## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figures</td>
<td>4</td>
</tr>
<tr>
<td>Tables</td>
<td>4</td>
</tr>
<tr>
<td>Glossary and abbreviations</td>
<td>5</td>
</tr>
<tr>
<td>Executive Summary</td>
<td>7</td>
</tr>
<tr>
<td><strong>1. Introduction</strong></td>
<td>9</td>
</tr>
<tr>
<td>1.1 Background</td>
<td>9</td>
</tr>
<tr>
<td>1.2 Princes Highway upgrade roadmap</td>
<td>9</td>
</tr>
<tr>
<td>1.3 Proposal overview</td>
<td>10</td>
</tr>
<tr>
<td>1.4 Study area</td>
<td>11</td>
</tr>
<tr>
<td>1.5 Purpose of this report</td>
<td>14</td>
</tr>
<tr>
<td><strong>2. Need for the proposal</strong></td>
<td>15</td>
</tr>
<tr>
<td>2.1 Service need/ problem statement</td>
<td>15</td>
</tr>
<tr>
<td>2.1.1 Traffic</td>
<td>15</td>
</tr>
<tr>
<td>2.1.2 Freight access</td>
<td>15</td>
</tr>
<tr>
<td>2.1.3 Movement and place</td>
<td>15</td>
</tr>
<tr>
<td>2.1.4 Road safety</td>
<td>16</td>
</tr>
<tr>
<td>2.2 Customer types and needs</td>
<td>16</td>
</tr>
<tr>
<td>2.2.1 Demographics and customer types</td>
<td>16</td>
</tr>
<tr>
<td>2.2.2 Travel behaviour</td>
<td>17</td>
</tr>
<tr>
<td>2.2.3 Emerging trends</td>
<td>18</td>
</tr>
<tr>
<td>2.2.4 Key customer needs</td>
<td>18</td>
</tr>
<tr>
<td>2.3 Proposal objectives</td>
<td>19</td>
</tr>
<tr>
<td>2.4 Strategic alignment</td>
<td>20</td>
</tr>
<tr>
<td><strong>3. Proposal considerations and constraints</strong></td>
<td>23</td>
</tr>
<tr>
<td>3.1 Statutory and planning framework</td>
<td>23</td>
</tr>
<tr>
<td>3.1.1 Environmental Planning and Assessment Act 1979</td>
<td>23</td>
</tr>
<tr>
<td>3.1.2 State Environmental Planning Policies</td>
<td>23</td>
</tr>
<tr>
<td>3.1.3 Other relevant legislation and environmental planning instruments</td>
<td>24</td>
</tr>
<tr>
<td>3.2 Transport considerations</td>
<td>27</td>
</tr>
<tr>
<td>3.2.1 Roads</td>
<td>27</td>
</tr>
<tr>
<td>3.2.2 Freight Routes</td>
<td>30</td>
</tr>
<tr>
<td>3.2.3 Public transport</td>
<td>30</td>
</tr>
<tr>
<td>3.2.4 Pedestrian and cycling facilities</td>
<td>32</td>
</tr>
<tr>
<td>3.2.5 Road safety</td>
<td>32</td>
</tr>
<tr>
<td>3.2.6 Existing traffic volumes</td>
<td>35</td>
</tr>
<tr>
<td>3.2.7 Mid-block capacity assessment</td>
<td>36</td>
</tr>
</tbody>
</table>
3.3 Environmental considerations

3.3.1 Aboriginal heritage

3.3.2 Air quality

3.3.3 Biodiversity

3.3.4 Hydrology, water quality and flooding

3.3.5 Landform, geology, and soils

3.3.6 Landscape character

3.3.7 Land use

3.3.8 Natural hazards

3.3.9 Noise and vibration

3.3.10 Non-Aboriginal heritage

3.3.11 Socio-economic

3.3.12 Utilities

4. Community involvement and feedback

4.1 Consultation activities to date

4.1.1 Initial community consultation

4.1.2 Key stakeholder meetings

4.2 Community Engagement methods

4.3 Ongoing future consultation

5. Alternatives and options considered

5.1 Methodology for selection of recommended option

5.2 Design criteria

5.3 Identification of options

5.3.1 'Do minimum' option (Strategic Corridor Option 0)

5.3.2 Strategic Corridor Option 1

5.3.3 Strategic Corridor Option 2

5.3.4 Strategic Corridor Option 3

5.3.5 Strategic Corridor Option 4

5.3.6 Strategic Corridor Option 5

5.3.7 Strategic Corridor Option 6

5.3.8 Strategic Corridor Option 7

5.3.10 Other strategic alternatives considered

5.4 Evaluation of options

5.4.1 Development of Key Result Areas

5.4.2 Shortlisting workshop

5.5 Evaluation of short list of options

5.5.1 Development of short list options

5.5.2 Additional investigations

5.5.3 Value management workshop

6. Preferred strategic corridor
Figures

Figure 1-1 Regional context ..........................................................12
Figure 1-2 Study area....................................................................13
Figure 3-1 Road network .................................................................29
Figure 3-2 Fatal (red) and serious injury (orange) crash data recorded from January 2014 to December 2018 .................................................................34
Figure 3-3 Daily traffic numbers (2019) - typical school day and holiday period .........35
Figure 3-4 Terrestrial biodiversity constraints ..................................39
Figure 3-5 Aquatic biodiversity constraints .....................................40
Figure 3-6 Locally listed Non-Aboriginal heritage items (Shoalhaven LEP) ...............45
Figure 5-1 Approach to selection of a recommended option .......................50
Figure 5-2 Strategic corridor option end points ................................51
Figure 5-3 Longlisted strategic corridor options ................................53
Figure 5-4 Shortlisted options with breakdown of required existing Princes Highway upgrades ........................................................................69
Figure 6-1 Preferred Milton Ulladulla bypass strategic corridor option .............78

Tables

Table 2-1 Customer needs ................................................................18
Table 2-2 Proposal objectives ................................................................19
Table 2-3 Strategic alignment of the proposal ..........................................20
Table 3-1 Road hierarchy classification guidelines ................................27
Table 3-2 Existing bus services .........................................................31
Table 3-3 School bus routes ...............................................................31
Table 3-4 Crashes by movement type ................................................33
Table 4-1 Community engagement methods ..........................................48
Table 5-1 Key Result Areas ...............................................................63
Table 5-2 Short-listing workshop multi-criteria analysis scoring ..........65
Table 5-4 Value management workshop multi-criteria analysis scoring .......75
<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHIMS</td>
<td>Aboriginal Heritage Information Management System</td>
</tr>
<tr>
<td>AHIP</td>
<td>Aboriginal Heritage Impact Permit</td>
</tr>
<tr>
<td>AusRAP</td>
<td>Australian Road Assessment Program</td>
</tr>
<tr>
<td>BC Act</td>
<td>Biodiversity Conservation Act 2016 (NSW)</td>
</tr>
<tr>
<td>Coastal Management SEPP</td>
<td>State Environmental Planning Policy (Coastal Management) 2018</td>
</tr>
<tr>
<td>End point</td>
<td>Location on the Princes where the proposed bypass would end. There are three potential end points identified:</td>
</tr>
<tr>
<td></td>
<td>• North of Burrill Lake (Point B1)</td>
</tr>
<tr>
<td></td>
<td>• South of Burrill Lake (Point B2)</td>
</tr>
<tr>
<td></td>
<td>• South of Lake Tabourie (Point C).</td>
</tr>
<tr>
<td>EPA</td>
<td>NSW Environment Protection Authority</td>
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<tr>
<td>EP&amp;A Act</td>
<td>Environmental Planning and Assessment Act 1979</td>
</tr>
<tr>
<td>EPBC Act</td>
<td>Environment Protection and Biodiversity Conservation Act 1999</td>
</tr>
<tr>
<td>FM Act</td>
<td>Fisheries Management Act 1994</td>
</tr>
<tr>
<td>Forestry Act</td>
<td>Forestry Act 2012</td>
</tr>
<tr>
<td>HSiD</td>
<td>Health and safety in design</td>
</tr>
<tr>
<td>Heritage Act</td>
<td>Heritage Act 1977</td>
</tr>
<tr>
<td>ISEPP</td>
<td>State Environmental Planning Policy 2007</td>
</tr>
<tr>
<td>KRA</td>
<td>Key Result Area</td>
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<td></td>
<td>KRAs represent important factors that can be realistically measured and would contribute to meeting the project objectives.</td>
</tr>
<tr>
<td>LEP</td>
<td>Local Environmental Plan</td>
</tr>
<tr>
<td>LGA</td>
<td>Local government area</td>
</tr>
<tr>
<td>MNES</td>
<td>Matters of national environmental significance</td>
</tr>
<tr>
<td>Milton Ulladulla bypass</td>
<td>The planned future bypass of Milton and Ulladulla</td>
</tr>
<tr>
<td>NPW Act</td>
<td>National Parks and Wildlife Act 1974</td>
</tr>
<tr>
<td>NSW</td>
<td>New South Wales</td>
</tr>
<tr>
<td>PACHCI</td>
<td>Procedure for Aboriginal cultural heritage consultation and investigation (Roads and Maritime Services, 2011)</td>
</tr>
<tr>
<td>PEI</td>
<td>Preliminary environmental investigation</td>
</tr>
<tr>
<td>Term</td>
<td>Meaning</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Proposal / The proposal</td>
<td>The proposed Milton Ulladulla bypass</td>
</tr>
<tr>
<td>Roads and Traffic Authority</td>
<td>Former Transport for NSW</td>
</tr>
<tr>
<td>SEPP</td>
<td>State environmental planning policy</td>
</tr>
<tr>
<td>Shoalhaven LEP</td>
<td>Shoalhaven Local Environmental Plan 2014</td>
</tr>
<tr>
<td>Start point</td>
<td>Location on the Princes Highway north of Milton near Little Forest Road where the proposed bypass would begin</td>
</tr>
<tr>
<td>Study area</td>
<td>Describes the location investigated</td>
</tr>
<tr>
<td>TECs</td>
<td>Threatened ecological communities</td>
</tr>
<tr>
<td>Transport for NSW</td>
<td>Transport for New South Wales</td>
</tr>
</tbody>
</table>
Executive Summary

Transport for NSW (Transport) is progressing with plans for a proposed Milton Ulladulla bypass and has recommended a preferred strategic corridor.

Since 2011, the Australian and NSW Governments have invested $2.5 billion to upgrading the Princes Highway. This has transformed and better connected communities, employed thousands of locals, improved safety, eased traffic congestion, and grown regional economies. The Australian and NSW Governments have now committed a further $1.5 billion to upgrade the Princes Highway between Jervis Bay Road and the Victorian border.

The Milton Ulladulla bypass is a priority project and part of a 20 year plan to deliver a safe, reliable, efficient and connected transport network. The 20 year plan is built on five goals:

- **Safety** - A safer corridor for all customers and communities including local traffic, freight, tourists, and public and active transport users.
- **Resilience** - a corridor that can be efficiently managed and maintained while adapting to changing social, environmental and economic factors including the ability to quickly recover from natural disasters and respond to changing land use and technologies.
- **Liveability** - a corridor that supports communities by connecting and contributing to providing attractive and healthy places to live, work and play.
- **Sustainability** - a corridor that is socially, environmentally and economically sustainable and unlocks a wide range benefits for communities and other customers.
- **Connectivity and Accessibility** - a corridor that has good physical and digital connectivity and accessibility, for access to opportunity and services.

The proposed Milton Ulladulla bypass aims to substantially reduce travel time and congestion, particularly in holiday periods. It would improve road safety after 111 crashes were recorded in the existing highway corridor within the Milton and Ulladulla area in a five-year period to 2018. The bypass would enhance the liveability within the Milton and Ulladulla town centres and enhance the appeal of the area.

The aim of the proposal is to upgrade the Princes Highway to provide a bypass of the Milton and Ulladulla town centres, delivering safer and more reliable journeys on the South Coast as part of the Princes Highway Upgrade program.

The proposed Milton Ulladulla bypass would:

- Create safer and more efficient journeys for all road users
- Improve access to local roads and reduce congestion through the Milton and Ulladulla town centres
- Provide opportunities to enhance the atmosphere of town centres and support the growth of regional economies including tourism and freight
- Cater for future growth of Milton, Ulladulla and connected communities and improve access to essential services
- Support network reliability and safe access, especially during emergencies

**This report**

The purpose of this report is to document the process followed for the development and assessment of corridor options and recommendation of a preferred strategic corridor.

**Preferred strategic corridor selection process**

Following community feedback provided during March and April 2020, an extensive strategic corridor options investigation and assessment process was carried out to better understand the factors that may influence the feasibility of different bypass options.

Seven potential bypass corridor options, plus a “do minimum” option which would involve upgrades to the existing highway, were developed to assess the benefits and impacts of each alignment.

Each of the corridor options included a bypass start point north of Milton near Little Forest Road and one of three potential bypass end points:

1. North of Burrill Lake
2. South of Burrill Lake
3. South of Lake Tabourie.

The options were evaluated against project objectives to identify a short list of options for assessment. The four shortlisted options included:

- Option 1 (Black), the existing bypass corridor in the Shoalhaven Local Environmental Plan (LEP) 2014
- Option 2 (Red), a variation of the Shoalhaven LEP that passes to the west of the large lot residential properties on the western outskirts of Ulladulla
- Option 5 (Green), this option is located further west and has a southern access point south of Burrill Lake. It traverses Meroo National Park as well as part of Woodburn State Forest and would include two crossings of Burrill Lake
- Option 6 (Cyan), this option is located further west and connects with the existing Princes Highway south of Lake Tabourie. It traverses narrow parts of Meroo National Park, would require a number of bridges and involves sections of steep terrain.

A Value Management Workshop was held on 23 September 2020 which brought together project team members, technical specialists, and key stakeholders from local, state and federal government agencies to assess the short listed strategic corridor options for the project. Participants of the workshop agreed to project objectives, identified broad community issues, assessed technical information and a range of design options before a recommendation for a preferred strategic corridor option was made.

**Preferred strategic corridor option**

The existing bypass corridor in the Shoalhaven LEP (Option 1) has been identified as the preferred strategic corridor. This corridor option was recommended as it was considered to best achieve the objectives of the project and Princes Highway upgrade program.
1. Introduction

1.1 Background

The Princes Highway is critical to a thriving South Coast of NSW. It helps drive the State’s third largest regional economy, is relied upon by over 500,000 local residents and welcomes almost four million tourists each year. It connects regional centres and essential services and is the main transport corridor for freight to the region.

Since 2011, the Australian and NSW Governments have invested $2.5 billion upgrading the Princes Highway. This has transformed and better connected communities, employed thousands of local residents, improved safety, eased traffic congestion, and grown regional economies.

The focus is now on the future, with the Australian and NSW Governments committing $1.5 billion to upgrade the Princes Highway between Jervis Bay Road and the Victorian border.

Five priority projects have progressed to the design phase, including the Jervis Bay Road and Princes Highway intersection upgrade, Jervis Bay Road to Sussex Inlet Road upgrade, Milton Ulladulla bypass, Burrill Lake to Batemans Bay upgrade, and Moruya bypass.

1.2 Princes Highway upgrade roadmap

Transport for NSW has developed a strategic roadmap for the Princes Highway upgrade. It is Transport for NSW’s plan for the highway over the next 20 years and identifies what needs to be done in the short, medium and long term to deliver a vision for the Princes Highway as a safe, reliable, efficient and connected network.

It would be a highway that enables the movement of people and goods and supports sustainable growth of the local economy, employment opportunities and population.

It would contribute to the character of the places it serves and be resilient to adapt to natural hazards and climate change, respond to changing land use, and support new technologies, industries and economic trends.

The roadmap is built on five goals:

- Safety: A safer corridor for all customers and communities including local traffic, freight, tourists, and public and active transport users
- Resilience: A corridor that can be efficiently managed and maintained while adapting to changing social, environmental and economic factors, including the ability to quickly recover from natural disasters and respond to changing land use and technologies
- Liveability: A corridor that supports communities by connecting and contributing to providing attractive and healthy places to live, work and play
- Sustainability: A corridor that is socially, environmentally and economically sustainable and unlocks a wide range benefits for communities and other customers
• Connectivity and Accessibility: A corridor that has good physical and digital connectivity and accessibility, for access to opportunity and services.

The roadmap aligns with the Future Transport 2056 Strategy (TfNSW 2018a) and the Regional NSW Services and Infrastructure Plan (TfNSW 2018b). This will ensure the future of the Princes Highway delivers the key outcomes and priorities for regional transport throughout the state.

1.3 Proposal overview

Milton and Ulladulla are two closely situated towns about 60 kilometres south of Nowra and about 55 kilometres north of Batemans Bay (Figure 1-1). The Milton Ulladulla region has a commercial harbour, a hospital and five schools.

An existing Milton Ulladulla bypass corridor was established in the Shoalhaven Local Environmental Plan 2014 (Shoalhaven LEP). This corridor was identified following a Route Selection Study carried out by Transport for NSW (formerly Roads and Traffic Authority) between 1996 and 1998.

The strategic investigation and design phase of this proposal has involved the identification and evaluation of the relative benefits of a number of bypass corridor options, including the existing bypass corridor in the Shoalhaven LEP.

The proposed Milton Ulladulla bypass aims to substantially reduce travel time and congestion, particularly during holiday periods. It would improve road safety after 111 crashes were recorded in the existing highway corridor through Milton and Ulladulla in a five-year period to 2018. The bypass would enhance the liveability within the Milton and Ulladulla town centres and enhance the appeal of the area.

The aim of the proposal is to upgrade the Princes Highway to provide a bypass of the Milton and Ulladulla town centres, delivering safer and more reliable journeys on the South Coast as part of the Princes Highway upgrade program.

Additionally, the proposal aims to achieve the following strategic priorities:

• Respect our community and the environment
• Increase customer value.
1.4 Study area

The study area is located in the Shoalhaven local government area and covers an area of about 8,800 hectares. The study area starts about four kilometres north of the town of Milton. The southern extent of the study area extends to about four kilometres south-west of Lake Tabourie. The eastern border of the study area follows the current alignment of the Princes Highway, through the town centres of Milton and Ulladulla. At its widest point, the study area extends about eight kilometres to the west of Ulladulla.

The townships of Milton, Ulladulla, Kings Point and Burrill Lake are located in the eastern section of the study area while Lake Tabourie is located in the southern section. Other suburbs across the study area include Yatte Yattah, Little Forest, Croobyar, Narrawallee, Mollymook, Termeil, Woodburn, Morton and Dolphin Point. The Meroo National Park and Termeil State Forest cover a large area across the southern half of the study area. Figure 1-2 illustrates the study area as outlined by the black perimeter.
Figure 1-1 Regional context
Figure 1-2 Study area
1.5 Purpose of this report

The purpose of this report is to describe how the preferred strategic corridor option for the Milton Ulladulla bypass was selected.

This report identifies the need for the proposal, examines issues and constraints, describes the methodology used to develop and assess strategic corridor options, and recommends a preferred strategic corridor option to be taken forward for further development, community consultation and environmental investigations.
2. Need for the proposal

2.1 Service need/problem statement

The Princes Highway is an important transport corridor that connects towns, regional centres and tourist attractions, linking Sydney and the Illawarra region with the NSW South Coast and Victoria. This makes the Princes Highway an important tourism and freight route. It is also a corridor that plays a significant role in supporting trips for local communities including for inter-regional business, tourism and leisure purposes.

The Princes Highway runs through the townships of Milton, Ulladulla and Burril Lake, which experience traffic congestion at peak times and during holiday periods. These townships are holiday destinations, attracting a high level of pedestrian activity, which, combined with high traffic volumes, increases the risk of potential crashes. As a key freight route, heavy vehicle movements along this section of the Princes Highway also contribute to reduced amenity within these town centres.

For these reasons, the future bypass of Ulladulla has been considered since the 1980s and subsequently, a Milton Ulladulla bypass corridor was identified in 1998, which is included in the Shoalhaven LEP. The Milton Ulladulla bypass has been identified as a short-term priority project in the NSW Government’s Strategic 20 year roadmap as part of Princes Highway upgrade program. As part of this project there is a need to review the Shoalhaven LEP corridor against the Princes Highway upgrade program's current design principles and consider whether it satisfies the project and program objectives, as well as evaluate the relative benefits of alternative strategic corridor options.

2.1.1 Traffic

With Milton, Ulladulla and surrounding regions being popular holiday destinations, traffic conditions worsen on the Princes Highway during these times. There is a clear seasonal increase in traffic over the summer months that substantially reduces the efficiency of movement along the corridor and the ability for the local community to access the places they need. In the future, these traffic volumes are expected to increase even further as the number of houses and jobs in the area increase and as the region becomes more popular as a holiday destination.

2.1.2 Freight access

Heavy vehicles and freight are estimated to account for up to 13 per cent of the traffic that travels along this section of the Princes Highway and passes through town centres. These heavy vehicle movements have the potential to further reduce amenity and the safety of the local community and visitors to Milton and Ulladulla and connected communities including Burrill Lake.

2.1.3 Movement and place

The NSW Movement and Place Framework (Transport for NSW, 2018) seeks to achieve a well-designed built environment that supports the needs of communities.
The Princes Highway is an important movement corridor that passes through and provides access to key tourist attractions and places within the townships of Milton and Ulladulla. Under existing traffic conditions, the centres of Milton and Ulladulla are classified as ‘vibrant streets’, with high movement and place values within the Movement and Place Framework.

It is important to balance the current and future transport and movement needs of customers, communities and stakeholders with the need to maintain and support the creation of liveable places for people within these townships. If this balance is not achieved, increased traffic and freight movements have the potential to reduce the character and sense of place within the Milton and Ulladulla townships, and connected suburbs, and reduce accessibility for the local community and customers visiting the area.

2.1.4 Road safety

There is a fundamental need for safe journeys for all customers, and particularly vulnerable road users such as pedestrians and bicycle riders, on local or recreational trips. The presence of businesses, key services and on-street parking alongside the highway through the Milton and Ulladulla town centres increases the likelihood of pedestrians crossing the highway mid-block. This was observed during site investigations carried out in August 2020, where pedestrians frequently crossed the Princes Highway outside of dedicated crossing locations.

Between 2014 and 2018 there were 111 crashes on the Princes Highway within the project study area. These included three fatal crashes, 20 serious injury crashes and 13 incidents involving cyclists or pedestrians.

Additionally, there is a growing demand for walking and cycling within Milton, Ulladulla and surrounding areas, particularly for recreational and exercise purposes. The combination of this trend with the expected increase of vehicle movements through the Milton Ulladulla town centres, heightens the potential risk of crashes involving vulnerable road users.

2.2 Customer types and needs

Transport for NSW is committed to putting the customer at the centre of everything we do. This is guided by our key strategy and policy documents, Future Transport 2056 and Connecting NSW 2016-2021. To achieve this commitment, it is important to understand our customers and their transport needs. This involves considering how their travel behaviours and needs change over time. For example, how they travel at various times of day and night for different purposes or how emerging technologies may influence their travel behaviour. Understanding our customers is critical for enabling us to connect their whole lives by balancing movement within, to, from and through places, and creating safer environments within which to travel by any transport mode.

2.2.1 Demographics and customer types

The demographics for the study area have been identified in the Setting the Scene Report (Arup, 2020) and based on 2016 census data¹, which inform the understanding of the customer types and their needs. The Ulladulla statistical area in the 2016 Australian Census includes

¹ Employment and population data in this section are based on ABS 2016 census data
The local community, with land use dominated by low density residential (with a substantial portion being holiday homes) and half the population residing in Ulladulla, including:
- Retirees, with 47.4 per cent of the population aged 55 and over (compared to 28.2 per cent in NSW)
- Education users, with several schools located in the area and TAFE NSW Illawarra Institute’s Ulladulla campus
- Recreational users, including for road cycling, mountain biking and access to sporting facilities
- Retail and commercial users, particularly customers of Ulladulla’s commercial core
- Vulnerable communities, with 7.5 per cent of the suburbs’ population identified as having a need for assistance with core activities
- Aboriginal and Torres Strait Islander communities, which make up about 3.2 per cent of the suburbs’ population.

Commuters, business owners, workers and tradespeople, with 33,665 jobs in the Shoalhaven Local Government Area (LGA) and 17 per cent of jobs in Ulladulla are in retail trade

Tourists and travellers visiting the area, with 15.3 per cent of the Ulladulla statistical area’s jobs associated with accommodation and food services that target this customer group

Emergency responders, with three local fire stations (Milton Rural Fire Service, Fire and Rescue NSW Ulladulla Fire Station and Lake Tabourie Rural Fire Service), one police station (Ulladulla) and Milton-Ulladulla Hospital located on Princes Highway in Milton. Moreover, the suburbs are located in fire-prone land

Freight and deliveries, between 10,000 and 50,000 freight journeys were made within the study area in 2018, including:
- Regional and local deliveries
- Local agricultural and manufacturing freight, with agriculture and industrial land use within the study area
- Long-distance and bulk freight
- Freight and logistics service providers.

2.2.2 Travel behaviour

The existing travel behaviour of the customer groups provides insight into their current travel needs and the transport modes they use. This information can also be used to identify opportunities to influence the travel behaviour of customers, by considering how alternative travel choices can be accommodated within the proposal.

Private motor vehicle is the dominant mode of travel within and through the study area. There are limited public transport services and safe pedestrian and cyclist facilities, which means that the number of journeys using these transport modes is minimal, accounting for just 5.3 per cent of all trips.

For recreational trips, running and cycling demand has been observed to be high based on Strava (cycling and running) and Trailforks (mountain biking) heat maps. Road cycling has a high demand on the Princes Highway, Golf Avenue and Matron Porter Drive. Running is
generally concentrated on the coast of Mollymook, and along the Princes Highway between Ulladulla and Burrill Lake.

2.2.3 Emerging trends

There is an increasing focus on providing and supporting multi-modal transport systems to give customers travel choices and encourage a shift towards using more sustainable transport modes such as walking, cycling and public transport. The study area also has an aging population for which transport options can be reduced as driving abilities decline, which reinforces the need to provide alternative transport modes.

Additionally, expected travel behaviour changes resulting from the introduction of new mobility technology, such as connected and automated vehicles and on-demand transport services, will also influence the future transport needs of customers.

2.2.4 Key customer needs

The customer needs identified for the study area are summarised in Table 2-1.

<table>
<thead>
<tr>
<th>Customer need</th>
<th>Description</th>
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<tbody>
<tr>
<td>Safe journey</td>
<td>The need for a safe journey applies to all customer types, and particularly vulnerable road users such as pedestrians and cyclists on local or recreational trips. This need underpins the NSW Government’s goal of Towards Zero by 2056, which aims push the number of deaths on NSW roads towards zero.</td>
</tr>
<tr>
<td>Reliable and resilient network</td>
<td>For most of the year the travel speeds and times do not vary substantially within the local road network providing a relatively reliable network. However, congestion is an ongoing concern for the local community during peak holiday periods. This issue affects the local community and tourists, with 15.3 per cent of the local community relying on tourism for income. Freight operators and commuters depend on a reliable transport network to move goods, get to work and support the economy of the region. Emergency services also need a reliable and resilient network to respond to incidents and support evacuation procedures during natural disasters.</td>
</tr>
<tr>
<td>Sense of place</td>
<td>For the local community there is a need to support high-quality places that are desirable destinations for living, working and visiting. This means creating streets for people to enjoy walking and socialising in, providing seamless access to connect these places and maximising amenity within the townships. Supporting a sense of place is particularly important for tourists, and for the tourism industry to attract and retain them.</td>
</tr>
</tbody>
</table>
Customer need | Description
---|---
Access to alternatives | Access to alternative modes of transport is particularly important as the study area has an aging population (with 47 per cent aged over 55) for which mobility options can be reduced as driving abilities decline. Access to public and active transport is enhanced by providing a multimodal mobility network, including:
- Protected cycling infrastructure
- Footpaths
- Safe crossings with pedestrians and cyclist priority
- Public transport services and stops, with safe and easy walking access to bus stops.

Hazard evacuation | Parts of the study area are bush fire prone and fire seasons are likely to continue to be a concern for local communities into the future. The study area also includes flood-prone land and may be vulnerable to coastal storm surges. Within this context, the ability to safely and efficiently evacuate flood-affected areas is a key need for local communities and tourists.

### 2.3 Proposal objectives

The objectives of the proposal are listed and described in Table 2-2. Proposal objectives were developed with consideration of the five goals and visions for the Princes Highway upgrade program (Section 1.2) as well as the key needs for a Milton Ulladulla bypass. Proposal objectives were discussed and agreed with a range of Transport for NSW stakeholders at a workshop held 11 August 2020.

Proposal objectives are intended to apply throughout all stages of proposal development, from preferred strategic option selection through to construction. Minor refinements may be considered to take into account future government strategies.

**Table 2-2 Proposal objectives**

<table>
<thead>
<tr>
<th>Proposal objectives</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve network safety for all transport modes and customers</td>
<td>Provide a corridor that allows for safe and efficient access to and from the Princes Highway for all transport modes and customers. Provide a transport network that caters for short, local trips and regional, long distance trips and reduces the incidence of fatal and serious injury crashes on the network.</td>
</tr>
<tr>
<td>Improve transport network efficiency and connectivity to support regional economic development, tourism and freight</td>
<td>Provide improved access that supports a range of transport options for all road users including public transport, pedestrians, cyclists, motorists and freight.</td>
</tr>
<tr>
<td>Improve transport network resilience</td>
<td>Improve network reliability and safe access during emergencies including bushfire and flood. Ensure information can be shared and key utilities such as telecommunications and electricity near the road corridor are protected. Deliver a futureproofed corridor that responds to evolving technologies and changes in climate.</td>
</tr>
</tbody>
</table>
### Proposal objectives

<table>
<thead>
<tr>
<th>Description</th>
<th>Strategic Priority 4*: Respect our community and the environment</th>
<th>Strategic Priority 1*: Increase customer value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify opportunities to contribute to and reinforce the character of towns along the corridor and connected communities by supporting improvements to walking and cycling, enhancing natural, open space and encouraging a mix of land uses that support a diverse range of activities.</td>
<td>Minimise impacts to areas of environmental sensitivity, as well as to the existing communities surrounding the proposed intersection.</td>
<td>Provide the best value for money across the life of the proposal with consideration of the other proposal objectives and wider economic benefits.</td>
</tr>
</tbody>
</table>

*From the TfNSW Corporate Plan 2018-2021

### 2.4 Strategic alignment

The proposal would form an important piece of infrastructure that would support government objectives and priorities. Table 2-3 outlines the strategic alignment of the proposal with key government strategic plans.

#### Table 2-3 Strategic alignment of the proposal

<table>
<thead>
<tr>
<th>Strategic plans</th>
<th>Strategic alignment of the proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future Transport 2056</td>
<td>The proposal would contribute to achieving several of the key objectives including:</td>
</tr>
<tr>
<td></td>
<td>• Supporting the hub and spoke transport network for the Regional City of Wollongong, as well as the strategic centres of Nowra, Vincentia, Ulladulla and Batemans Bay</td>
</tr>
<tr>
<td></td>
<td>• Adopting a safe systems approach to the delivery of road safety improvements to contribute to achieving the ‘Towards Zero’ target</td>
</tr>
<tr>
<td></td>
<td>• Applying the ‘Movement and Place’ Framework to inform decision-making on the Corridor in a way that supports safe, efficient and reliable journeys while enhancing the liveability and amenity of places.</td>
</tr>
<tr>
<td>Strategic plans</td>
<td>Strategic alignment of the proposal</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Future Transport 2056 – Regional NSW Services and Infrastructure Plan</td>
<td>For Regional NSW, Future Transport 2056 is supplemented by the Regional NSW Services and Infrastructure Plan which describes the necessary initiative required in the short, medium and long term to meet customer needs now and into the future. The proposal would contribute to the commitment of investigating upgrades to the Princes Highway (Jervis Bay Road Intersection to Batemans Bay) including the bypass of Milton Ulladulla. The proposal would also contribute to achieving the target to increase public and active transport use in Regional NSW.</td>
</tr>
<tr>
<td>Transport for NSW – Connecting to the Future 10 Year Blueprint</td>
<td>The proposal would contribute to achieving several of the key outcomes including: • Safe, seamless journeys for people and goods • Transport investments and solutions that service the people of NSW • Quality assets and efficient networks, managed at the right price.</td>
</tr>
<tr>
<td>NSW Road Safety Strategy 2021</td>
<td>The proposal would contribute to the commitment of reducing fatal and serious injury crashes on rural roads by addressing known safety risks and applying a Safe Systems approach to transport planning and design.</td>
</tr>
<tr>
<td>Illawarra Shoalhaven Regional Plan 2036</td>
<td>The proposal would support the following goals set in the Regional Plan for the Illawarra-Shoalhaven region including: • A connected and prosperous economy • A region with communities that are strong, health and well connected • A region that protects and enhances the nature environment.</td>
</tr>
<tr>
<td>NSW Freight and Ports Plan 2018 – 2023</td>
<td>The would proposal support the plan by: • Enhancing productivity • Increasing use of safer and more productive vehicles • Enabling regional growth • Reducing fatalities and serious injuries from crashes involving heavy vehicles or light trucks.</td>
</tr>
<tr>
<td>Strategic plans</td>
<td>Strategic alignment of the proposal</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------------------------------</td>
</tr>
</tbody>
</table>
| Tourism and Transport Plan (supporting plan to Future Transport 2056) | The proposal would support the plan by:  
  - Providing greater access to more of NSW  
  - A seamless experience. |
| NSW South Coast Marine Tourism Strategy | The proposal would support Strategic Direction 4: Tourism activation of the marine environment by improving accessibility to the South Coast from Sydney |
3. Proposal considerations and constraints

Preliminary investigations carried out by Transport for NSW identified key issues and constraints which have assisted in the development of numerous strategic corridor options for a potential bypass of Milton and Ulladulla. The key considerations informing the strategic corridor options development are described below.

3.1 Statutory and planning framework

This section provides the statutory and planning framework for the proposal and considers the provisions of relevant state environmental planning policies, local environmental plans and other legislation.

3.1.1 Environmental Planning and Assessment Act 1979

The Environmental Planning and Assessment Act 1979 (EP&A Act) is the main piece of legislation regulating land use planning and development in NSW. The planning pathway for development under the EP&A Act is generally dependent on the development’s size, environmental impact and capital cost, as well as relevant planning provisions under other pieces of NSW legislation. Assessment of infrastructure proposals is generally in accordance with Division 5.1 or Division 5.2 of the EP&A Act, however development consent under Part 4 of the EP&A Act may be required in some circumstances.

Transport for NSW will confirm the planning pathway for the proposal once additional investigations are completed and the preferred strategic corridor has been confirmed.

3.1.2 State Environmental Planning Policies

The proposal would require consideration of the State Environmental Planning Policies (SEPPs) described below

State Environmental Planning Policy (Infrastructure) 2007

The State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) aims to facilitate the effective delivery of infrastructure across the state, including for roads and road infrastructure facilities. Clause 94 of the ISEPP permits development on any land for the purpose of a road or road infrastructure facilities to be carried out by or on behalf of a public authority without consent.

The proposal would be characterised under Subdivision 1 of ISEPP as roads and road infrastructure facilities and would be carried out by or on behalf of Transport for NSW. As such, the proposal could be assessed under Division 5.1 or Division 5.2 of the EP&A Act.

State Environmental Planning Policy (Coastal Management) 2018

The State Environmental Planning Policy (Coastal Management) 2018 (Coastal Management SEPP) promotes an integrated and coordinated approach to land use planning in the coastal zone in a manner consistent with the objects of the Coastal Management Act 2016.
Under Clause 10 of the Coastal Management SEPP, various activities including clearing, earthworks, draining of land, environmental protection works, and development require development consent under Part 4 of the EP&A Act when proposed to be carried out within coastal wetlands. Except for environment protection works, these activities are declared to be designated development for the purposes of the EP&A Act and require the preparation of an Environmental Impact Statement (EIS).

Clauses 13 and 14 of the Coastal Management SEPP set out matters to be considered by a consent authority prior to approving development in a defined “coastal environment area” and “coastal use area” respectively. While these clauses are not directly applicable to Division 5.1 or Division 5.2 activities, the matters referred to in these provisions would still be considered as part of the environmental assessment process.

3.1.3 Other relevant legislation and environmental planning instruments

Shoalhaven Local Environmental Plan 2014

The study area is within the Shoalhaven LGA. Land use and development within the Shoalhaven LGA is primarily regulated by the Shoalhaven LEP. The Shoalhaven LEP identifies land use zones in the study area, includes zone objectives and lists permissible and prohibited development within zones.

The study area includes a range of planning zones identified under the Shoalhaven LEP.

It is expected the proposal would be carried out by, or on behalf of, Transport for NSW without development consent under the ISEPP. Under that circumstance, the requirement under the Shoalhaven LEP to obtain consent would not apply. However, Transport for NSW would consider the objectives of the local land use zonings during future assessments.

Under both the Shoalhaven LEP and the ISEPP, development within the E1 zone is permitted without consent if it is authorised under the National Parks and Wildlife Act 1974.

Biodiversity Conservation Act 2016

The Biodiversity Conservation Act 2016 (BC Act) sets out the environmental impact assessment framework for threatened species and threatened ecological for activities subject to assessment under Part 5 of the EP&A Act (amongst other types of development).

Based on preliminary investigations, several threatened species and ecological communities listed under the BC Act are known or are likely to occur within and near the study area (refer to Section 3.3). The potential for the proposal to impact on threatened species, populations and ecological communities listed under the BC Act would be considered during the environmental assessment for the proposal.

National Parks and Wildlife Act 1974

The National Parks and Wildlife Act 1974 (NPW Act) provides the basis for legal protection and management of National Parks estate and Aboriginal sites and objects in NSW.

The study area includes parts of the following reserved land under the NPW Act:

- Meroo National Park
- Morton National Park.

Were a future proposal to encroach on reserved land, the reservation of the affected land would need to be revoked through an Act of Parliament.
Section 86 lists offences relating to harming or desecrating Aboriginal objects. Under Section 90 of the NPW Act, where harm to an Aboriginal object or Aboriginal place cannot be avoided, an Aboriginal Heritage Impact Permit (AHIP) is required.

There are known Aboriginal heritage sites within the study area. The potential for the proposal to impact on Aboriginal heritage would be considered during the environmental assessment for the proposal.

**Heritage Act 1977**

The *Heritage Act 1977* (Heritage Act) provides for the conservation of buildings, work, relics and places that are of historic, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance to the State.

Approval under Section 57(1) is required for works to a place, building, work, relic, moveable object, precinct, or land listed on the State Heritage Register. An excavation permit is required under Section 139 to disturb or excavate any land containing or likely to contain a relic.

There are known non-Aboriginal heritage sites within the study area. The potential for the proposal to impact on non-Aboriginal heritage would be considered during the environmental assessment for the proposal.

**Forestry Act 2012**

The *Forestry Act 2012* (Forestry Act) provides for (amongst other things) the dedication and revocation of State forests in NSW and the regulation of forestry and non-forestry activities within dedicated State forests, timber reserves and flora reserves. The Forestry Act also establishes the Forestry Corporation of NSW, which is responsible for the management of forestry activities within State Forests.

The study area includes part of the Woodburn and Termeil State Forests. If affected by the proposal, parts of these state forests may need to be revoked in accordance with the provisions of the Forestry Act. This may require a resolution or Act of Parliament.

**Fisheries Management Act 1994**

The *Fisheries Management Act 1994* (FM Act) aims to conserve, develop and share the fishery resources for the benefit of present and future generations.

There are several areas mapped as key fish habitat within and near the study area. Under Section 199 of the FM Act, proposed dredging or reclamation work within key fish habitat would require notification to the relevant Minister prior to the commencement of work.

Section 205 of the FM Act prohibits the harming of any marine vegetation (including saltmarsh, mangroves and seagrasses) without a permit.

Section 219 of the FM Act includes a prohibition on temporary or permanent blockage of fish passage within a waterway.

**Crown Lands Management Act 2016**

The *Crown Lands Management Act 2016* provides the legislative framework for the administration of land that is vested in the Crown in NSW. Ministerial approval is required to grant a ‘lease, licence, permission, easement or right of way over a Crown Reserve’.

Based on preliminary investigations, there are multiple parcels of Crown land within the study area. If Crown land is identified as being affected by the proposal, the relevant requirements of
the Crown Lands Management Act 2016 and Commonwealth Native Title Act 1993 would be considered during the detail design development and construction planning phases.

**Aboriginal Land Rights Act 1983**

Through the Aboriginal Land Rights Act 1983, vacant Crown land not lawfully used or occupied or required for an essential purpose or for residential land, is returned to Aboriginal people (and vested in Aboriginal Land Councils).

A search of the Aboriginal Land Claims Register has been conducted to confirm the existence of any Aboriginal land claims over the potentially affected land parcels of identified Crown land. In accordance with Section 42B of the Aboriginal Land Rights Act 1983, land vested in an Aboriginal Land Council can only be acquired by Transport for NSW through an Act of Parliament.

**Commonwealth Environment Protection and Biodiversity Conservation Act 1999**

The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) protects matters of national environmental significance (MNES) (as defined under the Act) and the environment of Commonwealth land.

Under the EPBC Act a referral is required to the Australian Government for proposed actions that have the potential to significantly impact on MNES or the environment of Commonwealth land.

After completion of more detailed site investigations, Transport for NSW would confirm whether the proposal would fall under Division 5.1 or Division 5.2 of the EP&A Act, and whether a referral to the Commonwealth would be required.

**Native Title Act 1993**

The Native Title Act 1993 provides the legislative framework that:

- recognises and protects native title
- establishes ways in which future dealings affecting native title may proceed, and to set standards for those dealings, including providing certain procedural rights for registered native title claimants and native title holders in relation to acts which affect native title
- establishes the National Native Title Tribunal.

The Native Title Claim NC2017/003 – South Coast People (entered on Register 31/01/2018) affects the study area.
3.2 Transport considerations

A transport assessment was carried out to identify and characterise the existing network that needs to be considered in the development of the proposal. This section summarises the key elements of this assessment.

3.2.1 Roads

Transport for NSW and local councils define the functional road hierarchy to establish a consistent basis for road network management. The key road categories within the study area and their functions are outlined in Table 3-1.

Table 3-1 Road hierarchy classification guidelines

<table>
<thead>
<tr>
<th>Road classification</th>
<th>Road types</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Roads</td>
<td>Freeways/motorways and primary arterials</td>
<td>Form connections between urban centres, running through major regional towns.</td>
</tr>
<tr>
<td>Regional Roads</td>
<td>Secondary or sub arterials</td>
<td>Provide the main connections between smaller regional towns and districts with the main State Road network.</td>
</tr>
<tr>
<td>Local Roads</td>
<td>Collector and local access roads</td>
<td>Provide local access to residential properties, as well as connections to arterial roads.</td>
</tr>
</tbody>
</table>

Source: Transport for NSW classified roads map 2017

Table 3-1 shows the road hierarchy within the study area with the following subsections providing an overview of the key roads.

Princes Highway

The Princes Highway provides the primary north-south road connection between Sydney and the Victorian border. It connects Milton, Ulladulla, Burrill Lake and Lake Tabourie in the study area. It also plays a key role in connecting other suburbs across the study area, including Yatte Yattah, Little Forest, Croobyar, Mollymook, Termeil, Woodburn, Morton and Dolphin Point.

The Princes Highway carries a mix of local and regional traffic and has a substantial freight function. The townships and regions connected by the Princes Highway are also popular holiday destinations, which results in seasonal increases in traffic volumes during holiday periods. This increase in traffic volumes impacts the efficiency of movement along this section of the Princes Highway, limiting the ability for the local community and visitors to access the places they need. It also has the potential to reduce amenity of Milton and Ulladulla, and increase the risk of safety within the centres, particularly for vulnerable road users such as pedestrians and cyclists.

The posted speed limits along the Princes Highway vary between 50 and 80 kilometres per hour between the Milton and Ulladulla town centres. The posted speed limit is 60 kilometres per hour through Burrill Lake and 80 kilometres per hour through Lake Tabourie. The speed limit is generally 100 kilometres outside urban areas.
**Croobyar Road**

Croobyar Road is a local undivided road intersecting with Princes Highway and Matron Porter Drive in Milton. It has a two-way, two lane configuration and a 50 kilometres per hour posted speed limit and an 80-kilometre per hour speed limit from just north of Pettys Creek. Croobyar Road runs in the east/west direction and connects to Woodstock Road to the west. A school zone operates from 8am to 9.30am and 2.30pm to 4pm on school days.

**Woodstock Road**

Woodstock Road is a local undivided two-way, two-lane road running south-west from Croobyar Road west of Milton. It has a posted speed limit of 80 kilometres per hour and provides a connection to farmlands and areas leading to Woodstock.

**Matron Porter Drive**

Matron Porter Drive is an undivided local road with a two-way, two-lane configuration with varying posted speed limits between 50 and 60 kilometres per hour that runs in an east-west direction, east of Milton town centre. Matron Porter Drive provides connection to the coastal areas east of Milton, including Narrawallee and Mollymook Beach.

**Green Street**

Green Street is a local undivided road, running in an east/west direction and intersecting with Princes Highway in Ulladulla. Green Street provides connection to industrial areas in Ulladulla and TAFE NSW and has a posted speed limit of 50 kilometres per hour, with a school zone operating from 8am to 9.30am and 2.30pm to 4pm on school days.

**Kings Point Drive**

Kings Point Drive is an undivided local road with a posted speed limit of 80 kilometres per hour, running in an east-west direction between the southern end of Ulladulla and Kings Point.

**Canberra Crescent**

Canberra Crescent is an undivided local road with a posted speed limit of 50 kilometres per hour. The road runs in an east-west direction with a T-intersection with the Princes Highway north of Burrill Lake and cul-de-sac at other end of the road.
Figure 3-1 Road network
3.2.2 Freight Routes

The Princes Highway is an important transport corridor that connects towns, regional centres, linking Sydney and the Illawarra region with the NSW South Coast and Victoria. It also connects with key east-west transport corridors such as Kings Highway and Snowy Mountains Highway and is a significant route for inter-regional business. These connections mean that the Princes Highway is an important freight route. As well as providing an important route for heavy vehicles travelling through the Milton Ulladulla area, there is a substantial proportion of freight vehicles that have a destination within the townships, particularly in the Ulladulla industrial area.

The following routes are approved for heavy vehicle access:

- The Princes Highway is approved for B-doubles up to 23 metres long
- St Vincent Street, Ulladulla between the Princes Highway and Deering Street – approved B-double route for vehicles up to 23 metres long for use in emergency situations when directed by Transport for NSW, Police or Council.

The Princes Highway is not approved for 25/26-metre B-doubles access between Nowra and Bega. The nearest continuous approved north-south 25/26-metre B-double route is the Hume Highway and there are no connections between these two corridors for this section of the Princes Highway.

The Princes Highway's role in providing freight access competes with the need to support the creation of high-quality places and maintaining the character of the townships through which it passes. The freight demand is likely to increase in the future, and with it the volume of heavy vehicles passing through Milton, Ulladulla and connected communities. This presents a potential increase in the risk of safety issues within these centres, particularly involving vulnerable road users such as pedestrians and cyclists.

3.2.3 Public transport

The Milton and Ulladulla town centres are hubs for shops, jobs and a range of community services and amenities. As such, public transport connections to and between the town centres are important to provide access to such amenities. Bus stops within the townships generally comprise seating and shelters, which are considered adequate for supporting the local community, workers and tourist customers likely to be using these public transport services now and in the future.

The area has no direct rail service, with the nearest railway station located in Bomaderry, about 60 kilometres north of the study area, therefore buses are the primary form of public transport in the area. Existing bus services, the locations serviced, and frequencies are listed in Table 3-2.
Table 3-2 Existing bus services

<table>
<thead>
<tr>
<th>Route</th>
<th>Description</th>
<th>Type</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Weekdays</td>
</tr>
<tr>
<td>740</td>
<td>Ulladulla to Milton via Mollymook - Narrawallee</td>
<td>Public</td>
<td>4-7 in each direction</td>
</tr>
<tr>
<td>740V</td>
<td>Ulladulla to Milton via Village Drive</td>
<td>Public</td>
<td>4-6 in each direction</td>
</tr>
<tr>
<td>740B</td>
<td>Ulladulla to Burrill Lake via Kings Point</td>
<td>Public</td>
<td>4-6 in each direction</td>
</tr>
<tr>
<td>741</td>
<td>Ulladulla to Kioloa via Burrill Lake - Lake Tabourie - Termeil - Bawley Point</td>
<td>Public</td>
<td>3-4 in each direction</td>
</tr>
<tr>
<td>100</td>
<td>Bomaderry to Burrill Lake via Nowra and Ulladulla</td>
<td>Private</td>
<td>2 in each direction; no services on Wednesdays</td>
</tr>
<tr>
<td>700-1</td>
<td>Bomaderry to Eden</td>
<td>Private</td>
<td>2 in each direction</td>
</tr>
<tr>
<td>Rx1/2</td>
<td>Coast to Canberra shuttle, with stops at Lake Tabourie, Burrill Lake, Ulladulla, Mollymook and Milton</td>
<td>Private</td>
<td>1 in each direction</td>
</tr>
</tbody>
</table>

Table 3-3 lists the bus routes that serve the Ulladulla High School, Ulladulla Public School, Budawang School, and Milton Public School.

Table 3-3 School bus routes

<table>
<thead>
<tr>
<th>Route ID</th>
<th>Route name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kioloa – Bawley Point – Ulladulla High – St Marys Star of The Sea Milton – Milton Public School</td>
</tr>
<tr>
<td>11</td>
<td>Narrawallee – Mollymook Beach – Ulladulla High – St Marys Star of the Sea – Milton Public School – Ulladulla Public School</td>
</tr>
<tr>
<td>3</td>
<td>Lake Tabourie – Ulladulla High – St Marys Star of the Sea – Milton Public School – Ulladulla Public School</td>
</tr>
<tr>
<td>4</td>
<td>Ulladulla – Burrill Lake – Ulladulla High – St Marys Star of the Sea – Milton Public School – Ulladulla Public School</td>
</tr>
<tr>
<td>5</td>
<td>Kings Point – Ulladulla High – St Marys Star of the Sea – Milton Public School</td>
</tr>
<tr>
<td>7</td>
<td>Mollymook Beach – St Marys Star of the Sea – Milton Public School</td>
</tr>
<tr>
<td>9</td>
<td>Mollymook Beach – Ulladulla High – St Marys Star of the Sea – Milton Public School</td>
</tr>
</tbody>
</table>
Point to point and on-demand transport

Point to point transport is available in the region through Milton Ulladulla Taxi Service, a traditional taxi service provider. Global ridesharing service Uber is also understood to have expanded into the region following an announcement in March 2020 that drivers between Ulladulla and the Victorian Border, would be able to sign up to drive with the rideshare provider.

3.2.4 Pedestrian and cycling facilities

Within the Milton town centre, footpaths are provided on both sides of the Princes Highway to accommodate higher pedestrian volumes and access to shops and other amenities. A zebra crossing is located on the Princes Highway near the Wason Street intersection and signalised pedestrian crossing at the Matron Porter Drive.

Within the Ulladulla town centre, footpaths are provided on both sides of the Princes Highway. Signalised pedestrian crossings are available at the Princes Highway and Wason Street intersection, as well as two-staged crossings at several locations in the town centre. Off-road shared paths are available along St Vincent Street. Existing cycling facilities include shared paths between the Princes Highway and Golf Avenue, and Princes Highway and Green Street intersections.

Off-road shared pedestrian and cycle paths are available along the Princes Highway between Parsons Street, Ulladulla and Commonwealth Avenue, Burrill Lake. A shared path is exists along the Princes Highway, crossing the Burrill Lake bridge and Lake Tabourie bridge, into Lake Tabourie.

The commercial centre of Ulladulla and the shops along the Princes Highway within Milton attract a lot of pedestrian movements. In observations carried out in August 2020, these trips were mostly generated from local residential areas and nearby car parks. Many pedestrians were observed to cross the Princes Highway outside of designated crossings, which is a considerable safety concern.

In addition to these short local pedestrian trips, there is a substantial amount of recreational walking/ running and cycling trips within the study area. Road cycling has a high demand on the Princes Highway, Golf Avenue and Matron Porter Drive. Running is generally concentrated on the coast of Mollymook, and along the Princes Highway between Ulladulla and Burrill Lake. This can be attributed to the local community, tourist and traveller customer groups.

The proportion of workers walking and cycling is very low.

3.2.5 Road safety

Crash data captured from January 2014 to December 2018 for the section of the Princes Highway located within the study area recorded 111 crashes. Of these:

- Three crashes were fatal
- About 70 per cent of the recorded crashes involved at least one person being injured
- Twenty per cent of the crashes caused serious injury
- About 30 per cent of the recorded crashes involved vehicle damage only.

The types of crashes recorded during this period are listed in Table 3-4. Figure 3-2 shows the location of the fatal and serious injury crashes.
Table 3-4 Crashes by movement type

<table>
<thead>
<tr>
<th>Crash movement</th>
<th>Number of crashes</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td>Cross traffic</td>
<td>8</td>
<td>7%</td>
</tr>
<tr>
<td>Leaving parking</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Off Road, on curve</td>
<td>17</td>
<td>15%</td>
</tr>
<tr>
<td>Off Road, straight</td>
<td>14</td>
<td>13%</td>
</tr>
<tr>
<td>Opposite traffic</td>
<td>11</td>
<td>10%</td>
</tr>
<tr>
<td>Others</td>
<td>11</td>
<td>10%</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Rear end</td>
<td>41</td>
<td>37%</td>
</tr>
<tr>
<td>U Turn</td>
<td>3</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>111</strong></td>
<td></td>
</tr>
</tbody>
</table>
Figure 3-2 Fatal (red) and serious injury (orange) crash data recorded from January 2014 to December 2018
3.2.6 Existing traffic volumes

Preliminary traffic investigations completed for the proposal indicate that the Princes Highway carries between 6,000 and 18,000 vehicles per day within the study area, depending on location (Figure 3-3).

Figure 3-3 Daily traffic numbers (2019) - typical school day and holiday period
As a key tourism destination traffic volumes increase along the South Coast during holiday peaks. This often results in increased delays and queuing within town centres along the Princes Highway. For Milton, Ulladulla and connect communities there is a clear seasonal increase in traffic volumes over the summer months. Preliminary investigations have shown that depending on the location, Christmas holiday volumes can be as much as 60% more than a typical school day.

### 3.2.7 Mid-block capacity assessment

A mid-block capacity assessment of the Princes Highway was carried out for the AM and PM peak hours using the volume-capacity ratio. The volume-capacity ratio is a transport planning concept based on the number of vehicles on a section of road and the number of lanes within which these vehicles travel.

The mid-block capacity along a road can be influenced by a number of factors including the number of controlled intersections, the location of pedestrian crossings and infrastructure such as blister treatments and interactions associated with on-street parking.

The capacity of a road assumes that for undivided roads with interruptions (such as intersections and townships) each lane has a capacity of 900 passenger cars per lane per hour under typical conditions. For two-lane highways, this capacity increases to 1,700 passenger cars per lane per hour in each direction. As the volume-capacity ratio approaches one, the mid-block section of road being assessed approaches its theoretical capacity and vehicles travelling along this section of road will experience delays.

The mid-block capacity assessment of the Princes Highway was completed for six locations aligning with the count locations indicated in Fig 3-2. The mid-block capacity assessment indicates that on a typical school day in 2019, the volume-capacity ratio at five of the locations is generally well below capacity (<0.9) in the AM and PM peak hours. The busiest section on the highway within the study area is located in Ulladulla. The mid-block assessment indicated that the highway operated at capacity during the PM peak period which indicates delays at the surveyed location.

By 2041, this volume-capacity ratio is likely to approach or exceed its theoretical capacity within the Milton and Ulladulla townships during the AM and PM peak hours and is approaching capacity in Burrill Lake northbound in the AM peak hour.

### 3.3 Environmental considerations

A Preliminary Environmental Investigation (PEI) (Transport for NSW, 2020) was prepared for the study area in May 2020. The PEI involved desktop investigations using numerous databases and a range of literature sources. The key issues and considerations identified within the PEI are summarised below.

#### 3.3.1 Aboriginal heritage

There is a long history of Aboriginal occupation in the Shoalhaven area. Radiocarbon dating undertaken at the Burrill Lake rock shelter archaeological site (Lampert, 1971) indicated Aboriginal people have lived in the area for more than 20,000 years. The primary groups
occupying the study area are likely to have been the Wandandian, Budawang and Murramarang people, part of the Yuin Nation (Artefact, 2012).

A search of the Aboriginal Heritage Information Management System (AHIMS) database in March 2020 identified 142 recorded Aboriginal sites within the study area. Of this, one site is a burial site, one site has a grinding groove and six sites are modified trees (carved or scarred), with the remainder (134) being Potential Archaeological Deposits, artefacts and shells.

In the context of the study area, Burrill Lake has been identified as a significant area for its archaeological and cultural values.

There is one Native Title Claim, NC2017/003 – South Coast People (entered on Register 31/01/2018), that affects the study area.

Proposal implications

Detailed investigations in accordance with the Transport for NSW Procedure for Aboriginal Cultural Heritage Consultation and Investigation (PACHCI) process would be carried out to assess, minimise, avoid and manage potential impacts to Aboriginal cultural heritage. Transport for NSW would undertake further investigations and consultation with local Aboriginal communities to confirm the presence of Aboriginal cultural and archaeological sites.

3.3.2 Air quality

There are no air quality monitoring stations located near the study area. The air quality profile of the study area overall is likely to be typical of a mixed use rural and urban area and is likely to have reasonably unaffected background contaminant levels.

Sensitive receivers have been identified based on existing mapping and analysis of aerial photography. Within the study area, these include residential areas and community facilities in Milton, Ulladulla, Burrill Lake and Lake Tabourie.

Proposal implications

Sensitive receivers may be susceptible to generation of dust during earthworks and other construction activities.

An assessment of potential air quality impacts would be undertaken as part of the future development of the proposal.

3.3.3 Biodiversity

Vegetation

The study area consists of a mixture of urban residential and commercial areas, cleared agricultural land, areas of native vegetation and waterways.

The northern section of the study area has been largely cleared for agricultural purposes. The southern section of the study area includes large areas of native vegetation, the majority of which is reserved within Meroo National Park, Morton National Park, Termeil State Forest and Woodburn State Forest.

Threatened Ecological Communities (TECs) within the study area listed under the BC Act and EPBC Act are shown in Figure 3-4. TECs are mainly distributed within Meroo National Park and Woodburn State Forest, as well as multiple smaller patches near urban areas of Ulladulla and along Stony Creek.
Threatened species

Numerous threatened species listed under the BC Act and EPBC Act have been previously recorded within the study area, including three flora species and 38 fauna species. These records are mainly distributed in the southern bushland and eastern urban areas of the study area, with few records in the northern cleared agricultural area.

Key fish habitat and marine vegetation

Eight watercourses (and some associated unnamed tributaries) within the study area are mapped as Key Fish Habitat by the NSW Department of Primary Industries (Figure 3-5). Areas of marine vegetation listed under the FM Act are present within Burrill Lake and Lake Tabourie. This comprises mangrove, saltmarsh and seagrass plant type communities.

Coastal wetlands

Areas mapped under the Coastal Management SEPP as “Coastal Wetlands” and “Proximity to Coastal Wetlands” are present within Burrill Lake and Lake Tabourie (Figure 3-5). The study area also includes nationally significant wetlands at Lake Tabourie. The wetland is nationally listed due to the presence of saltmarsh and its importance as potential nursery habitat for fish, as well as its support of rare plant species and threatened fauna species.

Proposal implications

High biodiversity values have been identified within the study area. These include:

- Threatened ecological communities
- Threatened flora species
- Threatened fauna species and their habitat
- National Parks land
- Key fish habitat
- Coastal Management SEPP wetlands
- Nationally significant wetlands

These would be major considerations during design development, construction and operation of the bypass.

Additional environmental investigations, including ecological surveys, would be completed as part of the future development of the proposal.
Figure 3-4 Terrestrial biodiversity constraints
Figure 3-5 Aquatic biodiversity constraints
3.3.4 Hydrology, water quality and flooding

Surface water

The study area is within the Burrill Lake, Lake Tabourie and coastal creek catchments, and contains several first, second and third order streams.

The northern part of study area drains to the coast via Croobyar Creek and Narrawallee Creek. The central part of the study area drains to Burrill Lake. The eastern part of the study area primarily drains to the coast via Millards Creek, Racecourse Creek and other minor watercourses, while the southern part of the study area drains to Lake Tabourie and the coast via Lucy Kings Creek, Barndaree Creek, Tabourie Creek and Lemon Tree Creek.

Water quality

The quality of the water entering local waterways within the study area would be largely a function of the contaminants on roads and activities on adjacent areas. Common road runoff pollutants include gross pollutants and litter, sediment and suspended solids, toxic organics, nutrients, heavy metals and hydrocarbons. Runoff from agricultural lands commonly includes nitrogen, phosphorus, and sediment.

There are sensitive receiving environments within the study area that may be impacted by poor water quality, including key fish habitat and protected wetlands.

Hydrology and flooding

Parts of the study area (near Burrill Lake and Lake Tabourie) are identified by Shoalhaven City Council as flood prone land.

Groundwater

There are 41 groundwater dependent ecosystems within the study area as identified on the Groundwater Dependent Ecosystem Atlas. This includes both terrestrial and aquatic groundwater dependent ecosystems (Figure 3-5). Terrestrial groundwater dependent ecosystems are generally present across the southern and eastern bushland areas within the study area. Aquatic groundwater dependent ecosystems are present in Burrill Lake and Lake Tabourie.

Proposal implications

There are sensitive receiving environments within and near the study area that would be susceptible to changes in surface and ground water quality. There are flood affected areas near Burrill Lake and Lake Tabourie.

These constraints will be considerations during design development, construction and operation of the bypass.

Additional environmental investigations, including assessment of the impacts on surface and groundwater flow regimes and quality, would be completed as part of the future development of the proposal.
3.3.5 **Landform, geology, and soils**

**Landform**

The topography varies within the study area. Milton is situated atop a ridgeline and overlooks the northern section and is characterised by undulating hills and depressions where waterways are present. Suburban areas of Ulladulla, Burrill Lake and Lake Tabourie are relatively flat. The southern areas of Meroo National Park and Termeil State Forest are characterised by steep, mountainous terrain.

**Geology**

The geology of the study area is identified by NSW Department of Planning and Environment (Resources and Geoscience) data as comprising:

- Abercrombie Formation (brown and buff to grey, thinly to thickly bedded, fine to coarse-grained mica-quartz sandstone, interbedded with laminated siltstone and mudstone. Sporadic chert-rich units

- Milton Monzonite (Porphyritic monzonite with phenocrysts of glassy plagioclase in a black fine-grained (and sporadically sub-aphanitic) matrix; variable to a monzonite-porphyry; weathers to a light colour; small zones of olivine basalt dyke material (poorly-exposed medium-grained granodiorite, admixture of granodiorite and hornfels blocks)

- Various alluvial deposits, coastal deposits and estuarine geological units.

**Soils**

The study area includes a variety of soil types ranging from land capable of sustaining high impact land uses to land that is incapable of sustaining any land use apart from nature conservation. The erosion hazard within the study area varies from slight to extreme.

With the exception of some areas near Burrill Lake and Lake Tabourie, most of the study area is mapped as having a low or extremely low probability of acid sulfate soil occurrence.

There are three contaminated sites that have been notified to the EPA (service stations and a former sanitary depot) in the central and eastern parts of the study area.

**Proposal implications**

The steep, mountainous terrain in the southern section of the study area would require multiple bridges and increase the complexity of constructability.

Milton monzonite is an igneous rock that may require blasting to excavate.

Specific soil, salinity, erosion and sediment controls would be considered as part of the future development of the proposal.

3.3.6 **Landscape character**

Landscape character varies between the pastoral/agricultural lands in the north and central part of the study area and the woodland and reserve areas to the south. The eastern part of the study area includes areas with a more urban character, including the towns of Milton, Ulladulla and Burrill Lake.

Longer distance views over pastoral lands west towards the ranges are available from many parts of the study area.
Proposal implications

The study area includes some landscapes that have moderate or high landscape character sensitivity. Changes to these landscapes and the corresponding visual impact resulting from the proposal, such as tree removal and the introduction of road infrastructure, would be considered as part of the future development of the proposal.

3.3.7 Land use

Land use in the study area is a mixture of residential, infrastructure, agriculture/pastoral, open space and reserves. Descriptions of permitted uses in different land zones is available in the Shoalhaven LEP.

Key features of the land use include:

- Primarily general and low-density residential land uses around Milton and Ulladulla town centres, with pockets of medium density residential within the Ulladulla town centre
- Milton town centre is zoned as a local centre, whereas Ulladulla is zoned as commercial, mixed use and business development area
- The majority of the northern section of the study area is agricultural land, although not all of this is actively used for productive agriculture
- The southern section of the study area is dominated by national parks and reserves with some rural landscape and forestry land on the western and southern boundary.

Proposal implications

Land acquisition and rezoning would be required for the proposal.

Under the NPW Act, an Act of Parliament would be needed for revocation of any reserved national parks land.

Transport for NSW would be in contact with all directly impacted property owners once a preferred strategic option has been identified and work closely with them throughout the project.

3.3.8 Natural hazards

Bushfire is a risk for the NSW south coast region. It was reported that about 80 per cent of the land area of the Shoalhaven LGA was impacted or burned in some way in the 2019/20 bushfire season. As temperatures continue to rise, year on year, this risk is anticipated to continue. In particular, the southern part of the study area is heavily vegetated and is identified by Shoalhaven City Council as bushfire prone land.

Parts of the study area (near Burrill Lake and Lake Tabourie) are identified by Shoalhaven City Council as flood prone land.

Proposal implications

The proposal would consider susceptibility to natural hazards as well as options to improve resilience and connectivity for bushfire- and flood-prone areas.
3.3.9 Noise and vibration

The dominant noise sources in populated sections of the study area are likely to be agricultural machinery and road traffic noise.

Sensitive receivers have been identified based on existing mapping and analysis of aerial photography. Within the study area, these include residential rural dwellings, residences in Milton, Ulladulla, Burrill Lake and Lake Tabourie, as well as hospitals, churches and schools in Milton and Ulladulla.

Proposal implications

Sensitive receivers may be susceptible to construction noise and vibration from the operation of plant and machinery.

A new or redeveloped road, combined with traffic growth, could influence road traffic noise levels for surrounding land uses.

An assessment of potential noise and vibration impacts would be undertaken as part of the future development of the proposal.

3.3.10 Non-Aboriginal heritage

Ninety-four locally listed non-Aboriginal heritage items within and adjacent to (i.e. sharing a boundary) the study area have been identified (Figure 3-6). The majority of these heritage items are located in or near Milton. There are no state or nationally significant heritage items.

Nineteen of the listed heritage items are farms and associated buildings. Other heritage items include community/town halls, cemeteries, churches, stores and community services buildings (e.g. post office, police station), residences, vegetation and school buildings.

Proposal implications

The location of existing heritage items would be considered during design development, and impacts would be avoided where possible. Where there are potential impacts, additional heritage investigations would be undertaken as part of the future development of the proposal.
Figure 3-6 Locally listed Non-Aboriginal heritage items (Shoalhaven LEP)
3.3.11 Socio-economic

The Shoalhaven local government area is expected to see an increase in population of 20 per cent by 2041. Growth is anticipated to be limited to existing centres and developed areas, with Milton and Ulladulla identified within the Shoalhaven Local Strategic Planning Statement as planned growth areas.

The Shoalhaven area is home to a large proportion of accommodation and food services jobs suggesting a strong economic focus on tourism retail and local urban services. Other key employment sectors are healthcare, retail and public administration. Economic growth focuses in the Shoalhaven area include defence, manufacturing, professional and technology services, transport logistics and wholesale, agriculture and aquaculture, health and human services, education, tourism accommodation, food and retail.

Proposal implications

The proposal would seek to maximise the following potential socio-economic benefits:

- Travel time improvements and improved accessibility. This may lead to operational cost savings for businesses and individuals
- Road safety improvements at intersections
- Economic benefits over the construction period.

As discussed in above sections, amenity impacts such as noise and changes to landscape character and visual amenity could be experienced during both construction and operation, and land acquisition will be required. Socio-economic impacts on local business and communities would be investigated as part of the future development of the proposal.

3.3.12 Utilities

Utilities were identified from Dial Before You Dig plans, aerial imagery, a site visit and liaison with utility authorities.

Utilities are heavily concentrated within the residential and commercial areas of Milton, Ulladulla, Burrill Lake and Lake Tabourie and include extensive telecommunication, water and wastewater infrastructure. There are also high voltage electrical transmission lines that run from the north-south through the study area, as well as a connection east to Ulladulla.

Proposal implications

There may be clashes with existing utilities which would require avoidance, protection or relocation. This would be considered during design development, construction and operation of the proposal.
4. Community involvement and feedback

4.1 Consultation activities to date

4.1.1 Initial community consultation

Between 16 March and 13 April 2020, Transport for NSW sought community feedback on the existing corridor for the Milton Ulladulla bypass in the Shoalhaven LEP and asked to hear about current experiences travelling to and along the Princes Highway in Milton and Ulladulla. The purpose of this consultation was to enable the questions and concerns of the public to be considered during project development prior to the identification of a preferred strategic corridor option.

During the consultation period submissions were received from individuals, community groups and government representatives, who provided feedback through:

- 90 emails
- 12 phone calls
- 590 comments on the online consultation map.

Feedback focused on 13 topics listed below in order of frequency:

1. Route selection
2. Project need and justification
3. Traffic and transport
4. Socio-economic
5. Environment
6. Design suggestions
7. Project details
8. Bushfire resilience
9. Consultation
10. Placemaking
11. Out of Scope
12. General
13. Cumulative impacts.

4.1.2 Key stakeholder meetings

Stakeholder meetings have been carried out to provide an update and overview of the project.

A total of three project briefings have taken place so far in 2020 with:

- Shoalhaven City Council
- Milton Ulladulla bypass NOW subcommittee of the Milton and Districts Community Forum and Ulladulla and Districts Community Forum

4.2 Community Engagement methods

A summary of community engagement methods utilised for the project is included in Table 4-1.
Table 4-1 Community engagement methods

<table>
<thead>
<tr>
<th>Engagement Method</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Princes Highway Upgrade portal (princeshighway.nsw.gov.au)</td>
<td>Digital portal including interactive map of all work activities as part of Princes Highway upgrade program. Purpose of webpage is to explain scope of the program, program benefits, and objectives and provide up-to-date information.</td>
</tr>
<tr>
<td>Website (nswroads.work/miltonulladullabypass)</td>
<td>Details of project are provided on the Transport for NSW website. Website also includes a subscription form for members of the public to sign up to project updates and nominate how they would like to receive project information.</td>
</tr>
<tr>
<td>Project email (<a href="mailto:princeshighway@transport.nsw.gov.au">princeshighway@transport.nsw.gov.au</a>)</td>
<td>Dedicated Princes Highway upgrade program email address to provide alternative avenue for submitting written feedback submissions. Enable contact with project team.</td>
</tr>
<tr>
<td>Project information line (1800 719 759)</td>
<td>Project information line to answer questions from the public and obtain feedback from community members unable to submit feedback online or via email.</td>
</tr>
<tr>
<td>FAQ</td>
<td>Frequently Asked Questions document accessible via the project website to answer common project questions.</td>
</tr>
<tr>
<td>Postcard distribution</td>
<td>Postcards are distributed to over 7,000 properties in Milton, Narrawallee, Ulladulla, Mollymook, Burrill Lake, Dolphin Point and Lake Tabourie.</td>
</tr>
<tr>
<td>Social Media</td>
<td>Facebook is used to raise awareness of the project and project consultation periods. Facebook posts are geo-targeted to reach Facebook users in the region.</td>
</tr>
<tr>
<td>Advertising</td>
<td>Print and digital advertising is used during project consultation periods to inform members of the public of the consultation opportunity and encourage feedback to be provided.</td>
</tr>
<tr>
<td>Media release</td>
<td>Media releases will be issued to announce project milestones.</td>
</tr>
<tr>
<td>Facebook Live Q&amp;A session</td>
<td>30 minute online Q&amp;A session via Facebook Live sessions are held answer questions from members of the community to help inform and encourage feedback.</td>
</tr>
<tr>
<td>Emails to stakeholder list and subscribers</td>
<td>A subscription database was established utilising known contacts and expanded via an email subscription form via the project website.</td>
</tr>
</tbody>
</table>
4.3 **Ongoing future consultation**

Communication with the community and other stakeholders will continue as the project approaches key milestones. Communication will include collateral, updates to the website and interactive portal, media releases, announcements/photo opportunities, advertising and information sessions as required.

The preferred strategic option outlined in this report will be on public display for community feedback from Wednesday 25 November to Sunday 20 December 2020.
5. Alternatives and options considered

5.1 Methodology for selection of recommended option

The approach to selecting a preferred strategic corridor option for the proposal involved a five-stage process as shown in Figure 5-1. Each stage is described in detail in Sections 3, 5 and 6 of this report. A number of workshops were held to ensure collaboration between key stakeholders and members of the proposal team.

![Figure 5-1 Approach to selection of a recommended option](image)

5.2 Design criteria

The design criteria considered included a four lane high speed standard road for the Princes Highway with a cross section of two 3.5 metre lanes in each direction, separated by a three metre wide median. A barrier would be provided in the centre of the median and 3.0 metre shoulders would be provided on either side of the carriageway. The bypass would have a posted speed limit of 100 kilometres per hour.

5.3 Identification of options

Following initial community consultation (see Section 4.1.1) three southern end points for strategic corridor options were identified that considered different ways of connecting the communities along and around the Princes Highway (Figure 5-2):

- End Point B1 would be to the north of Burrill Lake. This end point is where the LEP corridor connects to the Princes Highway. Options that would connect here would bypass Milton and Ulladulla
- End Point B2 would be to the south of Burrill Lake. Options that would connect here would bypass Milton, Ulladulla and Burrill Lake
- End Point C would be to the south of Lake Tabourie. This connection point was selected to develop alignments that would extend the entire length of the study area, bypassing Milton, Ulladulla, Burrill Lake and Lake Tabourie.
Figure 5-2 Strategic corridor option end points

Key data about start and end points, design requirements, terrain, land uses and environmental constraints were input into route identification software. Based on trends identified through this process, a list of options was developed, which minimised impacts on the identified constraints within the study area. Seven strategic corridor options plus a “do minimum” option (i.e.
upgrading the existing Princes Highway) were identified (Figure 5-3). The list of options comprised:

- A ‘do minimum’ option that utilises the existing Princes Highway alignment (Option 0)
- Four ‘eastern’ options that would connect into End Point B1 (Options 1 to 4)
- One ‘centre’ option that would connect into End Point B2 (Option 5)
- Two ‘western’ options that would connect into End Point C. (Option 6 and 7).
Figure 5.3 Longlisted strategic corridor options
5.3.1 ‘Do minimum’ option (Strategic Corridor Option 0)

Strategic Corridor Option 0 considers upgrading the existing Princes Highway and not implementing a bypass. The 25.5 kilometre long corridor follows the existing Princes Highway alignment and passes through Milton, Ulladulla, Burrill Lake and Lake Tabourie. The ‘do minimum’ option would consist of minor infrastructure improvement alternatives including minor improvements to existing intersections, localised safety improvements, and the provision of overtaking lanes.
5.3.2 Strategic Corridor Option 1

Strategic Corridor Option 1 (black) is the existing LEP Corridor. A bypass along this corridor would be about 13 kilometres long. Key features of this option include a start point connecting to the Princes Highway to the north of Little Forest Road and an end point connecting to the highway around Princess Avenue in Burrill Lake. A number of bridges would be required.

Option 1 has the potential to connect to a number of existing local roads within the Milton and Ulladulla townships. Details regarding potential future connections to the Princes Highway and local roads would be investigated during further design development.
5.3.3 Strategic Corridor Option 2

Strategic Corridor Option 2 (red) follows a similar route to the LEP corridor. A bypass along this corridor would be about 13 kilometres long. Key features of this option include a start point connecting to the Princes Highway to the north of Little Forest Road and an end point connecting to the highway around Princess Avenue in Burrill Lake. A number of bridges would be required.

The key difference with Option 1 (black) is that Option 2 (red) passes to the west of the large lot residential properties on the western outskirts of Ulladulla. Similar to Option 1 (black), there is potential for connections to existing local roads which would be investigated during further design development.
5.3.4 **Strategic Corridor Option 3**

Strategic Corridor Option 3 (orange) deviates west of the existing LEP corridor to avoid impacts to the Old Croobyar Farm. A bypass along this corridor would be about 14 kilometres long.

Key features of this option include a start point connecting to the Princes Highway to the north of Little Forest Road and an end point connecting to the highway around Princess Avenue in Burrill Lake. A number of bridges would be required.

Similar to Option 2 (red), Option 3 (orange) passes to the west of the large lot residential properties on the western outskirts of Ulladulla. Similar to Option 1 (black) and 2 (red), there is potential for connections to existing local roads which would be investigated during further design development.
5.3.5 Strategic Corridor Option 4

Strategic Corridor Option 4 (yellow), a bypass about 13 kilometres long, differs from the other corridor options as it passes east of Milton.

Key features of this option include a start point connecting to the Princes Highway to the north of Little Forest Road and an end point connecting to the highway around Princess Avenue in Burrill Lake. A number of bridges would be required.

Option 4 (yellow) would cross over Matron Porter Road and the existing Princes Highway near Warden Road. It would then follow the same route as Option 1 (black). Potential connections to existing local roads would be investigated in further design development.
Strategic Corridor Option 5 (green) is about 15 kilometres long. The start point is the same as other corridor options and intersects the existing Princes Highway south of Burrill Lake near Wheelbarrow Road. It traverses the north-eastern section of Meroo National Park as well as part of Woodburn State Forest.

A number of bridges would be required, including two crossings of Burrill Lake.
5.3.7 Strategic Corridor Option 6

Strategic Corridor Option 6 (cyan) is about 20.5 kilometres long. The start point is the same as other corridor options and connects with the existing Princes Highway south of Lake Tabourie near Lemon Tree Creek Road. It traverses narrow parts of the north-western section of Meroo National Park. The terrain for the southern half of this option is steep.

A number of bridges would be required. Connection to existing local roads would be limited.
5.3.8 Strategic Corridor Option 7

Strategic Corridor Option 7 (blue) is about 20.5 kilometres long and is similar to Option 6 (cyan). This option is situated further east than Option 6 (cyan), and it therefore traverses a larger portion of Meroo National Park. The start and end points are the same as Option 6 (cyan).

A number of bridges would be required. Connection to existing local roads would be limited.
5.3.10 Other strategic alternatives considered

A number of other strategic alternatives were considered by Transport for NSW. These strategic alternatives represent overarching approaches to meeting the proposal objectives, and included:

- Business as usual – the 'do nothing' option
- Major upgrades of the Princes Highway
- Alternative western alignment along Wheelbarrow Road.

Each of these alternatives are discussed below.

**Business as usual alternative**

The business as usual option involves maintaining the Princes Highway in its existing design and alignment. This alternative was not considered for further assessment as it fails to address key program and proposal objectives including planning for a four lane upgraded highway.

**Major upgrade alternative**

This alternative would involve planning for a duplication of the Princes Highway along its current alignment with two travel lanes in each direction. Retaining the existing alignment and its geometric deficiencies would result in limited safety and traffic efficiency benefits with a maximum achievable AusRAP rating of three stars. Upgrading the existing highway to provide a total of four lanes through the town centres would also have substantial impacts on shop fronts and residential areas.

This option would require a significant impact in order to meet the desired cross-section and design goals for the highway. It would not enable a reduction in vehicle movements including freight from existing town centres and would have a greater impact on existing businesses and properties along the Princes Highway. For these reasons and the potential longer term impact on amenity and liveability within town centres, this option was not further considered.

**Alternative western alignment along Woodstock Road**

A strategic corridor option that involved upgrading the existing Woodstock Road / Woodburn Road was explored. Woodstock / Woodburn Road follows a ridgeline until about Brooman Road. The option investigated here diverges from Woodburn Road at Wheelbarrow Road to continue south to connect back to the existing Princes Highway at Lake Tabourie. Due to the geography and landscape of this area, this option would require substantial earthworks and clearing to be completed through native bushland that is habitat for a number of threatened species.

Additionally, the steep gradients of the route would have a detrimental impact to truck speed and freight efficiency. Maximising the use of the existing alignment would result in a number of design non-conformances that may compromise the safety of the bypass to users due to reduced sight distances and property access configurations.

This option was therefore considered to not meet the project objectives and was not considered further.
5.4  Evaluation of options

The identified options were evaluated in two stages. The first stage involved the development of Key Result Areas (KRAs) for each proposal objective which were then used to score each option during the second stage. Like the proposal objectives, it is intended that KRAs would be used through all stages of proposal development (not only in the route selection phase). The ways in which they are measured may however change as the proposal develops.

5.4.1  Development of Key Result Areas

Key Result Areas (KRAs) were developed by the project team for each objective prior to the workshop through a series of project team meetings. The KRAs represent important factors that would contribute to meeting the objectives, and are framed in a way that can be assessed (either qualitatively or quantitatively). The KRAs are presented in Table 5-1.

Table 5-1 Key Result Areas

<table>
<thead>
<tr>
<th>Objective</th>
<th>Key Result Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Improve network safety for all transport modes and customers</td>
<td>1.1 Improve network operational safety</td>
</tr>
<tr>
<td></td>
<td>1.2 Ensure safe construction and maintenance</td>
</tr>
<tr>
<td>2. Improve transport network efficiency and connectivity to support</td>
<td>2.1 Improve travel time North-South</td>
</tr>
<tr>
<td>regional economic development, tourism and freight</td>
<td>2.2 Improve network efficiency</td>
</tr>
<tr>
<td></td>
<td>2.3 Improve intersection performance</td>
</tr>
<tr>
<td></td>
<td>2.4 Improve arrangements for freight</td>
</tr>
<tr>
<td></td>
<td>2.5 Support modal shift from vehicles to active and public transport</td>
</tr>
<tr>
<td>3. Improve transport network resilience</td>
<td>3.1 Improve transport network resilience during traffic incidents</td>
</tr>
<tr>
<td></td>
<td>3.2 Resilience to natural disaster</td>
</tr>
<tr>
<td></td>
<td>3.3 Futureproof the corridor to respond to evolving technologies and requirements</td>
</tr>
<tr>
<td>4. Enhance the amenity and liveability of Milton and Ulladulla and</td>
<td>4.1 Support an increase in active and public transport by improving accessibility</td>
</tr>
<tr>
<td>connected communities</td>
<td>and connectivity</td>
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<td>4.2 Improve vehicle access from north and south to bypassed towns</td>
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<td>4.3 Improve township amenity and liveability</td>
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<tr>
<td>5. Respect our community and the environment</td>
<td>5.1 Minimise disruption and impact to the community through the construction</td>
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<td></td>
<td>5.2 Minimise impact on terrestrial ecology</td>
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<td>5.3 Minimise impact on aquatic ecology</td>
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<tr>
<td></td>
<td>5.4 Minimise impact to non-Aboriginal heritage</td>
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<td></td>
<td>5.5 Minimise impact to Aboriginal heritage</td>
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<tr>
<td></td>
<td>5.6 Minimise noise and air quality impacts</td>
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</tbody>
</table>
5.4.2 Shortlisting workshop

A shortlisting workshop was held on 14 August 2020 with a range of representatives from Transport for NSW. The purpose of this workshop was to agree on a set of shortlisted options to be further assessed.

During the workshop, information about the proposal background, agreed decision making process, the program and proposal objectives, strategic options (including specific environmental and engineering constraints) were provided and discussed.

Multi-criteria and sensitivity analysis of the seven options, plus the ‘do minimum option,’ were undertaken to inform the decision making process with consideration of the need to retain at least one strategic corridor option for each of the alternative end points.

Multi-criteria analysis

Subject matter experts presented the challenges and opportunities against each KRA and provided a recommended score between one and five for each of the options. A score of five indicated that a strategic corridor option comprehensively fulfilled the requirements of the KRA. A score of one indicated that a strategic corridor option performed poorly against a KRA. The recommended scores were discussed by the workshop participants and a consensus was reached.

The scoring outcomes from the workshop are summarised in Table 5-2. Certain KRAs were not scored due to lack of information available at the time of the shortlisting workshop, noting that the shortlisting process occurred relatively early in the process and that these KRA’s could be effectively scored based on more information in the subsequent stage.
### Table 5-2 Short-listing workshop multi-criteria analysis scoring

<table>
<thead>
<tr>
<th>Objective</th>
<th>Key Results Area (KRA)</th>
<th>Option 0</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
<th>Option 4</th>
<th>Option 5</th>
<th>Option 6</th>
<th>Option 7</th>
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</thead>
<tbody>
<tr>
<td>1. Improve network safety for all transport modes and customers</td>
<td>1.1 Improve network operational safety</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>5</td>
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<tr>
<td></td>
<td>1.2 Ensure safe construction and maintenance</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>1</td>
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<tr>
<td>2. Improve transport network efficiency and connectivity to support</td>
<td>2.1 Improve travel time North-South</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
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<tr>
<td>regional economic development, tourism and freight</td>
<td>2.2 Improve network efficiency</td>
<td>2</td>
<td>5</td>
<td>5</td>
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<td>5</td>
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<td></td>
<td>2.3 Improve intersection performance</td>
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<td>Not scored</td>
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<td>2.4 Improve arrangements for freight</td>
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<td>3</td>
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<td>3</td>
<td>4</td>
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<td>2.5 Support modal shift from vehicles to active and public transport</td>
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<td>3. Improve transport network resilience</td>
<td>3.1 Improve transport network resilience during traffic incidents</td>
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<td>3.2 Resilience to natural disaster</td>
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<td>Not scored</td>
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<td>3.3 Futureproof the corridor to respond to evolving technologies and requirements</td>
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<tr>
<td>4. Enhance the amenity and liveability of Milton and Ulladulla and</td>
<td>4.1 Support an increase in active and public transport by improving accessibility</td>
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<td>connected communities</td>
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<td></td>
<td>4.2 Improve vehicle access from north and south to bypassed towns</td>
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<td>Not scored</td>
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<tr>
<td>Objective</td>
<td>Key Results Area (KRA)</td>
<td>Scoring</td>
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<td>5.1 Minimise disruption and impact to the community through the construction phase</td>
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<td>5.2 Minimise impact on terrestrial ecology</td>
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<td>5.4 Minimise impact to non-Aboriginal heritage</td>
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<td>5.5 Minimise impact to Aboriginal heritage</td>
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<td>5.6 Minimise noise and air quality impacts</td>
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<td>5.7 Maximise integration with existing and future land uses</td>
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<td>5.8 Minimise impact on agriculture</td>
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<td>5.9 Minimise social impact from direct property impact</td>
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<td>2</td>
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<tr>
<td>5.10 Minimise impact on landscape character and visual amenity</td>
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<td>4</td>
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<td>1</td>
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<td>6. Increase customer value</td>
<td>6.1 Provide value for money</td>
<td>Not scored</td>
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| 5 = Comprehensive achievement, 1 = Minimal achievement                 |
Sensitivity analysis

Following the comparative assessment and scoring process for each of the options against each KRA, a sensitivity analysis was completed to inform the workshop participant’s recommendation of a preferred strategic corridor option. The sensitivity analysis process included testing a series of scenarios where project objectives were assigned different weightings to determine the ranking of the options based on the adjusted weighted scores for each scenario.

The initial scenario was to consider all objectives with an equal weighting, irrespective of the number of KRA’s associated with each objective. The next scenario tested the relative ranking with all KRA’s assigned and equal weighting and therefore objectives with more KRA’s would be have a higher weighting when compared to objectives with fewer KRA’s. Workshop participants were invited to nominate a range of scenarios that assigned different relative weightings to different objectives and KRAs as part of the sensitivity analysis. This included scenarios with higher weightings for safety, transport, resilience and amenity objectives, as well as three scenarios with different environment and community weightings.

The following trends were identified from the sensitivity testing process:

- The ‘do minimum’ option (Option 0) consistently ranked poorly
- Option 4 (yellow) typically ranked better than the ‘do minimum’ option but worse than all other options
- Options 1 (black), 2 (red) and 3 (orange) typically ranked similarly and were found to rank better than Option 0 and Option 4 (yellow). Option 2 (red) and Option 3 (orange) were found to have an equal ranking across all scenarios tested
- Options 5 (green), 6 (cyan) and 7 (blue) were found to rank similarly and were typically found to be the best ranking options across the various sensitivity scenarios. Option 6 (cyan) and Option 7 (blue) were found to have an equal ranking across all scenarios tested.

Identification of short list options

A fundamental consideration was that at least one strategic corridor option for each end point should be taken forward for further assessment. The options were therefore considered in four groups:

The ‘do minimum’ option (Option 0)

This option was not shortlisted due to its poor performance compared to other options. It was also acknowledged that this option could not achieve a four lane high speed standard road.

The eastern options (End Point B1)

- Option 1 (black) was selected as a shortlisted option as it scored comparatively well against the other eastern options
- Option 2 (red) and 3 (orange) were considered similar in their function and performance. It was recommended that Option 2 (red) be selected as a shortlisted option rather than Option 3 (orange) because it would have fewer impacts on noise, air quality, local communities, Aboriginal heritage and agricultural land
- Option 4 (yellow) was not shortlisted as it scored poorly compared to all other eastern options
The centre option (End Point B2)
Option 5 (green) was selected as a shortlisted option as it scored well and is the only option to connect south of Burrill Lake Bridge.

The western options (End Point C)
Option 6 (cyan) and Option 7 (blue) were considered similar in their function and performance. Option 6 (cyan) was selected as a shortlisted option as it would have fewer impacts on the Meroo National Park than Option 7 (blue) and would avoid impacts to wetlands.

The four shortlisted strategic corridor options were therefore agreed to be Corridor Options 1 (black), 2 (red), 5 (green) and 6 (cyan) (Figure 5-4Figure 5-4).
Figure 5-4 Shortlisted options with breakdown of required existing Princes Highway upgrades
5.5 Evaluation of short list of options

5.5.1 Development of short list options

The four shortlisted strategic corridor options were further developed following the shortlisting workshop. This involved refining the strategic corridor option boundaries based on analysis of the required cut and fill and potential connections to existing local roads.

During the shortlisting workshop, Transport for NSW identified the need to do further work to ensure each of the strategic corridor options could achieve a four lane high speed standard road for the Princes Highway. For options that do not extend the full length of the study area (the eastern options connecting at end point B1 and the centre option connecting at end point B2) it was assumed that upgrade works would be required from their end point south. The assumed upgrade south of the end points would include planning for the duplication of the existing Princes Highway (Figure 5-4). These upgrades to the existing Princes Highway were identified for the purpose of enabling a like for like comparison between the strategic corridor options to identify a preferred option and would not necessarily form part of a future bypass project. Upgrades to the existing highway would be considered as part of the Princes Highway upgrade program, which includes planning for a duplicated Princes Highway from Jervis Bay Road to Batemans Bay.

5.5.2 Additional investigations

Additional investigations were carried out to inform the evaluation and comparative assessment of the short-listed options during the value management workshop, as described below.

Constructability and Health & Safety in Design workshop

A combined constructability and health and safety in design (HSiD) workshop was held on 3 September 2020 with a range of project team representatives. This workshop was undertaken with consideration of observations made during a site visit on 17 August 2020.

The constructability criteria were assessed across seven categories:

- Ease /and efficiency of construction
- Staging of construction
- Traffic management
- Global site constraints
- Utilities
- Environment management
- Cost and time.

A summary of each short-listed strategic corridor option, including environmental and engineering constraints, was presented. Subject matter experts discussed the challenges and opportunities for each strategic corridor option and provided a recommended score against each constructability assessment criteria. The recommended scores were discussed by the workshop participants and a consensus was reached.
At the conclusion of scoring, it was established that Corridor 1 (black) performed the best against the constructability criteria. The key attributes of this strategic corridor option that resulted in the highest score are:

- Multiple potential access points from local roads providing the opportunity to have multiple work fronts been opened simultaneously
- Ease of construction access for compounds, investigations and stockpiling
- The alignment supports haul routes connectivity
- Deemed to have the least potential impact on environment during construction
- The shortest construction program with lower project risk due to less third-party approvals associated utilities and Meroo National Park.

Following the constructability assessment, workshop participants discussed the potential safety hazards for persons carrying out construction and operation, as well as users of the proposed bypass. The potential hazards were categorised and ranked based on the ability to implement control measures to eliminate or mitigate hazards so far as reasonably practicable.

At the conclusion of scoring, it was established that Corridor 6 (cyan) performed the best against the hazard categories and Corridor 1 (black) ranked second best.

**Traffic and Transport assessment**

A traffic and transport assessment was carried out to understand the traffic performance of each of the shortlisted options. The assessment considered how effective each option would be at reducing traffic volumes through the town centres along the Princes Highway under current and future traffic scenarios, including under holiday conditions.

The traffic modelling completed for the project confirmed that the longer, western alignments would carry lower traffic volumes and were as such less successful in reducing traffic on the Princes Highway through the town centres of Milton and Ulladulla. Options located closer to the existing highway also had the greatest potential to provide connections to town centres via the local road network improving the use of the bypass.

The assessment found that Option 1 (black) and Option 2 (red) would be the most effective at reducing traffic within the town centres of Milton and Ulladulla, particularly if connection points are provided along the corridor. Option 6 (cyan) was found to be the least effective strategic corridor option.

**Landscape character and visual impact**

A strategic urban design landscape character and visual impact assessment was completed for the shortlisted corridor options in accordance with Transport for NSW’s Guideline for landscape character and visual impact assessment (2020). This included a high level assessment of the land form and natural features, vegetation, built form, townships, scenic areas and key viewpoints, active transport and road networks and any Aboriginal and non-Aboriginal heritage and relevant designations. The aim of this study was to identify special places, key issues, opportunities and constraints as relevant to each shortlisted corridor option.

The outcomes of this assessment were used to inform the scoring of KRA 5.10 *minimise impact on landscape character and visual amenity*. Each shortlisted corridor option was described and scored based on how they fit with the built fabric and landform as well as their scenic value. The assessment found that Option 6 (cyan) was the best performing corridor and Option 4 (green)
was the worst performing corridor with Option 1 (black) and Option 2 (red) had similar potential visual impacts.

**Aboriginal cultural heritage and archaeological predictive modelling**

Transport for NSW is completing a cultural heritage sensitivity and values mapping study for the Princes Highway upgrade program from Jervis Bay Road to the border with Victoria. This study includes the Milton Ulladulla bypass study area. A preliminary map was prepared based on a desktop assessment of existing cultural heritage studies for the area as well as historic records to identify known pre and post-contact culturally sensitive sites that could be impacted by the shortlisted corridors.

This information, together with results from AHIMS searches and outputs from an archaeological potential predictive model produced for the study area, were used to inform the discussion and scoring of KRA 5.5 *minimise impact to Aboriginal heritage*.

**Noise assessment**

A strategic corridor options acoustic review was undertaken to assess each of the options against the existing conditions. Noise emission from each of the shortlisted options were predicted to the surrounding receivers for the year 2041, the number of pre-mitigation exceedances was determined and indicative at-road mitigations were identified.

The strategic corridor option with the greatest impact based on pre-mitigation exceedances was Option 1 (black), followed by Option 2 (red), option 5 (green) and Option 6 (cyan).

**5.5.3 Value management workshop**

A Value Management Workshop was held on 23 September 2020 with the aim of identifying a preferred strategic corridor option. This workshop was attended by a range of project team representatives as well as representatives from the Commonwealth Department of Infrastructure, Trade, Regional Development and Communications, NSW Department of Planning, Industry and Environment, NSW Police and Shoalhaven City Council.

The value management workshop followed a similar process to the shortlisting workshop, with multi-criteria and sensitivity analyses carried out to inform the decision-making process.

**Multi-criteria analysis**

The project team presented a summary of each shortlisted option and any design refinements that had been carried out. Subject matter experts presented on individual KRAs and outlined additional investigations carried out since the shortlisting workshop.

Following this, the workshop group discussed the suitability of each corridor option in reference to the KRAs and comparatively assessed how each option performed. The workshop group scored each shortlisted option from one to 10, with one indicating poor performance and 10 indicating optimal performance against the KRA. This evaluation process enabled a relative ranking of each design option against each KRA. A ranking of one indicates the best option.

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2 Some KRAs were not scored when the workshop group determined that it was either not relevant to this stage of proposal development or did not contribute to differentiation of options. For example, KRA 2.5 was not scored due to its close similarities to KRA 4.1.
comparatively when aligned to the KRA, and a ranking of four indicates the worst option comparatively.

Table 5-3 outlines the results of this comparative assessment. Key outcomes of the comparative assessment are presented below.

**Objective 1: Improve network safety for all transport modes and customers**

This objective’s KRAs included consideration of the long term safety benefits of bypass options as well as consideration of safety during construction and ongoing maintenance activities. All options performed relatively similarly against KRAs relating to improving network safety. Option 5 (green) performed slightly less favourably than the other options due to the need to construct and maintain long-span bridges across Burrill Lake.

**Objective 2: Improve transport network efficiency and connectivity to support regional economic development, tourism and freight**

Option 1 (black) and Option 2 (red) performed well against this objective, with Option 1 (black) performing best. The shorter length of the two routes and the possibility to connect to the local road network would allow for a higher utilisation rate of these routes, improving network efficiency and arrangements for freight. Option 6 (cyan) would have the lowest utilisation rate and minimal opportunity for connection points and performed lowest against this objective.

**Objective 3: Improve transport network resilience**

All options performed similarly against the objective to improve transport network resilience. Option 1 (black) and Option 2 (red) performed relatively consistently across the KRAs. Option 5 (green) and 6 (cyan) would enhance network resilience during traffic incidents but offered fewer options to respond to evolving technologies due to their relative isolation away from existing telecommunications networks.

**Objective 4: Enhance the amenity and liveability of Milton and Ulladulla and connected communities**

Option 1 (black) and Option 2 (red) performed better than Option 5 (green) and Option 6 (cyan) against this objective. The higher utilisation rates of the two eastern bypass options and their ability to connect to the local road network would provide opportunities to increase public and active transport and improve vehicle access to bypassed towns.

**Strategic Priority 4: Respect our community and the environment**

Each option performed similarly against one or more KRA relating to respecting our community and the environment, and poorly against others. Option 6 (cyan) performed poorly against KRAs relating to impacts on terrestrial ecology, land use and agriculture, but performed best overall due to its larger distance from town centres minimising amenity and community related impacts. Option 1 (black) performed similar to 6 (cyan), performing well due to its ability to integrate well with existing and future land uses. Option 5 (green) had the poorest performance overall due to its potential impact on aquatic ecology, Aboriginal heritage and landscape character.

**Strategic Priority 1: Increase customer value**

Option 1 (black) was found to comprehensively achieve the KRA to provide the best value for money. The relative increase in costs associated with the other options meant progressively lower performance, with Option 6 (cyan) performed least favourably.
Other considerations

KRA 4.3 relates to improving township amenity and liveability. Workshop participants found that each option would have limitations and opportunities for improving amenity within bypassed towns.

Option 1 (black) and Option 2 (red) would have the highest vehicle utilisation rates, removing more vehicles from the town centres of Milton and Ulladulla and providing the greatest opportunity for improved amenity within the two townships. Option 5 (green) and 6 (cyan) would bypass the additional town centre of Burrill Lake, but would have lower vehicle utilisation rates overall and therefore lower amenity improvement opportunities within town centres.

Workshop participants agreed to initially rank all options equally against KRA 4.3 but consider testing different scoring during the sensitivity analysis.
Table 5-3 Value management workshop multi-criteria analysis scoring

<table>
<thead>
<tr>
<th>Objective</th>
<th>Key Result Area (KRA)</th>
<th>Ranking</th>
<th>1 = Highest ranked option, 4 = Lowest ranked option</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Improve network safety for all transport modes and customers</td>
<td>1.1 Improve network operational safety</td>
<td>Option 1</td>
<td>3</td>
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<td></td>
<td>1.2 Ensure safe construction and maintenance</td>
<td>Option 1</td>
<td>1</td>
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<tr>
<td>2. Improve transport network efficiency and connectivity to support regional economic development, tourism and freight</td>
<td>2.1 Improve travel time North-South</td>
<td>Option 1</td>
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<td></td>
<td>2.2 Improve network efficiency</td>
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<td>2.3 Improve intersection performance</td>
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<td>2.4 Improve arrangements for freight</td>
<td>Option 1</td>
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<td>2.5 Support modal shift from vehicles to active and public transport</td>
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<td>3. Improve transport network resilience</td>
<td>3.1 Improve transport network resilience during traffic incidents</td>
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<td>3.2 Resilience to natural disaster</td>
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<td>3.3 Futureproof the corridor to respond to evolving technologies and requirements</td>
<td>Option 1</td>
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<tr>
<td>4. Enhance the amenity and liveability of Milton and Ulladulla and connected communities</td>
<td>4.1 Support an increase in active and public transport by improving accessibility and connectivity</td>
<td>Option 1</td>
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<td>4.2 Improve vehicle access from north and south to bypassed towns</td>
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<td>4.3 Improve township amenity and liveability</td>
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<td>Objective</td>
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<td></td>
<td>Option 1</td>
<td>Option 2</td>
</tr>
<tr>
<td>5. Respect our community and the environment</td>
<td>5.1 Minimise disruption and impact to the community through the construction phase</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>5.2 Minimise impact on terrestrial ecology</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>5.3 Minimise impact on aquatic ecology</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>5.4 Minimise impact to non-Aboriginal heritage</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>5.5 Minimise impact to Aboriginal heritage</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>5.6 Minimise noise and air quality impacts</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>5.7 Maximise integration with existing and future land uses</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>5.8 Minimise impact on agriculture</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>5.9 Minimise social impact from direct property impact</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>5.10 Minimise impact on landscape character and visual amenity</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Increase customer value</td>
<td>6.1 Provide value for money</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
**Sensitivity analysis**

Following the comparative assessment and scoring process for the options against each KRA, a sensitivity analysis was completed to inform the workshop participant's recommendation of a preferred strategic corridor option. The sensitivity analysis process included testing a series of scenarios where project objectives and KRAs were assigned different weightings to determine the ranking of the options based on the adjusted scenarios.

The initial scenario was to consider all objectives with an equal weighting, irrespective of the number of KRA's associated with each objective. The next scenario tested the relative ranking with all KRA's assigned and equal weighting and therefore objectives with more KRA's would be have a higher weighting when compared to objectives with less KRA's. Workshop participants were invited to nominate a range of scenarios that assigned different relative objective weightings as part of the sensitivity analysis. This included scenarios with higher weightings for safety, transport, resilience and amenity objectives, as well numerous scenarios with different scoring and weighting for 'KRA 4.3 Improve township amenity and liveability'.

The following trends were identified from the sensitivity testing process:

- Option 1 (black) ranked best under all but one of the sensitivity scenarios tested
- Option 2 (red) ranked second best under most of the sensitivity scenarios tested
- Option 5 (green) and Option 6 (cyan) consistently ranked third and fourth under most sensitivity scenarios tested. The ranking order of these options alternated depending on the scenario tested.

**Identification of a preferred strategic corridor option**

Following the conclusion of the multi-criteria analysis assessment, sensitivity analysis and discussion amongst workshop participants, it was recommended that Option 1 (black) (refer Section 5.3.2) best satisfied the objectives of the proposal.

Option 1 (black) scored highest, or equal highest, against all of the objectives with the exception of the strategic priority to respect the community and the environment where it scored second highest. Option 1 (black) (the current LEP corridor) was therefore recommended as the preferred strategic corridor as it provides, on balance, the best outcome in terms of the proposal's objectives and KRAs.

While acknowledging the benefits of Option 1 (black) to the towns of Milton and Ulladulla, a number of workshop participants raised concern that Option 1 may not best achieve the amenity and liveability objective when considering Burrill Lake and Lake Tabourie as connected communities.

Transport for NSW is planning further work to understand the future needs and performance of the existing highway from Burrill Lake and south as part of the Burrill Lake to Batemans Bay upgrade project.

Transport for NSW would also carry out further work to understand the best location/s for future connection points along the bypass corridor.
6. Preferred strategic corridor

Following an extensive strategic corridor options investigation and assessment process, a preferred strategic corridor has been identified for the Milton Ulladulla bypass. Option 1 (black) was recommended through the assessment process to be the preferred strategic corridor (Figure 6-1). This option is aligned with the existing LEP corridor and consists of a bypass about 13 kilometres long from north of Milton to the north of Burrill Lake.

Figure 6-1 Preferred Milton Ulladulla bypass strategic corridor option
Option 1 passes west of Milton and travels in a south-eastern direction towards Ulladulla, then south adjacent to the outer residential areas of Ulladulla. The corridor passes through the vegetated area to the east of Kings Point before connecting back into the Princes Highway between Ulladulla and Burrill Lake.

Option 1 was recommended as the preferred strategic corridor as it was considered to best achieve the objectives of the project and Princes Highway upgrade program. Option 1 represented the best balance against the criteria assessed, providing improvements to network efficiency while minimising impacts to the environment and community.

7. **Next steps**

The preferred option will be placed on public display until Sunday 20 December 2020 to provide the community and stakeholders an opportunity to review the preferred strategic corridor option and provide feedback.

Transport for NSW will use this information to further refine the preferred strategic corridor option. Transport for NSW will start work on the environmental impact assessment for the proposal which will have more detailed information about the design features, potential benefits and impacts, as well as offer further opportunities for the community and key stakeholders to provide feedback.

Please visit the project website at nswroads.work/miltonulladullabypass for more information and to provide your feedback.
8. References


Arup (2020), *Setting the Scene Report*, prepared for Transport for NSW


NSW Department of Planning and Environment (2015), *Illawarra Shoalhaven Regional Plan*, NSW Government

NSW Department of Premier and Cabinet (2019), *New South Wales South Coast Marine Tourism Strategy 2019*, NSW Government


Transport for NSW (2020), *Princes Highway Upgrade, Milton-Ulladulla Bypass Preliminary Environmental Investigation*


Transport for NSW (2018b), *Regional NSW Services and Infrastructure Plan*, NSW Government

Transport for NSW (2018c), *Milton Ulladulla Traffic and Transport Study*, NSW Government [change reference in section2 under need and place to 2018c]

Transport for NSW (2018d), *Connecting to the Future 10 Year Blueprint*, NSW Government

Transport for NSW (2018e), *NSW Road Safety Strategy 2021*, NSW Government

Transport for NSW (2018f), *NSW Freight and Port Plan 2018-2023*, NSW Government

Transport for NSW (2018g), *Tourism and Transport Plan Supporting the Visitor Economy*, NSW Government
If you need help understanding this information, please contact the Translating and Interpreting Service on 131 450 and ask them to call us on 1800 719 759.