Australian Government

BUILDING OUR FUTURE

NSW GOVERNMENT

M1 Pacific Motorway extension to Raymond Terrace

Environmental impact statement – Chapter 3: Strategic justification and project need

Transport for NSW | July 2021

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3. Strategic justification and project need

This chapter outlines the relationship of the project and the strategic planning framework. It also identifies the need for the project and the project objectives. A statement of strategic need concludes the chapter.

Table 3-1 sets out the SEARs that relate to the strategic context and need for the project and identifies where these SEARs are addressed in this EIS.

Table 3-1 SEARs (strategic justification and project need)

Secretary's requirement	Where addressed in EIS
2. Environmental Impact Statement	
1. The EIS must include, but not necessarily be limited to, the following:	
(c) a statement of the objective(s) of the project	The primary objectives of the project are provided in **Section 3.3**
(d) a summary of the strategic need for the project with regard to its State significance and relevant State Government policy	The strategic need for the project with relevance to NSW and Australian strategic planning and policy framework is discussed throughout **Chapter 3**. An overall statement of strategic need is provided in **Section 3.4**.

3.1 NSW and Australian strategic planning and policy framework

This section describes the strategic justification for the project, considering the consistency of the project with key strategic planning and policy documents.

3.1.1 NSW State Infrastructure Strategy 2018-2038

The NSW State Infrastructure Strategy 2018-2038 (Infrastructure NSW 2018) (the SIS) sets out the NSW Government's priorities for the next 20 years, and combined with the Future Transport Strategy 2056, the Greater Sydney Region Plan and the Regional Development Framework, brings together infrastructure investment and land-use planning for NSW cities and regions.

The SIS identifies a number of key actions to connect people and places, including a number of recommendations designed to improve the efficiency of regional and interstate transport connections. The project aligns with the SIS by providing benefits such as improving travel times and improving road safety. The SIS identifies Hexham and Heatherbrae as a priority area of the National Land Transport Network (NLTN), and identifies the project as one of the last major upgrades required along the Pacific Highway to compete a high-quality, free flowing route. The NLTN is a national network of important road and rail infrastructure determined under the Commonwealth *National Land Transport Act 2014*. Roads within the project which form part of the NLTN are identified on **Figure 3-1**.

The SIS identifies key restrictions across the NLTN, including restricted access for high productivity freight vehicles, flood immunity issues, and narrow bridges, road shoulder, and clear zones. Recommendation 41 of the SIS highlights the need for investment towards freight productivity upgrades on key routes linking the NLTN. The project would enable access by high productivity vehicles (HPVs) along the project and along the M1 Pacific Motorway and the Pacific Highway corridor from Sydney to Brisbane, providing significant productivity benefits to freight operators. The project is considered a critical link in the NLTN, particularly for the coastal Sydney to Brisbane corridor.

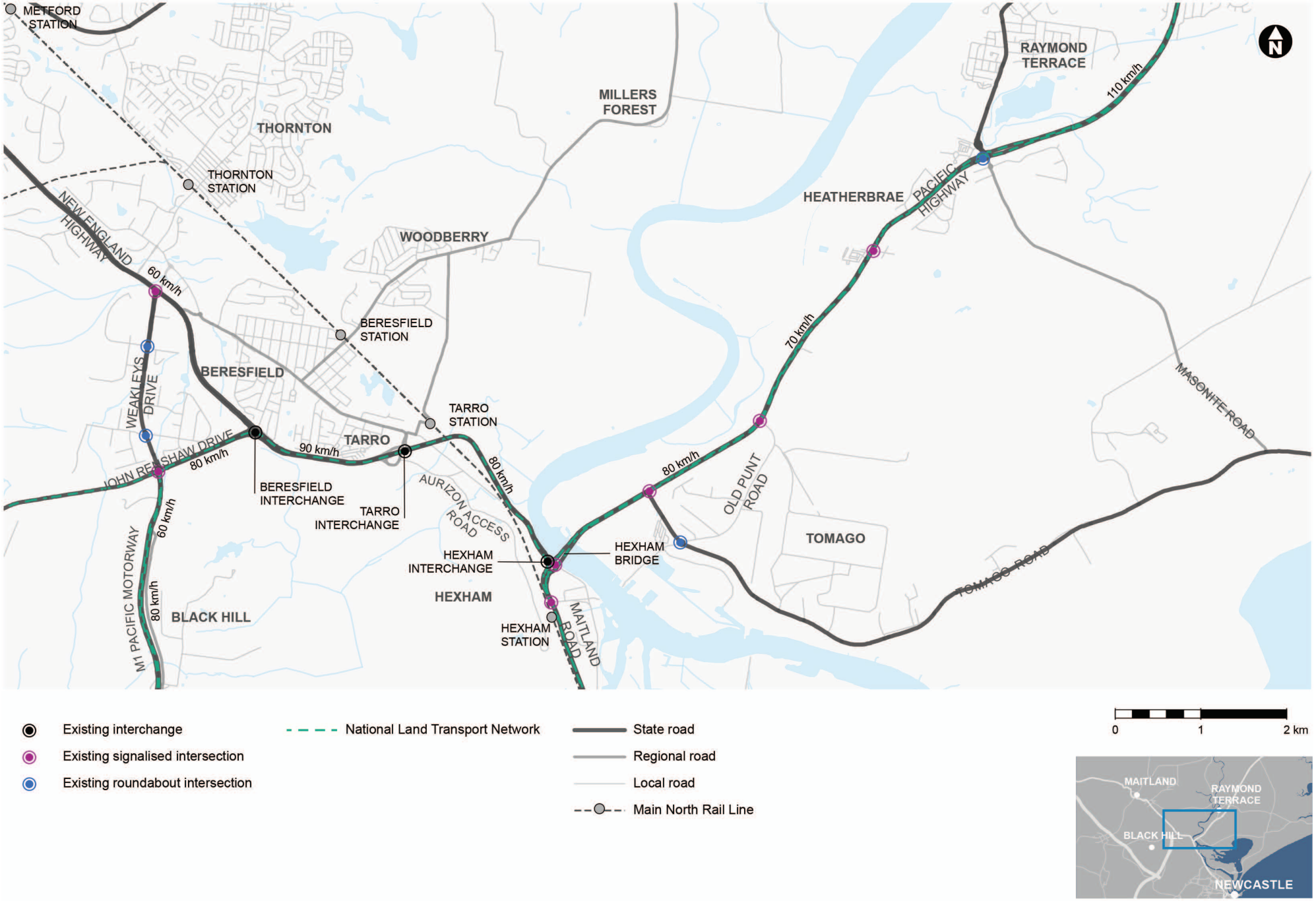


Figure 3-1 Existing road and rail infrastructure

3.1.2 Future Transport Strategy 2056

The Future Transport Strategy 2056 (Transport for NSW 2018a) underpins and supports the SIS and sets the 40-year vision, strategic directions and outcomes for customer mobility in NSW. It is delivered through a series of supporting plans, including the Regional NSW Services and Infrastructure Plan which is further underpinned by supporting plans. The relevant supporting plans include the Greater Newcastle Future Transport Plan, Road Safety Plan 2021, NSW Freight and Ports Plan 2018-2023 and Tourism and Transport Plan.

To support these outcomes, the strategy contains policy, service and infrastructure (road, rail, active) improvements and potential initiatives. The project is identified in the Greater Newcastle Future Transport Plan as a committed initiative over the next 10 years. The project will help meet a number of outcomes including:

- Growing the economy, by helping connecting people and places in growing regions
- Safety and performance, by helping to safely, efficiently and reliably move people and goods
- Sustainability, by making the best use of available resources and assets.

3.1.3 NSW Freight and Ports Plan 2018-2023

With NSW freight task set to grow by 28 per cent by 2036, a continued focus is required on the freight sector. The NSW Freight and Ports Plan 2018-2023 (Transport for NSW 2018b), as a supporting plan to the Future Transport Strategy 2056, is central to the NSW Government's long-term vision for freight transport to be more efficient, more accessible, safer and more sustainable for the benefit of producers, operators, customers and communities across NSW.

The NSW Freight and Ports Plan 2018-2023 identifies the freight routes between the M1 Pacific Motorway and Raymond Terrace, as well as the New England Highway at Hexham as key initiatives to improve the capacity of the freight network in the next five to10 years (between 2023 and 2028).

One of the key objectives of the plan is to increase efficiency, connectivity and access by improving the efficiency of existing infrastructure and ensuring greater connectivity and access along key freight routes. The project has been identified in the plan as one of the NSW Government's actions to address this objective. The project would provide a more efficient route between the M1 Pacific Motorway and the Pacific Highway and provide better access for HPV's to key employment areas such as Tomago, Beresfield, Black Hill and the Port of Newcastle.

Moving More with Less (Transport for NSW 2018c) is a policy framework established to support the NSW Freight and Ports Plan 2018-2023. The framework outlines the strategic approach for implementing HPV's on the road network and identifies the necessary network upgrades required. Moving More with Less states that it is desired to have the state-wide freight network gazetted as of right access to Performance Based Standard (PBS) 2B vehicles within the next five to10 years (between 2023 and 2028). Currently the road network in the Hexham/ Sandgate/ Tomago area is not able to cater for HPV's due to the height and weight restrictions imposed by the Pacific Highway southbound bridge crossing the Hunter River. The load carrying capacity of the bridge is limited to B-Doubles at higher mass limits of up to 68 tonnes. High productivity vehicles such as PBS 2B A-Doubles of up to 91.5 tonnes are not permitted to use the bridge. The project is consistent with the key policy outcomes of the framework as it would provide an alternative route to the existing, constrained road network, allowing free movement of HPVs (including PBS 2B vehicles) and offering improved freight connectivity.

3.1.4 Road Safety Plan 2021

The Road Safety Plan 2021 (Transport for NSW 2018d) details the NSW Government's commitment to improving safety on NSW roads. The key target relevant to the project is road safety, with road safety targets for:

- 2021: Reduce road fatalities by at least 30 per cent from 2008‑2010 levels (State Priority Target)
- 2056: Zero fatalities and serious injuries on roads.

The delivery of the project is consistent with the goals of the Road Safety Plan 2021. The project is expected to reduce casualty crash rates on the existing, surrounding state road network (refer to **Section 3.2.6**), as discussed in **Chapter 7** (traffic and transport).

3.1.5 Regional NSW Services and Infrastructure Plan

The Regional NSW Services and Infrastructure Plan (NSW Government 2018) is a supporting study to the Future Transport Strategy 2056 which focuses on regional centres throughout NSW. The Regional NSW Services and Infrastructure Plan aims to produce a modern multi-modal freight transport network and identify the need to lift freight productivity above previous results as a key objective. This was to be achieved through enabling the use of HPV's throughout the regional network. Currently the road network in the Hexham/Sandgate/Tomago area is not able to cater for HPV's due to the height and weight restrictions imposed by the Pacific Highway southbound bridge crossing the Hunter River, as discussed in **Section 3.1.3**. The project would enable the use of high productivity vehicles through this section of the network.

3.1.6 Australian Infrastructure Plan and Priority List

The Australian Infrastructure Plan (the Plan) (Infrastructure Australia 2016) sets out the infrastructure challenges and opportunities that Australia faces over the next 15 years and the solutions required. The Plan was informed by a comprehensive review of existing and required infrastructure over the coming decades. The Plan has four main themes:

- Productive cities, productive regions
- Efficient infrastructure markets
- Sustainable and equitable infrastructure
- Better decisions and better delivery.

The Infrastructure Priority List (Infrastructure Australia 2021), which is part of the Plan, is designed to give guidance to decision makers and provide transparency for industry and the community. It is a 'rolling' list that is updated periodically as proposals move through development and delivery and in response to emerging challenges and opportunities.

The 2021 Infrastructure Priority List identifies the project as a priority initiative. The priority list identifies that the existing network consists of at-grade intersections that stifles the network speeds, thereby reducing economic performance. It also notes that the existing network does not cater for HPVs. The priority list provided an indicative timeframe for this project as zero to five years.

The 2021 Infrastructure Priority List is available on the Infrastructure Australian website: **https://www.infrastructureaustralia.gov.au/publications/Infrastructure_Priority_List_2021**.

3.1.7 National Freight and Supply Chain Strategy

The National Freight and Supply Chain Strategy (Transport and Infrastructure Council 2019) is the national approach to Australia's freight and supply chains. This strategy builds on the foundation laid through the National Ports Strategy (Australian Government 2012) and National Land Freight Strategy (Australian Government 2013), and expands freight and supply chain networks as an integrated whole. The strategy sets an agenda for government and industry action across all freight modes over the next 20 years and beyond and is supported by the National Action Plan which details key actions to be delivered by government to achieve the goals of the Strategy. The strategy commits to action in four critical areas:

- Smarter and targeted infrastructure
- Enable improved supply chain efficiency
- Better planning, coordination and regulation
- Better freight location and performance data.

The project would improve access to major freight gateways to support the critical area of smarter and targeted infrastructure investment. The project has been designed to accommodate heavy vehicles and will increase efficiency in freight movements between Sydney and Brisbane.

3.1.8 National Road Safety Strategy 2011-2020

The National Road Safety Strategy 2011–2020 aims to identify initiatives to improve the safety of Australia's roads (Australian Transport Council 2011). The strategy aims to reduce the annual number of road crash fatalities and serious road crash injuries by at least 30 per cent by the end of 2020.

The project would provide the opportunity to reduce crashes, as it would improve the design of the existing M1 Pacific Motorway, including a dual carriageway with a median, an improved road alignment, wider lanes and shoulders and grade separated interchanges, and would reduce traffic volumes on the existing road network. By improving road safety, the project would directly support the aims of the National Road Safety Strategy 2011–2020.

3.1.9 Lower Hunter Regional Strategy 2006-2031

The Lower Hunter Regional Strategy (NSW Department of Planning 2006) represents an agreed NSW Government position on the future of the Lower Hunter. It is the primary planning document for the Lower Hunter Region and has been prepared to complement and inform other relevant State planning instruments.

The project aligns with the Lower Hunter Regional Strategy by improving traffic movement through the lower Hunter to facilitate the increase in traffic anticipated due to growth in housing and employment lands in the area.

3.1.10 Hunter Regional Plan 2036

The Hunter Regional Plan 2036 (DPE 2016) is the NSW Government's strategy for guiding land use planning decisions for the Hunter Region for a period of 20 years from 2016.

The Hunter Regional Plan's vision recognises that infrastructure investment is an important factor for economic development across the Hunter. It supports freight, health and education services, agribusiness and tourism, as well as building resilience to global economic cycles and climate change.

The plan sets four goals and a number of directions to achieve the vision 'to create a leading regional economy in Australia, with a vibrant metropolitan city at the heart'. Direction 4 (enhance inter-regional linkages to support economic growth) specifically recognises the need to extend the M1 Pacific Motorway to Raymond Terrace.

3.1.11 Hunter Regional Transport Plan

The Hunter Regional Transport Plan (NSW Government 2014a) and Hunter Regional Transport Plan Update (NSW Government 2016a) identify the need to ensure the efficient movement of freight within the Hunter region. Key transport challenges identified in the Hunter Regional Transport Plan which are relevant to the project include:

- Accessibility to regional facilities, such as education, health, jobs and Newcastle Airport
- Road congestion and safety
- Freight capacity constraints on the road and rail networks
- Impact of freight transport on towns
- Improving connections between smaller towns to regional centres.

The project would address these challenges by improving access to facilities within the Lower Hunter region, including to the Newcastle Airport and key employment areas. The project would also improve access for HPV's and heavy vehicles within the road network and improve road safety. The Hunter Regional Transport Plan identifies the project as a medium to long-term initiative which would provide an important link for freight. In addition, the Hunter Regional Transport Plan identifies a commitment to maintaining a high quality road corridor between Sydney and Brisbane to support anticipated growth. The project is one of the last major upgrades required to complete a high quality route between Sydney and Brisbane.

The Hunter Regional Transport Plan notes that the M1 Pacific Motorway and the Pacific Highway can experience congestion associated with daily peak periods and holiday periods and identifies a commitment to plan for the project to ensure efficient freight movement. The project will substantially reduce travel times in both the morning and evening peaks, including during holiday periods. The project will also provide a route which reduces the overall freight transport time and cost for heavy vehicles along the major north-south and east-west connections.

3.1.12 Greater Newcastle Future Transport Plan

The Greater Newcastle Future Transport Plan (Transport 2018e) is a supporting study to the Future Transport Strategy 2056 (Transport 2018a) and provides the overarching strategic transport network and vision that will guide future transport planning for the Greater Newcastle area. The plan builds on the platform being established to increase liveability in Greater Newcastle through more sustainable travel behaviour.

The plan identifies that the population within the metropolitan Newcastle area is expected to increase over the next forty years. Transport service planning is required to respond to this population change, with one of the key outcomes of the Plan being to improve connection to jobs, services and recreation. The project would support this objective by increasing the connection, travel time and safety of key roads within the Greater Newcastle area, including the M1 Pacific Motorway, which the plan identifies as important in providing through connections within Greater Newcastle.

The project would also support expansion of Newcastle Airport, which the plan identifies as currently expanding. The project improves access, and the movement of freight through Greater Newcastle, which the Plan identifies as important to the economic function and development of the Hunter region and New South Wales.

Upgrades to the strategic network of primary freight routes comprising the New England Highway, M1 Pacific Motorway through to the Pacific Highway at Raymond Terrace and the strategic junction with the New England Highway and Hexham Straight are identified as committed initiatives within this plan.

3.1.13 City of Newcastle Local Strategic Planning Statement

The City of Newcastle Local Strategic Planning Statement (City of Newcastle 2020) is the City of Newcastle's plan to guide land use planning from 2020 to 2040. The Beresfield to Black Hill area is classified as a catalyst area under this plan, as it is ideally positioned to be a leading freight and logistics hub with easy access to the M1 Pacific Motorway, Hunter Expressway, Newcastle Port and Newcastle Airport. The project would support this by providing improved road conditions and connections between Black Hill and Beresfield.

3.1.14 Raymond Terrace and Heatherbrae Strategy 2015-2031

The Raymond Terrace and Heatherbrae Strategy 2015-2031 (Port Stephens Council 2015) provides a series of goals and actions for Raymond Terrace. Port Stephens Council's vision for Raymond Terrace is for it to be a 'strong regional centre and a great place to live, work and play'.

Goal 1 of the Raymond Terrace and Heatherbrae Strategy is to achieve a 'competitive economy with regional services, including transport, health, justice, government, commercial, retail, industrial and entertainment'. Direction 1.2 of the strategy is to enhance 'transport and mode connectivity, including road, public transport, footpath and cycleway connections within Raymond Terrace and Heatherbrae'.

The project is consistent with these goals and directions as it would provide road infrastructure which would improve accessibility and connectivity between the M1 Pacific Motorway at Beresfield and the Pacific Highway at Raymond Terrace. The project would reduce congestion within the local road network and improve connections for public transport, pedestrians and cyclists.

3.2 Project need

This section provides a description of the strategic context and a summary of the existing transport conditions which demonstrate the need for the project.

3.2.1 Overview

The M1 Pacific Motorway was constructed to provide access between Sydney and Newcastle, and was completed in 1998. Construction of the Pacific Highway bypass of Raymond Terrace was also completed in 1998.

The Pacific Highway and New England Highway between the M1 Pacific Motorway at Black Hill and Raymond Terrace form part of the NLTN. The project is located along this key freight route facilitating substantial interstate freight movements between NSW, Victoria and Queensland, and particularly the freight task between Sydney, the Hunter region, northern NSW and Queensland.

The project is in one of the most highly trafficked areas of the road network in the region and is more heavily congested than adjacent high standard sections of the M1 Pacific Motorway and Pacific Highway corridor. Key issues along the M1 Pacific Motorway, Pacific Highway, and New England Highway corridors applicable to the project include:

- High traffic volumes on the New England and Pacific Highways, the M1 Pacific Motorway and John Renshaw Drive and congestion on these highly-trafficked routes
- Major delays caused at controlled intersections and merge/diverge locations combined with high traffic demand
- Road safety
- Restrictions on heavy vehicle movements
- Accessibility for freight to major nearby existing and future employment areas
- Flood immunity of existing road corridors.

The project would help integrate the needs of the Hunter Region's road network with those of the broader NLTN. By providing one of the last major upgrades required to complete a free flowing dual carriageway route between Sydney and Brisbane, the project would improve traffic efficiency and congestion caused by the interaction of high volumes of National, interstate, regional and local traffic on the currently constrained road network. The project would further promote connectivity between key residential and employment areas, improve road safety and improve flood immunity in this section of the road network (refer to **Section 3.3** and **Chapter 26** (project justification and conclusion)).

3.2.2 National context

The New England Highway and the Pacific Highway between the M1 Pacific Motorway at Black Hill and Raymond Terrace form part of the NLTN (refer to **Figure 3-1**), which is a defined national network of important road and rail infrastructure links.

The two roads facilitate significant interstate freight movements between NSW, Victoria and Queensland, and intrastate movements between Sydney, the Hunter region and northern NSW.

The project is one of the last remaining major upgrades required to complete a free flowing dual carriageway route between Sydney and Brisbane along the coastal route of the NLTN. The other remaining major upgrade proposed along the Pacific Highway corridor is the Coffs Harbour Bypass (currently in the pre-construction phase).

3.2.3 Pacific Highway upgrade program

The upgrade of the Pacific Highway is one of the largest road infrastructure programs in NSW. The Pacific Highway forms part of the NLTN, connecting Sydney and Brisbane, and is a major contributor to Australia's economic activity. The Australian and NSW governments have been jointly upgrading the Pacific Highway to provide a four-lane divided road from Hexham to Queensland since 1996. By the end of 2020, the majority of the Pacific Highway north and south of Coffs Harbour will be upgraded to a posted speed limit of 100 or 110 kilometre per hour.

Although the project will not be delivered under the Pacific Highway upgrade program, completion of the project will contribute to fully realising the benefits of the program. As outlined in **Section 3.2.2**, there are only two locations on the east coast corridor linking Sydney to Brisbane where the route is an urban road with traffic signals – at Coffs Harbour and at Black Hill, Hexham, Tomago and Heatherbrae. The project, together with Coffs Harbour bypass, would provide the remaining major upgrades to complete a free flowing dual carriageway route between Sydney and Brisbane.

3.2.4 Existing road network conditions and performance

The M1 Pacific Motorway is a key north-south corridor linking Sydney to the Central Coast, Newcastle and Hunter region. It is a dual carriageway road with two lanes in each direction and a 110 kilometre per hour speed limit.

Existing road infrastructure surrounding the project is shown on **Figure 3-1**. The current alignment between the M1 Pacific Motorway at John Renshaw Drive and the Raymond Terrace Bypass is not free flowing, does not meet motorway standards and is a congestion point on the NLTN. Constraints to the safe and effective operation of the road network are shown on **Figure 3-1** and include:

- Traffic lights along the route at the following intersections:
  - M1 Pacific Motorway, Weakleys Drive and John Renshaw Drive
  - New England Highway, Maitland Road and Pacific Highway
  - Pacific Highway and Tomago Road
  - Pacific Highway and Old Punt Road
  - Pacific Highway and Hank Street.
- The roundabout at the Pacific Highway and Masonite Road intersection
- Geometric constraints, including undesirable merging arrangements from John Renshaw Drive onto the New England Highway at Beresfield, and tight curves northbound on the existing bridge over the Hunter River
- Varied speed limits along the route
- Adjoining land use development with direct access.

Traffic volumes

Demand on the existing NLTN (shown on **Figure 3-1**), linking the M1 Pacific Motorway with the Pacific Highway and the New England Highway, is very high. The key routes with the highest traffic volumes are the New England Highway, Pacific Highway, M1 Pacific Motorway and John Renshaw Drive (east of the M1 Pacific Motorway). Traffic volumes recorded along these roads were:

- M1 Pacific Motorway: about 40,000 vehicles per day, south of John Renshaw Drive
- Pacific Highway: about 52,000 vehicles per day, north of Hexham Bridge
- New England Highway: about 61,000 vehicles per day, north-west of the Pacific Highway
- John Renshaw Drive: about 32,000 vehicles per day, east of the M1 Pacific Motorway.

The project location is one of the most highly trafficked areas of the road network in the region and along the Sydney to Brisbane corridor. The regional road network, serving the broader Newcastle and Hunter Valley areas from the project location, also experiences high traffic demand. The current road network requires long distance freight travel and commuting regional traffic to interact and travel on the same road network.

The Pacific Highway north of the Hunter River has its highest peak flows between the Hunter River and Tomago. This area of the network is constrained and congested due to capacity constraints at the older southbound bridge and traffic signals at the intersection with the New England Highway.

Traffic volumes at the northern end of the M1 Pacific Motorway at its junction with John Renshaw Drive and Weakleys Drive exhibit constrained capacity due to the high demand from all intersection directions, which causes substantial queueing and delay. This intersection was upgraded to traffic signals under the M1 Productivity Package (funded by the Australian and NSW Governments) as part of a separate project, to improve the operational performance of the former roundabout. The Weakleys Drive and John Renshaw Drive intersection upgrade was completed in March 2019.

It is anticipated with continued economic growth in the immediate vicinity of the project and that this part of the network is affected from growth across a broad area that traffic volumes will continue to grow into the future. Refer to **Section 3.2.7** for further discussion on future economic growth.

Traffic volumes across the road network are shown on **Figure 3-2** and are discussed in further detail in **Chapter 7** (traffic and transport) and the Traffic and Transport Working Paper (**Appendix G**).

Travel times

The existing road network has controlled intersections (traffic signals and roundabouts) and speed limits lower than the desirable motorway speeds of 100 to 110 kilometres per hour. These factors decrease the performance for travel time through the area, including freight movements. There are currently six controlled intersections along the Pacific Highway corridor between Black Hill and Raymond Terrace.

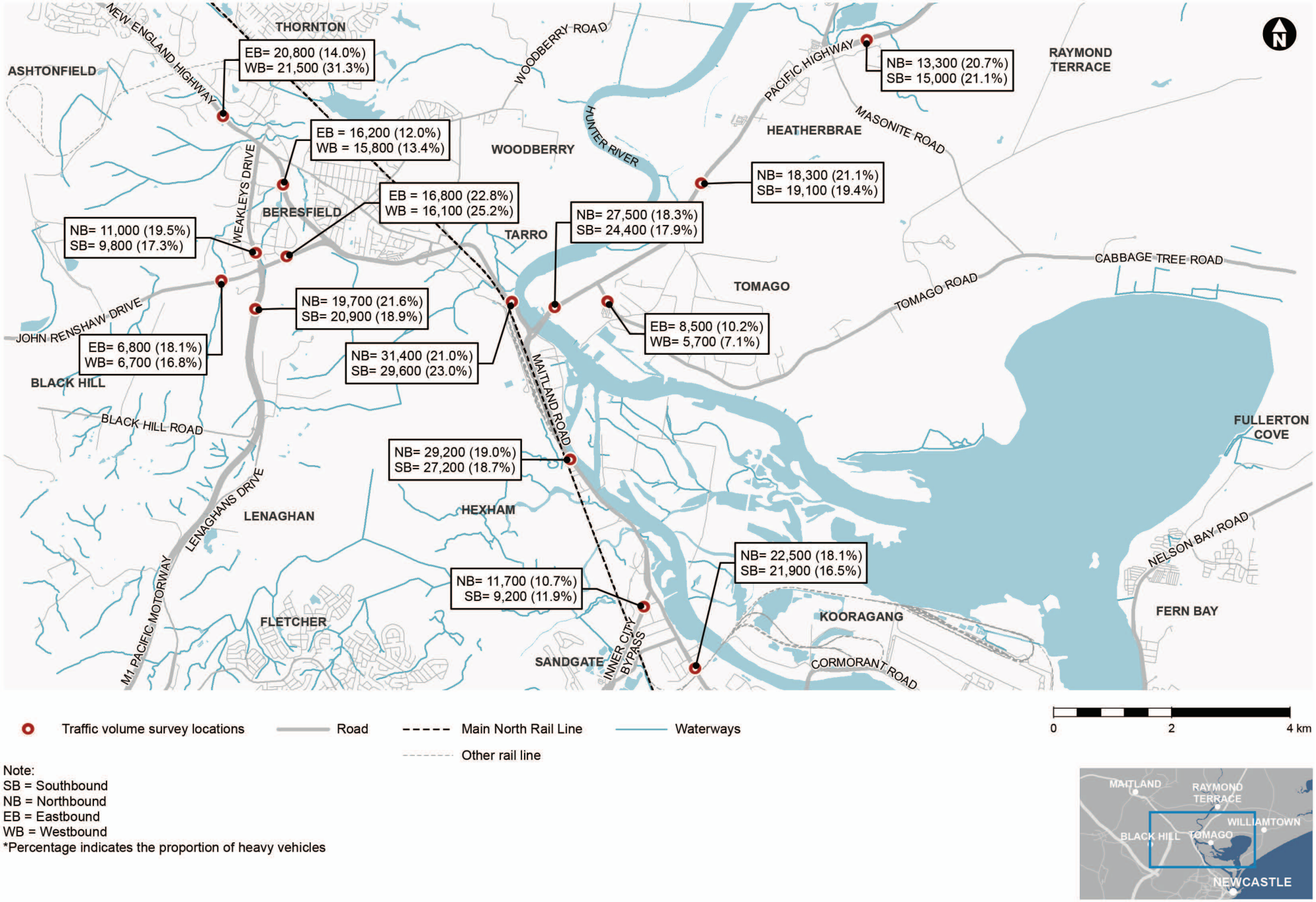
Existing peak period travel times are presented in **Table 3-2**.

Table 3-2 Existing travel times during peak periods

Route		Distance (km)	Average travel time (min:sec)		Average travel speed (km/h)	
From	To		Morning peak	Evening peak	Morning peak	Evening peak
New England Highway	Maitland Road	12.5	14:55	11:59	50	63
	Pacific Highway	16.3	13:26	13:26	73	73
M1 Pacific Motorway		20.7	16:52	16:52	74	74
John Renshaw Drive		18.0	15:13	15:13	71	71
Pacific Highway	New England Highway	16.6	16:26	16:26	61	61
	M1 Pacific Motorway	20.9	19:31	19:31	64	64
	John Renshaw Drive	18.2	17:24	17:24	63	63
	Maitland Road	16.0	14:06	13:46	56	57
Maitland Road	Pacific Highway	16.0	13:25	14:45	59	54
	New England Highway	13.5	12:24	13:11	61	57

Along the routes, the posted speed limit is generally 80 kilometres per hour with a section through Heatherbrae at 70 kilometres per hour and the New England Highway west of Tarro interchange at 90 kilometres per hour. **Table 3-2** indicates that current travel times are substantially below the posted speed limit (about 15 kilometres per hour) for southbound movements along the corridor.

Further information regarding existing travel times is provided in **Chapter 7** (traffic and transport) and the Traffic and Transport Working Paper (**Appendix G**).



Note:
SB = Southbound
NB = Northbound
EB = Eastbound
WB = Westbound
*Percentage indicates the proportion of heavy vehicles

Figure 3-2 Existing traffic volumes

Intersection performance

Key intersections within the project area and current performance issues include:

- M1 Pacific Motorway/John Renshaw Drive/Weakleys Drive: During peak periods, there is high demand from all legs of the intersection
- New England Highway/Pacific Highway (Maitland Road): During peak periods major delays occur on all legs of the intersection due to very high traffic demand along the New England Highway and Pacific Highway corridors. Congestion is caused by the high right-turn demand from the Pacific Highway, causing all New England Highway traffic to be stopped
- Pacific Highway/Tomago Road: The intersection has high traffic demand along the Pacific Highway and is impacted by the industrial peak traffic demand to/from Tomago industrial area
- John Renshaw Drive/New England Highway: A major merge point where northbound and eastbound traffic from the M1 Pacific Motorway and the New England Highway traffic merge. It currently performs poorly due to the unconventional nature of the right to left merge and the high traffic demand.

Further information regarding existing intersection performance is provided in the Traffic and Transport Working Paper (**Appendix G**) and **Chapter 7** (traffic and transport).

3.2.5 Network freight efficiency and capacity

The existing rail and road network provides important links for freight transport through the project. Major freight activity precincts and routes located near the project are shown on **Figure 3-3**.

The Pacific Highway, New England Highway and the Hunter Expressway form part of the NLTN. In addition to facilitating substantial interstate freight movements between Victoria, NSW and Queensland, these roads provide the primary access to the City of Newcastle, Port of Newcastle, Newcastle Airport, Upper Hunter Valley mining developments, Maitland and other major employment and commercial centres in the Hunter Region. The NLTN in the location of the project plays an important role in the movement of freight in the region, NSW and Australia.

Access to the Pacific Highway southbound is currently provided via the heritage listed Hexham Bridge over the Hunter River. The Hexham Bridge is height limited (with a maximum clearance of 5.2 metres), limited in capacity to two undersized lanes, widening only at the immediate approach to the Pacific Highway/Maitland Road intersection. The southbound Hexham Bridge also has a weight limitation which does not allow for vehicles over 68 tonnes. As a result, the southbound Hexham Bridge does not provide for HPV's PBS Class 2B vehicles of up to 30 metres and 90.5 tonnes in mass, or oversize overmass (OSOM) vehicles from the major Tomago industrial area and areas further away. Larger heavy vehicles require contra flow movements under restricted conditions to be made in the reverse direction across the northbound Hexham Bridge.

By removing restrictions to southbound traffic with the provision of a high quality four lane motorway, the project would reduce traffic volumes on the existing road network and provide local improvements to facilitate HPV's and OSOM loads, as well as enable efficient movement of these heavy vehicles along the M1 Pacific Motorway / Pacific Highway, to surrounding areas of heavy industry and to the Hunter Valley. The completion of the project, along with the recently completed Pacific Highway upgrade program and Coffs Harbour Bypass, would remove all other remaining restrictions for the adoption of HPV's and movement of larger OSOM loads between Hexham and the Brisbane. The project would enable the full benefit of the substantial investment by both State and Australian governments, together with the completion of the Pacific Highway upgrade program, to be realised.

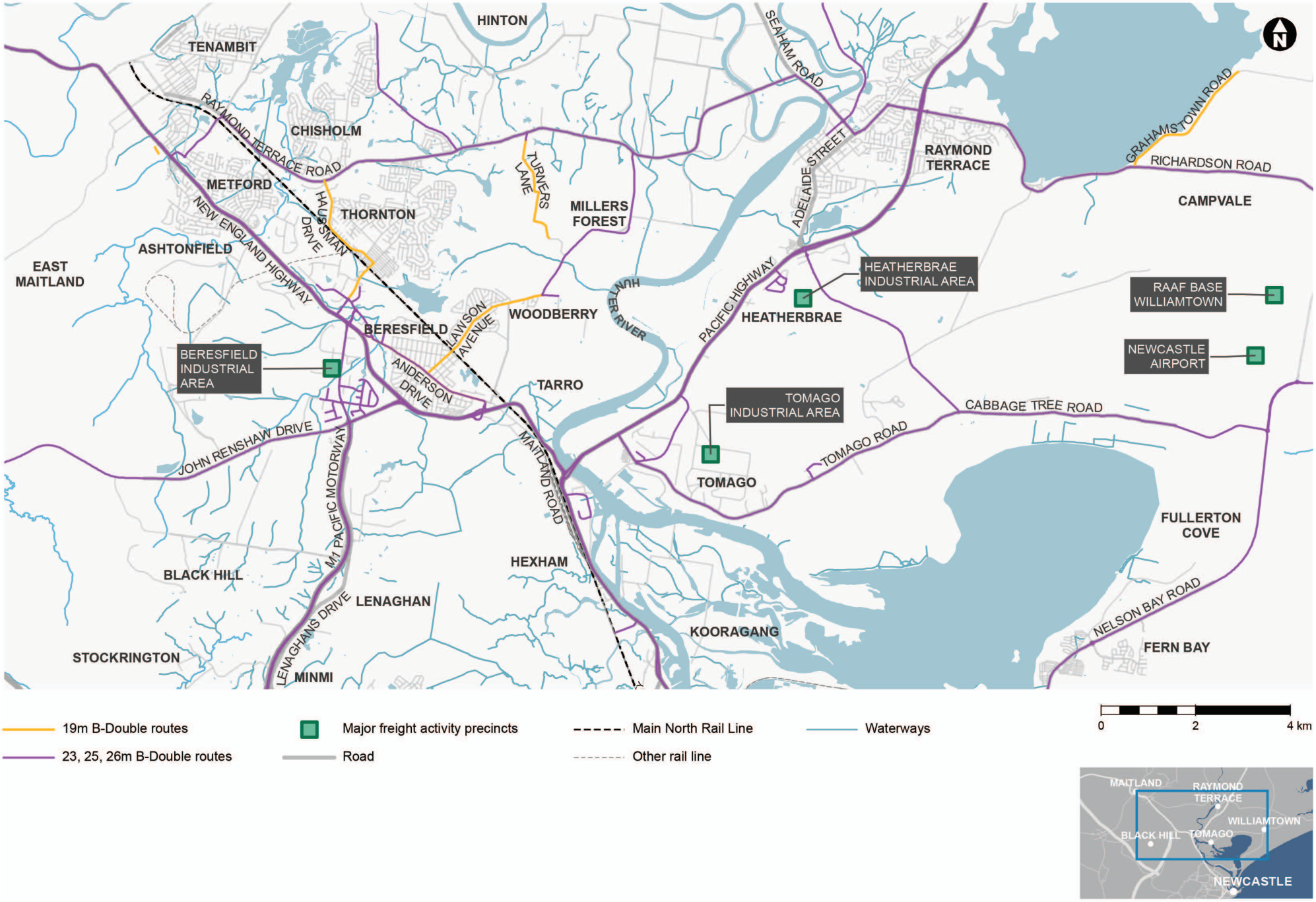


Figure 3-3 Major freight activity precincts in the vicinity of the project

3.2.6 Road safety

One of the key objectives of the project is to improve road safety. The number of crashes recorded within the traffic and transport study area during the five year reporting period from October 2014 to September 2019 is shown in **Table 3-3**. The New England Highway and the Pacific Highway recorded the highest number of crashes in the area, as they are the longest lengths and have higher traffic volumes compared to the other sections. Tomago Road and Old Punt Road recorded the lowest number of crashes.

Impacts of the project on road safety are further discussed in **Chapter 7** (traffic and transport) and the Traffic and Transport Working Paper (**Appendix G**).

Table 3-3 Crashes recorded within the traffic and transport study area during the five year reporting period between October 2014 and September 2019

Road	Section	Fatal	Injury	Non-casualty (tow-away)	Total	Casualty crash rate (per 100 million vehicles travelled)
John Renshaw Drive	500m west of M1 Pacific Motorway to New England Highway	1	3	4	8	6.09
M1 Pacific Motorway	North of Black Hill to John Renshaw Drive	1	24	23	48	14.74
New England Highway	West of Thornton Rd to Old Maitland Road	1	70	50	121	8.37
Old Punt Road	Tomago Road to Pacific Highway	0	2	1	3	19.93
Pacific Highway	New England Highway to Richardson Road	2	55	36	93	6.07
Tomago Road	500m west of Tomago Aluminium to Pacific Highway	0	5	2	7	13.66
Weakleys Drive	John Renshaw Drive to New England Highway	1	4	4	9	6.62

3.2.7 Future growth

The Hunter Region has the largest share of both regional population and regional employment and is located in the State's fastest growing corridor – from the northern edge of Sydney to Newcastle. The projected population along this corridor is estimated to be 1.1 million by 2036. (Hunter Regional Plan 2036, DPE 2016).

The Hunter Regional Plan 2036 estimates that by 2036 there will be an increase in population of approximately 130,000 people and 61,500 jobs. The road network in the project area is central to the functionality and catering for this predicted future growth.

The New England Highway, Pacific Highway and John Renshaw Drive form part of the NLTN through the project area and make up part of the Sydney to Brisbane coastal route. In addition to facilitating significant interstate freight movements between Victoria, NSW and Queensland, these roads provide the primary access to the City of Newcastle, Port of Newcastle, Newcastle Airport, Upper Hunter Valley mining developments, Maitland and other major employment and commercial centres in the Hunter Region. Accordingly, the road network within the project area is a critical location in the Sydney to Brisbane corridor.

Significant employment precincts have been identified at Tomago, Heatherbrae and at the convergence of the NLTN around Thornton, Beresfield and Black Hill. The Greater Newcastle Metropolitan Plan (DPE 2018) also identifies Beresfield, Black Hill and Tomago as major employment precincts and trading hubs within Greater Newcastle.

Beresfield and Black Hill are proposed to be a freight and logistics hub, with complementary manufacturing and light industrial activity. Three precincts are identified within this location, including:

- Beresfield Precinct, which will support freight and logistics, manufacturing and other light industrial uses
- Emerging Black Hill Precinct, located west of the M1 Pacific Motorway, which will support employment lands, freight and logistic uses
- Thornton Precinct, which is proposed to support expanded business and light industrial uses.

Tomago is proposed to be an advanced manufacturing and industrial area. Local planning for the Tomago Industrial Precinct will look to enable the efficient movement of goods by protecting freight routes connecting Tomago to Newcastle Airport and the Port of Newcastle.

Historically, traffic growth in the area has varied across the network. Trends of traffic growth in some locations such as the Pacific Highway, north of Hexham Bridge, have experienced traffic growth of about 1.5 per cent increase per year. As an example of major employment and traffic growth in proximity to the project area, the proposed Emerging Black Hill Precinct has been anticipated to generate in the order of 3,000 peak trips on the network when full development potential is realised in the future.

Due to the expansion of these employment areas, as well as population growth within the Hunter region and immediately adjacent to the project area, the volume of vehicles on the M1 Pacific Motorway, the Pacific Highway and the New England Highway is anticipated to continue to increase with similar growth. This would place additional strain on the road network, leading to increased travel times and the potential for greater risks to safety for road users within the project area.

3.2.8 Flooding

The Hunter River traverses through the project along with numerous tributaries and other minor waterways including Purgatory Creek, Windeyers Creek, Grahamstown Drain, and an unmapped and unnamed artificial tributary of Viney Creek. The project is situated within the Hunter River floodplain, and the area is impacted during flooding events.

Recent major storm events in the Hunter Region required closure of the Pacific Highway north of Hexham Bridge due to water over the road and partial impacts along the New England Highway corridor west of Hexham Bridge, disrupting local and regional connectivity. Based on the 2015 flood event that occurred, the flood immunity of the existing key roads at these locations, on the Hunter River flood plain, is between a 20% and 10% annual exceedance probability (AEP) flood immunity. Flooding is discussed further in **Chapter 10** (hydrology and flooding).

3.3 Project objectives

Objectives for the project have been developed to be consistent with the overall objectives of the Pacific Highway upgrade program. The objectives of the project are to:

- Improve travel time and road network efficiency for freight and commuters on the NLTN at the key strategic junction of the M1 Pacific Motorway, the New England Highway and the Pacific Highway
- Provide improved long term route reliability along the M1 Pacific Motorway corridor, particularly in relation to congestion reduction, flood immunity and high demand holiday peak travel
- Improve road safety for all road users
- Provide more efficient access to facilitate economic growth for the Lower Hunter and key regional employment areas such as the Port of Newcastle, Newcastle Airport, Tomago, Beresfield and Black Hill.

A summary of how the project achieves the project objectives is provided in **Table 3-4.**

Table 3-4 Assessment of the project against the project objectives

Objective	Project outcome
Improve travel time and road network efficiency for freight and commuters on the NLTN at the key strategic junction of the M1 Pacific Motorway, the New England Highway and Pacific Highway	The project would provide an alternative route to the existing road network, improving freight and commuter connectivity and allowing free movement for freight travelling along this section of the NLTN. Travel times would be substantially reduced between Newcastle, Raymond Terrace, Maitland and other regional industrial areas, improving network efficiency for commuting and freight. The project substantially reduces travel times for both the morning and evening peak periods in future years with travel time reductions of between seven and nine minutes in both peak periods along the M1 Pacific Motorway corridor upon opening of the project.
Provide improved long term route reliability along the M1 Pacific Motorway corridor, particularly in relation to congestion reduction, flood immunity and high demand holiday peak travel	The project would provide key infrastructure for movements along the eastern coast of Australia, improving travel time and travel time reliability between Brisbane in the north and Melbourne and Sydney. The project would provide a minimum 5% AEP flood immunity between Black Hill and Raymond Terrace (including 1% AEP local flood immunity between Black Hill and Tomago), improving from the current 20% AEP flood immunity on the existing network. The project would also provide a new flood emergency and evacuation access route (the project itself). The project would provide free-flow, dual carriageway conditions and avoid existing intersections along the M1 Pacific Motorway corridor to provide improved travel time reliability during high demand holiday periods through this part of the road network.
Improve road safety for all road users	The project would have a positive impact on road safety by: • Reducing congestion on the New England Highway and the Pacific Highway, which is expected to reduce rear-end and lane-change crashes • Reducing potential points of conflict between road vehicles on the network, minimising the risk of congestion-related incidents • Providing an improved road alignment, including wider lands and shoulders with barriers, minimising the risk and impact of any off-road crashes.
Provide more efficient access to facilitate economic growth for the Lower Hunter and key regional employment areas such as the Port of Newcastle, Newcastle Airport, Tomago, Beresfield and Black Hill	The project would improve travel times and connectivity to key activity centres in the region, including the Port of Newcastle, Newcastle Airport, Tomago, Beresfield and Black Hill. The project improves accessibility for oversize and overmass freight, and enables end to end access by high productivity vehicles (PBS Class 2B heavy vehicles) along the M1 Pacific Motorway corridor across the Hunter River. The project would also improve access and connectivity to current and future employment and growth areas to and from the M1 Pacific Motorway.

3.4 Statement of strategic need

The existing NLTN (M1 Pacific Motorway corridor), between Black Hill to Raymond Terrace is a combination of John Renshaw Drive, the New England Highway and the Pacific Highway. Generally it provides two lanes in both directions with six controlled intersections and speed limits ranging from 60 kilometres per hour to 90 kilometres per hour.

This location along the M1 Pacific Motorway corridor is one of the last remaining sections not providing a free flowing dual carriageway route between Sydney and Brisbane along the coastal route of the NLTN. The other remaining major location along the corridor is the Coffs Harbour Bypass (currently in the pre-construction phase).

Increasing traffic demand, due to continued expansion of key industries, employment areas and population growth within the region, means that the volume of vehicles on the corridor will continue to place further strain on this critical junction of the NLTN. This will lead to increased travel times and the potential for greater risks for road users within the project location. The project is needed to improve connectivity and overall performance of the road network and to deliver improved travel times and safety for road users.

The project would complete one of the last remaining major upgrades required to facilitate significant interstate freight movements between NSW, Victoria and Queensland. Additionally, the project would support freight servicing the Hunter Valley mining industry, the Port of Newcastle, and interstate movements, resulting in local, regional and national economic benefits.

Route reliability of travel would improve, not only in peak times, but during holiday periods and during times of flooding as the project would remove all intersections and provide increased flood immunity along this section of the NLTN.

The new crossing over the Hunter River would remove the existing constraint for southbound movements at the Hexham Bridge, improving the opportunity for movement of high productivity vehicles in this part of the NLTN. The project would therefore not only provide local and regional benefits but would provide significant productivity benefits on a national scale.

The project would improve connectivity for the rapidly growing Lower Hunter region by improving access to key employment areas such as Tomago, Beresfield, Black Hill and the Port of Newcastle. The road network area currently experiences high traffic demand, with demand anticipated to increase as populations within the Lower Hunter and Newcastle area grow. The project would provide greater capacity on the network and provide increased connectivity for these rapidly growing regions and better access to the road network for local traffic.

As presented throughout **Section 3.1**, the project would also fulfil the goals and objectives of numerous strategic planning instruments. Further justification for the project is provided in **Chapter 26** (project justification and conclusion).