of the Newcastle Light Rail Extension Options Assessment Report
- Supporting investigations and background material undertaken in the development of recent projects in the area completed by both government and private sectors

5.2 Discussions with internal and external stakeholders

A primary purpose of the Report is to identify a preferred corridor alignment for a possible extension of the Newcastle Light Rail. High-level discussions between Transport for NSW and other State and Local Government agencies were undertaken in the development of this report. This included:

- NSW Department Planning, Housing and Industry
- City of Newcastle Council
- Venues NSW
- Hunter and Central Coast Development Corporation

The discussions focused on desired project objectives and outcomes as well as the wider alignment for passenger transport in Greater Newcastle.

5.3 Corridor long-list development

The long-list of 21 options was developed broadly in alignment with strategic policy and planning, consideration of constraints, and for a future possible extension beyond Broadmeadow to John Hunter Hospital Health and Innovation Precinct. The corridor design options were conceptual using the light rail gauge located at Newcastle Interchange. The designs were not developed to reflect technical considerations such as utilities or light rail stops.

Once this long list was developed, the NSW Movement and Place Framework and the Australian Transport Assessment and Planning (ATAP) Framework were used as the context for evaluating the 21 individual corridors. Corridors were assessed against each other to determine if they were significantly different, with scores and rankings developed. Site constraint considerations and

alignment with the Future Transport Greater Newcastle Plan were used as the basis for scoring. This resulted in a short-list of six corridor design options that underwent further assessment using a Rapid Strategic Merit Test.

5.4 Rapid Strategic Merit Test

A Rapid Strategic Merit Test (SMT) was used to rank the short-listed options. Recommended under the ATAP guidelines, an SMT is used for determining whether an option aligns with high-level strategic and project objectives.

Along with strategic and project objectives, the following were used as inputs for the Rapid SMT:

- NSW Movement and Place Built Environment Indicators (TfNSW)
- urban design analysis of Study Area
- NSW Better Placed framework (Government Architect NSW)
- a high-level utility assessment

5.5 Multimodal options assessment

For this Report, only light rail corridor options were assessed. This recognises that the Government is seeking to identify and protect a corridor for a future transit corridor that is also capable of facilitating a potential light rail extension. This also acknowledges the corridor identification process would facilitate a passenger transport corridor supportive of increased densities and mixed used in close proximity such as the Broadmeadow area.

6. Newcastle Light Rail Extension Options Assessment

The long-list of 21 corridors comprised of a mix of on-road corridor routes and routes utilising the existing heavy rail alignment. The high level strategic assessed the long-listed options into six short-listed options, five on-road options, and one using the existing heavy rail alignment. These were further assessed via a Rapid Strategic Merit Test (SMT) which identified a common alignment between two options, with the western ends following slightly different alignments as they cross the road over rail bridge on Belford Street. The SMT considered eight core indicators to prioritise and rank the short-listed options as follows:

- Mode share
- Public transport accessibility
- Permeability
- Public space
- Mix of uses
- Tree canopy
- Streetscape for pedestrians
- Road safety

As a result, Transport for NSW has identified a preferred option corridor running parallel and adjacent to the heavy rail line until Railway Avenue where the alignment heads west and travels along Tudor Street until the intersection with Broadmeadow Street (Nine Ways). This enables a whole of government conversation with the community about future land use aspirations, appropriate destinations (such as John Hunter Hospital and University) and how supports the nationally significant sports and entertainment precinct.

6.1 Short-list of Newcastle Light Rail Extension corridors

The six options identified through the high-level strategic assessment comprised of the following:

- **Option 4** – Newcastle Interchange to McDonald Jones Stadium (Turton Road) via Main North Line and Broadmeadow Station (heavy rail alignment option)
- **Option 14** – Newcastle Interchange to McDonald Jones Stadium (Turton Road) Tudor Street and Hunter Park
- **Option 15** – Newcastle Interchange to McDonald Jones Stadium (Turton Road) via Tudor Streets, Nineways, Lambton Road and Hunter Park
- **Option 16** – Newcastle Interchange to McDonald Jones Stadium (Turton Road) via Tudor Streets, Nineways, Young Road and Hunter Park
- **Option 17** – Newcastle Interchange to McDonald Jones Stadium (Turton Road) via Tudor Streets, Nineways and Lambton Road
- **Option 21** – Newcastle Interchange to McDonald Jones Stadium (Turton Road) via Tudor Streets, Nineways, Lambton Road and Perth Road



Figure 2: Short-list of corridor options.

6.2 Highest scoring options

Application of the Rapid SMT resulted in the ranking of the six short-listed corridor design options. Option 17 and Option 21 were the highest-scoring corridor design options. Figure 6 and Figure 7 provide an overview of their respective alignments. The location of light rail stops, and pedestrian links are indicative only, both were beyond the scope of work for this Report.



Figure 3: Corridor design for Option 17



Figure 4: Corridor design for Option 21

6.3 Preferred corridor

The Report identified two preferred corridor options from six short-listed corridor design options between Newcastle Interchange and Broadmeadow.

As both options follow the same path from the Newcastle Interchange to the road over rail bridge, the preferred corridor is the common alignment to the ‘Nineways’ intersection (Figure 5). This will enable for the testing of future opportunities to extend the corridor through the lens of the Broadmeadow Place Strategy and its consultation framework.

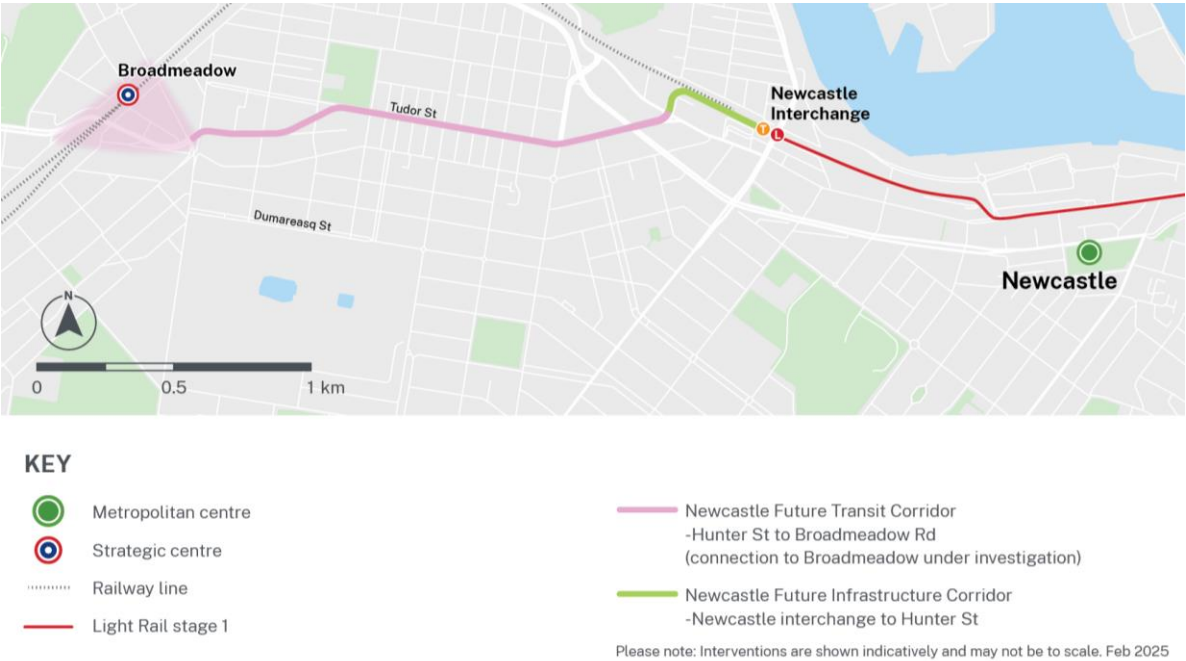


Figure 5: Preferred corridor

7. Consideration of Environmental Impacts

The process of identifying the preferred corridor acknowledges that there will be environmental impacts associated with infrastructure construction and operation of the future transit.

Key issue impacts would be assessed objectively and thoroughly during the planning approval process. This would provide confidence that the proposed infrastructure would be constructed and operated within acceptable levels of impact.

The likely key issue impacts are discussed in this section.

7.1 Noise

Existing noise levels along the corridor are influenced by a range of sources including motor vehicles, public transport, construction activities, residential and commercial/retail activities. The expected continued development of land along the corridor will increase background noise levels over time. This includes increased noise from more traffic being on the road as well as any new transit options.

Sensitive noise receivers along the corridor include existing and future residential properties, educational facilities, places of worship, parks and retail/commercial facilities. Existing and future noise conditions are not considered a significant constraint in the preservation of the corridor for future transit.

Transport for NSW is committed to build well-designed transport infrastructure that makes places more liveable. Early protection of the corridor provides the opportunity for the surrounding areas to be planned and designed in the full knowledge that a Light Rail Extension would ultimately be built within the corridor. Before construction and operation of future transport along the protected corridor commences, noise impacts will be assessed to the relevant noise guidelines at the time (currently this the *Rail Infrastructure Noise Guideline*, EPA 2013 for operational light rail noise, and the *Interim Construction Noise Guideline* EPA 2009 for construction) s part of the environmental assessment process.

7.2 Safety

The provision of a safe transport network is the first and most important outcome sought by Transport for NSW. The interaction of people walking and cycling around public transport vehicles will need to be carefully considered and infrastructure included in the delivery of the future project to ensure every journey can be completed safely. Infrastructure will include new and upgraded pedestrian crossings, improved cycling facilities, channelisation and landscaping treatments. Other treatments such as speed zone adjustments, improved lighting, signage and wayfinding will also be considered as part of the program of work needed to provide both a safe and functional corridor. Of special note will be high footfall areas including around schools and the retail area on Beaumont Street.

7.3 Traffic, transport and access

The Tudor Street corridor between Hunter Street and Brunner Road will need to be adjusted to re-assign capacity towards public transport services. What this will look like and how this will be achieved will be the subject of detailed analysis and modelling during the development phase and extensive consultation with the community and adjacent landowners to refine the design as required to manage any impacts of these changes. Broadly, it is anticipated that the road will be reduced to a single through lane in each direction for general traffic with turning lanes available at key intersections. Turning movements at minor intersections and at driveways may be

restricted to left turns only and it is expected there will be some impacts on parking along the corridor. While impacts are unavoidable, early and continuing engagement with the community will ensure that these are identified and addressed through the development process.

7.4 Land use

Land use and property are a potential constraint for the future transit corridor. There may be social and economic impacts associated with acquiring property to enable the future development of the infrastructure needed to support the vision for the corridor. Also, many land uses are sensitive to potential noise and vibration changes as a result of the uplift in public transport services on the corridor. Where stops/stations/interchanges are proposed, there is a need to integrate these with the surrounding network to optimise access and opportunities for people to transfer to other modes.

Existing Land Use Patterns

Currently the corridor is a diverse mix of low and medium density housing, retail and commercial facilities including a large car sales precinct at the eastern end, and other uses including a school, church and park. Many properties have direct vehicular access to the corridor. Beaumont Street is located approximately midway along the corridor and is known locally as a very popular eat street with numerous restaurants, cafes and pubs along its length. At the eastern end, the corridor is proposed to run between the existing heavy rail line and the rear of a number of properties. Currently the only confirmed property impacts generated by the delivery of the proposed transit corridor are in this area, between the existing Newcastle Interchange and the intersection of Parry Street and Tudor Street.

Future Land Use Patterns

One key driver of the preservation of this transit corridor is to support the future densification of the city and encourage more journeys to be undertaken via more sustainable modes such as walking, cycling and public transport. The delivery of the transit corridor will be directly linked to the increase in population and employment in areas along the corridor and at Broadmeadow at the western end, but the preservation is required now to ensure that the land is not built out and to provide signals to residents, developers, Council and others of what is the future vision for public transport in Newcastle. It is anticipated that the delivery of this corridor will be city shaping level infrastructure that will influence future land use type and density and people's trip behaviour over a substantial period.

Over the long term, it is envisioned that the corridor population and employment will increase in density, particularly around stop/station/interchanges, to take best advantage of the public transport services available. Over time land uses inappropriate to a CBD environment such as car sales yards will be replaced with higher yield uses including higher density employment and housing. Low density dwellings will over time be replaced with medium and high density residential offerings and precincts offering retail/commercial and other services including health and education will be clustered at key locations along the length. The revitalisation of the Broadmeadow area will be strongly supported by increased public transport services, with the corridor linking to sporting venues, Broadmeadow station and a range of other uses.

In the shorter term, there are a number of existing proposed and approved Development Applications along the corridor. City of Newcastle is typically the approval authority for these applications. Preservation of this transit corridor will provide the certainty and the legal mechanism required for Council to consider any potential impacts of the land use change on the corridor and to condition requirements to mitigate for potential impacts such as noise and vibration.

8. Next Steps

It is proposed that the preferred corridor alignment from Newcastle Interchange to Hunter Street is protected via a statutory protection mechanism.

Protection of the Newcastle future transit corridor would:

- Demonstrate integration of land use and transport planning in the consideration of the critical transport infrastructure needed to support renewal in the Broadmeadow growth area.
- Provide developers with certainty about which CBD locations are affected by a transport corridor in future.
- Demonstrates early progress on the Newcastle Light Rail extension.



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