Parkes Bypass

Submissions report

December 2019 | Version: 3

Contents

Contents (continued)

Tables

Figures

Appendices

Author:	WSP
Date:	December 2019
Version:	3
Document reviewers:	TfNSW

Executive summary

The proposal

Transport for NSW proposes to build a new 10.5 kilometre bypass about 1.5 to 2.0 kilometres west of the existing Newell Highway in Parkes, NSW (the proposal).

The key features of the proposal include:

- A new two-lane bypass (one lane in each direction) with four key intersections comprising:
  - T-intersections where the new bypass connects to the existing highway near Barkers Road (south) and Maguire Road (north)
  - A staggered T-intersection at London Road
  - A four-way roundabout at Condobolin Road
- A bridge over the Broken Hill and Parkes to Narromine rail lines and Hartigan Avenue and a shared pedestrian/cycleway bridge over the Parkes Bypass connecting Victoria Street and Back Trundle Road
- An extension of Hartigan Avenue that would connect to Brolgan Road (west of the bypass) and Condobolin Road
- Changes to local roads to tie in with the new bypass.

Display of the Review of Environmental Factors

Roads and Maritime (now Transport for NSW) prepared a review of environmental factors (REF) for the Parkes Bypass. The REF was publicly displayed between Monday 1 July 2019 and Friday 9 August 2019 at Parkes Shire Council, Parkes Arbour, Service NSW – Parkes Service Centre, Discount Dave's and Parkes Metroplaza. The REF was also published on the project website and made available for download.

The display locations and website link were advertised in the Parkes Champion Post, The Parkes Phoenix, ROK FM / 2PK and on Facebook. During this time, Transport for NSW invited the public to provide feedback on the proposal. Transport for NSW also met with residents and businesses who would be directly affected by the proposal.

In addition, displays of the REF at Discount Dave's, Parkes Metroplaza and Parkes Arbour were staffed at times during the public display period to give the community a chance to learn more about the project, ask questions and 'have their say'. An invitation to comment, and a link to a copy of the REF, was sent directly to several identified stakeholders.

Summary of issues and responses

Public display of the REF and the supporting consultation resulted in a total of 119 submissions, of which 117 were from the general community, one was from Parkes Shire Council and one was from NSW Police.

Of the community submissions, 15 per cent were in support of the proposal, 7 per cent objected to the proposal and 9 per cent were partially supportive of the proposal. The remaining 68 per cent of submissions offered no position on whether they supported or objected to the proposal.

Approximately 87 per cent of all community submissions raised issues related to the proposal design and options. This was particularly associated with the design of the shared pedestrian/cycleway bridge between Victoria Street and Back Trundle Road and the roundabout at Condobolin Road. One of the community submissions was a petition with 406 signatures, which requested to adjust the design of the shared pedestrian/cycleway bridge to a light traffic overpass.

The design of these key intersections was also directly associated with concerns related to:

- Hazards and risks (raised 61 times), particularly the safety of crossing the Condobolin Road roundabout
- Operational traffic, transport and access impacts (raised 65 times), particularly for people travelling to Parkes Christian School and residences in Shallow Rush
- Operational noise and vibration impacts (raised 22 times), particularly associated with braking, accelerating and decelerating at the approach to the Condobolin Road roundabout.

To address these strong community recommendations and concerns, Transport for NSW developed an alternate design for the local bridge between Victoria Street and Back Trundle Road that caters for light vehicles as well as pedestrians and cyclists. This alternate design would provide direct vehicular access for light vehicles between Victoria Street and Back Trundle Road, which would improve east-west connectivity and reduce travel times for road users needing to cross the bypass. It is also likely to reduce light vehicle volumes on the Condobolin Road roundabout.

Another key issue raised in the community submissions was related to concerns regarding reduced passing trade or income for businesses in Parkes town centre during operation of the proposal (raised 28 times). To minimise this, the proposal would incorporate urban design and landscaping measures at the Condobolin Road roundabout and Northern/Southern tie-ins to create an effective ‘gateway’ to encourage people to access Parkes town centre. The “gateway” treatments would be developed in consultation with Parkes Shire Council to determine the best design to represent Parkes.

Changes to the proposal

Following exhibition of the REF, the proposal design has been refined due to design development and the submissions to include:

- An alternate local vehicle bridge option between Victoria Street and Back Trundle Road that caters for light vehicles as well as pedestrian and cyclists
- More detail on the provision of shared paths and bus stops, including:
    - A new shared path for pedestrians and cyclists parallel to the eastern side of the bypass, which would connect Brolgan Road, Condobolin Road and Victoria Street
    - Four new bus stops to maintain safe access to bus routes during operation of the proposal
- An adjustment to the intersection between the Hartigan Avenue extension and Henry Parkes Way, so that it would be approximately 100 metres west, opposite a vacant paddock and further away from the Condobolin Road Roundabout. This change resulted in a revised survey area for the proposal.

Additional assessment

Additional biodiversity and heritage assessment has been undertaken for the change to the intersection between the Hartigan Avenue extension and Henry Parkes Way, as the revised alignment extends beyond the original survey area in the REF. The amended proposal footprint would result in a minor additional biodiversity impact to vegetation communities (0.03 hectares of native vegetation and 3.23 hectares of non-native vegetation) and threatened bird species. However, this would not require any additional safeguards and management measures to those identified in the REF. No additional heritage impacts are expected.

Additional noise assessment has been undertaken for the revised intersection between the Hartigan Avenue extension and Henry Parkes Way and the local vehicle bridge. The proposed changes would result in a slight increase in construction noise levels and the number of residential properties that would require further consideration of mitigation during detailed design. However, this would not require any additional safeguards and management measures to those identified in the REF.

The proposed change is likely to reduce traffic and transport impacts compared to the REF for local road users, primarily due to the improvements in east-west access from the local vehicle bridge.

Next steps

Transport for NSW as the determining authority will consider the information in the REF and this submissions report and make a decision whether or not to proceed with the proposal.

Transport for NSW will inform the community and stakeholders of this decision and where a decision is made to proceed will continue to consult with the community and stakeholders prior to and during the construction phase.

1 Introduction and background

1.1 The proposal

The proposal involves the construction of a 10.5-kilometre bypass of the Newell Highway at Parkes (the Parkes Bypass). The Parkes Bypass would divert heavy vehicle traffic out of the Parkes town centre. It would be located about 1.5 to two kilometres west of the existing Newell Highway and would generally include one lane in each direction. The Parkes Bypass would depart from the existing Newell Highway to the south of Barkers Road and would re-join the highway to the north of Parkes near Maguire Road. Figure 1-1 shows the proposal footprint in regional context and Figures 1-2a to 1-2c show an overview of the key features of the proposal, as per the design in the review of environmental factors (REF).

The key features of the proposal would include:

- A new two-lane bypass (one lane in each direction) with four key intersections comprising:
  - T-intersections where the new bypass connects to the existing highway near Barkers Road (south) and Maguire Road (north)
  - A staggered T-intersection at London Road
  - A four-way roundabout at Condobolin Road
- A bridge over the Broken Hill and Parkes to Narromine rail lines and Hartigan Avenue and a shared pedestrian/cycleway bridge over the Parkes Bypass connecting Victoria Street and Back Trundle Road
- An extension of Hartigan Avenue that would connect to Brolgan Road (west of the bypass) and Condobolin Road
- Changes to local roads to tie in with the new bypass.

A more detailed description of the proposal is found in the *Parkes Bypass Review of Environmental Factors* (Roads and Maritime, 2019).

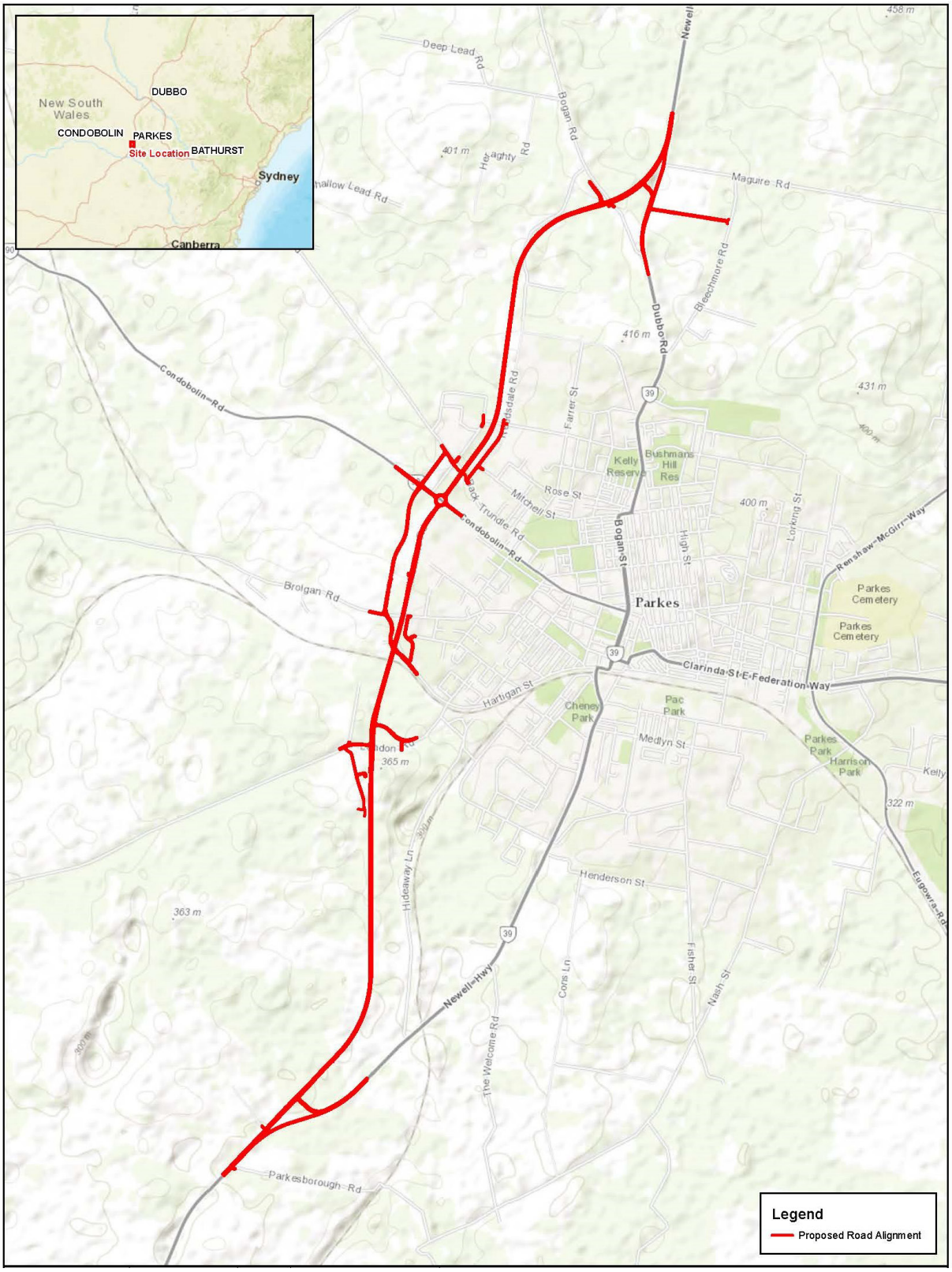

Figure 1-1: Proposal overview

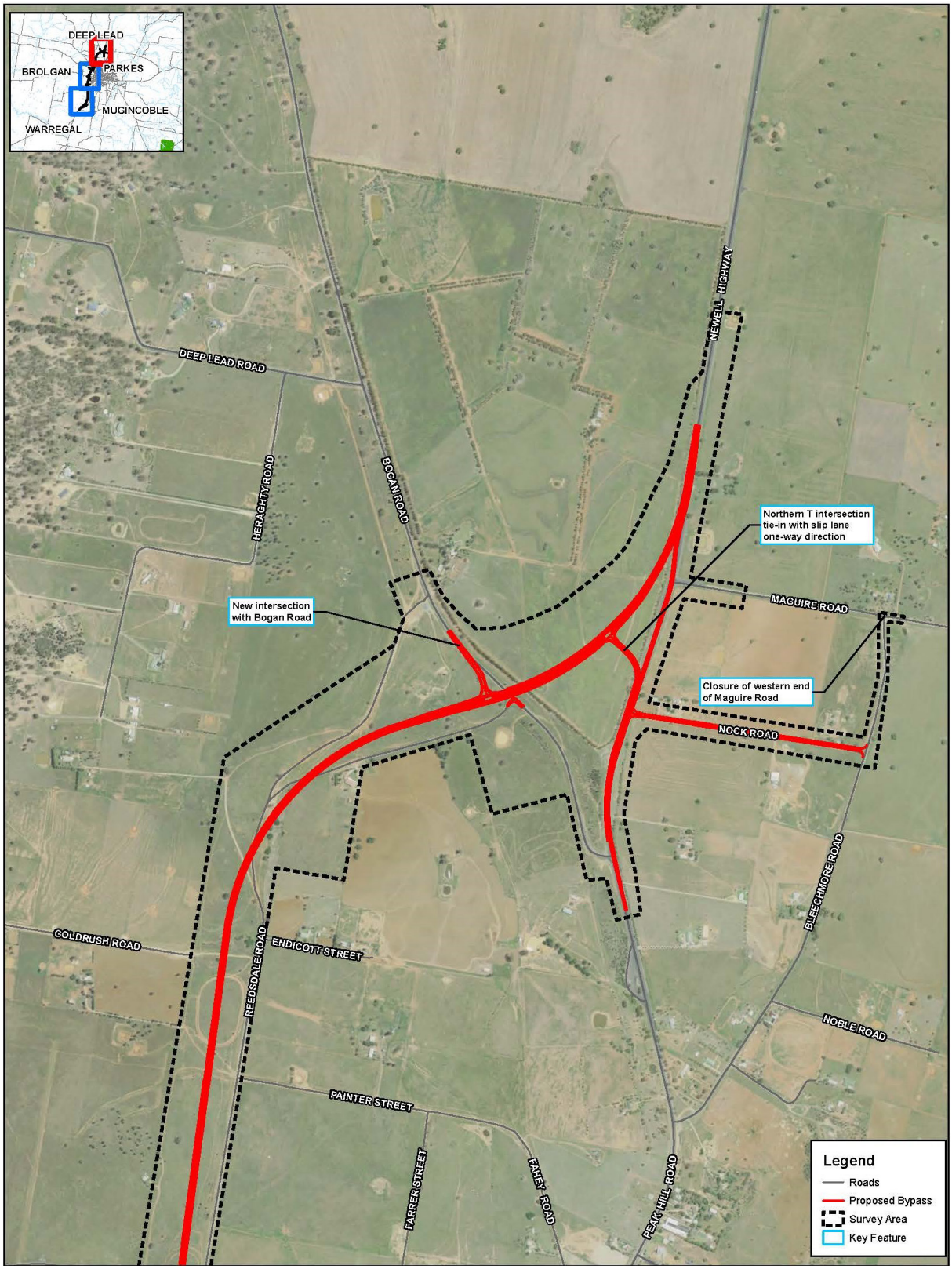

Figure 1-2a: Key features of the proposal (as per the REF)

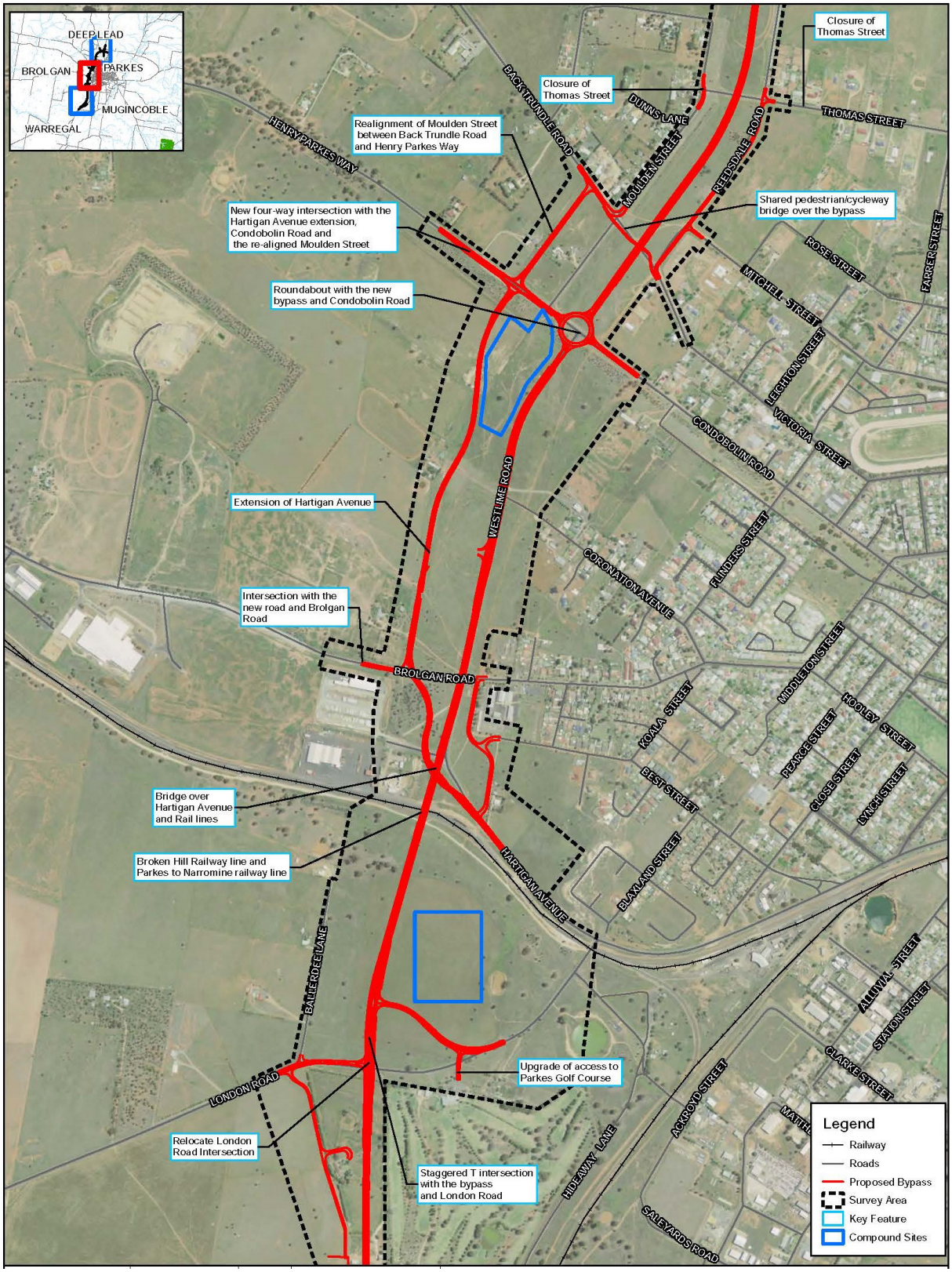

Figure 1-2b: Key features of the proposal (as per the REF)

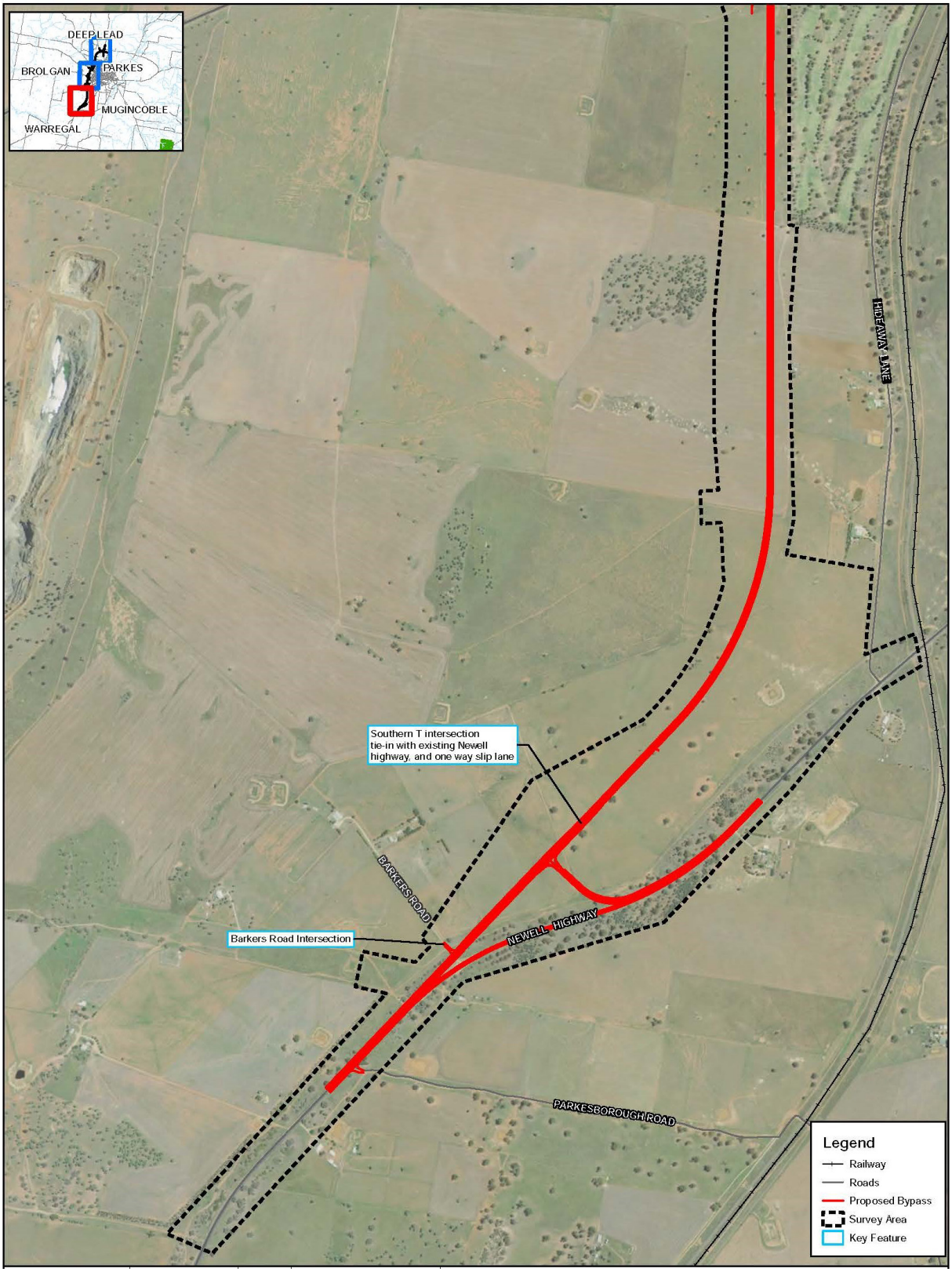

Figure 1-2c: Key features of the proposal (as per the REF)

1.2 REF display

Roads and Maritime (now Transport for NSW) prepared a REF to assess the potential environmental impacts of the proposed works. The REF was publicly displayed between 1 July 2019 and 9 August 2019 at five locations, as detailed in Table 1-1. The REF was placed on the project website and made available for download. The display locations and website link were advertised in the Parkes Champion Post.

In addition to the above public display, an invitation to comment and details on how to view the concept design and the REF was sent directly to several identified stakeholders.

Briefings were provided to Parkes Christian School and the Parkes Chamber of Commerce during the public display period, in addition to 11 meetings with property owners to discuss the concept design and REF.

Table 1-1: Display locations

Location	Address	
Parkes Shire Council	2 Cecile Street, Parkes	Hard copies of the REF and supporting documentation available at an unstaffed display.
Service NSW – Parkes Service Centre	51-55 Currajong Street, Parkes	Hard copies of the REF and supporting documentation available at an unstaffed display.
Discount Dave's	250 Clarinda Street, Parkes	Five information sessions to allow the community to view the project documentation and meet with Transport for NSW project staff.
Parkes Metroplaza	299 Clarinda Street, Parkes	Four information sessions to allow the community to view the project documentation and meet with Transport for NSW project staff.
Parkes Arbour	Bogan Street, Parkes	Two information sessions to allow the community to view the project documentation and meet with Transport for NSW project staff.

1.3 Purpose of the report

This submissions report relates to the REF prepared for Parkes Bypass and should be read in conjunction with that document.

The REF was placed on public display and submissions relating to the proposal and the REF were received by Transport for NSW. This submissions report summarises the issues raised and provides responses to each issue (Chapter 2). It details changes to the proposal since finalisation of the REF (Chapter 4), describes and assesses the environmental impact of changes to the proposal (Chapter 5) and identifies new or revised environmental management measures (Chapter 6).

2 Response to community issues

2.1 Overview of community issues raised

Transport for NSW Services received 117 community submissions, accepted up until 9 August 2019.

Each submission has been examined individually to understand the issues being raised. The issues raised in each submission have been extracted and collated, and corresponding responses to the issues have been provided. Where similar issues have been raised in different submissions, only one response has been provided. The issues raised, and Transport for NSW response to these issues forms the basis of this chapter.

Appendix A lists the respondents and each respondent's allocated submission number and where the issues from each submission have been addressed in Chapter 2 of this report.

Out of the total community submissions:

- 15 per cent of submissions stated that they supported the overall proposal
- 9 per cent of submissions supported the idea of the proposal but objected to certain elements of the proposal
- 7 per cent of submissions objected to the overall proposal
- 68 per cent of submissions did not clearly state a position on the overall proposal, however most of these submissions discussed their support or concerns on particular element/s of the proposal design.

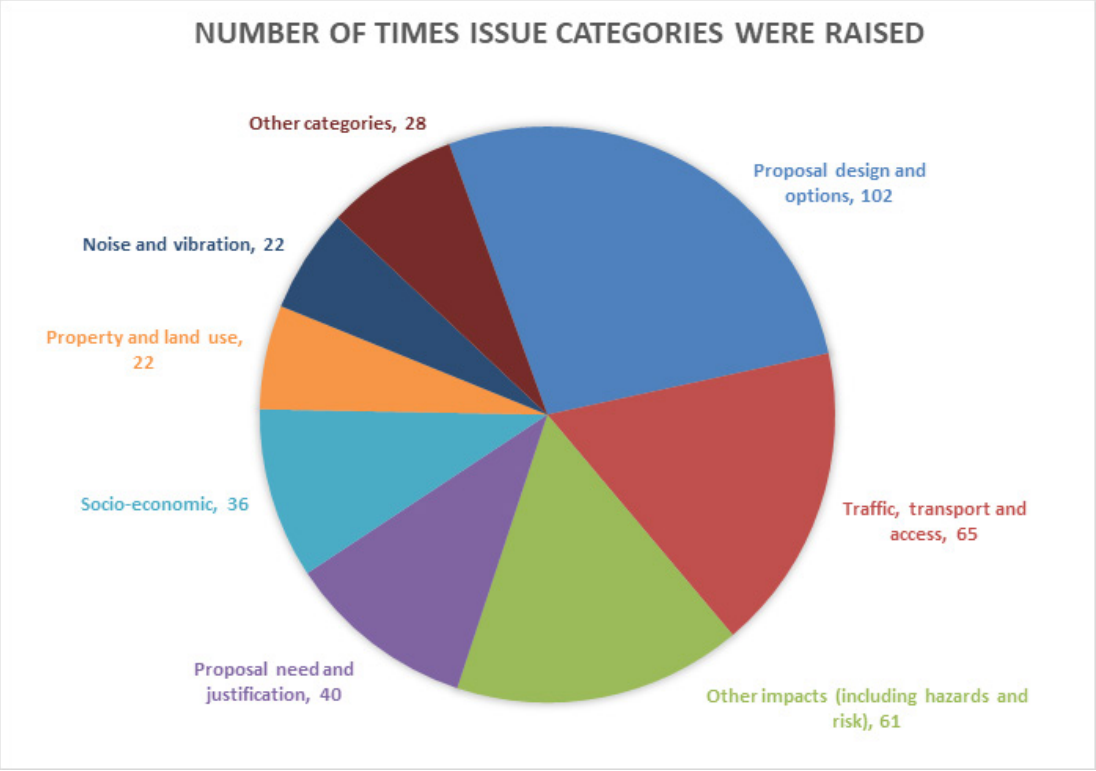

Figure 2-1: Summary of the number of times the key issue categories were raised by the community

Figure 2-1 provides a summary of key issue categories raised by the community. Approximately 87 per cent of all community submissions raised issues related to the proposal design and options. This was particularly associated with the design of specific intersections including the shared pedestrian/cycleway bridge between Victoria Street and Back Trundle Road and the roundabout at Condobolin Road. It is also noted that one of the community submissions was a petition with 406 signatures, which requested to adjust the design of the shared pedestrian/cycleway bridge to a light traffic overpass.

The design of these key intersections was also directly associated with concerns related to:

- Hazards and risks (raised 61 times), particularly the safety of crossing the Condobolin Road roundabout
- Operational traffic, transport and access impacts (raised 65 times), particularly for people travelling to Parkes Christian School and residences in Shallow Rush
- Operational noise and vibration impacts (raised 22 times), particularly associated with braking, accelerating and decelerating at the approach to the Condobolin Road roundabout.

Another key issue raised in the community submissions was related to concerns regarding reduced passing trade or income for businesses in Parkes town centre during operation of the proposal (raised 28 times).

2.2 Proposal need and justification

2.2.1 Support for the proposal

2.2.1.1 Submission number(s)

7, 34, 45, 46, 49, 52, 55, 65, 68, 70, 71, 78, 79, 80, 83, 84, 86, 87, 94, 95, 97, 105, 110, 111, 113, 114

2.2.1.2 Issue description

- Comments regarding general support for the proposal or aspects of the proposal
- Comments stating that the proposal would benefit Parkes town centre by:
  - Relieving congestion and reducing heavy vehicles volumes on the existing Newell Highway
  - Improving safety and local access, including for pedestrians and cyclists crossing Bogan Street
  - Improving amenity in the town centre from reducing noise, dirt and diesel fumes
  - Reducing wear and tear on the local roads
  - Encouraging economic growth and new development
- Comments that the proposal would be beneficial for heavy vehicles and freight traffic
- Comments noting that a bypass in Parkes has been known about for some time and that they are looking forward to the proposal being built.

2.2.1.3 Response

Transport for NSW has noted the need, perceived benefits and support for the proposal.

2.2.2 Proposal need and justification

2.2.2.1 Submission number(s)

48, 64, 92, 103

2.2.2.2 Issue description

- Comments and questions regarding the economic assessment and economic benefit of the proposal
- Comments that it is a waste of money and that other options would have been cheaper or more effective, such as upgrading the existing Newell Highway
- Question why the investment is for a road project rather than a rail project
- Comment that the new rail line would remove trucks from the road between Brisbane to Melbourne
- Comment that rail is a more effective and safer means of moving bulk freight.

2.2.2.3 Response

Chapter 2 of the REF discusses the need and options considered for the proposal. Each step of the options assessment and design refinement process included consideration of the economic cost and benefits of the proposal, as well as various other considerations such as the ability to meet the proposal objectives and impacts on property, traffic and environmental constraints.

As discussed in Section 2.4.2 of the REF, strategic corridor options to upgrade the existing Newell Highway were originally considered. However, upgrading the existing Newell Highway would not improve the amenity within Parkes town centre or allow easy access to the Parkes Special Activation Precinct (SAP). Therefore, the preferred strategic corridor option for the proposal was Option A (full Newell Highway bypass option with a bridge over the rail line at Hartigan Avenue) because it best met all the proposal objectives and was considered to have a lower environmental impact than the other options.

The proposal is needed to reduce the constraints to freight movement within Parkes, which is aligned with various NSW Government strategies to upgrade the Newell Highway as an inland freight route. It would also help develop Parkes as a centre to transfer freight between road and rail and facilitate connectivity improvements to the Parkes SAP.

The proposal would also complement the ARTC Inland Rail project and the Parkes National Logistics Hub (which forms part of the Parkes SAP) by improving the regional transportation of freight, to and from these projects, via road. As a result, the proposal would indirectly contribute to the success of rail projects within Parkes and overall movement of freight between Brisbane to Melbourne.

2.2.3 Integration with the Parkes SAP

2.2.3.1 Submission number(s)

72, 86, 87, 96, 97, 99, 114

2.2.3.2 Issue description

- Comment that integration with the Parkes SAP would be important as it would increase the traffic on the bypass
- Queries regarding what the Parkes SAP is and where it would be located.

2.2.3.3 Response

The NSW Government announced the establishment of SAPs as part of its *20-Year Economic Vision for Regional NSW*. The precincts will be funded as part of the NSW Government's $4.2 billion Snowy Hydro Legacy Fund. SAPs are a new way of planning and delivering infrastructure projects in certain regional locations in NSW, to attract and grow businesses, stimulate the regional economy and provide more employment opportunities.

The first SAP was announced for Parkes, taking advantage of its location, business development and employment growth opportunities associated with the east-west rail line and the north-south Inland Rail project. The Parkes National Logistics Hub, which has been developed on Brolgan Road, will form part of the Parkes SAP.

The location of the Parkes SAP is still being defined as part of a master planning process. The master planning process involves undertaking technical studies across a 5,600 hectare investigation area in Parkes, which is located west of the proposal footprint. More information can be found on the NSW Government webpage https://www.nsw.gov.au/improving-nsw/regional-nsw/snowy-hydro-legacy-fund/activation-precincts/parkes-special-activation-precinct/.

The new Hartigan Avenue extension would provide direct access to the Parkes SAP via Hartigan Avenue, Billy Mac Place, Brolgan Road and Henry Parkes Way. This would separate heavy vehicle movements for the Parkes National Logistics Hub and Parkes SAP from the bypass and reduce potential congestion at the Condobolin Road roundabout. The new Hartigan Avenue extension would be incorporated as part of MR61, be designed for PBS3a heavy vehicles and would have sufficient capacity to cater for the expected traffic volumes generated by the Parkes SAP.

2.3 Proposal design and options

2.3.1 Shared pedestrian/cycleway bridge

2.3.1.1 Submission number(s)

4, 8, 9, 10, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 33, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 51, 55, 56, 57, 58, 59, 60, 62, 64, 71, 72, 78, 81, 82, 86, 87, 91, 99, 103, 104, 106, 107, 108, 109, 113, 114

2.3.1.2 Issue description

- Suggestions to upgrade the design of the shared pedestrian/cycleway bridge proposed between Victoria Street and Back Trundle Road so that it would also be suitable for light vehicles
- Concerns that the current pedestrian/cycleway bridge design would be a waste of money as not many pedestrians/cyclists would use the bridge and the money could be better spent on alternative projects
- Concerns that the current pedestrian/cycleway bridge design prioritises financial costs over the safety and needs of the local community
- Comments that the current pedestrian/cycleway bridge design would not cater for increased demand in the future, and that upgrading the bridge now would be cheaper than if it was upgraded in the future

- Comments that including the upgraded light vehicle bridge design in the proposal would:
  - Provide safer and easier access to Parkes Christian School for parents, students and residents
  - Provide direct access over the bypass to/from Parkes town centre and increase east-west connectivity in Parkes
  - Provide an alternate route for emergency vehicles
  - Reduce traffic and potential delays at the proposed Condobolin Road roundabout and the intersection between the Hartigan Avenue extension and Henry Parkes Way
  - Result in a minor increase in cost compared to the overall project cost
  - Not be difficult to construct
  - Show that Transport for NSW is listening to local recommendations.

2.3.1.3 Response

As a result of the strong community recommendations, Transport for NSW has developed an alternate design for the local bridge between Victoria Street and Back Trundle Road that caters for light vehicles as well as pedestrians and cyclists (refer to Section 4.1). The potential environmental impacts of this design have been assessed (refer to Chapter 5), including in the updated noise and traffic modelling for the proposal.

2.3.2 Roundabout at Condobolin Road

2.3.2.1 Submission number(s)

8, 9, 10, 12, 56, 61, 62, 72, 83, 88, 90, 92

2.3.2.2 Issue description

- Queries why a roundabout was considered for the bypass
- Praise for changing the intersection at Condobolin Road to a roundabout in the current design (from the initial staggered T-intersection, which was included in the strategic concept design)
- Concerns that roundabouts are unsafe for heavy vehicles
- Concern that the roundabout design does not include overtaking lanes
- Comment that the five-way roundabout design (as identified as an option in the value management workshop) was not chosen, which would have reduced impacts to residences on Back Trundle Road
- Suggestions to construct a bridge instead of a roundabout at Condobolin Road, as it would:
  - Provide grade separation of opposing traffic
  - Avoid the need for through traffic to slow before the intersection
  - Reduce noise associated with heavy vehicles braking and accelerating
  - Increase safety benefits
- Comments that the roundabout design would not cater for increased demand in the future, and building a bridge now would be cheaper than in the future.

2.3.2.3 Response

The strategic concept design, which was made public in December 2016 for community consultation, included a staggered T-intersection at Condobolin Road. The community feedback from December 2016 to February 2017 suggested making this intersection a large roundabout or a bridge, as these intersection types were perceived to be safer and easier to navigate than staggered T-intersections. Emergency services also considered roundabouts as an easier intersection type to navigate.

As a result, Transport for NSW developed five initial intersection design options for the intersection at Condobolin Road, which were assessed at the value management workshop. As shown in Section 2.4.3 of the REF, this included two staggered T-intersection designs, two roundabout designs (a four-way roundabout and a five-way roundabout) and one grade separated bridge design.

Option D4: Four-way roundabout with a shared pedestrian/cycleway bridge to Back Trundle Road was determined to be the preferred option as it:

- Provided an opportunity to develop an entrance statement to Parkes to encourage visitation and minimise potential impacts to passing trade
- Would be simpler (and potentially safer) for people to negotiate than a five-way roundabout
- Was considered a preferred intersection type (compared to a staggered T-intersection) in the initial community and emergency services feedback
- Would be similar in cost to a staggered T-intersection, but significantly cheaper than a bridge.

The roundabout proposed at Condobolin Road would be a large inverted roundabout structure, which would have its lowest point in the middle of the intersection (shown in Figure 2-2), which is opposite to a normal roundabout design. This type of roundabout has been chosen as it improves the stability of heavy vehicles when using the roundabout compared to normal roundabouts. The roundabout would be designed specifically for PBS3a vehicles, an 80 km/hr speed limit, the future expected demand volumes and would be compliant with Transport for NSW's design standards. Traffic modelling indicates this intersection would operate with a high level of service for current and future demand scenarios. As a result, this roundabout would be safe for PBS3a heavy vehicles to navigate and is considered appropriate for the proposal.

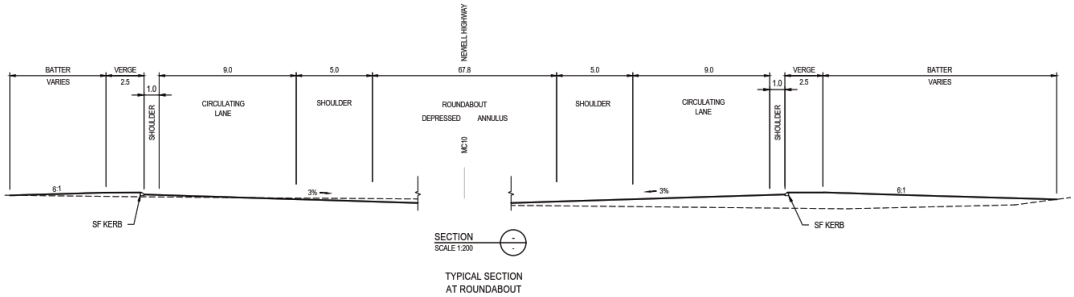

Figure 2-2: Cross section of the proposed roundabout at Condobolin Road

The potential noise impacts associated with heavy vehicles braking, accelerating and decelerating at the roundabout have been assessed as part of the REF (refer to Section 6.3 of the REF). Mitigation measures will be refined in detailed design in accordance with the relevant guidelines to minimise operational noise impacts where reasonable and feasible.

2.3.3 Signage strategy and lighting

2.3.3.1 Submission number(s)

6, 15, 46, 49, 61, 76, 93, 94, 96

2.3.3.2 Issue description

- Suggestions to label the proposal as a “heavy vehicle bypass” and keep the current route labelled as the “Newell Highway”
- Suggestions that advertising the proposal as a “heavy vehicle bypass” would assist in encouraging light vehicles to still travel through and visit Parkes town centre during operation of the proposal
- Comment that clear signage is required to advertise access points into Parkes.

2.3.3.3 Response

During operation, the proposal would be labelled the “Newell Highway” and would not be specifically labelled as a “heavy vehicle bypass” as it is designed to be used by both heavy vehicles and light vehicles.

As discussed in Section 6.2.3 of the REF, the business and stopper surveys reported that 61 per cent of light vehicles are expected to continue to travel through Parkes town centre during operation of the proposal, and many of these motorists would continue to visit local business and amenities.

The proposal would implement a specific type of image-based road signage (called Bypassed Town signage), which would show key features of Parkes and highlight available services and facilities. The signage would be developed in consultation with Parkes Shire Council to determine the best images and signage design to represent Parkes.

Additionally, as discussed in Chapter 6 of the REF, the proposal would incorporate urban design and landscaping measures at the Condobolin Road roundabout and Northern/Southern tie-ins to create an effective ‘gateway’ to encourage people to access Parkes town centre. These “gateway” treatments would be developed in consultation with Parkes Shire Council to determine the best design to represent Parkes.

2.3.3.4 Submission number(s)

14, 76, 78

2.3.3.5 Issue description

- Queries regarding what lighting would be included in the proposal
- Comment that Condobolin Road is poorly lit and street lighting should be provided.

2.3.3.6 Response

The proposal would include street lighting at the Condobolin Road roundabout. Indicative lighting locations for the proposal are shown in the videos provided on the project website (https://www.rms.nsw.gov.au/projects/western-nsw/newell-highway-parkes/index.html).

The individual lighting locations for the proposal will be confirmed during detailed design.

2.3.3.7 Submission number(s)

88

2.3.3.8 Issue description

- Request for lights and a camera to be installed on the bridge to protect motorists from having things thrown at them.

2.3.3.9 Response

Throw screens would be installed on all bridge structures constructed as part of the proposal, which would prevent items from being thrown off the bridges.

2.3.4 Request for additional project features

2.3.4.1 Submission number(s)

3, 9, 10

2.3.4.2 Issue description

- Suggestions that the proposal should include a multi-purpose service centre, rest areas and parking bays for heavy vehicles
- Comments that a service centre would provide employment and income for Parkes residents
- Comments that existing parking bays and rest areas would be bypassed by the proposal.

2.3.4.3 Response

The proposal would not remove the ability for vehicles to access the existing rest areas and parking bays within Parkes. As discussed in Section 2.5.2, heavy vehicles with current permission to use the approved B-double or road train routes surrounding the proposal could continue to be able to access those routes.

Provision of a multi-purpose service centre, rest areas and parking bays are beyond the scope of this proposal. However, the proposal would not restrict the ability for these types of developments to be built near the bypass in the future.

2.3.4.4 Submission number(s)

65, 96

2.3.4.5 Issue description

- Suggestion that Parkes Shire Council should consider a two-way cycle way on the north side of Victoria Street to ensure segregation between Philip Street and Metcalfe Street
- Suggestion that Parkes Shire Council should review the access restrictions for local roads that intersect the existing Newell Highway in Parkes town centre.

2.3.4.6 Response

These suggestions are outside of the proposal footprint and beyond the scope of the proposal. Any changes to active transport provision or local road access within Parkes town centre would be independent of this proposal and undertaken by Parkes Shire Council.

2.3.4.7 Submission number(s)

116

2.3.4.8 Issue description

- Comment that the verge of the bypass should have enough room for a marked cycleway.

2.3.4.9 Response

The proposal design does not incorporate a marked cycleway in the verge of the bypass. However, it does include a shared pedestrian/cycleway bridge and new shared paths for pedestrians and cyclists parallel to the bypass (refer to Section 4.1 and Figure 2-3), which are considered safer options and would increase the provision of dedicated active transport infrastructure within Parkes.

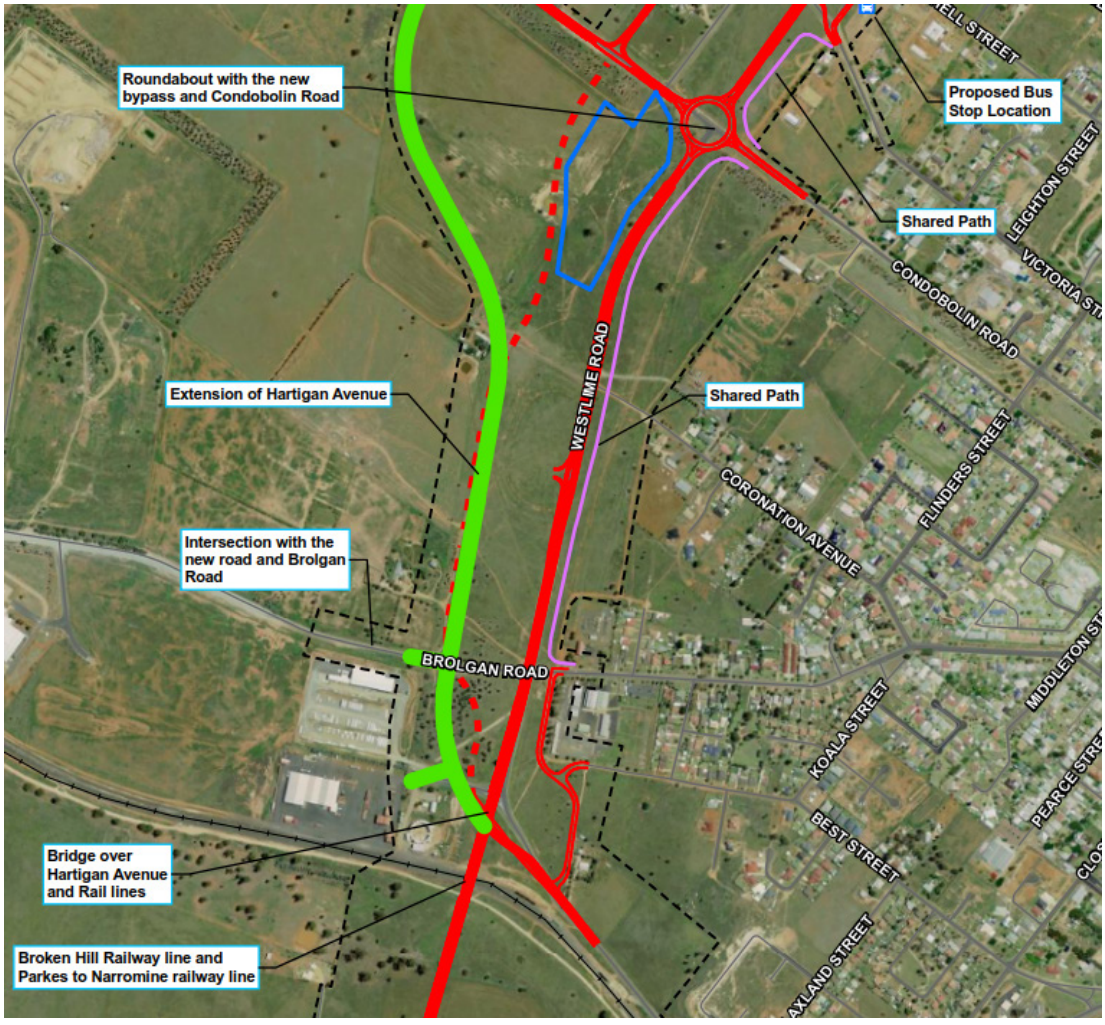

Figure 2-3: Location of new shared path between Brolgan Road and Victoria Street (shown in pink)

2.3.4.10 Submission number(s)

67

2.3.4.11 Issue description

- Concern that the bypass would only have a stock fence on the western side of the highway as several residents near the bypass have stock
- Suggestion to include a fence on the eastern side of the bypass, particularly near the tie-ins.

2.3.4.12 Response

Stock fencing is only proposed for the designated travelling stock route, which would only be operational on the western side of the bypass. Individual landowners on the eastern side of the bypass would be responsible for maintaining their own stock fencing.

2.3.4.13 Submission number(s)

90

2.3.4.14 Issue description

- Suggestion that overtaking lanes should be incorporated into the design as there are limited opportunities for overtaking in the area.

2.3.4.15 Response

The proposal design includes an extension of overtaking lanes at the southern tie-in. There is an existing overtaking lane close to the northern tie-in. An extension to the existing overtaking lane at the northern tie-in is proposed, but this extension is separate to this proposal.

2.3.5 Other design suggestions

2.3.5.1 Submission number(s)

48, 72, 78, 100

2.3.5.2 Issue description

- Suggestion that the bypass speed limit should be reduced to 50 km/hr (reflecting the town speed) to reduce potential amenity-related impacts
- Comment that the 80 km/hr speed limit would not be suitable due to walkers, joggers and cyclists frequently using Condobolin Road as part of a fitness route
- Concern that the speed limit of 110 km/hr at the northern and southern tie-ins would be unsafe
- Suggestion that roundabouts should be considered at the northern and southern tie-ins to improve the safety of the intersections.

2.3.5.3 Response

A key objective of the proposal is to enable safe access for PBS3a freight vehicles through Parkes to improve freight efficiency and productivity. For this to be achieved, the proposal has been designed as a controlled access road with limited intersection opportunities (to minimise the potential for conflicting traffic flows) and 110 km/hr speed limits, where possible.

The proposal would not be able to meet its objectives to improve freight efficiency and productivity if the speed limit is reduced to 50 km/hr. However, several mitigation measures (other than speed reduction), would be implemented, such as urban design and noise treatments (refer to Section 6.2), to minimise amenity-related impacts where feasible and reasonable.

The inclusion of a roundabout at Condobolin Road, which is required to balance the need for freight efficiency with the need for local connectivity and access, resulted in a reduction of the speed limit from 110 km/hr to 80 km/hr in the middle section of the bypass. This 80 km/hr speed limit is suitable for the intersection design and is aligned with the *NSW Speed Zoning Guidelines* (Roads and Maritime, 2016).

The shared pedestrian/cycleway bridge near Condobolin Road has been included in the design to provide a safe route for walkers, joggers and cyclists to cross the bypass. In addition, the proposal includes new shared paths for pedestrians and cyclists parallel to the bypass (refer to Section 4.1), which would be able to be used.

Unlike at Condobolin Road, roundabouts at the northern and southern tie-ins are not considered necessary for connectivity or access. T-intersections with slip lanes would be compliant with Transport for NSW's design standards and considered safe for a 110 km/hr speed limit.

Roundabouts at the tie-ins have not been included in the design as they would unnecessarily restrict the speed limit to 80 km/hr for the entire length of the bypass and reduce the travel time benefits of the proposal.

2.3.5.4 Submission number(s)

9, 13

2.3.5.5 Issue description

- Suggestion to move the Hartigan Avenue extension intersection with Henry Parkes Way approximately 150 metres west and consider adjusting the angle to a 'Y' shaped intersection to reduce potential amenity-related impacts
- Concern that the Hartigan Avenue extension intersection with Henry Parkes Way would be inappropriate for the expected traffic volumes
- Question why the Hartigan Avenue extension intersection with Henry Parkes Way is required as vehicles could use the nearby Condobolin Road roundabout instead.

2.3.5.6 Response

Since exhibition of the REF, the intersection between the Hartigan Avenue extension and Henry Parkes Way has been reviewed. As a result, this intersection has been moved approximately 100 metres further west, so that it is opposite a vacant paddock and further away from the Condobolin Road roundabout (refer to Section 4.4). This would reduce potential amenity-related impacts to existing residences on Henry Parkes Way.

The new Hartigan Avenue extension is required to allow heavy vehicles to travel between Hartigan Avenue, Billy Mac Place, Brolgan Road and Henry Parkes Way without needing to interact with traffic on the bypass. This would separate heavy vehicle movements for the Parkes National Logistics Hub and Parkes SAP from the bypass and reduce potential congestion at the Condobolin Road roundabout. The new Hartigan Avenue extension would be designed for PBS3a heavy vehicles and would have sufficient capacity to cater for long-term expected traffic volumes.

2.3.5.7 Submission number(s)

85

2.3.5.8 Issue description

- Suggestion to include a right-hand turning lane for southbound traffic turning from the bypass onto Barkers Road
- Comment that an additional right-hand turning lane at the southern tie-in would not disrupt the flow of traffic and would reduce the risk for several residences.

2.3.5.9 Response

Right-hand turning lanes at the southern tie-in were considered in early versions of the intersection design, however were not considered justified due to the low traffic volumes that would use the turning lane.

The proposal incorporates a three-metre shoulder width near the southern tie-in (shown in Figure 2-4), which is wider than the two-metre shoulder width that is typical elsewhere along the bypass. This increase in shoulder width has been provided as an alternative safety treatment to a right-hand turning lane, which would allow light vehicles to pull into the shoulder while waiting to turn into Barkers Road. This is a common design feature along the existing Newell Highway for property access and intersections with local roads that have low vehicle volumes.

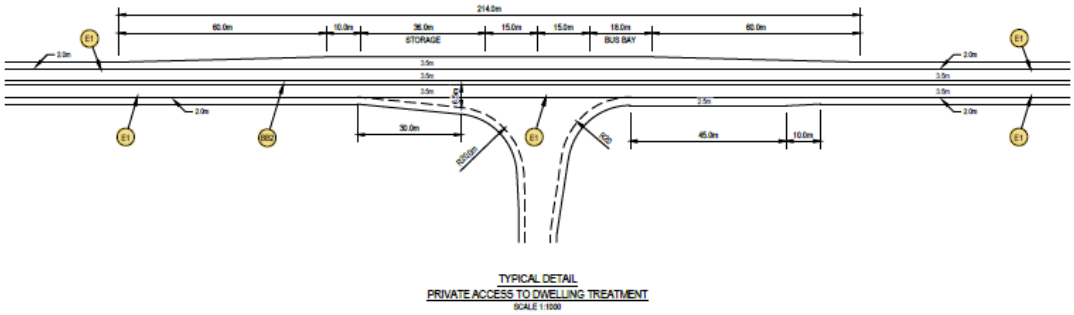

Figure 2-4: Typical design with increased shoulder width for property access

2.3.5.10 Submission number(s)

72

2.3.5.11 Issue description

- Comment that the overpass method is the best way to allow local traffic to travel around the bypass
- Suggestion that an overpass at the southern-tie in would assist Forbes residents to enter Parkes from the south and ‘keep the twin towns together’.

2.3.5.12 Response

As discussed in Section 2.4 of the REF, the selection of intersection design options considered various factors including environmental impacts, constructability, community acceptance, traffic efficiency, connectivity and value for money. In general, bridges (i.e. the overpass method) were the most expensive intersection type. Therefore, bridges were only included where the benefits were considered to outweigh the high economic cost.

The ‘T-intersection with slip lanes with priority given to the Parkes Bypass’ option was chosen as the preferred intersection design at the southern tie-in because it was simple, easy for drivers to understand and good value for money. This intersection would also be easy to upgrade to include a ramp and bridges in the future, if considered needed to cater for increased traffic volumes.

2.4 Consultation

2.4.1.1 Submission number(s)

9, 13, 87, 96, 97, 99, 102

2.4.1.2 Issue description

- Comment that the proposal has been well advertised with useful information and plenty of opportunities to provide community feedback
- Comments regarding whether Transport for NSW would change any decisions based on community feedback
- Comment that specific meetings with Shallow Rush residents would reduce their concerns.

2.4.1.3 Response

As outlined in Section 5.2.1 of the REF, Transport for NSW has conducted community consultation activities at each key stage in the proposal development, starting in 2014. Transport for NSW has noted the feedback regarding the consultation activities undertaken for the proposal to date.

The key issues raised by the community and key stakeholders during each display period have been considered by Transport for NSW and used refine the concept design of the proposal where appropriate.

Following the release of the strategic concept design in December 2016, Transport for NSW conducted nine community drop-in sessions, several stakeholder group meetings, an online survey as well as business and stopper surveys. The feedback gathered during these consultation activities was directly considered during the options assessment process and led to several changes from the strategic concept design. Key changes that were considered and incorporated into the proposal design because of feedback included an additional eastern connection at London Road, a roundabout at Condobolin Road and a shared pedestrian/cycleway bridge between Victoria Road and Back Trundle Road (refer to Sections 2.4, 5.2.2 and 5.4 in the REF).

Following exhibition of the REF, Transport for NSW has refined the design further, taking into account community feedback on the concept design where appropriate. These design refinements included (refer to Chapter 4):

- Development of an alternate local vehicle bridge option
- Identification of additional shared paths and bus stops
- Modification of the intersection between the Hartigan Avenue extension and Henry Parkes Way.

Transport for NSW will continue to consult with the community, Parkes Shire Council and relevant stakeholders during detailed design and construction of the proposal. This will include specific consultation with directly affected landowners (including Shallow Rush residents) and key stakeholders to minimise impacts during construction and operation where possible (refer to Section 6.2).

2.4.1.4 Submission number(s)

48

2.4.1.5 Issue description

- Comment that Transport for NSW did not provide any information regarding the proposal when their development application was submitted near the proposal footprint.

2.4.1.6 Response

As outlined in Section 5.2.1 of the REF, Transport for NSW has endeavoured to keep the community updated at each key stage of the proposal, and has undertaken community consultation activities for the proposal since 2014.

Transport for NSW will continue to consult with directly affected landowners on an individual basis to minimise impacts during construction and operation where possible (refer to Section 6.2).

2.5 Traffic, transport and access

2.5.1 Operational traffic, transport and access impacts

2.5.1.1 Submission number(s)

4, 13, 16, 19, 20, 21, 22, 23, 25, 26, 27, 28, 35, 36, 38, 39, 40, 41, 42, 43, 44, 51, 54, 57, 58, 59, 60, 74, 75, 76, 86, 92, 93, 96, 103, 104, 106, 108, 109, 113, 114, 117

2.5.1.2 Issue description

- Comment that the proposal would remove direct vehicular access from Victoria Street to Back Trundle Road and from Thomas Street to Moulden Street
- Concern that the proposal would reduce east-west connectivity and would make it harder to access Parkes Christian School, Parkes Tip, Parkes Golf Club, residences in Shallow Rush and other existing businesses and churches west of the bypass
- Concern that travel times for road users needing to cross the bypass would be increased
- Concern that the Condobolin Road roundabout would be subject to high volumes of traffic, including school traffic, which would result in delays for road users.

2.5.1.3 Response

Section 6.1.3 of the REF concludes that while the proposal would have a positive traffic and transport impact overall, the road access changes may have a negative impact on local road users within Parkes, including residents in Shallow Rush and staff/students of Parkes Christian School. To minimise these impacts, the proposal includes new local road connections, such as between Thomas Street and Victoria Street as well as between Brolgan Road and Hartigan Avenue, which would improve connectivity and access to the proposed intersections and shared pedestrian/cycleway bridge.

Traffic modelling undertaken for the proposal shows that the proposed intersections would provide an adequate level of service for the expected and future traffic demand.

As discussed in Section 4.1, an alternate design for the shared pedestrian/cycleway bridge that allows for light vehicle traffic (a local vehicle bridge) has been included in the revised proposal design. This local vehicle bridge design would provide direct vehicular access for light vehicles between Victoria Street and Back Trundle Road, which would improve east-west connectivity and reduce travel times for road users needing to cross the bypass. It is also likely to reduce light vehicle volumes on the Condobolin Road roundabout.

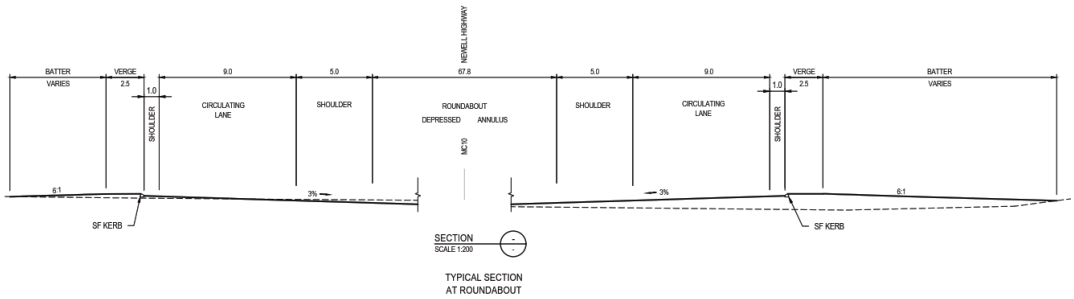

Figure 2-5: Cross section of the proposed roundabout at Condobolin Road

2.5.2 Approved heavy vehicle routes

2.5.2.1 Submission number(s)

1, 11, 78, 88, 103, 104

2.5.2.2 Issue description

- Questions whether currently approved heavy vehicle routes would change due to the proposal
- Questions regarding which roads as part of the proposal would be approved for PBS3a heavy vehicles
- Comment that heavy vehicles should not use local residential streets.

2.5.2.3 Response

The Parkes Bypass (including the Hartigan Avenue extension) would be designed for PBS3a heavy vehicles up to 36.5 metres in length. Transport for NSW would apply to the National Heavy Vehicle Regulator for this new road to be gazetted under the Heavy Vehicle National Law and Regulations so that the road would be approved as a route for PBS3a heavy vehicles.

However, the proposal would not affect any gazetted notices that are currently in place, including for roads that are currently approved for B-doubles or road trains surrounding the Parkes Bypass. Heavy vehicle movements would only be permitted on approved heavy vehicle routes.

2.5.2.4 Submission number(s)

99

2.5.2.5 Issue description

- Questions whether heavy vehicles would be permitted to park along Back Trundle Road or Condobolin Road during operation of the proposal.

2.5.2.6 Response

The proposal does not include designated parking for heavy vehicles on Condobolin Road. The provision of designated parking along Back Trundle Road is managed by Parkes Shire Council, and would be unaffected by the proposal.

2.5.3 Access for emergency vehicles during operation

2.5.3.1 Submission number(s)

62, 86, 104, 107, 109

2.5.3.2 Issue description

- Comments that the proposal may result in reduced access for emergency vehicles to Shallow Rush and Parkes Christian School
- Comments that delays on the Condobolin Road roundabout may prevent emergency services from responding to emergencies west of the bypass quickly
- Questions regarding how emergency vehicles would access the hospital from the bypass.

2.5.3.3 Response

Emergency services (fire, ambulance and police) were consulted during the development of the proposal design. As discussed in Section 5.5 of the REF, the need for fast access routes for emergency services was specifically considered during the selection of intersection locations and designs. Roundabouts were discussed during the consultation as being an easy intersection type for emergency vehicles to navigate. This was a factor in the choice to include an east-west connection at the London Road intersection and a roundabout at Condobolin Road, which would provide access routes for emergency vehicles. Both these intersections would be suitable for emergency vehicles to access the hospital from the bypass.

Transport for NSW will continue to “consult with the emergency services to ensure access routes are included in the construction delivery plans and associated management plans, as well as the inclusion of specific emergency access routes in to and out of Parkes once the Parkes Bypass is operational”, as per additional safeguard SE2 (refer to Section 6.2).

As discussed in Section 4.1, an alternate design for the shared pedestrian/cycleway bridge that allows for light vehicle traffic has been included in the revised proposal design. This local vehicle bridge design would provide an additional emergency access route to the Shallow Rush area and Parkes Christian School.

2.5.4 Access to bus routes

2.5.4.1 Submission number(s)

29, 74, 102, 103, 104

2.5.4.2 Issue description

- Concerns that the proposal would reduce access to school bus routes, including buses that service Parkes Christian School and Red Bend Catholic College Forbes.

2.5.4.3 Response

As discussed in Section 5.5 of the REF, bus operators were consulted during the development of the proposal design to identify ways to minimise impacts on bus services where possible.

Following exhibition of the REF, the proposal design has been refined further to include more detail on provision of bus stops and shared paths. This included identification of new bus stops on London Road, Reedsdale Road, Back Trundle Road and Bleechmore Road (refer to section 4.3). These bus stops as well as the shared pedestrian/cycleway bridge and the link road between Thomas Street and Victoria Street, have been designed to ensure safe access to school bus routes is maintained during operation of the proposal.

As per mitigation measure TT2 (refer to section 6.2), “any affected bus stops or routes would be relocated or re-routed” in consultation with bus companies.

2.5.5 Traffic assessment approach

2.5.5.1 Submission number(s)

30

2.5.5.2 Issue description

- Comment that an estimation of 300 vehicle movements per day near Parkes Christian School and Shallow Rush is too low.

2.5.5.3 Response

The revised traffic assessment estimated:

- 1,054 vehicles in year 2023
- 1,202 vehicles in year 2033.

would be affected by the removal of direct access for vehicles between Back Trundle Road and Victoria Street during operation of the proposal. Therefore, Transport for NSW agrees that an estimation of 300 vehicle movements per day in the region near Parkes Christian School and Shallow Rush would be too low.

2.6 Socio-economic

2.6.1 Amenity related impacts during operation

2.6.1.1 Submission number(s)

9, 10, 13, 14, 30, 48, 62, 64, 78, 82, 106, 107, 108, 109

2.6.1.2 Issue description

- Concerns that the proposal would impact on the quiet and rural lifestyle of existing residents near the bypass due to increased noise, safety issues, dust pollution, light glare and visual impacts
- Comments that the realigned Moulden Street and Hartigan Avenue extension would be close to existing residential properties and have health impacts.

2.6.1.3 Response

The proposal would result in positive amenity and lifestyle impacts to people living and working within or near Parkes town centre, due to the significant reduction in the volume of heavy vehicles expected to travel through Parkes town centre. Dust is unlikely to be an issue during operation of the proposal, as the road surface would be sealed, and the surrounding area revegetated and landscaped.

However, as discussed in Section 6.2.3 of the REF, the proposal may have adverse amenity and lifestyle impacts to people living and working close to the proposal footprint due to increased noise and visual impacts. These impacts would be minimised where possible through mitigation measures such as urban design, landscaping, visual screening, and noise mitigation treatments (refer to Section 6.2), which will be assessed and refined during detailed design. Noise mitigation measures will be determined in accordance with the NMG and include the use of quieter road pavement surfaces and noise mounds, where appropriate. Transport for NSW has individually contacted the properties that have been identified in the noise modelling as having noise impacts that warrant mitigation (refer to Section 6.3.4 of the REF).

It is also noted that since exhibition of the REF, the intersection between the Hartigan Avenue extension and Henry Parkes Way has been moved further west to reduce potential light glare and amenity impacts to existing residences on Henry Parkes Way (refer to Section 4.4).

2.6.2 Reduced passing trade or income during operation

2.6.2.1 Submission number(s)

18, 46, 48, 49, 64, 68, 71, 88, 93, 94, 96, 103, 113, 115, 116

2.6.2.2 Issue description

- Concerns that the operation of the proposal would result in reduced passing trade to businesses in Parkes town centre, which would have a negative impact on the local economy
- Comment that easy access into Parkes town centre is required to prevent reduced passing trade
- Comment that fast fuel outlets and service stations may relocate from Parkes town centre to the bypass.

2.6.2.3 Response

As discussed in Section 6.2.3, although there is anticipated to be a reduction in traffic through Parkes town centre, approximately 61 per cent of light vehicles are expected to continue to travel through Parkes town centre and continue to visit local businesses and amenities. The proposal could also provide an opportunity to improve Parkes' appeal as a stopping place, as it would improve the amenity in Parkes town centre due to the reduction in heavy vehicles expected. Furthermore, attractions and events such as the Elvis Festival and the Dish, and local employment and business opportunities, would continue to draw visitors and tourists to Parkes. As a result, impacts to passing trade during operation of the proposal are expected to be low and short-term as the community adjusts to changes.

Additionally, the potential short-term reduction in passing trade would be mitigated through implementation of Bypassed Town signage strategies, such as "gateway" treatments. Urban design and landscaping measures to encourage people to access Parkes town centre would be developed at the Condobolin Road roundabout and Northern/Southern tie-ins, in consultation with Parkes Shire Council. Similar strategies have been successful in preventing loss of passing trade, as discussed in Chapter 6 of the REF.

The proposal may also indirectly result in some opportunity for development of roadside businesses including service stations, food providers and amenities along the proposal. However, the economic benefit of these developments is outside the scope of the proposal and hard to quantify as it relies on several external factors.

2.6.2.4 Submission number(s)

29, 102

2.6.2.5 Issue description

- Comment that reduced east-west access or increased travel time to cross the bypass may result in loss of clients and income for local businesses.

2.6.2.6 Response

The proposal includes several intersections and new active transport infrastructure that provide east-west access across the bypass. Traffic modelling of these intersections show that they are expected to provide an adequate level of service for current and future traffic volumes.

Due to strong community recommendations, Transport for NSW has developed an alternate design for the bridge connecting Victoria Street and Back Trundle Road that caters to light vehicles (refer to Section 4.1). This alternate design would provide direct vehicular access for light vehicles between Victoria Street and Back Trundle Road, which would improve east-west connectivity and reduce travel times for road users needing to cross the bypass.

2.6.3 Community cohesion

2.6.3.1 Submission number(s)

17, 18, 60, 73, 81

2.6.3.2 Issue description

- Concerns that the proposal would separate Parkes Christian School and residents west of the bypass from the rest of the town of Parkes.

2.6.3.3 Response

As discussed in Section 6.2.3 of the REF, the proposal may be perceived to form a barrier to the west of Parkes town centre and result in a sense of isolation for businesses and residents west of the bypass. However, the intersections provided in the proposal design would maintain east-west access across the bypass.

Additionally, due to strong community recommendations, Transport for NSW has developed an alternate design for the bridge connecting Victoria Street and Back Trundle Road that caters to light vehicles (refer to Section 4.1). This vehicular bridge would provide a direct route for light vehicles to cross the bypass and access Parkes Christian School, which would significantly reduce feelings of separation and isolation.

2.7 Noise and vibration

2.7.1 Operational noise and vibration impacts

2.7.1.1 Submission number(s)

9, 14, 47, 48, 65, 78, 93, 96, 99, 102, 107, 108, 109, 117

2.7.1.2 Issue description

- Comments that heavy vehicle movements on the bypass, would result in generation of noise particularly during braking, acceleration and deceleration near the Condobolin Road roundabout
- Queries regarding noise impacts at individual residences near the proposal footprint
- Concern that traffic on the bypass may cause noise impacts that would impact sleep
- Comment that the elevated sections of the bypass may cause noise to carry further
- Comment that the modelling results would not be the actual noise levels that would be experienced.

2.7.1.3 Response

An updated operational noise assessment has been undertaken for the proposal in accordance with relevant guidelines. The results of the assessment are detailed in Table 5-2. This assessment considered residential and non-residential receivers that may be affected by noise and vibration generated by the proposal (refer to Table 6-10 of the REF). The noise modelling also considered the horizontal and vertical alignment of the proposal, including the predicted height of the bridges.

The predicted maximum noise levels for a truck passby on the Parkes Bypass indicate that 15 properties, which are mostly within NCA06 and within 100 metres of the proposal footprint, may experience maximum noise levels above 65 dBA and potential sleep disturbance.

The noise modelling also indicates that sensitive receivers in NCA01 and NCA03 to NCA07 are at risk of being exposed to maximum noise levels above 65 dBA when a truck uses engine compression braking to decelerate at either end of the Parkes Bypass or at the proposed roundabout at Condobolin Road.

To minimise noise impacts during operation of the proposal, up to54 residential properties were identified to be eligible for consideration of additional mitigation. Transport for NSW is in the process of individually contacting these properties. The mitigation strategy for each residential property will be confirmed during detailed design.

2.7.2 Management of operational noise and vibration impacts

2.7.2.1 Submission number(s)

14, 48, 66, 67, 71, 101

2.7.2.2 Issue description

- Queries regarding the mitigation measures that would be implemented to minimise noise impacts at residential properties
- Question why trees are not proposed to reduce noise impacts
- Suggestion to position the northern end of the bypass within a cutting to provide a noise barrier.

2.7.2.3 Response

An operational noise mitigation assessment was conducted as part of the REF to determine possible mitigation measures to control the predicted noise impacts during operation of the proposal.

As discussed in Section 6.3.4 of the REF, the preferred order of mitigation strategies in line with the *Noise Mitigation Guidelines* (Roads and Maritime, 2014) is as follows:

1. Road design and traffic management, which includes consideration of:
    a) Shielding the road with the natural landscape (including positioning the bypass within a cutting)
    b) Minimising the need for compression release engine braking (such as by reducing the number of signalised intersections and signage).
2. Quieter road pavement surfaces, which includes consideration of:
    a) Dense graded asphalt (DGA, which reduces noise by approximately 3 dB compared to spray seal)
    b) Low noise stone mastic asphalt or open graded asphalt (LNSMA or OGA, which reduces overall noise emissions by 5 dB compared to concrete)
3. Noise barriers, which includes consideration of noise walls or mounds
4. At property treatment, which includes consideration of architectural upgrades such as sealing windows, mechanical ventilation or localised screening.

Vegetation is not identified as an effective noise mitigation measure in the *Noise Mitigation Guideline* (Roads and Maritime, 2014) and therefore has not been considered for the proposal.

Quieter road pavement surfaces and noise barriers are generally only considered where there are four or more closely spaced eligible receivers.

Transport for NSW is in the process of individually contacting the 54 residential properties that were identified in the updated noise modelling as eligible for consideration of additional noise mitigation. The specific mitigation measures to be implemented as part of the proposal will be further investigated and confirmed during detailed design.

2.7.3 Construction noise and vibration impacts

2.7.3.1 Submission number(s)

14, 47, 76

2.7.3.2 Issue description

- Comments that construction tasks for the proposal would generate noise
- Question regarding what management measures would be implemented during construction to minimise noise and vibration impacts.

2.7.3.3 Response

A construction noise assessment has been undertaken for the proposal in accordance with relevant guidelines. The results of the assessment are detailed in Section 6.3 and Appendix E of the REF.

The assessment determined that noise generated from construction activities and construction traffic has the potential to impact sensitive receivers surrounding the proposal. Sleep disturbance impacts are predicted during most construction scenarios, including site establishment, corridor clearing, bulk earthworks and pavement and road surfacing (such as during placement of asphalt, intersection and tie-in activities, and deliveries of oversized materials). Residents in NCA03 to NCA07 are the most likely to be affected by night work.

As outlined in Section 6.3.5 of the REF, a construction noise, vibration and blasting management plan would be prepared in accordance with the *Interim Construction Noise Guideline* (DECC, 2009) to manage potential construction noise impacts. This plan would outline the specific mitigation measures, a noise and vibration monitoring program, consultation procedures and other contingency measures to be implemented during construction to minimise noise and vibration impacts. Transport for NSW would notify all sensitive receivers likely to be affected by noise or vibration at least five-days prior to commencement of the relevant construction work activities.

Without mitigation, properties within 25 metres from the proposal footprint may experience cosmetic building damage and properties within 100 metres from the proposal footprint may experience amenity-related vibration impacts during construction of the proposal. However, the potential for vibration related impacts would be minimised by selecting lower powered and smaller construction equipment.

2.8 Landscape character and visual impacts

2.8.1.1 Submission number(s)

14, 48, 82, 87, 101

2.8.1.2 Issue description

- Questions regarding the landscaping that would be implemented as part of the proposal
- Concern that the proposal would result in adverse visual impacts
- Suggestion to plant and maintain trees along the bypass
- Concern that users of the bypass would be able to directly look into private properties, which would reduce privacy.

2.8.1.3 Response

The proposal would incorporate landscaping and urban design measures, which would be refined during detailed design, to minimise any adverse visual impacts and potential impacts on privacy. This would include planting of trees and shrubs along the bypass to screen views to residential properties and improve the landscape character of the area. Indicative landscaping and urban design locations are shown in the videos provided on the project website (https://www.rms.nsw.gov.au/projects/western-nsw/newell-highway-parkes/index.html).

Transport for NSW has also prepared several cross sections for individual properties, which demonstrate that the users of the bypass would generally not have direct views from the bridges into residential properties, due to the topography of the land.

2.9 Biodiversity

2.9.1.1 Submission number(s)

82, 92

2.9.1.2 Issue description

- Comment that the proposal would scare away native wildlife including kangaroos
- Suggestion that the land behind Cookapie Street could be used as a kangaroo reserve.

2.9.1.3 Response

As discussed in Table 6-36 of the REF, impacts of the proposal (including indirect noise and vibration impacts as well as fauna injury and mortality from roadkill) on native flora and fauna species (including kangaroos) are expected to be minor.

Land use on Cookapie Street is considered out of the scope of this proposal.

2.10 Property and land use

2.10.1 Impacts on property access

2.10.1.1 Submission number(s)

32, 63, 85, 99, 107, 108, 109, 119

2.10.1.2 Issue description

- Comments and questions regarding impacts on existing property routes, and whether new property access routes would be required
- Suggestions for the location and extent of new property access routes
- Question regarding whether Transport for NSW would help construct new access routes
- Concerns that the proposal may make turning into/out of existing driveways joining the proposal unsafe.

2.10.1.3 Response

As per management measure TT6, “alternate temporary and/or permanent property [legal] access routes would be provided by Transport for NSW (as required) in consultation with the relevant land owners/occupiers to maintain private property access during construction and operation” of the proposal. Further details regarding the relocation of individual property access routes would be confirmed during detailed design. Current illegal accesses would not be retained or reinstated.

2.10.2 Impacts on property value

2.10.2.1 Submission number(s)

9, 10, 13, 14, 48, 64, 99, 108

2.10.2.2 Issue description

- Concerns that the proposal would negatively impact the property value of some properties near the proposal footprint
- Queries regarding compensation that would be offered to residents with property values that may be impacted by the proposal.

2.10.2.3 Response

Transport for NSW has, and will continue to, consult with directly (acquisition) and indirectly (amenity-related) affected landholders to minimise the potential for impacts to property and land use.

As discussed in Section 2.6.1, Transport for NSW would endeavour to minimise amenity-related impacts where possible through mitigation measures, such as urban design and noise treatments. Transport for NSW has individually contacted properties who have been identified in the noise modelling as having noise impacts that warrant mitigation (refer to Section 6.3.4 of the REF).

For properties with partial acquisition, Transport for NSW would consider each landowner’s remaining holdings accounting for the impacts of severance and/or the residual functional use of any remaining land. The impact of land acquisition will be assessed in accordance *with Land Acquisition (Just Terms Compensation) Act 1991*, the Land Acquisition Reform 2016, and the *Land Acquisition Information Guide* (Roads and Maritime, 2014).

2.10.3 Property acquisition

2.10.3.1 Submission number(s)

9, 10

2.10.3.2 Issue description

- Queries regarding whether the land needed for the re-alignment of Moulden Street has been acquired.

2.10.3.3 Response

The property acquisition process for the proposal is ongoing. All acquisitions of privately owned land would be carried out in consultation with landowners and in accordance with the requirements of the *Land Acquisition (Just Terms Compensation) Act 1991* the supporting NSW Government Land Acquisition Reform 2016.

2.10.3.4 Submission number(s)

47

2.10.3.5 Issue description

- Request for Transport for NSW to consider acquiring the entirety of an impacted property.

2.10.3.6 Response

Transport for NSW has, and will continue to, consult with directly (acquisition) and indirectly (amenity-related) affected landholders to minimise the potential for impacts to property and land use.

2.10.4 Other land use and property impacts

2.10.4.1 Submission number(s)

63, 69

2.10.4.2 Issue description

- Comment that the need for some landholders to move machinery across the bypass should be considered.

2.10.4.3 Response

The existing process to obtain access permits from the National Heavy Vehicle Regulator for the movement of a Class 1 agricultural vehicle would still apply during operation of the proposal.

2.10.4.4 Submission number(s)

86

2.10.4.5 Issue description

- Question regarding whether the travelling stock route would still be usable for stock droving during operation of the bypass.

2.10.4.6 Response

As per management measure SE3, continued access to the travelling stock route would be provided during construction and operation of the proposal. Where necessary, Transport for NSW would notify relevant agricultural stakeholders and/or recreational users of the travelling stock route of any changes in access points.

2.11 Surface water and groundwater

2.11.1.1 Submission number(s)

14, 32, 47, 101, 102

2.11.1.2 Issue description

- Question whether the impact of the proposal on the rainwater catchment of surrounding dams, runoff and water quality has been considered
- Concerns that stormwater runoff would impact properties or cause flooding of local roads.

2.11.1.3 Response

The potential surface water impacts of the proposal are discussed in Section 6.10.3 of the REF.

During construction, erosion and sediment controls would be designed and implemented to minimise surface water impacts, in accordance with *The Blue Book: Managing Urban Stormwater: Soils and Construction, Volume 2* (Landcom, 2008).

During operation, surface water impacts including impacts associated with stormwater runoff, water quality and local flooding would be minimised through the drainage design of the proposal. The drainage design will be refined during detailed design and incorporates longitudinal drainage, cross-drainage culverts, scour protection and erosion and sediment controls. This would channel runoff from the proposal footprint to specific outfall points.

An average recurrence interval (ARI) of 1-in-10 years has been adopted for the design of road surface water drainage and 1-in-20 years for the longitudinal drainage. Design for the cross-drainage culverts running under the road (and associated drainage) has adopted an ARI of 1-in-50 years. Scour protection would be needed at the outlets of all the cross-drainage culverts. This would prevent erosion and scour and would likely take the form of rock rip-rap aprons with energy dissipation structures.

2.12 Other impacts

2.12.1 Hazards and risks

2.12.1.1 Submission number(s)

16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 51, 53, 54, 55, 56, 57, 58, 59, 60, 62, 73, 77, 81, 82, 103, 107, 112, 113

2.12.1.2 Issue description

- Concerns that crossing the Condobolin Road roundabout would be unsafe for staff, students and families travelling to Parkes Christian School due to high volumes of heavy vehicles, high speed and sun glare
- Concerns that learner drivers would have difficulty safely negotiating the Condobolin Road roundabout
- Concerns that it would be unsafe for school children to walk or cycle to Parkes Christian School, and alternate modes of transport would reduce their levels of physical activity.

2.12.1.3 Response

The Condobolin Road roundabout would be compliant with Transport for NSW's design standards such as:

- *Austroads Guide to Road Design* (Austroads, 2009) and Transport for NSW supplements to the Austroads Guide
- *Austroads Road Safety Audit Manual* (Austroads, 2009)
- *Roads and Maritime Road Design Guide* (Roads and Maritime, undated).

The intersection has also been modelled to perform at an adequate level of service for the current and forecast vehicle volumes and types. This roundabout would be a four-leg large inverted roundabout structure. This roundabout design was specifically chosen because it would be relatively easy for vehicles to navigate compared to a five-way roundabout or the initial staggered T-intersection (as per the strategic concept design). The inverted design would also provide increased stability for heavy vehicles compared to a normal roundabout design (refer to Section 2.3.2). Therefore, the Condobolin Road roundabout is expected to be safe for drivers to navigate to access Parkes Christian School.

Due to strong community recommendations, Transport for NSW has developed an alternate design for the bridge connecting Victoria Street and Back Trundle Road that caters to light vehicles (refer to Section 4.1). This alternate design would provide an easier direct vehicular access for light vehicles between Victoria Street and Back Trundle Road, which would improve east-west connectivity and reduce travel times for road users needing to cross the bypass. It is also likely to reduce light vehicle volumes on the Condobolin Road roundabout.

The shared pedestrian/cycleway bridge near Condobolin Road has been included in the design to provide a safe route for walkers, joggers and cyclists to cross the bypass. The proposal also includes new shared paths for pedestrians and cyclists parallel to the bypass (refer to Section 4.1), which would be able to be used as a fitness route.

2.12.1.4 Submission number(s)

107, 108, 109

2.12.1.5 Issue description

- Concerns regarding the safety of children walking to the existing bus stop at the intersection of Moulden Street and Back Trundle Road.

2.12.1.6 Response

As per management measure TT2, any affected bus stops or routes during construction of the proposal would be relocated or re-routed in consultation with bus companies.

Following exhibition of the REF, the design for the proposal has been refined further to include further detail on provision of bus stops and shared paths. This has included identification of new bus stops and pick up and drop off points, including a new bus stop location on Back Trundle Road near the intersection with Moulden Street and the shared pedestrian/cycleway bridge (refer to Section 4.3). The proposed bus stops have been identified in consultation with bus companies and would ensure that safe access to school bus routes is maintained during operation of the proposal.

2.12.1.7 Submission number(s)

13

2.12.1.8 Issue description

- Concern that the relocation of Westlime Road would result in an increased risk of accidents.

2.12.1.9 Response

The project website for the Parkes Bypass (https://www.rms.nsw.gov.au/projects/western-nsw/newell-highway-parkes/index.html) included an error on the concept map for the Condobolin Road roundabout, where the Hartigan Avenue extension was accidentally labelled as Westlime Road. This may have resulted in some confusion, as Westlime Road is not being relocated as part of the proposal. The Hartigan Avenue extension has been designed to separate heavy vehicles travelling between Hartigan Avenue, Billy Mac Place, Brolgan Road and Henry Parkes Way from the traffic on the bypass. The concept map has since been corrected on the project website.

2.12.1.10 Submission number(s)

76

2.12.1.11 Issue description

- Comment regarding general hazards and risks including uneven surfaces, dust, wildlife, weather conditions, underground services, overhead powerlines, soil contamination and water runoff.

2.12.1.12 Response

These general construction related hazards and risks would be minimised through standard management and mitigation measures during construction of the proposal. A summary of these measures is provided in Section 6.2.

2.12.1.13 Submission number(s)

76

2.12.1.14 Issue description

- Concern that merging at the northern and southern tie-ins would be unsafe.

2.12.1.15 Response

The intersection design at the northern and southern tie-ins has been carried out in accordance with the following guidelines and standards:

- *Austroads Guide to Road Design* (Austroads, 2009) and Transport for NSW supplements to the Austroads Guide
- *Austroads Road Safety Audit Manual* (Austroads, 2009)
- *Roads and Maritime Road Design Guide* (Roads and Maritime, undated)
- *Roads and Maritime's Delineation Guidelines* (Roads and Maritime, undated).

The T-intersections with slip lanes at the northern and southern tie-ins would be compliant with Transport for NSW's design standards for a 110km/hr speed limit and incorporate safety in design considerations. Therefore, these intersections are expected to be safe for people merging to or from the bypass.

2.12.1.16 Submission number(s)

88

2.12.1.17 Issue description

- Concern that people may throw items off the bridges onto heavy vehicles.

2.12.1.18 Response

Throw screens would be installed on all bridge structures as part of the proposal, which would eliminate the risk of items from being thrown off the bridges.

2.12.2 Waste and resource use

2.12.2.1 Submission number(s)

14

2.12.2.2 Issue description

- Question regarding how the litter from the passing traffic on the bypass is going to be managed.

2.12.2.3 Response

The operation of the proposal may result in some additional roadside litter from vehicles using the bypass. This would be managed as per the maintenance procedures for the existing section of the Newell Highway through Parkes by the relevant roads authority.

2.12.2.4 Submission number(s)

117

2.12.2.5 Issue description

- Comment that a lot of materials would be required.

2.12.2.6 Response

Section 3.3.4 of the REF provides estimates of the resources that would be needed to build the proposal. The final quantities of these resources will be defined during detailed design.

To minimise potential impacts associated with use of materials, the resource management hierarchy would be followed during construction of the proposal, which prescribes:

1. Avoiding resource consumption
2. Recovering recyclable materials for reuse
3. Disposing of material unable to be recycled.

Recycled, durable, and low embodied energy products would also be used in instances where the materials are cost and performance competitive and comparable in environmental performance.

Where suitable, excavated material would be reused as fill to minimise the volume of imported fill required and waste material generated.

2.12.3 Air quality and climate change

2.12.3.1 Submission number(s)

102, 106, 107

2.12.3.2 Issue description

- Comments that the proposal would increase dust levels.

2.12.3.3 Response

Some activities during the construction of the proposal, such as vegetation clearing and earthworks, may lead to generation of dust. However, the potential for dust generation would be managed through the implementation of site-specific Erosion and Sediment Control Plans and an Air Quality Management Plan during construction. These plans would outline the erosion and dust mitigation and suppression measures to be implemented including methods to manage work during strong winds or other adverse weather conditions.

Dust is unlikely to be an issue during operation of the proposal, as the road surface would be sealed.

2.12.3.4 Submission number(s)

14, 76

2.12.3.5 Issue description

- Concern regarding the exhaust emissions from vehicles on the bypass.

2.12.3.6 Response

The proposal would reduce exhaust emissions from vehicles within Parkes town centre, however may result in minor increases of exhaust emissions in the area surrounding the proposal. However, vehicles on the bypass would be able to operate more efficiently and have slightly lower levels of emissions than vehicles on the existing Newell Highway (refer to section 6.11 of the REF).

2.12.4 Utilities

2.12.4.1 Submission number(s)

14, 48, 103

2.12.4.2 Issue description

- Concern that construction may impact on water supply pipelines
- Concern that the proposal may impact on existing wireless broadband or NBN services
- Question regarding the relocation of Parkes town water connection from the eastern side of the golf course
- Comment that the proposal may require electricity services to be moved.

2.12.4.3 Response

The proposal has the potential to impact on existing utilities and services including electricity, water, gas and telecommunications. This includes the Parkes town water connection at the eastern side of the golf course, which would be relocated by Transport for NSW as part of the proposal. The proposal is not expected to impact on existing NBN connections.

Transport for NSW will consult with relevant service providers during detailed design to identify possible interactions with utilities and services and develop procedures to minimise the potential for service interruptions. This will include confirmation of the location of existing utilities and relocation details.

If any disruption to existing services is identified due to construction or operation of the proposal, Transport for NSW would implement management and mitigation measures to restore the service as soon as possible.

2.13 Other

2.13.1.1 Submission number(s)

2, 5, 76

2.13.1.2 Issue description

- Questions regarding the process for contractors and suppliers to tender for construction of the proposal.

2.13.1.3 Response

Transport for NSW are working towards issuing an open tender for the construction of the proposal. This tender is expected to be released to the market via the e-tender portal in mid-2020 and awarded in late-2020. Construction is expected to commence in early-2021 and take about three years to complete (subject to funding, weather and access considerations).

In the lead up to the tender release, Transport for NSW will run several pre-tender meetings to brief the industry of the construction requirements and Transport for NSW's specifications. As a condition of Australian Government funding, an Indigenous Participation Plan and a Local Industry Participation Plan would be prepared for the proposal.

The successful construction tenderer will be responsible for choosing the suppliers for products and services required by the contract. This may result in opportunities for local suppliers and contractors including for:

- Supply of equipment and materials (e.g. road base, concrete, steel)
- Supply of labour hire and/or apprentices
- Aboriginal participation.

For future updates, potential contractors and equipment suppliers can subscribe to the mailing list on the project website (https://www.rms.nsw.gov.au/projects/western-nsw/newell-highway-parkes/index.html).

2.13.1.4 Submission number(s)

64, 65

2.13.1.5 Issue description

- Comments that the Transport for NSW feedback form webpage mentions "New Dubbo Bridge" instead of "Parkes Bypass".

2.13.1.6 Response

Transport for NSW has noted the error on the feedback form webpage. The error lasted a couple of days and all submissions made during that time were retrieved and attributed to the Parkes Bypass.

2.13.1.7 Submission number(s)

118

2.13.1.8 Issue description

- Comment that the aerial imagery used for the REF is out of date as it shows a dwelling as a vacant block.

2.13.1.9 Response

The REF used the aerial imagery that was available at the time of figure preparation. Transport for NSW has noted that since this time, some new dwellings may have been built near the proposal footprint. The detailed design of the proposal will use updated aerial imagery, which will capture recent developments near the proposal footprint.

Additional dwellings near the proposal footprint were included in the noise modelling undertaken as part of the REF despite them not being identified on the aerial photography used (refer to Table 5-1).

2.13.1.10 Submission number(s)

65, 105

2.13.1.11 Issue description

- Comment that bicycle and light vehicle interactions that the tennis court would need to be considered as the dedicated cyclist route would increase bike traffic
- Comment that there may be stock truck faeces splattered on the major intersections.

2.13.1.12 Response

These issues are considered beyond the scope of this proposal.

3 Response to government agency issues

Transport for NSW received two government agency submissions, accepted up until 16 August 2019. This included submissions from Parkes Shire Council (Submission 50) and NSW Police Force (Submission 31).

Parkes Shire Council issues

3.1 Proposal need and justification

3.1.1 Support for the proposal

3.1.1.1 Issue description

- Comments that the proposal is not only an improvement for highway efficiency and safety, but a key piece of strategic infrastructure which would (if designed correctly) enable the future development and success of Parkes.

3.1.1.2 Response

Transport for NSW has noted the need, perceived benefits and support for the proposal.

3.1.2 Proposal objectives

3.1.2.1 Issue description

- Suggestion to review the proposal objectives to place more emphasis on road user safety, resolution of regional road routes, connectivity improvements to Parkes town centre and the Parkes SAP as well as pedestrian access improvements.

3.1.2.2 Response

The proposal was identified through the Newell Highway Corridor strategy. The key objective of the proposal is to enable safe access for PBS3a freight vehicles through Parkes to improve freight efficiency and productivity. The other key objective is the removal of level crossings from interaction with the highway. For these to be achieved, the proposal has been designed as a controlled access road with limited intersection opportunities (to minimise the potential for conflicting traffic flows) and 110 km/hr speed limits, where possible.

Consideration of the broader road network, road user safety, future connectivity and provision of active transport infrastructure has been considered in the design. However, there are currently no changes proposed to the objectives of the proposal.

3.2 Proposal design and options

3.2.1 Shared pedestrian/cycleway bridge

3.2.1.1 Issue description

- Comment that the proposal would create a barrier to east-west travel to Parkes Christian School and does not consider the east-west travel demand that would occur due to development of the Parkes National Logistics Hub
- Comment that the proposal proposes a pedestrian bridge linking Victoria Street and Back Trundle Road
- Suggestion that the bridge linking Victoria Street and Back Trundle Road should be designed to be suitable for all forms of traffic including pedestrians, cyclists, light vehicles, trucks and wildlife.

3.2.1.2 Response

Due to strong community recommendations, Transport for NSW has developed an alternate design for the bridge connecting Victoria Street and Back Trundle Road that caters to light vehicles (refer to Section 4.1). This alternate design would provide direct vehicular access for light vehicles between Victoria Street and Back Trundle Road, which would improve east-west connectivity and reduce travel times for road users needing to cross the bypass. It is also likely to reduce light vehicle volumes on the Condobolin Road roundabout.

3.2.2 Other design suggestions

3.2.2.1 Issue description

- Comment that the detailed design of the proposal should include development of an urban design plan that encourages travellers on the Newell Highway to stop in Parkes
- Suggestions regarding the scope of urban design and landscaping included in the proposal.

3.2.2.2 Response

As discussed in Chapter 6 of the REF, an urban design plan would be developed in consultation with Parkes Shire Council that combines Bypassed Town signage strategies, urban design and landscaping measures. These “gateway” treatments would be implemented at the Condobolin Road roundabout and Northern/Southern tie-ins to encourage people to access Parkes town centre.

3.2.2.3 Issue description

- Comment that the intersections need to provide access between the bypass and Parkes town centre
- Suggestion that additional intersection options and design refinements, such as additional right-hand lanes or different intersection types should be considered.

3.2.2.4 Response

The key objective of the proposal is to enable safe access for PBS3a freight vehicles through Parkes to improve freight efficiency and productivity. The other key objective is the removal of level crossings from interaction with the highway. For these to be achieved, the proposal has been designed as a controlled access road with limited intersection opportunities (to minimise the potential for conflicting traffic flows) and 110 km/hr speed limits, where possible.

As discussed in Section 2.4 of the REF, the selection of intersection design options considered various factors including access into Parkes town centre as well as environmental impacts, constructability, community acceptance, traffic efficiency, connectivity and value for money. Eastern connections are provided at each intersection, to facilitate access to and from Parkes town centre.

Each intersection is being further refined during detailed design, including consideration of turning lanes and other intersection treatments as appropriate. Transport for NSW will continue to consult with Parkes Shire Council as the design progresses.

3.3 Property and land use

3.3.1 Property acquisition

3.3.1.1 Issue description

- Comment that some private properties near the proposal footprint may be significantly impacted by the construction or operation of the proposal
- Suggestion that Transport for NSW should consider acquiring significantly affected properties, if requested by the landholder.

3.3.1.2 Response

Transport for NSW has, and will continue to, consult with directly (acquisition) and indirectly (amenity-related) affected landholders to minimise the potential for impacts to property and land use.

As discussed in Section 2.7.1, Transport for NSW would endeavour to minimise amenity-related impacts where possible through mitigation measures, such as urban design and noise treatments. Transport for NSW has individually contacted properties who have been identified in the noise modelling as having noise impacts that warrant mitigation (refer to Section 6.3.4 of the REF).

For properties with partial acquisition, Transport for NSW would consider each landowner's remaining holdings accounting for the impacts of severance and/or the residual functional use of any remaining land. The impact of land acquisition will be assessed in accordance with *Land Acquisition (Just Terms Compensation) Act 1991*, the *Land Acquisition Reform 2016*, and the *Land Acquisition Information Guide* (Roads and Maritime, 2014).

3.4 Socio-economic

3.4.1 Reduced passing trade or income during operation

3.4.1.1 Issue description

- Concern that the proposal would result in loss of passing trade to businesses in Parkes
- Comment that Parkes is reliant on tourism and may be vulnerable to economic impacts from the bypass.

3.4.1.2 Response

As discussed in Chapter 2 of the socio-economic assessment (Appendix F of the REF), there are various success factors and risk factors that influence whether a bypassed town would experience adverse economic impacts over the long term. Parkes is not expected to experience any major adverse economic impacts, as:

- Parkes has a population base of 15,450 people, which is higher than the small towns (less than 2,500 people), which have been identified as having a higher risk of adverse impacts
- Parkes provides regional services and resources (such as health care and larger supermarkets) for the surrounding smaller towns
- Parkes has a diverse economic base and identity, with tourism generated from unique local attractions such as the Dish and Elvis Festival and strong mining, agriculture, freight, education and retail sectors, which are expected to continue to draw visitors into Parkes
- The proposal would only take a small amount of time to travel into Parkes town centre, with people being able to easily re-join the highway.

Therefore, passing trade loss is expected to be no more than a minor negative indirect impact as people and the community adjust to the changes.

The proposal would also incorporate Bypassed Town signage, which is a success factor that would encourage people to continue visiting Parkes. The signage would be developed in consultation with Parkes Shire Council and show key features of Parkes as well as available services and facilities. As discussed in Chapter 6 of the REF, an urban design plan would be developed in consultation with Parkes Shire Council that combines Bypassed Town signage strategies, urban design and landscaping measures. These “gateway” treatments would be implemented at the Condobolin Road roundabout and Northern/Southern tie-ins to encourage people to access Parkes town centre.

The proposal may also indirectly result in some opportunity for development of roadside businesses including service stations, food providers and amenities along the proposal. However, the economic benefit of these developments is outside the scope of the proposal and hard to quantify as it relies on several external factors.

3.5 Surface water and groundwater

3.5.1.1 Issue description

- Comment that the REF briefly explores potential stormwater related issues related to the proposal
- Suggestion for further consideration of stormwater drainage and management options to ensure existing drainage infrastructure can cope with the agreed design storm event
- Comment that Parkes Shire Council can share documentation with Transport for NSW relating to urban stormwater assets in Parkes.

3.5.1.2 Response

The potential surface water impacts of the proposal, including stormwater related issues, are discussed in Section 6.10.3 of the REF.

During operation, impacts associated with stormwater runoff would be minimised through the drainage design of the proposal, which incorporates longitudinal drainage, cross-drainage culverts, scour protection and erosion and sediment controls. This would channel runoff from the proposal footprint to specific outfall points.

An average recurrence interval (ARI) of 1-in-10 years has been adopted for the design of road surface water drainage and 1-in-20 years for the longitudinal drainage. Design for the cross-drainage culverts running under the road (and associated drainage) has adopted an ARI of 1-in-50 years. Hydrological modelling will be undertaken during detailed design to ensure that the drainage would cope with the adopted design storm events.

Transport for NSW has noted the offer from Parkes Shire Council to share documentation regarding urban stormwater assets in Parkes, and will request this information if required during detailed design.

3.6 Other

3.6.1.1 Issue description

- Suggestion that Transport for NSW should fund a Strategic Transport Assessment for Parkes
- Suggestion that Transport for NSW should study and monitor Parkes, to assess the economic impacts of town bypasses
- Suggestion that an outdoor advertising policy should be agreed
- Comments regarding the asset handover process that will be undertaken between Transport for NSW and Parkes Shire Council
- Comment that Parkes Shire Council is willing to work positively and collaboratively with Transport for NSW to achieve shared objectives.

3.6.1.2 Response

Transport for NSW intends to meet with Parkes Shire Council on a monthly basis during detailed design of the proposal, to obtain feedback on the design and achieve shared objectives.

These suggestions are outside the scope of the REF, and will be investigated further as independent opportunities in consultation with Parkes Shire Council during the detailed design, construction and asset handover process.

NSW Police issues

3.7 Proposal design and options

3.7.1 Request for additional project features

3.7.1.1 Issue description

- Comment that the long straight stretches on the bypass may be used as race-tracks by some vehicles
- Request for speed enforcement bays to be included at three points along the bypass
- Question whether heavy vehicle stopping bays (for enforcement and breakdowns) can be included
- Question whether cross over bays can be provided along the bypass.

3.7.1.2 Response

Transport for NSW will investigate opportunities to provide heavy vehicle stopping bays or speed enforcement bays along the bypass further during detailed design in consultation with emergency services. Cross over bays are not considered to be required as the carriageway is not divided in the proposal design.

3.7.2 Signage strategy and lighting

3.7.2.1 Issue description

- Question whether variable message signs/speed limit signs would be included along the bypass.

3.7.2.2 Response

The location of speed limit signs along the bypass will be confirmed during detailed design.

The provision of variable message signs along the Newell Highway is outside the scope of this proposal and is being coordinated by a separate project, the Newell Highway Safety Enhancement Package where a site just north of Parkes is one of 19 proposed sites between Queensland and Victoria.

4 Changes to the proposal

Following exhibition of the REF, the proposal design has been refined to include an alternate local vehicle bridge option, more detail on the provision of shared paths and bus stops and an adjustment to the intersection between the Hartigan Avenue extension and Henry Parkes Way. The revised proposal design is shown in Figure 4-2a to Figure 4-2c, with most of the changes in the middle section of the proposal.

4.1 Alternate local vehicle bridge option

An alternate design for the bridge connecting Victoria Street and Back Trundle Road has been developed, which provides access for light vehicles as well as pedestrians and cyclists (referred to as a local vehicle bridge). The local vehicle bridge would be located within the original survey area as per the REF.

The local vehicle bridge design includes (shown in Figure 4-1):

- A three span bridge structure, which would be approximately 46 metres long
- 60 km/hr design speed
- Two 3.25 metre wide traffic lanes with a one metre wide shoulder on each side
- 2.5 metre wide shared path on the southern side for pedestrians and cyclists
- Safety screens and a barrier to separate the shared path from the traffic lanes.

With this alternate design, the proposed local road connection between Victoria Street and Mitchell Street would no longer be required to provide local connectivity, therefore this would be removed from the proposal.

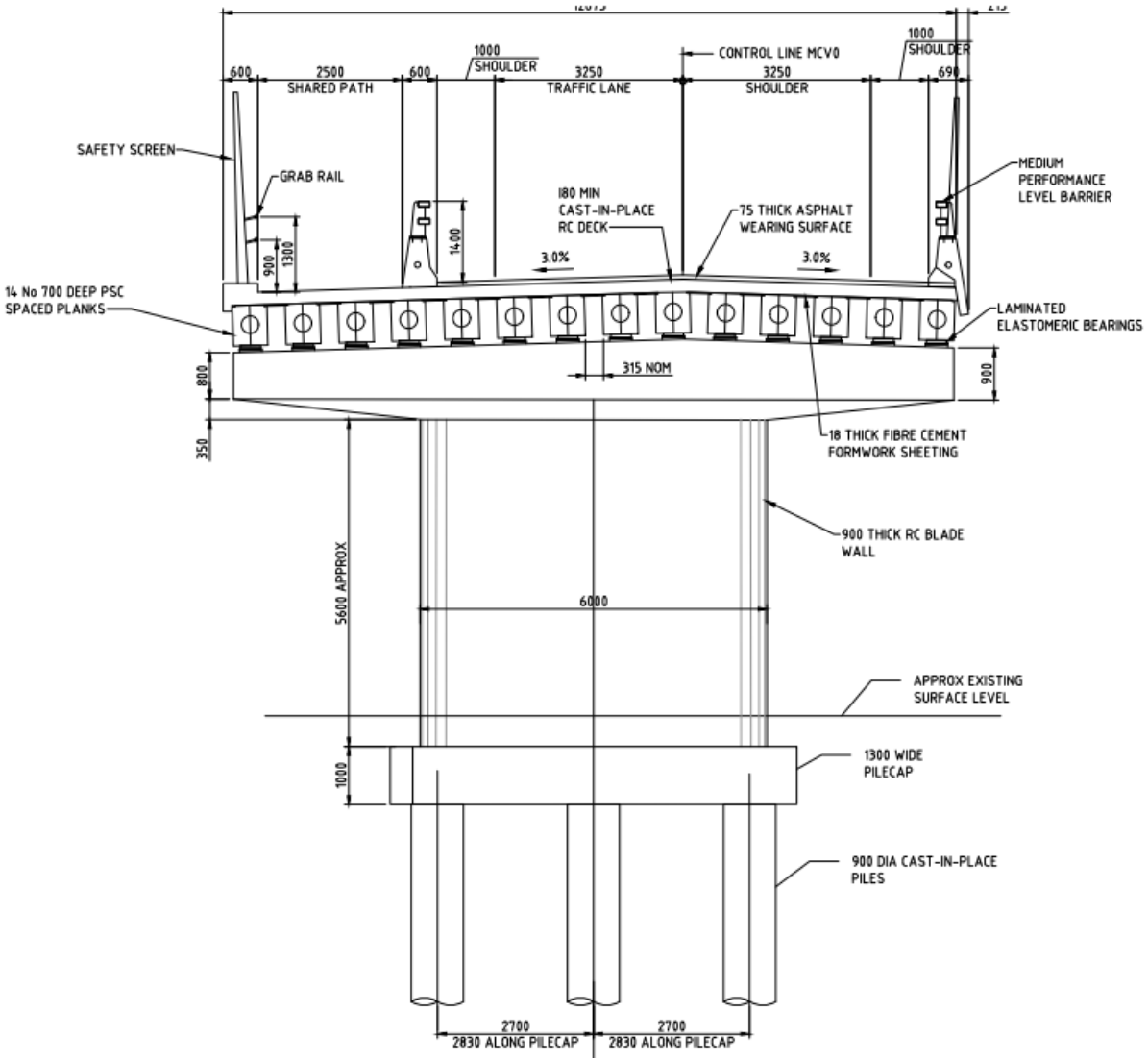

Figure 4-1: Indicative cross section for the local vehicle bridge

4.2 Additional shared path

The revised proposal design includes a new shared path for pedestrians and cyclists parallel to the eastern side of the bypass (shown in Figure 4-2). This shared path would connect Brolgan Road, Condobolin Road and Victoria Street and the proposed local vehicle bridge near Condobolin Road. This would provide local connectivity, increase the provision of active transport infrastructure in Parkes and provide a safe route for pedestrians and cyclists to cross the bypass.

4.3 Provision of additional bus stops

New bus stops would be provided as part of the proposal design to maintain safe access to bus routes during operation of the proposal (shown in Figure 4-2) including on:

- Bleechmore Road (near the intersections with Maguire Road and Nock Road)
- Reedsdale Road (between Mitchell Street and Victoria Street)
- Back Trundle Road (near the intersection with Moulden Street and the local vehicle bridge)
- London Road (near the intersection with Ballerdee Lane).

4.4 Intersection between the Hartigan Avenue extension and Henry Parkes Way

The intersection between the Hartigan Avenue extension and Henry Parkes Way has been moved approximately 100 metres further west, so that it is opposite a vacant paddock and further away from the Condobolin Road roundabout (shown in Figure 4-2). This intersection would be designed for PBS3a vehicles in accordance with Transport for NSW's design standards. This amended intersection location would reduce potential light glare and other amenity-related impacts to existing residences on Henry Parkes Way. It has also been considered in additional heritage and biodiversity assessment, as it extends beyond the original survey area in the REF (refer to Chapter 5).

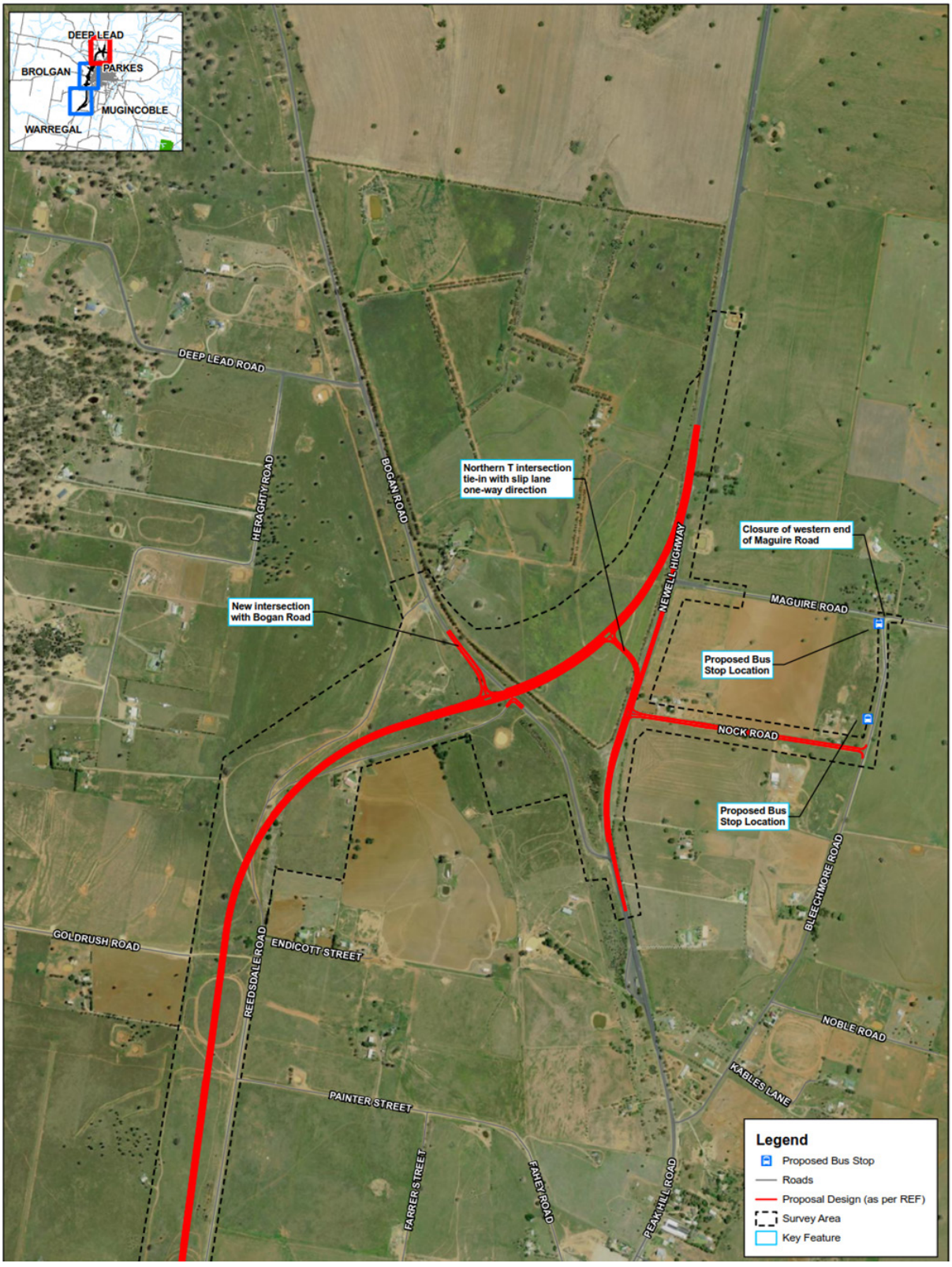

Figure 4-2a: Key features of the revised proposal (Page 1 of 3)

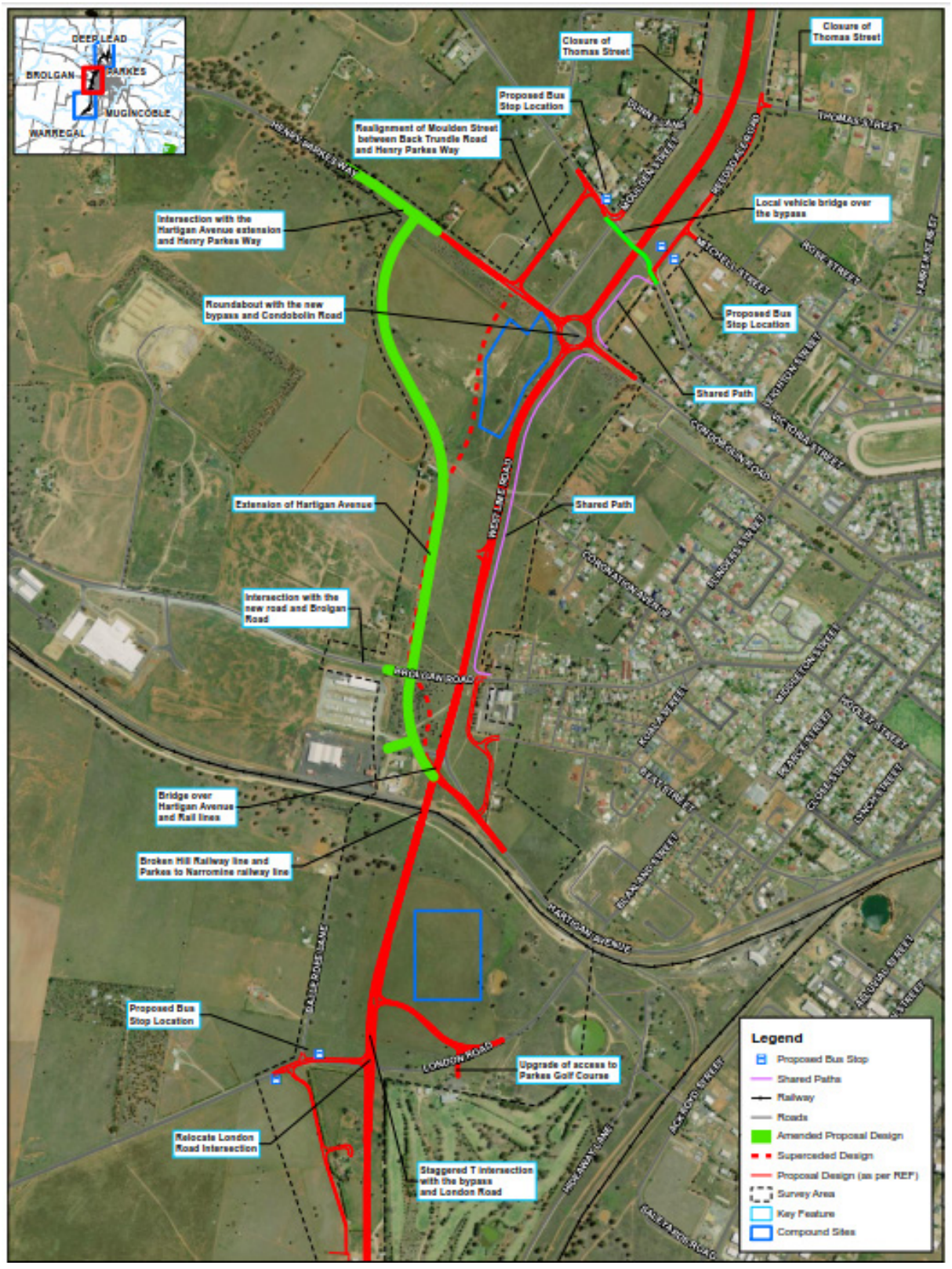

Figure 4-2b: Key features of the revised proposal (Page 2 of 3)

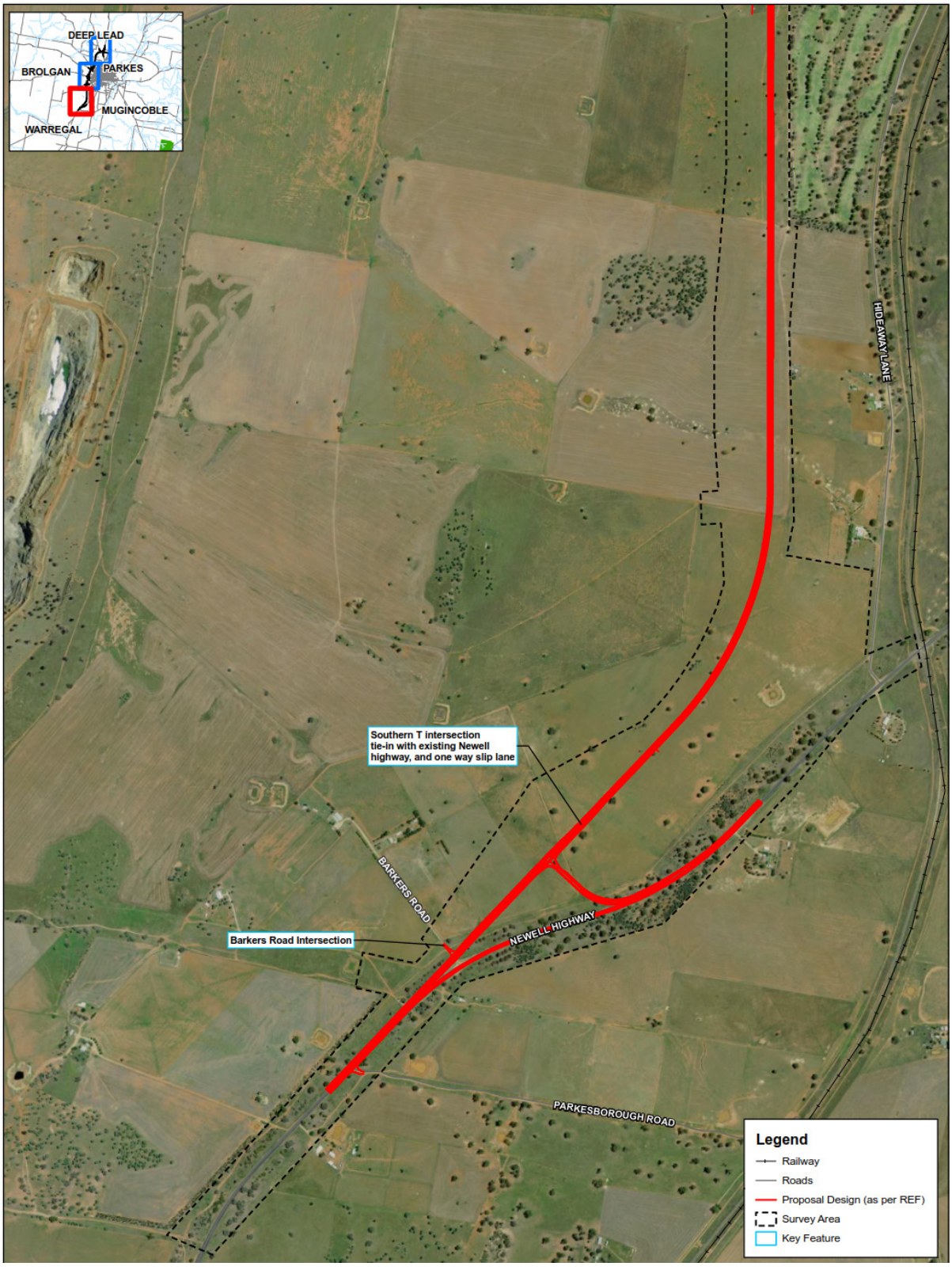

Figure 4-2c: Key features of the revised proposal (Page 3 of 3)

5 Additional environmental assessment

Additional environmental assessment has been carried out for the revised proposal design, specifically:

- The change to the intersection between the Hartigan Avenue extension and Henry Parkes Way, which extends west beyond the original survey area in the REF
- The local vehicle bridge between Victoria Street and Back Trundle Road.

Figure 4-2 shows the revised survey area that incorporates the amended proposal footprint.

5.1 Noise and vibration

5.1.1.1 Methodology

A noise and vibration impact assessment (NVIA) was prepared for the REF by WSP, which involved modelling potential noise and vibration impacts during construction and operation.

To assess potential construction noise impacts of the revised proposal design a qualitative assessment of the design changes and a review of the predicted construction noise levels by WSP.

To assess potential operational noise impacts of the revised proposal design, updated operational noise modelling based on the 80% detailed design of the proposal was conducted by Cardno. The updated noise model incorporated the proposed design changes as well as more recent traffic data and property information than was available for the noise modelling carried out for the REF. The updated operational noise modelling was undertaken for the same scenarios as the REF, which included:

- A ‘no build’ scenario in 2023 and 2033, where the proposal is not built and heavy vehicle traffic would continue to pass through Parkes town centre
- A ‘build’ scenario in 2023 and 2033, where the proposal is built and a large percentage of heavy vehicle traffic would travel along the bypass instead of Parkes town centre.

5.1.1.2 Description of existing environment

The amended proposal footprint would generally have the potential to impact the same sensitive receivers to those identified in the REF (refer to Section 6.3.2 of the REF), except:

- The amended proposal footprint would be approximately 200-300 metres closer to residential receivers and Parkes Christian School in NCA06
- Additional residential properties located in NCA03 and NCA06 west of the amended proposal footprint may be impacted
- The revised modelling has updated residential properties which have either been built or demolished since the REF.

The closest sensitive receivers to the local vehicle bridge are within NCA05 (15 metres away) and NCA06 (85 metres away). More generally, the proposed changes are within one kilometre of sensitive receivers within NCA03 to NCA08. Sensitive receivers within these NCAs are most likely to be impacted by the proposed changes.

5.1.1.3 Potential impacts

5.1.1.3.1 Construction

Table 5-1 summarises the predicted noise impacts during construction of the revised proposal design. For simplicity, Table 5-1 only shows noise results for scenarios and receivers that would have different noise impacts compared to the REF.

The predicted noise impacts show that the proposed changes are expected to result in increased noise impacts for residential receivers to the west of the proposal in NCA06 by up to 6 dB and at Parkes Christian School by up to 2 dB. In addition, the construction of the local bridge is likely to result in noise level exceedances for residential receivers in NCA03 to NCA08, with the worst-predicted noise impact being for residential receivers in NCA05.

Table 5-1: Changes in predicted noise impacts and exceedances compared to REF

NCA	Noise management level								
	Highly noise affected	Standard hours[1]	Out of hours[2]	SC01 site establishment	SC02 corridor clearing	SC03 bulk earthworks	SC04 drainage infrastructure	SC05 paving /asphalting	SC06b local bridge works
Residential receivers									
NCA01	75	43	35	No change from REF					<30
NCA02	75	43	35						<30
NCA03	75	48	35						< 45
NCA04	75	49	36						< 45
NCA05	75	51	37						38 to ***85***
NCA06	75	48	35	47 (+6) to ***79***	53 (+6) to ***85***	55 (+6) to ***87***	47 (+6) to ***79***	52 (+6) to 84	39 to 66
NCA07	75	47	35	No change from REF					40 to 56
NCA08	75	50	35						< 43
NCA09	75	50	35						< 35
NCA10	75	50	35						<30
Educational institution									
NCA06	-	55	-	< 50 (+2)	< 56 (+2)	< 58 (+2)	< 50 (+2)	< 55 (+2)	< 46 (+2)
Child care centre									
NCA05	-	55	-	No change from REF					< 47
Place of worship									
NCA06	-	55	-	No change from REF					< 48

NCA	Noise management level								
	Highly noise affected	Standard hours[1]	Out of hours[2]	SC01 site establishment	SC02 corridor clearing	SC03 bulk earthworks	SC04 drainage infrastructure	SC05 paving /asphalting	SC06b local bridge works
Commercial receivers									
NCA01	-	70	-			No change from REF			< 36
NCA05	-	70	-						< 53
Active recreational areas									
NCA01	-	65	-			No change from REF			< 36
NCA04	-	65	-						< 47
NCA06	-	65	-						< 45
Passive recreational areas									
NCA05	-	60	-			No change from REF			< 48
Industrial receivers									
NCA04	-	75	-			No change from REF			54 to 59

(1) The standard hour NMLs cover the daytime period, which comprises Monday to Friday from 7am to 6pm and Saturday from 8am to 1pm.
(2) The out of hours NMLs cover the night time (OOHW2) period, which comprises Monday to Friday from 10pm to 7am, Saturday 10pm to 8am and Sunday/public holiday from 6pm to 7am.
(3) Values in brackets represent change in noise impact compared to the REF.
(4) The **bolded results** show where receivers may be highly noise affected. The red text shows where there is predicted to be a noise exceedance.

5.1.1.3.2 Operation

Table 5-2 presents a comparison of the REF and updated noise modelling results for the operation of the proposal in 2033.

Based on the updated predicted noise levels for the operation of the proposal in 2033, 54 residential properties (19 additional properties compared to the REF assessment) would require further consideration of mitigation. Most of these properties are located in NCA06, NCA07 or NCA08 and several only exceed the criteria by 1dB(A) which may be able to be reduced further during final detailed design. The additional exceedances in NCA06 compared to the REF are likely to be associated with the inclusion of a local traffic bridge instead of a shared cyclist and pedestrian bridge within this NCA.

Table 5-2: Predicted noise levels and results for the design year of 2033 for REF and updated noise modelling results

NCA	REF assessment results		Updated noise modelling results	
	Predicted noise level increases and/or exceedances	Properties that qualify for further consideration of mitigation	Predicted noise level increases and/or exceedances	Properties that qualify for further consideration of mitigation
NCA01	Noise level increases up to 7 dB at residential properties. The active recreational area criteria was exceeded for the Parkes Golf Course.	The Parkes Golf Course qualified for further consideration of mitigation however it is not typical for road infrastructure project to provide further mitigation for such land uses.	Noise level increases up to 18 dB Exceedances of the criteria up to 10 dB (residential properties only).	Three residential properties
NCA02	Noise level increases up to 6 dB.	None	Noise level increases up to 5 dB No exceedances of criteria.	None
NCA03	Noise level increases of more than 12 dB Exceedances of the NCG criteria at four residential properties.	Four residential properties	Noise level increases of up to 10 dB No exceedances of criteria.	None

NCA	REF assessment results		Updated noise modelling results	
	Predicted noise level increases and/or exceedances	Properties that qualify for further consideration of mitigation	Predicted noise level increases and/or exceedances	Properties that qualify for further consideration of mitigation
NCA04	No notable noise level increase for the majority of the properties Exceedances of the NCG criteria greater than 2 dB for some properties.	Eleven residential properties	Noise level increases up to 15 dB Exceedances of the criteria up to 7 dB.	Three residential properties
NCA05	Average noise level increases of up to 3 dB Noise level increase of up to 10 dB at the property closest to the proposal.	None	Noise level increases up to 22 dB Exceedances of the criteria up to 10 dB.	Eight residential properties
NCA06	Noise level increases in exceedance of the criteria.	Eleven residential properties, primarily along Moulden Street	Noise level increases up to 16 dB Exceedances of the criteria up to 7 dB.	19 residential properties, primarily along Moulden Street
NCA07	Noise level increases in exceedance of the criteria.	Four residential properties	Noise level increases up to 22 dB Exceedances of the criteria up to 9 dB.	10 residential properties, primarily along Thomas Street
NCA08	Noise level increases in exceedance of the criteria.	Two residential properties	Noise level increases up to 19 dB Exceedances of the criteria up to 8 dB.	Seven residential properties, primarily along Heraghty Road
NCA09	Noise level increases in exceedance of the criteria.	Three residential properties	Noise level increases up to 24 dB Exceedances of the criteria up to 8 dB.	Four residential properties
NCA10	No noise level increases in exceedance of the criteria.	None	Noise level increases up to 7 dB No exceedances of criteria.	None

5.1.1.4 Revised safeguards and management measures

The predicted noise and vibration impacts would be managed as described in the REF (refer to Sections 6.3.4 and 6.3.5), including further assessment of the possible noise mitigation strategies during detailed design to address the receivers identified to require further consideration of mitigation. This would include investigation of (as appropriate):

- Road design and traffic management
- Quieter road pavement
- Noise barriers
- At-property treatments.

No additional safeguards or mitigation measures beyond those identified in the REF would be required.

5.2 Traffic and transport

5.2.1.1 Methodology

A traffic and transport impact assessment was prepared for the REF by WSP, which utilised mid-block traffic count data, origin destination surveys and travel time data where available. Following the REF, Cardno carried out detailed Aimsun traffic modelling for the proposal, which was informed by more detailed intersection counts, travel times and origin destination surveys. To assess the proposed change, a qualitative review of the potential impacts as identified in Section 6.1.3 of the REF and the detailed traffic modelling undertaken by Cardno.

5.2.1.2 Description of existing environment

The detailed traffic modelling undertaken by Cardno indicates that Victoria Street would have the following daily traffic demands (with the local vehicle bridge):

- 1,054 vehicles in year 2023
- 1,202 vehicles in year 2033.

5.2.1.3 Potential impacts

5.2.1.3.1 Construction

The REF identified that construction of the proposal may result in minor traffic and transport impacts associated with construction traffic as well as temporary disruptions to local road access, bus services and pedestrian/cyclist routes (refer to Table 6-2 of the REF). The revised proposal design is unlikely to result in any additional impacts to traffic or transport during construction of the proposal.

5.2.1.3.2 Operation

The REF identified that the proposal would result in:

- Travel time saving benefits, primarily due to bypassing the level crossings
- Traffic redistribution impacts, mainly associated with a shift of some of the traffic from the existing Newell Highway to the bypass
- Road access changes, which may result in slightly increased travel times for residents affected by closure of local roads.

The revised proposal design would continue to involve bypassing the level crossings. Therefore, the overall travel time saving benefits of the proposal would be relatively unchanged from the REF design.

Traffic modelling for the revised proposal design indicates that approximately 100 vehicles (in a peak hour) would use the local vehicle bridge to access Victoria Street instead of Back Trundle Road, Moulden Street and Condobolin Road (as per the REF design). Therefore, the traffic redistribution from the proposed change is limited and is not expected to result in traffic delays on the surrounding road network. Pedestrians and cyclists would continue to be able to use the local vehicle bridge via a shared path facility. Therefore, overall traffic redistribution impacts from the proposed change are expected to be consistent with those identified in the REF.

Table 5-3 compares the traffic and transport impacts associated with road access changes from the REF design and the revised proposal design. Overall, the proposed change is likely to reduce the traffic and transport impacts to local road users by providing improved east-west access via the local vehicle bridge.

The proposed change would also have a positive impact on pedestrians and cyclists, due to the provision of additional bus stops and the additional shared path compared to the REF design.

Table 5-3: Comparison of the traffic and transport impacts associated with road access changes

Road access change (as per REF)	Impact (as per REF)	Change in impact from revised design
Closure of Thomas Street at its western end	This may result in reduced vehicle accessibility for residents to Moulden Street and Back Trundle Road and could impact on access to Parkes Christian School.	The proposed change would improve access by providing a shorter route for vehicles to access Back Trundle Road via Reedsdale Road and the local vehicle bridge.
Hartigan Avenue extension and the new four-way intersection of Condobolin Road, realigned Moulden Street and Hartigan Avenue extension	This intersection would provide connectivity between Condobolin Road, Moulden Street and Hartigan Avenue for light and heavy vehicles, including PBS3a heavy vehicles. However, the intersection may result in occasional queuing on Condobolin Road or the Hartigan Avenue extension. It may also impact on private property access for residents near the proposed Hartigan Avenue extension.	The proposed change involves moving the intersection with the Hartigan Avenue extension further west. This would remove the four-way intersection, which may reduce queuing.

Road access change (as per REF)	Impact (as per REF)	Change in impact from revised design
A shared pedestrian/cycleway bridge for cyclist and pedestrians over the Parkes Bypass connecting Victoria Street and Back Trundle Road.	This would result in the removal of direct access for vehicles between Back Trundle Road and Victoria Street. This would impact about 700 heavy vehicles per day as well as residents in Shallow Rush and staff/students of Parkes Christian School that would be redirected via Moulden Street and Condobolin Road. It may also lead to a slight increase in travel times for vehicle traffic wanting to access Victoria Street or Condobolin Road east of the bypass. However, this would provide pedestrian and cyclist access via the local bridge.	The proposed change includes a local vehicle bridge between Back Trundle Road and Victoria Street. This would provide direct access for vehicles and improve travel times for local traffic.
A four-way roundabout at Condobolin Road with the proposed bypass	The intersection would require bypass traffic to slow and stop at the roundabout. This would impact on traffic flow requiring vehicles travelling at 80 km/h to slow in a high-speed environment. A major reduction in vehicle speed may introduce additional safety risks. However, it would improve vehicle access to the Newell Highway east, west, north and south Parkes via this roundabout and along the bypass. It also creates an effective gateway to access Parkes while reserving the possibility of building a grade separate interchange in the future if traffic volumes significantly increase. The roundabout would be designed to accommodate PBS3a heavy vehicles and be of sufficient capacity for the expected traffic volumes.	The proposed change includes a local vehicle bridge, which provides an additional east-west link across the bypass and would potentially reduce the volume of light vehicles using the four-way roundabout at Condobolin Road.

5.2.1.4 Revised safeguards and management measures

No additional safeguards or mitigation measures beyond those identified in the REF would be required. The detour signage for safeguard TT5 is no longer required and has been removed.

5.3 Biodiversity

5.3.1.1 Methodology

A Biodiversity Assessment Report (BAR) was prepared for the REF by WSP, which involved database searches, a habitat assessment and a field survey. To assess the proposed change, a desktop-based addendum biodiversity assessment was prepared by WSP for the revised survey area and amended proposal footprint. No additional field verification was required, as the land within the revised survey area was previously surveyed during preparation of the BAR.

5.3.1.2 Description of existing environment

5.3.1.2.1 Vegetation communities

Figure 5-1 shows the location of vegetation communities within the revised survey area.

The amended proposal footprint crosses two vegetation community types:

- PCT 70 / BVT LA223 – White Cypress Pine woodland on sandy loams in central NSW wheatbelt
- Miscellaneous ecosystems – Highly disturbed areas with no or limited native vegetation (Pasture grassland).

5.3.1.2.2 Threatened biodiversity

The revised survey area is likely to contain the same threatened species as those identified previously in the BAR for the REF. This includes twelve threatened fauna species that are considered moderately or highly likely to have potential habitat within the amended proposal footprint (refer to Table 5-5).

No hollow dependant microchiropteran bat species or hollow-dependant woodland birds are expected to occur within the amended proposal footprint as no hollows were recorded in PCT 70 / BVT223 or Pasture grassland.

No threatened ecological communities or threatened flora species (or their associated habitat) are expected to occur within the amended proposal footprint.

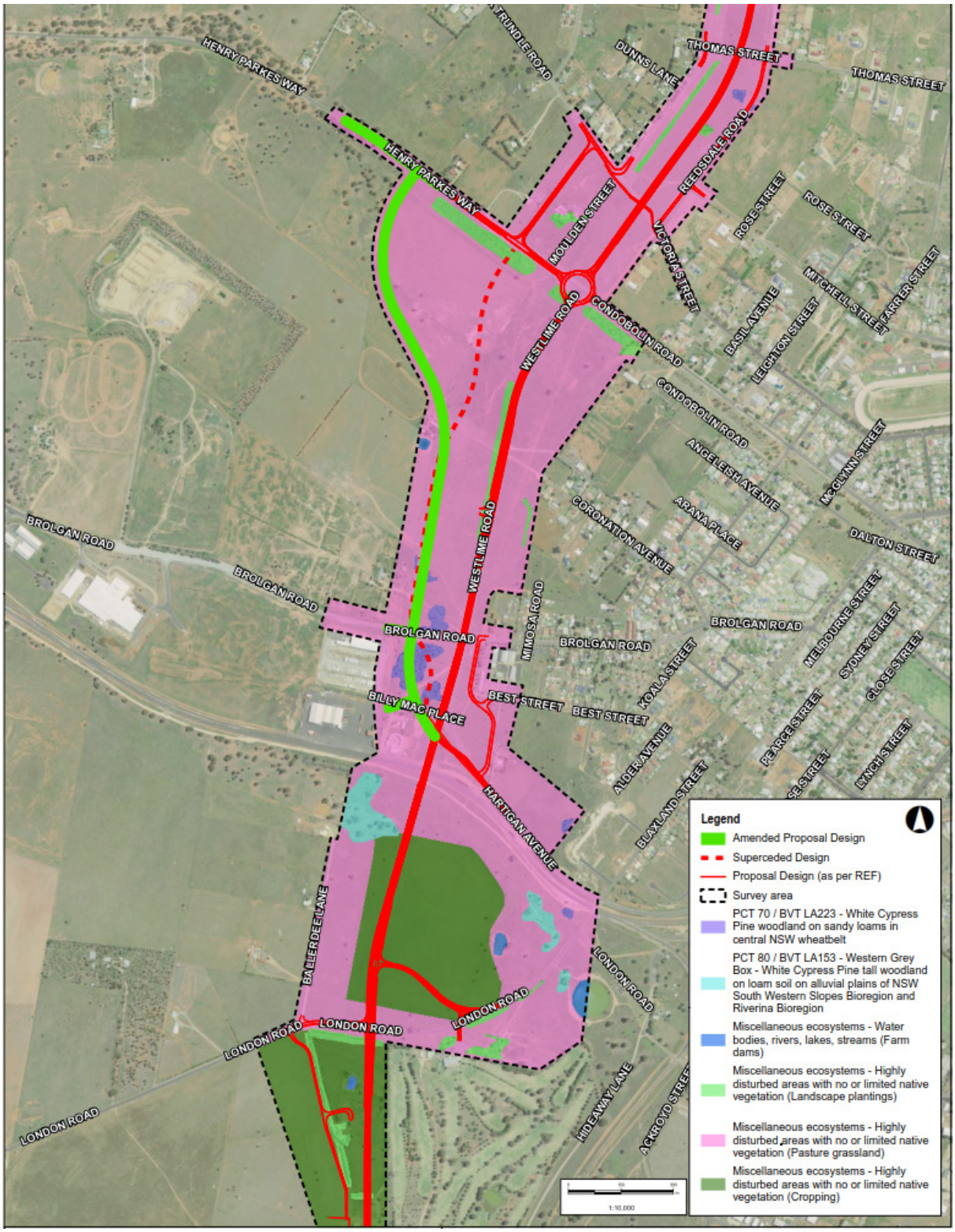

Figure 5-1: Vegetation communities within the revised survey area

5.3.1.3 Potential impacts

5.3.1.3.1 Vegetation communities

Table 5-4 compares the area of native and non-native vegetation communities that would be impacted by the original proposal footprint and the amended proposal footprint.

Table 5-4: Comparison of the area of plant community types to be impacted by the original and revised alignment

Name of community (condition)	Threatened ecological community	Area (ha) in original proposal footprint	Area (ha) in amended proposal footprint	Change (ha)
Native vegetation types				
PCT80/BVT LA153 Western Grey Box – White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion (Moderate to Good)	Yes - Inland Grey Box Woodland	0.84	0.84	0.00
PCT 70/BVT LA223 White Cypress Pine woodland on sandy loams in central NSW wheatbelt (Moderate to Good)	Not listed	0.45	0.48	+0.03
PCT 267/BVT LA218 White Box – White Cypress Pine – Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion (Moderate to Good)	White Box Yellow Box Blakely's Red Gum Woodland	0.10	0.10	0.00
Total		**1.39**	**1.42**	**+0.03**
Non-native vegetation types				
Pasture Grasslands	Not listed	36.17	39.40	+3.23
Landscape Plantings	Not listed	1.94	1.94	0.00
Cropping	Not listed	21.71	21.71	0.00
Farm Dams	Not listed	0.22	0.22	0.00
Total		**60.04**	**63.27**	**+3.23**

5.3.1.3.2 Threatened biodiversity

Twelve threatened fauna species are considered moderately or highly likely to have potential habitat within the amended proposal footprint.

Table 5-5 outlines the potential impact on these fauna species due to the amended proposal footprint. However, the impact is unlikely to be significant as habitats for the thirteen threatened birds of similar or greater quality would remain in proximity of the survey area and wider locality.

No threatened ecological communities or threatened flora species (or their associated habitat) are expected to be impacted by the amended proposal footprint.

Table 5-5: Threatened fauna considered moderate or highly likely to occur within the amended proposal footprint

Common name	Scientific name	BC Act[1]	EPBC Act[2]	Additional Impact?
Small threatened woodland birds				
Grey-crowned Babbler	*Pomatostomus temporalis temporalis*	V	Not listed	Yes - additional 0.03 ha of potential habitat (PCT 70) would be impacted by the amended proposal footprint
Dusky Woodswallow	*Artamus cyanopterus*	V	Not listed	
Varied Sittella	*Daphoenositta chrysoptera*	V	Not listed	
Flame Robin	*Petroica phoenicea*	V	Not listed	
Diamond Firetail	*Stagonopleura guttata*	V	Not listed	
Black-chinned Honeyeater	*Melithreptus gularis gularis*	V	Not listed	
Predatory birds				
Spotted Harrier	*Circus assimilis*	V	Not listed	Yes - additional 3.25 ha of potential habitat (PCT 70 and Pasture Grassland) would be impacted by the amended proposal footprint
Black Falcon	*Falco subniger*	V	Not listed	
Little Eagle	*Hieraaetus morphnoides*	V	Not listed	
Blossom nomads				
Regent Honeyeater	*Anthochaera phrygia*	CE	CE	Yes - additional 0.03 ha of potential habitat (PCT 70) would be impacted by the amended proposal footprint
Swift Parrot	*Lathamus discolor*	E	E	
Little Lorikeet	*Glossopsitta pusilla*	V	Not listed	

(1) V = Vulnerable, E = Endangered, CE = Critically Endangered under the BC Act

(2) E = Endangered, CE = Critically Endangered under the EPBC Act

5.3.1.4 Revised safeguards and management measures

No additional safeguards or mitigation measures beyond those identified in the REF would be required.

5.4 Aboriginal and Non-Aboriginal Heritage

5.4.1.1 Methodology

The Aboriginal and non-Aboriginal assessment for the REF was carried out by OzArk for the original survey area (shown in yellow on Figure 5-2). To assess the proposed change, an addendum Aboriginal and non-Aboriginal assessment was prepared for an additional 17 hectares of land that covers the revised alignment (referred to as the additional study area, shown in blue on Figure 5-2). This involved carrying out updated database searches and a field inspection on 28 July 2019 for the additional study area.

The addendum Aboriginal heritage component was undertaken in accordance with Stage 2 of the *Procedure for Aboriginal cultural heritage consultation and investigation* (PACHCI; Roads and Maritime, 2011). The non-Aboriginal Heritage assessment followed the *Historical Archaeology Code of Practice* (Heritage Council 2006).

5.4.1.2 Description of existing environment

5.4.1.2.1 Aboriginal Heritage

An updated search of the Aboriginal Heritage Information Management System database on 2 September 2019 found no previously recorded Aboriginal sites within the additional study area.

None of the mature trees inspected within the additional study area were found to contain cultural modifications, such as Aboriginal scarring or carving. However, trees within Lot 382 DP750179 were unable to be inspected due to access constraints.

None of the landforms present within the additional study area are considered to have increased archaeological potential and these landforms have been previously disturbed.

5.4.1.2.2 Non-Aboriginal Heritage

Non-Aboriginal heritage items are unlikely to be present within the additional study area, due to the agricultural and transport land uses within the additional study area, and any items found are unlikely to have archaeological potential.

Desktop database searches on 2 September 2019 found no previously recorded non-Aboriginal heritage items within the additional study area. No non-Aboriginal heritage items were identified during the field inspection.

5.4.1.3 Potential impacts

No additional impacts on Aboriginal or non-Aboriginal heritage are expected due to the revised alignment between the Hartigan Avenue extension and Henry Parkes Way.

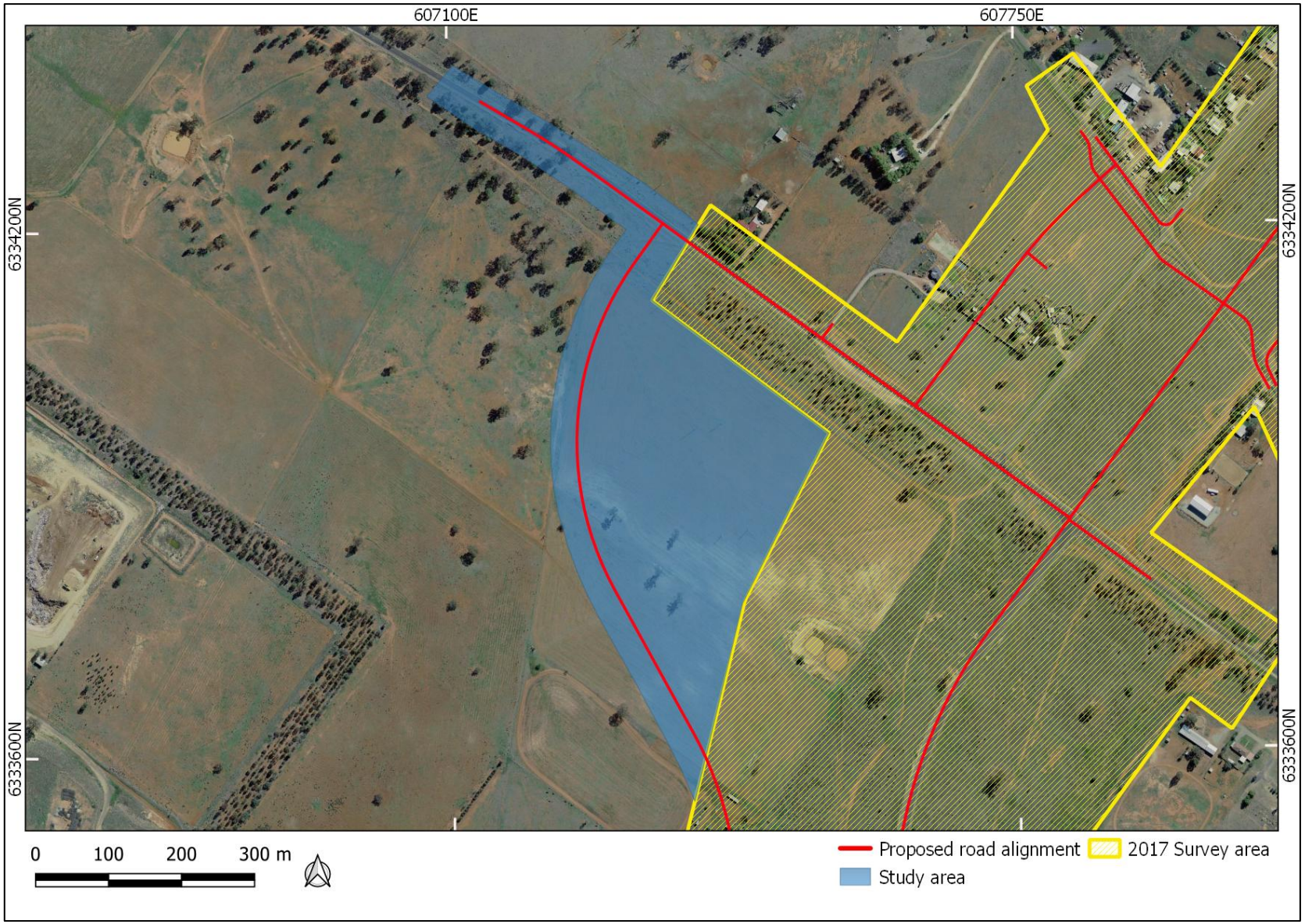

Figure 5-2: Study area for additional heritage assessment (OzArk, 2019)

5.4.1.4 Revised safeguards and management measures

After the additional Aboriginal and non-Aboriginal assessment, the environmental management measures for the proposal have been revised (refer to Table 5-6 and Section 6.2).

Table 5-6: Revised safeguards and management measures for Aboriginal and non-Aboriginal heritage

Impact	Environmental safeguard	Responsibility	Timing	Standard/ additional safeguard
Aboriginal Heritage	Should the proposed impact footprint extend within the drip line of any trees within Lot 382 DP750179, they must be inspected by an archaeologist prior to any work to determine whether they have any cultural modifications.	Contractor	Detailed design/pre-construction	Additional safeguard AH6

6 Environmental management

The REF for the Parkes Bypass identified the framework for environmental management, including safeguards and management measures that would be adopted to avoid or reduce environmental impacts (Section 7.2 of the REF).

After consideration of the issues raised in the public submissions and changes to the proposal, the safeguard and management measures have been revised.

Should the proposal proceed, environmental management will be guided by the framework and measures outlined below.

6.1 Environmental management plans (or system)

Several safeguards and management measures have been identified to minimise adverse environmental impacts, including social impacts, which could potentially arise because of the proposal. Should the proposal proceed, these management measures would be incorporated into the detailed design and applied during the construction and operation of the proposal.

A Construction Environmental Management Plan (CEMP) will be prepared to describe safeguards and management measures identified. The CEMP will provide a framework for establishing how these measures will be implemented and who would be responsible for their implementation.

The CEMP will be prepared prior to construction of the proposal and must be reviewed and certified by Transport for NSW Environment Officer, Western region, prior to the commencement of any on-site works. The CEMP will be a working document, subject to ongoing change and updated as necessary to respond to specific requirements. The CEMP would be developed in accordance with the specifications set out in the QA Specification G36 – Environmental Protection (Management System), QA Specification G38 – Soil and Water Management (Soil and Water Plan), QA Specification G10 – Traffic Management and QA Specification R44 – Earthworks.

6.2 Summary of safeguards and management measures

The REF for the Parkes Bypass identified a range of environmental outcomes and management measures that would be required to avoid or reduce the environmental impacts.

After consideration of the issues raised in the public submissions, the environmental management measures for the proposal (refer to Chapter 7.2 of the REF) have been revised. Should the proposal proceed, the environmental management measures in Table 6-1 will guide the subsequent phases of the proposal. Additional and/or modified environmental safeguards and management measures to those presented in the REF have been underlined and deleted measures, or parts of measures, have been struck out.

Table 6-1: Summary of environmental safeguards and management measures

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
GEN1	General - minimise environmental impacts during construction	A CEMP will be prepared and submitted for review and endorsement of the Transport for NSW Environment Manager prior to commencement of the activity. As a minimum, the CEMP will address the following: • Any requirements associated with statutory approvals • Details of how the project will implement the identified safeguards outlined in the REF • Issue-specific environmental management plans • Roles and responsibilities • Communication requirements • Induction and training requirements • Procedures for monitoring and evaluating environmental performance, and for corrective action • Reporting requirements and record-keeping • Procedures for emergency and incident management • Procedures for audit and review. The endorsed CEMP will be implemented during the undertaking of the activity.	Contractor/ Transport for NSW project manager	Pre-construction/ detailed design	Core standard safeguard GEN1
GEN2	General – notification	All businesses, residential properties and other key stakeholders (e.g. schools, local councils) affected by the activity will be notified at least five days prior to commencement of the activity.	Contractor/ Transport for NSW project manager	Pre-construction	Core standard safeguard GEN2

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
GEN3	General – environmental awareness	All personnel working on site will receive training to ensure awareness of environment protection requirements to be implemented during the project. This will include up-front site induction and regular "toolbox" style briefings. Site-specific training will be provided to personnel engaged in activities or areas of higher risk. These include: • Areas of Aboriginal heritage sensitivity • Threatened species habitat • Adjoining residential areas requiring particular noise management measures].	Contractor/ Transport for NSW project manager	Pre-construction/ detailed design	Core standard safeguard GEN3

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
TT1	Traffic and transport	A Traffic Management Plan (TMP) will be prepared and implemented as part of the CEMP. The TMP will be prepared in accordance with the *Traffic Control at Work Sites Manual* (RTA, 2010) and *QA Specification G10 Control of Traffic* (Roads and Maritime, 2008). The TMP will include: • Confirmation of haulage routes • Measures to maintain access to local roads and properties • Site specific traffic control measures (including signage) to manage and regulate traffic movement • Measures to maintain pedestrian and cyclist access • Requirements and methods to consult and inform the local community of impacts on the local road network • Access to construction sites including entry and exit locations and measures to prevent construction vehicles queuing on public roads. • A response plan for any construction traffic incident • Consideration of other developments that may be under construction to minimise traffic conflict and congestion that may occur due to the cumulative increase in construction vehicle traffic • Monitoring, review and amendment mechanisms.	Contractor	Detailed design/ pre-construction	Core standard safeguard TT1 Section 4.8 of QA G36 Environment Protection
TT2	Changes to bus services	Any affected bus stops or routes would be relocated or re-routed.	Contractor	Construction	Additional safeguard TT2
TT3	Road closures	The necessary permits or licences will be obtained for road or lane closures or rail possessions.	Contractor	Construction	Additional safeguard TT3

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
TT4	Changed traffic conditions	Adequate advisory and warning signage will be provided of the road conditions ahead.	Contractor	Construction	Additional safeguard TT4
TT5	Changed local road access	Current traffic movements and property accesses are to be maintained during the works as far as practical. Any disturbance is to be minimised to prevent unnecessary traffic delays. Detour signage to Moulden Street and Back Trundle Road via Condobolin Road and Henry Parkes Way will be provided. This will include local road network connections with Condobolin Road.	Transport for NSW	Detailed design	Additional safeguard TT5
TT6	Changes to property access	Alternate temporary and/or permanent property [legal] access routes would be provided (as required) in consultation with the relevant land owners/occupiers to maintain private property access during construction and operation.	Transport for NSW	Construction and operation	Additional safeguard TT6
SE1	Socio-economic	A Communication Plan (CP) will be prepared and implemented as part of the CEMP to help provide timely and accurate information to the community during construction. The CP will include (as a minimum): • Mechanisms to provide details and timing of proposed activities to affected residents, including changed traffic and access conditions • Contact name and number for complaints. The CP will be prepared in accordance with the *Community Involvement and Communications Resource Manual* (RTA, 2008).	Contractor	Detailed design/ pre-construction	Core standard safeguard SE1

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
SE2	Amenity impacts	Transport for NSW will consult with the following key stakeholders to address the following socio-economic-related impacts and opportunities: • Local businesses and Council to provide signage infrastructure at bypass and intersections interchanges to attract business people from the Parkes Bypass into Parkes • Parkes Golf Club to address construction and operational amenity-related impacts for users of the golf course • Parkes Christian School to develop a safe alternative for children to walk and cycle to school when Victoria Street is closed during construction • Bus operators to develop safe access routes to the Parkes Christian School during the construction and operation of the proposal • The emergency services to ensure access routes are included in the construction delivery plans and associated management plans, as well as, the inclusion of specific emergency access routes in to and out of Parkes once the Parkes Bypass is operational • Pedestrian and cyclist groups to notify them of planned diversions and road configuration changes and to understand any specific needs requirements that will need including under the detailed design • Pedestrian and cyclist groups to notify them of planned diversions and road configuration changes.	Transport for NSW	Detailed design and pre-construction	Additional safeguard SE2

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
SE3	Access changes to the travelling stock route	Continued access to the travelling stock route would be provided during construction and once the Parkes Bypass is operational. Where necessary, Transport for NSW will consult with relevant agricultural stakeholders (including the Department of Industry: Lands) and/or recreational users of the travelling stock route to notify them of any change in access points, which will be additionally advertised in the media and around the proposed work sites.	Transport for NSW	Pre-construction	Additional safeguard SE3
SE4	Perceived passing trade loss in Parkes	Transport for NSW would continue to work with the Chamber of Commerce, Council and other business-groups to ensure ongoing concerns are listed to and acted upon.	Transport for NSW	Detailed design	Additional safeguard SE4
SE5	Perceived passing trade loss in Parkes	Transport for NSW will develop and implement a Signage Strategy in consultation with the Chamber of Commerce, Council and other business-groups as part of the detailed design. The strategy will review previous bypassed towns to confirm the most effective way to attract people in to the town.	Transport for NSW	Detailed design	Additional safeguard SE5

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
SE6	Private property acquisition, severance, residual functional use, and amenity-related impacts	Transport for NSW would continue consulting with directly (acquisition) and indirectly (amenity-related) impacted residents. Transport for NSW would develop final property fencing, driveway and other property infrastructure adjustments in consultation with the affected property owners and this will be reflected in the detailed design. The impact of land acquisition will be assessed in accordance with *Land Acquisition (Just Terms Compensation) Act 1991*, the Land Acquisition Reform 2016, and the Land Acquisition Information Guide (Roads and Maritime, 2014). The assessment would consider each owner's remaining holdings accounting for the impacts of severance and/or the residual functional use of any remaining land. Transport for NSW will engage an appropriately qualified property and/or agricultural specialist to assess these impacts and to identify alternative opportunities for their remaining holdings. Transport for NSW would manage any residual land in accordance with its disposal processes. This will involve considering landowner requests for land swaps.	Transport for NSW	Detailed design	Additional safeguard SE6
SE7	Temporary access restrictions, diversions and traffic management controls	Transport for NSW will work with the freight and agricultural industries to identify critical times during the year where access reliability is critical (e.g. harvest time). These will be included in the Traffic Management Plan.	Transport for NSW	Detailed design	Additional safeguard SE7

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
SE8	Private property access changes	Transport for NSW will work with the property owners whose accesses will be impacted by the proposal to discuss their needs. The final access arrangement will be agreed and they will form part of the detailed design.	Transport for NSW	Detailed design	Additional safeguard SE8
NV1	Noise and vibration	A Construction Noise, Vibration and Blasting Management Plan (CNVBMP) will be prepared and implemented as part of the CEMP. The CNVBMP will generally follow the approach in the *Interim Construction Noise Guideline* (ICNG, DECC, 2009) and identify: • All potential significant noise and vibration generating activities associated with the activity • Feasible and reasonable mitigation measures to be implemented, taking into account Beyond the Pavement: urban design policy, process and principles (Roads and Maritime, 2014) • A monitoring program to assess performance against relevant noise and vibration criteria • Arrangements for consultation with affected neighbours and sensitive receivers, including notification and complaint handling procedures. • Contingency measures to be implemented in the event of non-compliance with noise and vibration criteria.	Contractor	Detailed design/ pre-construction	Core standard safeguard NV1 Section 4.6 of QA G36 Environment Protection

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
NV2	Noise and vibration	All sensitive receivers (eg schools, residents) likely to be affected will be notified at least ~~seven~~ five-days prior to commencement of any works associated with the activity that may have an adverse noise or vibration impact. The notification will provide details of: • The project • The construction period and construction hours • Contact information for project management staff • Complaint and incident reporting • How to obtain further information.	Contractor	Detailed design/ pre-construction	Core standard safeguard NV2
NV3	Operational noise impact	Further assessment of the following possible noise mitigation strategies will be carried out to address the receivers identified to qualify for consideration of mitigation (strategies listed in the order of decreasing preference): • Road design and traffic management • Quieter road pavement • Noise barriers • At-property treatments.	Transport for NSW	Detailed design	Additional safeguard NV3
NV4	Construction traffic noise	When further information becomes available, a review of the potential road traffic noise impact on the existing road network from construction vehicles or changes to the road network during construction will be carried out.	Transport for NSW	Pre-construction	Additional safeguard NV4

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
UD1	Landscape character and visual impact	An Urban Design Plan (UDP) will be prepared to support the final detailed project design and implemented as part of the CEMP. The UDP will present an integrated urban design for the project, providing practical detail on the application of design principles and objectives identified in the environmental assessment. The Plan will include design treatments for: • Location and identification of existing vegetation and proposed landscaped areas, including species to be used • Built elements including retaining walls, bridges and noise walls • Pedestrian and cyclist elements including footpath location, paving types and pedestrian crossings • Fixtures such as seating, lighting, fencing and signs • Details of the staging of landscape works taking account of related environmental controls such as erosion and sedimentation controls and drainage • Procedures for monitoring and maintaining landscaped or rehabilitated areas. The Urban Design Plan will be prepared in accordance with relevant guidelines, including: • Beyond the Pavement urban design policy, process and principles (Roads and Maritime, 2014) • Landscape Guideline (RTA, 2008) • Bridge Aesthetics (Roads and Maritime 2012) • Noise Wall Design Guidelines (RTA, 2006) • Shotcrete Design Guideline (RTA, 2005).	Contractor	Detailed design/ pre-construction	Core standard safeguard UD1

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
UD2	Operational light spill impacts	The lighting design specification will be developed to ensure the height and direction of any relocated lighting poles will not be next to any residential properties where feasible and reasonable. If there is any identified conflict, it will be considered if the lighting pole can be relocated. If the pole location cannot be relocated the aim will be to minimise light spill and light glare in accordance with the provisions of AS4282-1997 Control of the Obtrusive Effect of Outdoor Lighting (Standards Australia, 1997). This may require the use of directional lighting, cut-offs or filters.	Transport for NSW	Detailed design	Additional safeguard: UD2
UD3	Landscape character and visual impact	The landscape plans will incorporate the design principles outlined in the landscape character and visual impact assessment and urban design technical study report.	Transport for NSW	Detailed design	Additional safeguard: UD3

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
UD4	Planting and vegetation	• Choose vegetation on embankments either side of the Parkes Bypass based on its ability to screen the built form and reduce the scale of the infrastructure. A selection of appropriate grasses, low groundcovers and groups of native trees should be utilised • Maintain long vistas to distant hills where possible, ensuring that landscape planting does not block views • Plant trees either side of the bridge structure to screen built form and reduce the scale of the infrastructure • Reinforce the local semi-rural landscape character using appropriate vegetation • Ensure planting conforms to sight lines and clear zone requirements • Restore disturbed areas to match existing conditions • Use slope stabilisation matting such as a textile mat to assist planting.	Transport for NSW, Contractor	Detailed design/ construction	Additional safeguard: UD4
UD5	Signage	• Provide clear wayfinding signage for visitors wishing to travel into Parkes • Consider entry or gateway treatments to the northern and southern entrances to Parkes.	Transport for NSW	Detailed design	Additional safeguard: UD5

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
UD6	Construction visual impacts	• Locate storage areas and associated works in cleared or otherwise disturbed areas away from vegetation • Avoid stockpiling materials in areas supporting vegetation where possible • Restrict vegetation clearing to those areas where it is necessary • Opportunities to minimise clearing should be part of the detailed design, further to any being considered currently • Trimming rather than the removal of trees to be undertaken where possible and to be conducted by a qualified arborist • Rehabilitate vegetated areas where ground is disturbed.	Contractor	Construction	Additional safeguard: UD6
UD7	Construction visual impacts	Hoarding will be erected around the construction compound where possible, to reduce visibility.	Contractor	Construction	Additional safeguard: UD7
UD8	Construction visual impacts	The construction area will be kept clean and clear of rubbish.	Contractor	Construction	Additional safeguard: UD8
UD9	Operational visual and amenity impacts	Where feasible and reasonable, an integrated response to the design will be adopted that provides noise treatment in combination with visual mitigation.	Transport for NSW	Detailed design	Additional safeguard: UD9

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
UD10	Tree management and removal	Any tree removal or pruning will be undertaken by a qualified specialist and in accordance with AS4970: 2009: Protection of Trees on Development Sites (Standards Australia, 2009) and AS4373:2007: Pruning of Amenity Trees and WorkCover Amenity Tree Industry Code of Practice 1998.	Contractor	Pre-construction/ construction	Additional safeguard: UD10
B1	Biodiversity	A Flora and Fauna Management Plan (FFMP) will be prepared in accordance with Biodiversity Guidelines: Protecting and Managing Biodiversity on RTA Projects (RTA, 2011) and implemented as part of the CEMP. It will include, but not be limited to: • Plans showing areas to be cleared and areas to be protected, including exclusion zones, protected habitat features and revegetation areas • Requirements set out in the Landscape Guideline (RTA, 2008) • Pre-clearing survey requirements • Procedures for unexpected threatened species finds and fauna handling • Procedures addressing relevant matters specified in the Policy and guidelines for fish habitat conservation and management (DPI Fisheries, 2013) • Protocols to manage weeds and pathogens.	Contractor	Detailed design/ pre-construction	Core standard safeguard B1 Section 4.8 of QA G36 Environment Protection
B2	Biodiversity	Measures to further avoid and minimise the construction footprint and native vegetation or habitat removal will be investigated during detailed design and implemented where practicable and feasible.	Contractor	Detailed design	Core standard safeguard B2

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
B3	Biodiversity	Determine appropriate exclusion zones during pre-clearing surveys to minimise clearing of native vegetation. Pre-clearing surveys will be undertaken in accordance with Guide 1: Pre-clearing process of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (Roads and Traffic Authority, 2011).	Contractor	Pre-construction	Additional safeguard B3
B4	Biodiversity	Exclusion zones will be set up at the limit of clearing in accordance with Guide 2: Exclusion zones of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (Roads and Traffic Authority, 2011).	Contractor	Pre-construction	Additional safeguard B4
B5	Biodiversity	Habitat will be replaced or re-instated in accordance with Guide 5: Re-use of woody debris and bushrock and Guide 8: Nest boxes of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (Roads and Traffic Authority, 2011).	Contractor	Post-construction	Additional safeguard B5
B6	Biodiversity	Habitat removal will be will be carried out in accordance with Guide 4: Clearing of native vegetation and removal of bushrock of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (Roads and Traffic Authority, 2011).	Contractor	Post-construction	Additional safeguard B6

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
B7	Biodiversity	Wherever practicable, within road safety limitations and provisions for utilities, native vegetation will be restored in areas along the existing road corridors with canopy and shrub species such as *Eucalypt sp., Callistemon sp. and Grevillea sp*. Native vegetation will be re-established in accordance with Guide 3: Re-establishment of native vegetation of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (Roads and Traffic Authority, 2011).	Contractor	Post-construction	Additional safeguard B7
B8	Biodiversity	The unexpected species find procedure is to be followed under Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (Roads and Traffic Authority, 2011) if threatened ecological communities, flora or fauna, not assessed in the biodiversity assessment, are identified in the proposal footprint.	Contractor	Construction	Additional safeguard B8
B9	Biodiversity	Fauna (injury) will be managed in accordance with Guide 9: Fauna handling of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (Roads and Traffic Authority, 2011).	Contractor	Construction	Additional safeguard B9
B10	Biodiversity	Changes to existing surface water flows will be minimised through detailed design.	Transport for NSW	Detailed design	Additional safeguard B10
B11	Biodiversity	Minimising roadkill will be considered in the detailed design of the road and associated infrastructure (e.g. culverts, fencing) and landscaping.	Transport for NSW	Detailed design	Additional safeguard B11
B12	Biodiversity	Weed species will be managed in accordance with Guide 6: Weed management of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (Roads and Traffic Authority, 2011).	Contractor	Construction	Additional safeguard B12

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
B13	Biodiversity	Hygiene procedures will be implemented for the use of vehicles and material imports to the proposal footprint in accordance with Guide 7: Pathogen management of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (Roads and Traffic Authority, 2011).	Contractor	Construction	Additional safeguard B13
B14	Biodiversity	The unexpected species find procedure is to be followed under Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (Roads and Traffic Authority, 2011) if threatened ecological communities, fauna, flora, not assessed in the biodiversity assessment, are identified in the proposal footprint.	Contractor	Construction	Additional safeguard B14
AH1	Aboriginal heritage	An Aboriginal Heritage Management Plan (AHMP) will be prepared in accordance with the Procedure for Aboriginal cultural heritage consultation and investigation (PACHCI, Roads and Maritime, 2012) and Standard Management Procedure – Unexpected Heritage Items (Roads and Maritime, 2015) and implemented as part of the CEMP. It will provide specific guidance on measures and controls to be implemented for managing impacts on Aboriginal heritage. The AHMP will be prepared in consultation with all relevant Aboriginal groups.	Contractor	Detailed design/ pre-construction	Core standard safeguard AH1 Section 4.9 of QA G36 Environment Protection

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
AH2	Aboriginal heritage	The Standard Management Procedure - Unexpected Heritage Items (Roads and Maritime, 2015) will be followed if an unknown or potential Aboriginal object(s), including skeletal remains, is found during construction. This applies where Transport for NSW does not have approval to disturb the object (s) or where a specific safeguard for managing the disturbance (apart from the Procedure) is not in place. Work will only re-commence once the requirements of that Procedure have been satisfied.	Contractor	Detailed design/ pre-construction	Core standard safeguard AH2 Section 4.9 of QA G36 Environment Protection
AH3	Aboriginal heritage	A buffer zone (10 metres around each site as a minimum) will be created around Barkers Road-ST1 and Westlime Road-ST1 to ensure they are avoided during construction. High-visibility fencing should be used.	Contractor	Construction	Additional safeguard AH3
AH4	Aboriginal heritage	All land-disturbing activities must be confined to within the assessed survey area shown in ~~Figure 6-25~~ Figure 4.1 to Figure 4.3 of the *Parkes Bypass Submissions Report* (Transport for NSW, 2019). Should the parameters of the proposed work extend beyond the assessed area then further archaeological assessment may be needed.	Contractor	Construction	Additional safeguard AH4
AH5	Aboriginal heritage	All construction personnel will be made aware of the location of Barkers Road-ST1 and Westlime Road-ST1 and inductions should be provided as to the location of the recorded sites and their legislative protection under the NPW Act.	Contractor	Construction	Additional safeguard AH5
AH6	Aboriginal heritage	Should the proposed impact footprint extend within the drip line of any trees within Lot 382 DP750179, they must be inspected by an archaeologist prior to any work to determine whether they have any cultural modifications.	Contractor	Detailed design/pre-construction	Additional safeguard AH6

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
H1	Non-Aboriginal heritage	A Non-Aboriginal Heritage Management Plan (NAHMP) will be prepared and implemented as part of the CEMP. It will provide specific guidance on measures and controls to be implemented to avoid and mitigate impacts to Non-Aboriginal heritage.	Contractor	Detailed design/ pre-construction	Core standard safeguard H1 Section 4.10 of QA G36 Environment Protection
H2	Non-Aboriginal heritage	The Standard Management Procedure – Unexpected Heritage Items (Roads and Maritime, 2015) will be followed if any unexpected heritage items, archaeological remains or potential relics of Non-Aboriginal origin are encountered. Work will only re-commence once the requirements of that Procedure have been satisfied.	Contractor	Detailed design/ pre-construction	Core standard safeguard H2 Section 4.10 of QA G36 Environment Protection
H3	Non-Aboriginal Heritage	The location of the disused gold mine shafts (Reedsdale Road-HS01) should be included on site sensitivity plans and a no-go exclusion zone will be established before construction work starts. If any part of the site cannot be avoided by the proposal the site will be subject to photographic archival recording.	Contractor	Construction	Additional safeguard H3
H4	Non-Aboriginal Heritage	All contractors undertaking the work will be made aware of the legislative protection of historic heritage sites in the event unknown heritage items ae encountered during the work. Accordingly, site inductions will be provided to workers on the project to inform them of the location of the recorded sites and their legislative protection under the *Heritage Act 1977*.	Contractor	Construction	Additional safeguard H4
H5	Non-Aboriginal Heritage	All land-disturbing activities will be confined within the assessed survey area. Should impacts change such that the area to be impacted is altered then additional assessment may be required.	Contractor	Construction	Additional safeguard H5

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
H6	Non-Aboriginal Heritage	All contractors undertaking the work will be made aware of the legislative protection of historic heritage sites in the event unknown heritage items ae encountered during the work.	Contractor	Construction	Additional safeguard H6
C1	Contaminated land	A Contaminated Land Management Plan will be prepared in accordance with the Guideline for the Management of Contamination (Roads and Maritime, 2013) and implemented as part of the CEMP. The plan will include, but not be limited to: • Capture and management of any surface runoff contaminated by exposure to the contaminated land • Further investigations required to determine the extent, concentration and type of contamination, as identified in the detailed site investigation (Phase 2) • Management of the remediation and subsequent validation of the contaminated land, including any certification required • Measures to ensure the safety of site personnel and local communities during construction.	Contractor	Detailed design/ pre-construction	Core standard safeguard C1 Section 4.2 of QA G36 Environment Protection
C2	Contaminated land	If contaminated areas are encountered during construction, appropriate control measures will be implemented to manage the immediate risks of contamination. All other work that may impact on the contaminated area will stop until the nature and extent of the contamination has been confirmed and any necessary site-specific controls or further actions identified in consultation with the Transport for NSW Environment Manager and/or EPA.	Contractor	Detailed design/ pre-construction	Core standard safeguard C2 Section 4.2 of QA G36 Environment Protection

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
C3	Accidental spill	A site-specific emergency spill plan will be developed, and include spill management measures in accordance with the Transport for NSW Code of Practice for Water Management (RTA, 1999) and relevant EPA guidelines. The plan will address measures to be implemented in the event of a spill, including initial response and containment, notification of emergency services and relevant authorities (including Transport for NSW and EPA officers).	Contractor	Detailed design/ pre-construction	Core standard safeguard C3 Section 4.3 of QA G36 Environment Protection
C4	Identification of contaminated land	A targeted Phase 2 investigation providing general coverage of the proposed alignment and areas of potential contamination sources (including areas where fill will be encountered during construction) will be undertaken. This investigation will address the potential risk that fill material may pose to construction workers and future users of the site. Assessments will be carried out in accordance with guidance made or endorsed by the NSW EPA. The contaminated land investigations will be carried out and the report verified by a suitably qualified and experienced environmental consultant.	Transport for NSW	Detailed design, Pre-construction	Additional safeguard C4

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
SW1	Soil and water impacts	A soil and water management plan (SWMP) will be prepared and implemented as part of the CEMP. It will be prepared in accordance with relevant guidelines including: • The Blue Book: Managing Urban Stormwater (MUS): Soils and Construction, Volume 2 (Landcom, 2008). The SWMP will identify all reasonably foreseeable risks relating to soil erosion and water pollution and describe how these risks will be addressed during construction. The SWMP will be reviewed by a soil conservationist on the Transport for NSW list of Registered Contractors for Erosion, Sedimentation and Soil Conservation Consultancy Services. The SWMP will then be revised to address the outcomes of the review.	Contractor	Detailed design/ pre-construction	Core standard safeguard: SW1 Section 2.1 of QA G38 Soil and Water Management
SW2	Erosion and sediment discharge impacts	A site-specific Erosion and Sediment Control Plan(s) (ESCP) will be prepared and implemented as part of the Soil and Water Management Plan The Plan will include arrangements for managing wet weather events, including monitoring of potential high-risk events (such as storms) and specific controls and follow-up measures to be applied in the event of wet weather.	Contractor	Detailed design/ pre-construction	Core standard safeguard SW2 Section 2.2 of QA G38 Soil and Water Management
SW3	Soil and water impacts	All stockpiles will be designed, established, operated and decommissioned in accordance with the Stockpile Site Management Guideline (Roads and Maritime, 2015), QA Specification Q44 – Earthworks and NSW resource recovery exception requirements.	Contractor	Pre-construction/ construction	Additional safeguard SW3

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
SW4	Soil stockpiles	Any materials stockpiled for long than 28 days would be stabilised and compacted, covered with anchored fabrics, sprayed with stabiliser, or seeded with sterile grass. Potential stockpile runoff would be controlled using suitable sediment traps in the form of fencing or berms.	Contractor	Pre-construction/ construction	Additional safeguard SW4
PL1	Property acquisition	All property acquisition will be carried out in accordance with the Land Acquisition Information Guide (Roads and Maritime, 2012), the *Land Acquisition (Just Terms Compensation) Act 1991 and* the supporting NSW Government Land Acquisition Reform 2016.	Transport for NSW project manager	Pre-construction and construction	Core standard safeguard PL1
PL2	Land use impacts	Transport for NSW will consult with affected landholders before and during construction to minimise the potential for impacts to land use.	Transport for NSW	Detailed design	Additional safeguard PL2
PL3	TSR impact	Transport for NSW will consult with key stakeholders for the TSR before and during construction to minimise the potential impacts.	Transport for NSW	Pre-construction	Additional safeguard PL3
AQ1	Air quality	An Air Quality Management Plan (AQMP) will be prepared and implemented as part of the CEMP. The AQMP will include, but not be limited to: • Potential sources of air pollution • Air quality management objectives consistent with any relevant published EPA and/or OEH guidelines • Emission and dust mitigation and suppression measures to be implemented • Methods to manage work during strong winds or other adverse weather conditions • A progressive rehabilitation strategy for exposed surfaces.	Contractor	Detailed design/pre-construction	Core standard safeguard AQ1 Section 4.4 of QA G36 Environment Protection

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
W1	Waste	A Waste Management Plan (WMP) will be prepared and implemented as part of the CEMP. The WMP will include but not be limited to: • Measures to avoid and minimise waste associated with the project • Classification of wastes and management options (re-use, recycle, stockpile, disposal) • Statutory approvals required for managing both on and off-site waste, or application of any relevant resource recovery exemptions • Procedures for storage, transport and disposal • Monitoring, record keeping and reporting. The WMP will be prepared considering the Environmental Procedure – Management of Wastes on Roads and Maritime Services Land (Roads and Maritime, 2014) and relevant Transport for NSW Waste Fact Sheets.	Contractor	Detailed design/ pre-construction	Core standard safeguard W1 Section 4.2 of QA G36 Environment Protection
W2	Waste	The resource management hierarchy will be followed always throughout the proposal with the objective of: • Avoiding resource consumption • Recovering recyclable materials for reuse • Disposing of material unable to be recycled. If the material can be re-used, it would need to be sampled and tested to meet the criteria and conditions attached to the EPA's Excavated Public Road Material Exemption or Asphalt Exemption.	Transport for NSW	Pre-construction and construction	Additional safeguard W2
W3	Waste	Waste accumulation, littering and general tidiness will be monitored during routine site inspections.	Contractor	Construction	Additional safeguard W3

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
W4	Waste	Recycled, durable, and low embodied energy products will be used to reduce primary resource demand in instances where the materials are cost and performance competitive and comparable in environmental performance (eg where quality control specifications allow).	Contractor	Construction	Additional safeguard W4
W5	Waste	Any material reused on site or imported to site from another project would be subject to testing and waste classification provisions in accordance with the Waste Classification Guidelines (DECCW, 2014). Should the material be classified as a controlled or restricted waste or found to contain contaminants of concern, it would not be classified for exemption and reuse. It would be stored in a contained separate location on site before being transported offsite to a licenced facility.	Contractor	Construction	Additional safeguard W5
GHG1	Greenhouse gas/Climate change	Ensure efforts are made to reduce construction material requirements and to select recycled materials or materials with low-embodied energies where practical and possible.	Contractor	Pre-construction, construction	Additional safeguard GHG1
U1	Utilities	Prior to the commencement of works: • The location of existing utilities and relocation details will be confirmed following consultation with the affected utility owners. If the scope or location of proposed utility relocation works falls outside of the assessed proposal scope and footprint, further assessment will be undertaken.	Contractor	Detailed design/pre-construction	Core standard safeguard U1

No.	Impact	Environmental safeguards	Responsibility	Timing	Standard/additional safeguard
HAZ1	Hazards and risk management	A hazard and risk management plan (HRMP) will be prepared and implemented as part of the CEMP. The HRMP will include, but not be limited to: • Details of hazards and risks associated with the activity • Measures to be implemented during construction to minimise these risks • Record keeping arrangements, including information on the materials present on the site, material safety data sheets, and personnel trained and authorised to use such materials • A monitoring program to assess performance in managing the identified risks • Contingency measures to be implemented in the event of unexpected hazards or risks arising, including emergency situations. The HRMP will be prepared in accordance with relevant guidelines and standards, including relevant Safe Work Australia Codes of Practice, and EPA or Office of Environment and Heritage publications.	Contractor	Detailed design/ pre-construction	Core standard safeguard HAZ1
CL1	Cumulative impacts	Consult with other developers to obtain information about project timeframes and impacts. Identify and implement appropriate safeguards and management measures to minimise cumulative impacts.	Transport for NSW	Pre-construction/ construction	Additional safeguard CL1
CL2	Cumulative impacts	Prepare all environmental management plans to consider other developments in the area.	Contractor	Pre-construction	Additional safeguard CL2
CL3	Cumulative visual impacts	The projects would be designed to minimise the visual presence of the proposal elements in the landscape and to minimise clearing as far as possible.	Transport for NSW	Detailed design	Additional safeguard CL3

6.3 Licensing and approvals

A summary of the licenses and approvals required for the proposal are provided in Table 6-2.

Table 6-2: Summary of licensing and approval required

Instrument	Requirement	Timing
Protection of the Environment Operations Act 1997 (s43)	Environment protection licence (EPL) for the excavation of more than 30,000 tonnes of material from the EPA.	Prior to commencement of construction
Roads Act 1993 (s138)	Licence from Parkes Shire Council and the Transport Management Centre to occupy roads during construction.	Prior to the start of the activity
Crown Lands Management Act 2016	To secure acquisition of Crown Land.	Prior to the start of the activity

7 References

Austroads, 2009, *Austroads Guide to Road Design*

Austroads, 2009, *Austroads Road Safety Audit Manual*

DECC, 2009, *Interim Construction Noise Guideline*

Heritage Council, 2006, *Historical Archaeology Code of Practice*

Landcom, 2008, *Managing Urban Stormwater: Soils and Construction, Volume 2*

Roads and Maritime, undated, *Roads and Maritime Road Design Guide*

Roads and Maritime, undated, *Roads and Maritime's Delineation Guidelines*

Roads and Maritime, 2011, *Procedure for Aboriginal cultural heritage consultation and investigation*

Roads and Maritime 2014, *Land Acquisition Information Guide*

Roads and Maritime 2014, *Noise Mitigation Guideline*

Roads and Maritime 2016, *NSW Speed Zoning Guidelines*

Roads and Maritime 2019, *Parkes Bypass Review of Environmental Factors.*

Appendix A
Response to issues

Summary of responses

Respondent	Form of submission	Submission No.	Section number where issues are addressed
Individual	Email submission	1	2.5.2
Individual	Email submission	2	2.13
Individual	Email submission	3	2.5.1
Individual	Email submission	4	2.3.1, 2.5.1
Individual	Email submission	5	2.13
Individual	Email submission	6	2.3.3
Individual	Email submission	7	2.2.1
Individual	Email submission	8	2.5.1, 2.3.2, 2.3.1
Individual	Written letter	9	2.6.1, 2.3.5, 2.4, 2.10.2, 2.7.1, 2.3.1, 2.10.3, 2.3.4, 2.3.2
Individual	Written letter	10	2.6.1, 2.3.1, 2.10.3, 2.3.4, 2.10.2, 2.3.2
Individual	Email submission	11	2.5.2
Individual	Email submission	12	2.3.2
Individual	Typed letter	13	2.6.1, 2.5.1, 2.10.2, 2.12.1, 2.3.5, 2.4
Individual	Typed letter	14	2.6.1, 2.7.1, 2.7.2, 2.7.3, 2.8, 2.12.2, 2.12.3, 2.11, 2.3.3, 2.12.4, 2.10.2
Individual	Email submission	15	2.3.3
Individual	Email submission	16	2.5.1, 2.12.1, 2.3.1
Individual	Email submission	17	2.6.3, 2.12.1, 2.3.1
Individual	Email submission	18	2.6.2, 2.6.3, 2.12.1, 2.3.1
Individual	Email submission	19	2.12.1, 2.5.1, 2.3.1
Individual	Email submission	20	2.5.1, 2.12.1, 2.3.1
Individual	Email submission	21	2.5.1, 2.12.1, 2.5.3, 2.3.1
Individual	Email submission	22	2.5.1, 2.12.1, 2.3.1
Individual	Email submission	23	2.5.1, 2.12.1, 2.3.1
Individual	Email submission	24	2.12.1, 2.3.1
Individual	Email submission	25	2.5.1, 2.12.1, 2.3.1
Individual	Email submission	26	2.5.1, 2.12.1, 2.3.1
Individual	Email submission	27	2.5.1, 2.12.1, 2.3.1
Individual	Email submission	28	2.5.1, 2.12.1, 2.3.1
Individual	Email submission	29	2.5.4, 2.12.1, 2.6.2, 2.3.1
Individual	Email submission	30	2.3.1, 2.5.5, 2.6.1

Respondent	Form of submission	Submission No.	Section number where issues are addressed
Government Agency (NSW Police)	Email submission	31	3.7
Individual	Email submission	32	2.10.1, 2.11
Individual	Email submission	33	2.3.1
Individual	Email submission	34	2.2.1
Individual	Email submission	35	2.5.1, 2.12.1, 2.3.1
Individual	Email submission	36	2.5.1, 2.12.1, 2.3.1
Individual	Email submission	37	2.12.1, 2.3.1
Individual	Email submission	38	2.5.1, 2.12.1, 2.3.1
Individual	Email submission	39	2.5.1, 2.12.1, 2.3.1
Individual	Email submission	40	2.5.1, 2.12.1, 2.3.1
Individual	Email submission	41	2.5.1, 2.12.1, 2.3.1
Individual	Email submission	42	2.5.1, 2.12.1, 2.3.1
Individual	Email submission	43	2.5.1, 2.12.1, 2.3.1
Individual	Email submission	44	2.5.1, 2.12.1, 2.3.1
Individual	Written letter	45	2.2.1, 2.3.1
Individual	Written letter	46	2.3.3, 2.2.1, 2.6.2
Individual	Written letter	47	2.7.3, 2.7.1, 2.11, 2.10.3
Individual	Written letter	48	2.4, 2.6.1, 2.3.5, 2.8, 2.7.1, 2.7.2, 2.10.2, 2.12.4, 2.6.2, 2.2.2
Individual	Written letter	49	2.3.3, 2.6.2, 2.2.1
Government Agency (Parkes Shire Council)	Written letter	50	3.1, 3.2, 3.3, 3.4, 3.5, 3.6
Individual	Email submission	51	2.5.1, 2.12.1, 2.3.1
Individual	Email submission	52	2.2.1
Individual	Email submission	53	2.12.1
Individual	Email submission	54	2.12.1, 2.5.1, 2.12.1
Individual	Email submission	55	2.3.1, 2.2.1, 2.12.1
Individual	Written letter	56	2.3.2, 2.3.1, 2.12.1
Individual	Email submission	57	2.5.1, 2.12.1, 2.3.1
Individual	Email submission	58	2.5.1, 2.3.1, 2.12.1
Individual	Email submission	59	2.5.1, 2.12.1, 2.3.1
Individual	Email submission	60	2.5.1, 2.12.1, 2.3.1, 2.6.3
Individual	Email submission	61	2.3.3, 2.3.2

Respondent	Form of submission	Submission No.	Section number where issues are addressed
Group of individuals (406 signatures)	Petition	62	2.3.1, 2.3.2, 2.6.1, 2.12.1, 2.5.3
Individual	Written letter	63	2.10.4, 2.10.1
Individual	Web submission	64	2.13, 2.3.1, 2.6.2, 2.6.1, 2.2.2, 2.10.2
Individual	Web submission	65	2.2.1, 2.3.4, 2.7.1, 2.13
Individual	Web submission	66	2.7.2
Individual	Web submission	67	2.3.5, 2.7.2
Individual	Web submission	68	2.2.1, 2.6.2
Individual	Web submission	69	2.10.4
Individual	Web submission	70	2.2.1
Individual	Web submission	71	2.3.1, 2.7.2 ,2.6.2, 2.2.1
Individual	Web submission	72	2.3.5, 2.3.2, 2.2.3
Individual	Web submission	73	2.12.1, 2.6.3
Individual	Web submission	74	2.5.1, 2.5.4
Individual	Web submission	75	2.5.1
Individual	Web submission	76	2.12.1, 2.12.3, 2.7.3, 2.5.1, 2.13, 2.3.3, 2.3.4
Individual	Web submission	77	2.12.1
Individual	Web submission	78	2.6.1, 2.3.3, 2.3.5, 2.7.1, 2.5.2, 2.2.1, 2.3.1
Individual	Web submission	79	2.2.1
Individual	Web submission	80	2.2.1
Individual	Web submission	81	2.12.1, 2.3.1, 2.6.3
Individual	Web submission	82	2.3.1, 2.12.1, 2.9, 2.6.1, 2.8
Individual	Web submission	83	2.3.2, 2.2.1
Individual	Web submission	84	2.2.1
Individual	Web submission	85	2.10.1, 2.3.5
Individual	Web submission	86	2.2.1, 2.3.1, 2.5.3, 2.10.4, 2.5.1, 2.2.3
Individual	Web submission	87	2.3.1, 2.8, 2.2.1, 2.4, 2.2.3
Individual	Web submission	88	2.12.1, 2.3.2, 2.3.4, 2.5.2, 2.6.2
Individual	Web submission	89	2.3.4
Individual	Web submission	90	2.3.2, 2.3.4
Individual	Web submission	91	2.3.1

Respondent	Form of submission	Submission No.	Section number where issues are addressed
Individual	Web submission	92	2.5.1, 2.9, 2.3.2, 2.2.2
Individual	Web submission	93	2.7.1, 2.5.1, 2.3.3, 2.6.2
Individual	Web submission	94	2.2.1, 2.3.3, 2.6.2
Individual	Web submission	95	2.2.1
Individual	Web submission	96	2.3.3, 2.6.2, 2.7.1, 2.3.4, 2.4, 2.2.3, 2.5.1
Individual	Web submission	97	2.2.1, 2.4, 2.2.3
Individual	Web submission	98	N/A
Individual	Web submission	99	2.3.1, 2.7.1, 2.10.1, 2.5.2, 2.4, 2.2.3, 2.10.2
Individual	Web submission	100	2.3.5
Individual	Web submission	101	2.11, 2.7.2, 2.8
Individual	Web submission	102	2.11, 2.7.1, 2.12.3, 2.6.2, 2.4, 2.5.4
Individual	Web submission	103	2.3.1, 2.5.2, 2.5.1, 2.5.4, 2.6.2, 2.2.2, 2.12.4, 2.12.1,
Individual	Web submission	104	2.5.4, 2.3.1, 2.5.2, 2.5.1, 2.5.3
Individual	Web submission	105	2.2.1, 2.13
Individual	Web submission	106	2.5.1, 2.3.1, 2.6.1, 2.12.3
Individual	Web submission	107	2.12.1, 2.10.1, 2.3.1, 2.6.1, 2.12.3, 2.5.3
Individual	Web submission	108	2.10.1, 2.12.1, 2.5.1, 2.3.1, 2.6.1, 2.10.2, 2.7.1
Individual	Web submission	109	2.5.1, 2.3.1, 2.10.1, 2.12.1, 2.6.1, 2.7.1, 2.5.3
Individual	Web submission	110	2.2.1
Individual	Web submission	111	2.2.1
Individual	Web submission	112	2.12.1
Individual	Web submission	113	2.5.1, 2.12.1, 2.3.1, 2.2.1, 2.6.2
Individual	Web submission	114	2.3.1, 2.5.1, 2.2.3, 2.2.1
Individual	Web submission	115	2.6.2
Individual	Web submission	116	2.2.1, 2.6.2, 2.3.4
Individual	Web submission	117	2.5.1, 2.12.2, 2.7.1
Individual	Email submission	118	2.13
Individual	Letter submission	119	2.10.1

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13 22 13

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December 2019
RMS 19.1498
ISBN: 978-1-922338-22-8