Bus Priority Infrastructure Program On-time running improvements Castle Hill to M2 Motorway corridor

Submissions report

Roads and Maritime Services | November 2017

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Roads and Maritime Services

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November 2017

Prepared by NGH Environmental and Roads and Maritime Services

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Approval and authorisation

Title	Bus Priority Infrastructure Program On-time running improvements Castle Hill to M2 Motorway Corridor Submissions Report
Accepted on behalf of Roads and Maritime NSW by	Roopa Jogunoori Project Manager Busway Program, Easing Sydney's Congestion PMO, Sydney Division
Signed	
Dated	30 November 2017

Executive summary

The proposal

Transport for NSW, in partnership with Roads and Maritime Services (Roads and Maritime), is proposing to improve the reliability of buses by making changes to bus stops along the corridor between Castle Hill and the M2 Motorway (the proposal) (See *Figure 1-1*). This corridor is predominantly serviced by the Metrobus M61 route, plus other local and suburban bus routes on parts of the corridor. It also forms part of the broader corridor that links Castle Hills to Parramatta via Windsor Road and to Liverpool via the T-way in Sydney's Bus Future.

The main features of the proposal are:

- Rationalising bus stop locations to optimise the spacing between bus stops
- Lengthening some bus stops to improve access for buses and assist passenger boarding and alighting
- Relocating some bus stops to optimise spacing and / or address traffic and safety issues
- Improving bus stop infrastructure at some locations including changes to bus stop signage
- Reducing delays for buses by moving bus stops to the departure side of traffic lights, allowing them to take advantage of the Public Transport Information and Priority System (PTIPS).

The proposed changes include the following:

- Eight bus stop removals (including the removal of signage and other bus stop infrastructure)
- Three bus stop improvements (including extensions)
- Five bus stop relocations.

Following a review of the submissions received, changes to the proposal have been made. These are discussed in Chapter 4 (Changes to the proposal) and a summary table of the revised proposal per location is provided in Table 0-1.

Display of the REF

Roads and Maritime prepared a review of environmental factors to assess the environmental impacts of the proposed works. The review of environmental factors was publicly displayed for 33 days between Monday 15 May 2017 to Friday 16 June 2017 on the Roads and Maritime project website and made available for download. The website link was advertised in the Hills Shire Times.

In addition to the above public display, a community update was letterbox-dropped to residents and businesses, and additional stakeholders were sent the community update with a covering email/letter. During the public display period, project team staff visited potentially affected residents, businesses and other stakeholders near bus stops with significant changes.

Issues raised

A total of 99 submissions were received in response to the display of the REF. This included submissions from the community, two organisations (Stockland and Guide Dogs NSW/ACT) and a community group (Action for Public Transport (APT)). 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.

Of the 99 submissions received in regard to the 16 bus stops where works are being proposed:

- 11 stops received objections.
- Between one and 51 objections on individual bus stops were received, with the highest number of objections received for bus stops #11, #12, #13, and #24 (#11 and #12 – 10 objections, #13 – 32 objections, #24 – 51 objections).
- Five bus stops received submissions that supported the proposed works.
- The proposal wide submissions received 12 objections and 7 submissions in support.

A total of 253 issues were raised about the proposal. Key issues raised by both the community and organisations and the community group included the following:

- Increased walking distance as a result of removing/relocating bus stops, in particular where it would impact on the elderly or school children (27 issues raised).
- Overall justification of the proposed works, in terms of whether the scope of works would improve bus travel times (116 issues raised).
- Decreased pedestrian safety as a result of removing/relocating bus stops in areas that do not provide safe pedestrian crossings (28 issues raised).
- Access for visually impaired people using the bus stops on this route (two issues raised).

In addition, a total of 16 issues were raised which were considered outside the scope of the proposed works.

Proposal changes

The following table (Table 0-1) provides a summary of the changes to the proposal as a result of the public display of the REF and feedback received from the local community and organisations as described in this report.

A total of four bus stops are now proposed to be retained in their current location (#11, #12, #13 and #24).

Table 0-1 Proposed changes to original proposal

Ref#	Location and TSN[1]	Original proposal	Changes to the proposal
11	Old Northern Road near Oxley Avenue (Southbound) (stop TSN #2154120)	Remove bus stop 2154120. Existing clearway operation to be retained, no loss of parking.	A high number of customers park nearby in Oxley Avenue and surrounds, students and a vision impaired user. Bus stop # 11 will be retained at its current location
12	Old Northern Road near Oxley Avenue (Northbound) (stop TSN #2154111)	Remove bus stop and replace with clearway	A high number of customers park nearby in Oxley Avenue and surrounds, students and a vision impaired user. Bus stop # 12 will be retained at its current location
13	Baulkham Hills College, Old Northern Road (Northbound) (stop TSN #2153218)	Relocate bus stop and replace with clearway	There is a high number of customers who are students accessing the TAFE and Baulkham Hills High School. The local community raised concerns about the safety of students (day and night) should this bus stop be removed. Bus stop # 13 will be retained at its current location, however, some improvements will be made to make the bus stop in-line by infilling the bus bay with concrete hardstand.

[1] Transport Stop Number

Ref#	Location and TSN[1]	Original proposal	Changes to the proposal
24	Stockland Mall, Old Northern Road (Northbound) (stop TSN #2153207)	Remove bus stop and replace with clearway. No loss of parking	There is a high number of customers including travellers accessing Stockland Mall, seniors/pensioners, children and concession card holders, as well as commuters. Bus stop # 24 will be retained at its current location.

Next steps

The submissions report will be considered by Transport for NSW with the Roads and Maritime prior to making a final decision regarding the proposal. Further consultation with the Hills Shire Council will occur during implementation of the proposal, if approved.

Contents

Appendices

1 Introduction and background

1.1 The proposal

Transport for NSW, in partnership with Roads and Maritime, is proposing to improve the reliability of buses by making changes to bus stops along the corridor between Castle Hill and the M2 Motorway (the proposal) (See Figure *1-1*). This corridor is predominantly serviced by the Metrobus M61 route, plus other local and suburban bus routes on parts of the corridor. It also forms part of the broader corridor that links Castle Hill to Parramatta via Windsor Road and to Liverpool via the T-way in Sydney's Bus Future.

The proposal site traverses the suburbs of Baulkham Hills and Castle Hill and is within the Hills Shire local government area.

The key features of the proposal are:

- Rationalising bus stop locations to optimise the spacing between bus stops
- Lengthening some bus stops to improve access for buses and assist passenger boarding and alighting
- Relocating some bus stops to optimise spacing and / or address traffic and safety issues
- Improving bus stop infrastructure at some locations including changes to bus stop signage
- Reducing delays for buses by moving bus stops to the departure side of traffic lights, allowing them to take advantage of the Public Transport Information and Priority System (PTIPS).

The proposed changes as presented in the Castle Hill to M2 Motorway Corridor Review of Environmental Factors include:

- Eight bus stop removals (including the removal of signage and other bus stop infrastructure)
- Three bus stop improvements (including extensions)
- Five bus stop relocations.

Implementation of the proposal would take up to two months.

A more detailed description of the proposal is found in the Bus Priority Infrastructure Program On-time running improvements Castle Hill to M2 Motorway Corridor Review of Environmental Factors (the REF) prepared by Roads and Maritime in May 2017.

1.1.1 Need for the proposal

The proposal forms part of the Bus Priority Infrastructure Program and supports *Sydney's Bus Future* (Transport for NSW, 2013) by delivering projects that make buses more reliable. The Bus Priority Infrastructure Program is consistent with, recognises and progresses NSW Government policies and plans, including the NSW Premier Priorities and Sydney's Bus Futures. The current program focuses on improvements in Rapid and Suburban routes, as outlined in Sydney's Bus Future, and targeted corridors that experience lower service reliability.

The Bus Priority Infrastructure Program supports targeted improvements for bus on-time running through a range of initiatives, including:

- Combining or removing some bus stops where they are spaced close together
- Lengthening some bus stops to accommodate longer articulated buses
- Making it easier for buses to move in and out of bus stops by removing or relocating on-street parking
- Reducing potential delays for buses at traffic signals by moving stops to the departure side of the intersection.

This initiative is the first stage aimed at achieving on-time running improvements of buses. Any future proposal by the NSW Government to develop the corridor into a rapid route would involve further reviewing the bus service along this corridor and consideration of other road and traffic management improvements. This would be subject to further consultation.

1.1.2 Objectives of the proposal

The objectives of the proposal are to:

1. Achieve more reliable travel times for bus passengers
2. Improve on-time running for buses consistent with the State Priority to maintain or improve reliability of public transport services
3. Improve road safety and traffic efficiency at bus stop locations #10, #23 and #28
4. Minimise impacts for users of suburban and local services
5. Minimise impacts on the environment and the community.

1.1.3 Proposal considerations

Overview

Every year, Transport for NSW and bus operators receive thousands of complaints about slow and unreliable bus services. This can affect people's perception of bus service quality compared to other travel choices and their ability to reliably access employment, education, medical and other services. A number of measures have been identified to address these issues targeting particular bus corridors that currently experience lower service reliability including bus route M61.

Adjusting the number and location of bus stops along a bus corridor is one measure that can help reduce the risk of delays to passengers. It limits the need for buses to continually pull in and out of traffic from poorly located stops where less customers use the bus stop compared to other adjacent stops along the route or where buses may miss green traffic lights or get caught in queues behind turning cars.

Maintaining suitable access to bus stops and adjacent land uses which the stop services is an important consideration when determining if a bus stop should be removed or relocated. The proposal aims to strike a balance between:

- Maintaining a suitable walking distance to bus stops (i.e. within a 400 metre radius or an average five minute walk[2]) and those key land uses which they service, and
- Providing a bus service that can keep to time and enable bus passengers to reach their destinations quickly and reliably.

While at individual locations the proposed changes may only seem to have small benefits, collectively they can deliver an important cumulative benefit to service reliability across the corridor.

Options selection

The methodology for selecting the preferred option was an iterative process that involved several stages of evaluation as described below:

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[2] Based on a 'walkable' catchment area of 400 metres as described in *'Integrating Land Use and Transport: Improving Transport Choice – Guidelines for planning and development',* prepared for NSW Department of Urban Affairs and Planning, August 2001, 99/77, ISBN 0 7347 0076 8. This is also consistent with the guidelines of Sydney's Bus Future which states an average five minute walk to a bus route.

Stage 1 – Preliminary investigations

Performance study carried out by Transport for NSW along key corridors outlined in *Sydney's Bus Future* (Transport for NSW, 2013).

Stage 2 – Field investigation / site observations

- Inspect bus routes by riding the buses during peak periods to understand the bus route operation and identify operational issues
- Review bus stop location, topography and adjacent land use
- Conduct a survey on each bus stop to determine the number of passengers using the stop and user's profiles (also reviewing Opal data)
- Carry out an audit of each bus stop to prepare an inventory of existing infrastructure at the bus stop.

Stage 3 – Early stakeholder engagement

- Engage with stakeholders such as bus operators and councils regarding the proposal corridor.

Stage 4 – Initial assessment

- Review the survey data and identify deficiencies of existing bus stop infrastructure against the draft *Bus Stop Location Guidelines Sydney Metropolitan Area* (Transport for NSW, 2014).
- Carry out a preliminary assessment for each bus stop to determine whether the bus stop should be retained, modified, relocated or consolidated, including a review and analysis of:
    - Customer counts (Opal data) to identify usage at each stop including identifying the busiest times and the relative numbers of seniors/pensioners and students
    - PTIPS data showing bus performance along routes, compared with schedule
    - Key customer generators
    - Topography and bus stop spacing having regard to the 400 metre spacing guideline in *Sydney's Bus Future* (which helps with efficient bus operation) whilst maintaining a suitable walking distance to bus stops (i.e. within a five minute walk or 400 metre radius).
- In the initial assessment phase, Roads and Maritime's Network and Safety team undertook a safety review of the bus stop locations identified for potential relocation/removal/extension, taking into consideration the following factors:
    - Curvature of the road and sight distance
    - Location in relation to traffic signals and pedestrian crossings
    - Adjacent land uses
    - Vegetation and street tree plantings
    - Adjacent traffic or parking restrictions
    - Distances to adjacent bus stops
    - Developing the proposed scheme of bus stop changes in order to determine overall location of bus stops along the route,
    - Consultation with Transport for NSW, local bus operator and STA to ensure the proposed changes are suitable.

Stage 5 – Detailed assessment

- Carry out additional surveys at the identified bus stops during peak periods covering extended periods for both weekday and weekend
- Prepare concept drawings (to scale) for each bus stop where modifications are proposed, identifying new / removed / relocated infrastructure
- Prepare a plan of work including ownership of assets and cost estimate for bus stop modification, relocation and consolidation.

Stage 6 – Environmental assessment

- Prepare a REF and assess the potential environmental impacts of the proposal.

Stage 7 – Wider community and stakeholder consultation

- Publicly display the REF and invite community and stakeholder comment
- Consider community / stakeholder views and modify the proposal as appropriate.

Key considerations

Key considerations for developing the proposal were derived from the *Sydney's Bus Future* (Transport for NSW, 2013) and the draft *Bus Stop Location Guidelines Sydney Metropolitan Area* (Transport for NSW, 2014) and were as follows*:*

1. Generally aiming for a standardised spacing of about 400 metres between bus stops, with a greater than 400 metre spacing accepted at some locations to minimise the number of bus stop relocations across the corridor (acknowledging that bus stop spacings of around 800 metres would still maintain a walking catchment of 400 metres to the nearest bus stop, however a 800 metre spacing was not an aim of this proposal).
2. Ensure bus stops are located close to major customer generators and community facilities to maximise the efficiency of a bus stop and eliminating redundant and underutilised stops.
3. Locate bus stops on the departure side of signalised intersections to improve traffic conditions and help buses to meet the timetable using PTIPS.
4. Adjust and locate bus stops to maintain and/or improve pedestrian safety.
5. Provide suitable bus zone length to allow buses to manoeuvre in and out of bus stops easily without obstructing the adjacent lane.

An important consideration in developing the proposal was to ensure bus stops used by local and suburban services in the corridor remained accessible, factoring in site specific considerations such as topography, walking distance, adjacent land uses and safe crossing facilities.

Improving Transport Choice - guidelines for planning and development (NSW Department of Urban Affairs and Planning[3], 2001) is an important part of the State Government's commitment to promote urban areas in NSW as attractive, accessible and convenient places in which to live and work. The guidelines are part of a package of initiatives to improve the integration of land use and transport planning and provide principles, initiatives and best practice to improve access to more sustainable transport modes including public transport (buses and trains), walking and cycling.

The guidelines recognise that the proximity of housing and other key land uses such as commercial centres and community facilities to public transport services is an important determinant in improving transport choice and managing travel demand in urban areas. In relation to land use and bus services, the guidelines recommend a maximum of 400 metres (about a five minute walk) from a bus route accessing a metropolitan railway station or equivalent mass transit node served at least every 20 to 30 minutes. This is generally consistent with the guidelines in *Sydney's Bus Future* which recommend that people are within an average five minute walk to a bus stop (Transport for NSW, 2013). In denser urban areas with higher frequency services, the *Improving Transport Choice* guidelines state that the walking catchment could be 600 to 800 metres.

Where distances between stops have exceeded 400 metres, consideration was given to ensure that the proposed spacing maintained a 400 metre walking catchment (or five minute walk) to the

[3] The Department of Urban Affairs and Planning is now the Department of Planning and Environment

nearest bus stop in accordance with the guidelines of *Sydney's Bus Future* and *Improving Transport Choice - guidelines for planning and development* and *Sydney's Bus Future* described above.

Based on these guidelines, stop spacings of up to 800 metres would maintain an accessible walking catchment to the nearest bus stop of 400 metres, however proposed bus stop spacings have generally been kept well below 800 metres to maintain a duplicate coverage area that potentially provides bus users with a choice of stops in some locations. Where removing a bus stop would result in excessive distance between stops for local and / or suburban routes, no changes have been proposed.

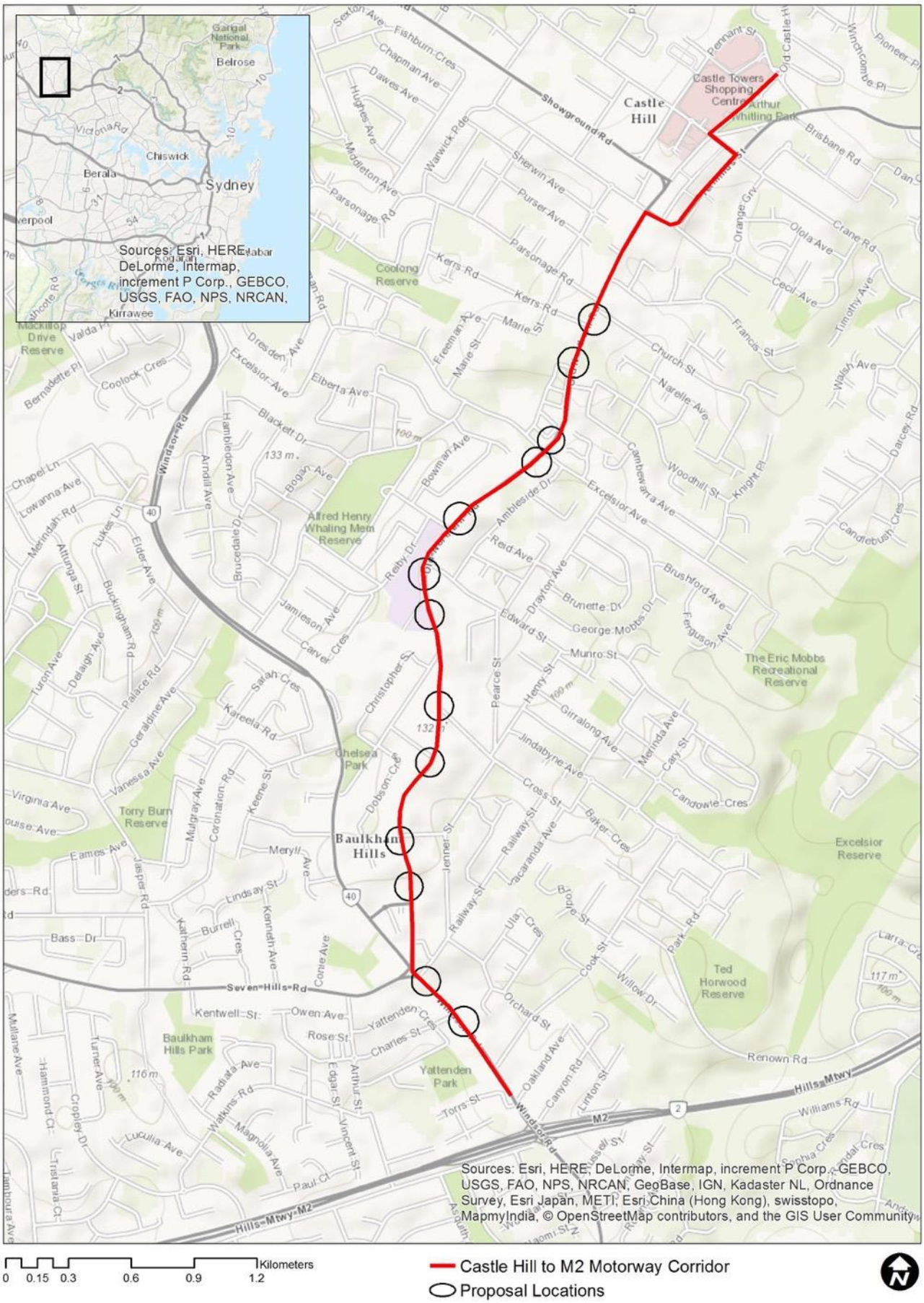

Figure 1-1 Location of the proposal

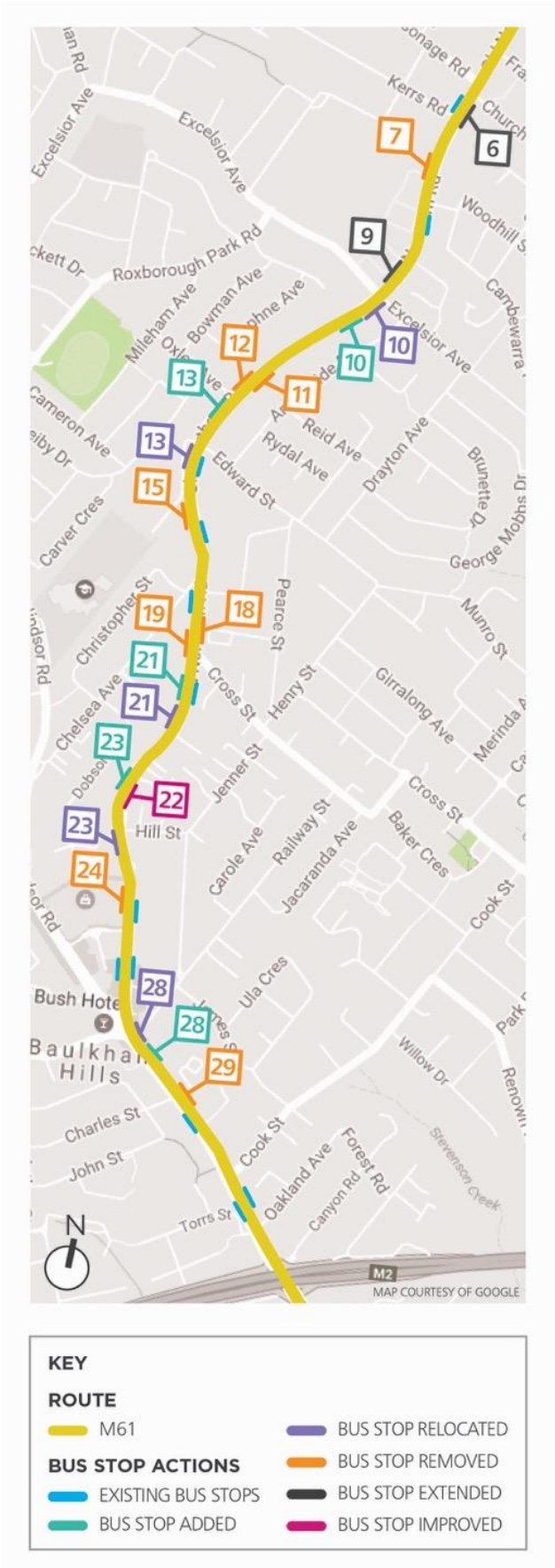

Figure 1-2 Proposed changes on the corridor from Castle Hill to M2 Motorway as proposed in the REF

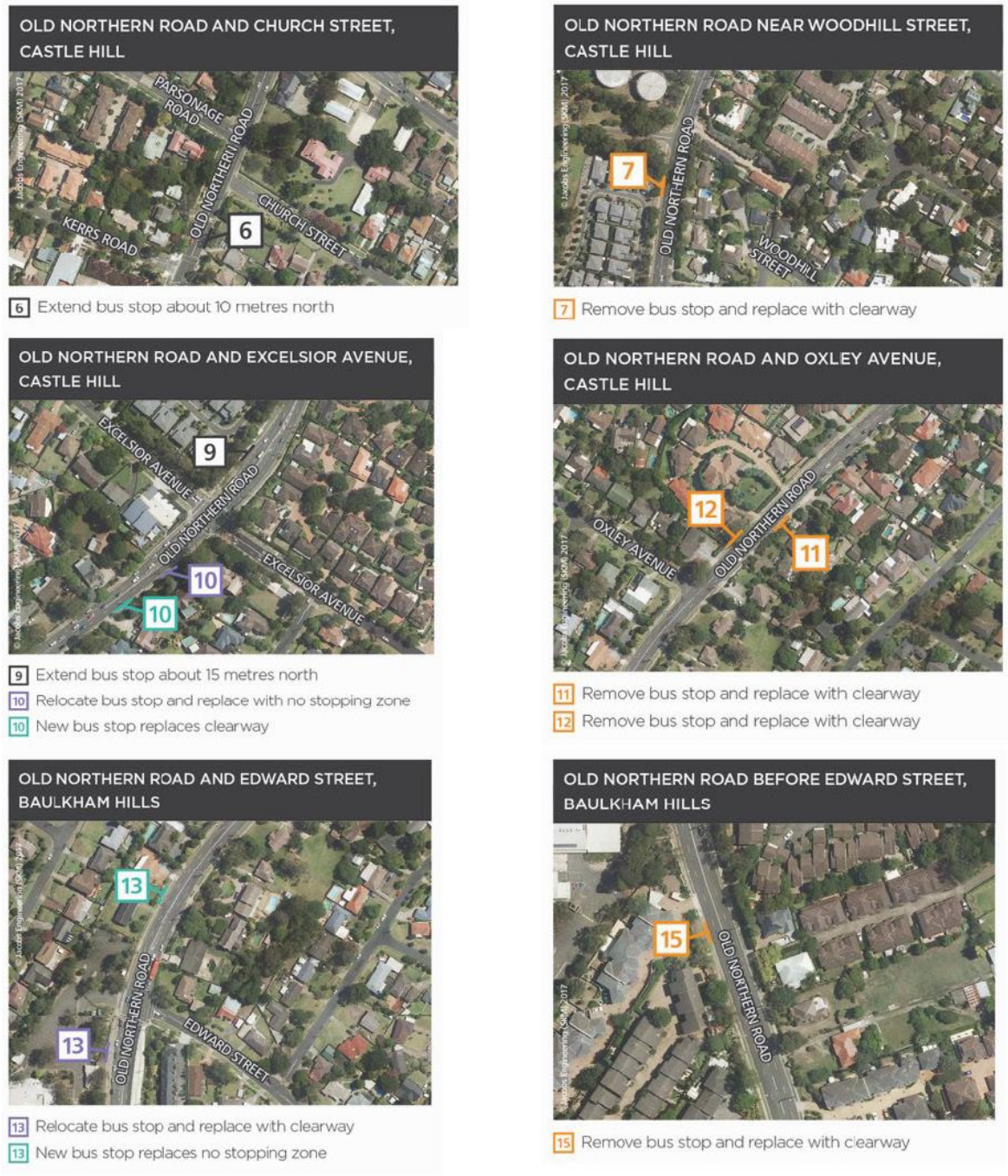

Figure 1-3 Detail of proposed changes Locations #6, #7, #9, #10, #11, #12, #13 and #15 as proposed in the REF

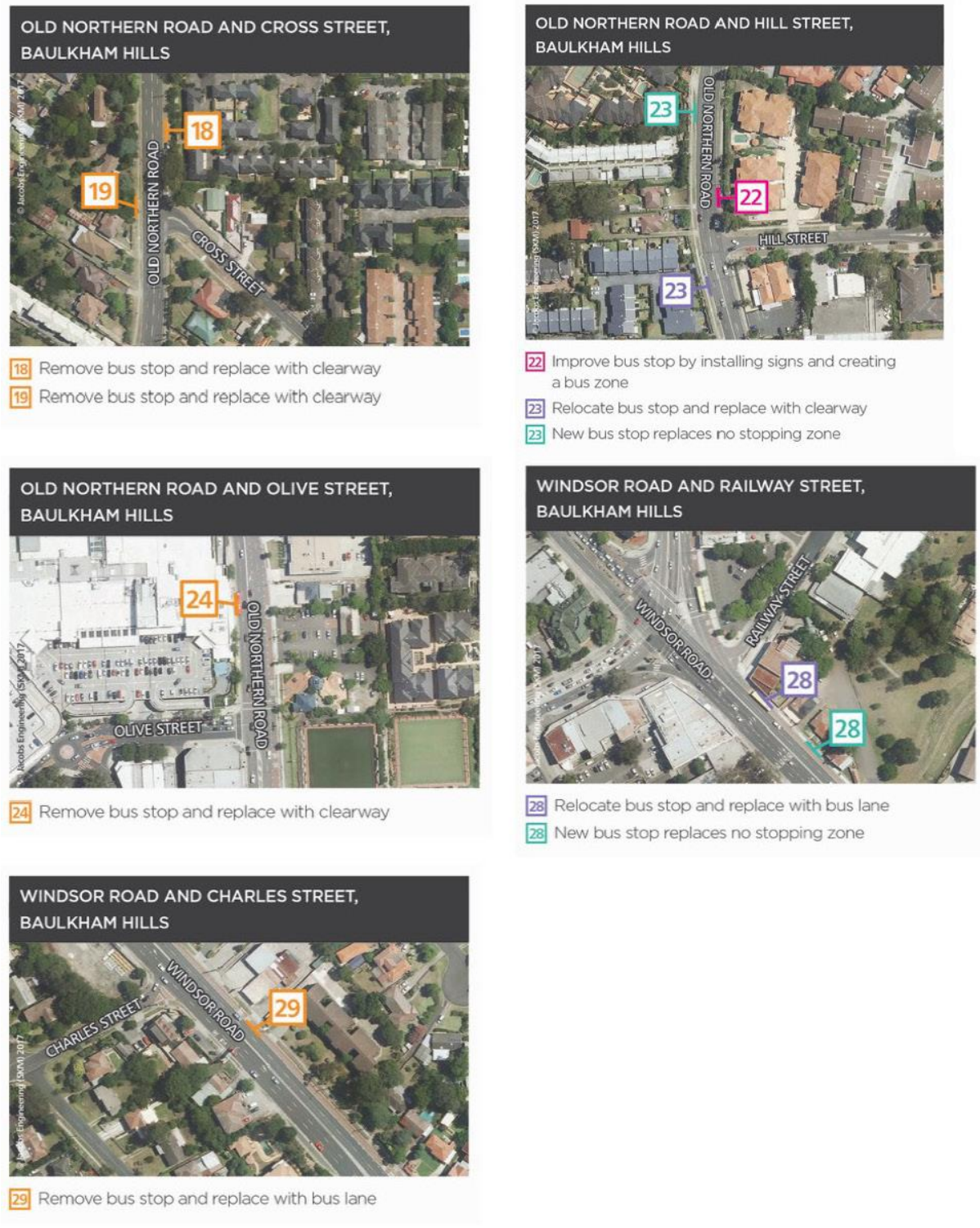

Figure 1-4 Detail of proposed changes Locations #18, #19, #22, #23, #24, #28 and #29 as proposed in the REF

1.2 REF display

Roads and Maritime and Transport for NSW sought community feedback on a Review of Environmental Factors (REF) for changes to bus stops along the corridor between Castle Hill and the M2 Motorway. This is serviced mainly by the M61 and is in the Hills Shire Council LGA. The proposal has been developed in close consultation with Transport for NSW, Sydney Buses and Hills Shire Council. The proposal is part of the Bus Priority Infrastructure Program that aims to improve the reliability of bus services by combining, relocating, removing or lengthening some bus stops. The program is part of Transport for NSW's Sydney's Bus Future.

Roads and Maritime prepared a REF to assess the environmental impacts of the proposed works. The review of environmental factors was publicly displayed for 33 days between 15 May 2017 to Friday 16 June 2017 on the Roads and Maritime project website and made available for download. The website link was advertised in the Hills Shire Times.

In addition to the above public display, an invitation to comment was sent directly to several identified stakeholders (Table *1-1*).

Community updates were distributed to residents and businesses along the impacted route. There was also signage displayed at bus stops that were proposed to be removed, extended or relocated. Doorknocks were carried out for the residents and businesses near these affected stops. Ads were also placed in the local paper as well as updates to the Roads and Maritime website and offering stakeholder meetings to schools and businesses.

Table 1-1 Communication activities

Date	Communication activity	Targeted stakeholders
Monday 15 May 2017	Distribution of community update	Local residents, business and community
Monday 15 May 2017	Signs at bus stops that proposed to be removed, relocated or extended	Transport users
Monday 15 May 2017	Flyers on buses that follow the affected routes	Transport users
Monday 15 May 2017	Media release	Wider community
Monday 15 May 2017	Website update	Wider community
Monday 15 May 2017	Email update	Local government, emergency services, utilities, interest groups and educational stakeholders with email addresses
Monday 15 May 2017	Direct mail stakeholder letter	Local government, emergency services, utilities, interest groups and educational stakeholders without email addresses
Monday 15 May 2017	Print advertisement in Hills Shire Times	Wider community

Date	Communication activity	Targeted stakeholders
Thursday 25 May 2017	Doorknocks around stops that proposed to be removed, relocated or extended	Local residents and businesses

1.3 Purpose of the report

This submissions report relates to the REF prepared for the Bus Priority Infrastructure Program On-time running improvements Castle Hill to M2 Motorway Corridor, and should be read in conjunction with that document (Bus Priority Infrastructure Program - On-time running improvements Castle Hill to M2 Motorway corridor REF May 2017).

The REF was placed on public display and submissions relating to the proposal and the REF were received by Roads and Maritime.

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.

This submissions report summarises the issues raised and provides responses to each issue as well as outlines the proposed changes to the proposal that are required as a result of the issues raised in submissions and associated environmental impacts. Additional amendments to the safeguards and mitigation measures for inclusion within the REF are also outlined to address issues raised in submissions.

This submissions report is structured as follows:

- Chapter 2 (Summary of issues)
- Chapter 3 (Response to issues)
- Chapter 4 (Changes to the proposal)
- Chapter 5 (Environmental management).

2 Summary of issues

Roads and Maritime Services received 99 submissions, between 17 May 2017 and 19 June 2017. Appendix A lists the respondents and each respondent's allocated submission number. Appendix A also indicates where the issues from each submission have been addressed in Chapter 3 (Response to issues) of this report.

2.1 Overview of issues raised

A total of 99 submissions from the community, two organisations (Stockland and Guide Dogs NSW/ACT) and one community group (Action for Public Transport (APT)) were received in response to the display of the REF.

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 in submissions have been categorised by location (ie. by individual bus stops or proposal wide) as the issues raised primarily related to specific bus stops. The issues have been further categorised and summarised based on the nature of the comments raised for each stop (ie. safety, increased walking distance).

This report provides an overview of the number of submissions received with identified support or objection to the proposed works at specific at specific bus stops and the proposal as a whole.

Of the 99 submissions received in regard to the 16 bus stops where works are being proposed:

- 11 stops received objections.
- Between one and 51 objections on individual bus stops were received, with the highest number of objections received for bus stops #11, #12, #13, and #24 (#11 and #12 – 10 objections, #13 – 32 objections, #24 – 51 objections).
- Five bus stops received submissions that supported the proposed works.
- The proposal wide submissions received 12 objections and 7 submissions in support.

A total of 253 issues were raised on the proposal. Key issues raised by both the community and organisations and the community group included the following:

- Increased walking distance as a result of removing/relocating bus stops, in particular where it would impact on the elderly or school children (27 issues raised).
- Overall justification of the proposed works, in terms of whether the scope of works would improve bus travel times (116 issues raised).
- Decreased pedestrian safety as a result of removing/relocating bus stops in areas that do not provide safe pedestrian crossings (28 issues raised).
- Access for visually impaired people using the bus stops on this route (two issues raised)

In addition, a total of 16 issues were raised which were considered outside the scope of the proposed works.

Figure 2-1 graphically illustrates the issues raised by the community in their submissions for all at specific bus stops combined, including the proposal as a whole. A total of 253 issues were raised. The key issues raised included the following:

- Existing bus stops are convenient and well used.
- Reduced access for elderly and disabled.

- Reduced access for visually impaired.
- Access and safety for School children and college students.
- Contribution to traffic congestion.
- Discourages use of public transport.

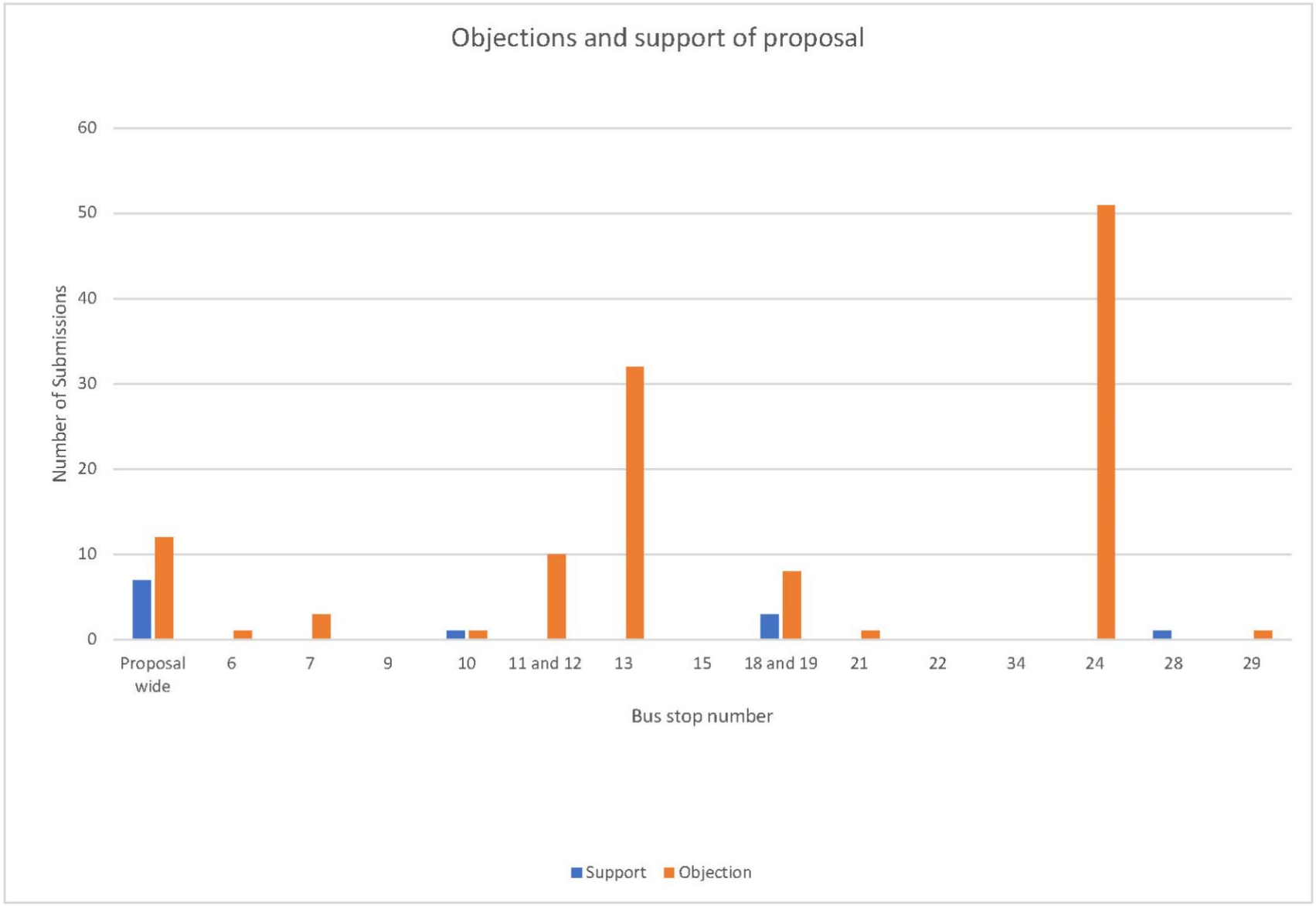

Figure 2-1 Objections and support for proposed works at individual bus stops by submission issue. It includes issues considered outside the scope of works being proposed.

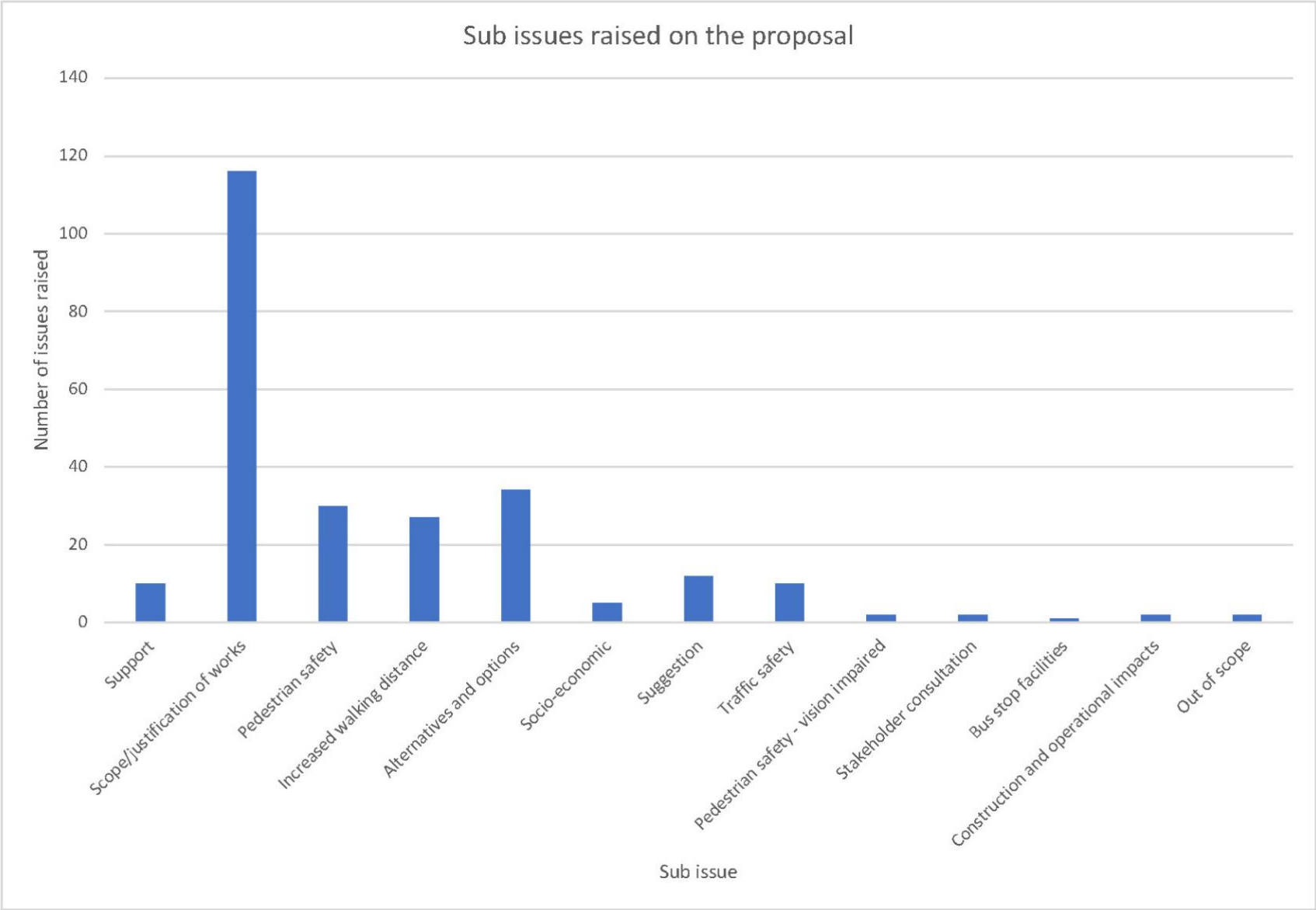

Figure 2-2 Sub issues themes raised in the submissions for all bus stops combined, including the proposal as a whole

3 Response to issues

This chapter addresses the submissions made in relation to the proposal. Proposal wide comments made regarding the proposal are addressed in section 3.1. Specific comments on individual bus stop locations are addressed in sections 3.1 to 3.15. Out of scope submissions are addressed in section 3.16.

3.1 Proposal wide

3.1.1 Support

Submission number(s)

12, 20, 59, 60

Issue description

- Supports the rationale of the project as often there are too many stops placed close to each other and rationalising bus stops will improve the efficiency and reliability of the M61 route and improve traffic flow.

Response

Roads and Maritime and Transport for NSW acknowledge the support for the proposal.

3.1.2 Scope/ Justification of works

Submission number(s)

10, 11, 18, 24, 25, 52, 65, 72, 75, 76, 77, 78, 82, 79

Issue description

Justification for reduction in stops easing congestion

- Not sure the service will improve with reduction in stops as buses would have to stop longer at less stops to let on the same number of people, taking the same amount of time. Buses are often queued in traffic to get into bus bays and relocation of stop #13, combined with adding in passengers that presently use stops #11 and #12, will not improve this.
- How will removing access to buses allow a clearer run for cars and ease congestion?
- Changes will increase congestion because people will drive instead of using public transport.

Does not address underlying cause of bus delays

- Removal of bus stops will not increase consistency of travel times or irregular dwell times. Bus delays are experienced as a result of:
    - Buses that are full, not from buses running late.
    - Traffic, including M1 traffic, not the number of bus stops
    - M2 and Harbour Bridge delays
    - Years of development without adequate infrastructure
- The proposal does not take into account future growth.
- REF provides no basis for the claim that fewer bus stops will increase bus reliability.
- By increasing the number of commuters at each stop, buses would stop longer, potentially resulting in traffic and current bus bays might not alleviate concerns.

Bus bay access

- Preserving stops with bus bays in preference to on road stops will not make it easier for buses; bus bays make it harder to merge back into traffic.

Justification for closing bus stops

- Public transport options in the Hills District are already poor. Closing stops and providing no information on alternatives will worsen the situation. Is there a reason for shutting down stops in the area?
- Concerned that the removal of bus stops would result in overcrowding at existing infrastructure and that upgrades beyond those proposed would be necessary.

Priority to passengers and buses

- The Bus Priority Program should give priority to customers not buses. Speeding up buses by removing stops and detouring around busy centres would be contrary to customers interests.
- The Bus Priority Program indicates that buses will have an advantage over other road users, however, it is not clear what the advantage is.

Safety concerns

- The proposed changes will result in unsafe conditions for users, with no change in reliability and longer travel times.

Commuter parking

- Parking is an issue for commuters travelling to the city. Removal of bus stops would only increase off street parking and make stops even more heavily crowded. There isn't enough parking to catch transport from Castle Hill.
- Streets near every bus stop on Old Northern Road are completely parked out every day. It will not be easy for people to find a parking around remaining stops

Longer bus zones no longer required

- Agree with moving stops to allow use of TGSI and improve traffic flow and signage and infrastructure. Although need for longer bus zones may not be as great now that the government is moving to double decker buses rather than articulated buses.

Route location error

- There is an error on the map on page 16 of the REF that shows route M61 crossing the M2. M60 crosses the M2 and M61 use the M2 to/from the city. Perhaps the intention is to benefit M60 and M61 buses identically north of the M2.

Response

Justification for reduction in stops easing congestion

As detailed in section 1.1.3 of this report, a key consideration in the development of the proposal was to ensure (as far as practicable) that bus stops were adjusted and located to improve bus on-time running.

Improving bus services will encourage people to use public transport which will help improve traffic congestion on our roads. While at individual locations the proposed changes may only seem to have small benefits, collectively they can deliver an important cumulative benefit to service reliability across the corridor as a whole. The proposal is one of many projects currently being investigated and implemented to improve bus services in the Sydney region.

Improvements to the reliability of bus services are expected to encourage public transport use. While for some people optimisation of bus stop spacing would mean additional walking distance and reduced convenience, the proposed changes would still mean the bus services using the corridor would be accessible and would remain an attractive transport option.

The potential for overcrowding at retained stops is considered limited because the proposal targets not only bus stops that are positioned too close together, but also those which are underutilised. In most cases, the bus stops identified for removal have an average 24-hour weekday demand of less than 30 passengers and have usage which is lower than the preceding and/or following bus

stops on the route. In some cases, the average 24-hour weekday demand is less than ten passengers.

Following a review of the issues raised by the local community, Roads and Maritime and Transport for NSW have agreed that a number of bus stops needed to be retained to minimise impacts on the local community, in particular seniors/pensioners, children and concession card holders. The proposed changes are detailed in Chapter 4 (Changes to the proposal). Bus stop #11 (TSN #2151420), #12 (TSN #2154111), #13 (TSN #2153218) and #24 (TSN #2153207) are now proposed to be retained in their current location and improved including the following:

- Small bus bay at present to be filled in
- Make inline bus stop
- Provide concrete hardstand.

Does not address underlying cause of bus delays

The aim of the proposal is to improve on time running on buses. This may reduce the number of buses that are at capacity by improving reliability. It is not within the scope of the proposal to address traffic congestion or delays on the M1, M2 and Harbour Bridge.

While it is acknowledged that the road network can be highly congested resulting in delays and poor reliability for some bus services, the proposal would still improve bus reliability by reducing common sources of delay. A key issue is delays associated with servicing bus stops that are positioned too close together and which are underutilised. Numerous bus stops positioned closely together multiply the delays associated with a bus leaving the traffic stream, allowing customers to board / alight and then waiting to re-enter the traffic stream. While the Opal system has reduced some delays on Sydney bus services, reliability issues have still been identified along the M61 route

Bus bay access

Motorists are required to give way to merging buses in bus bays. Merging from a bus bay as opposed to an on road bus stop is expected to have a negligible difference to bus travel times.

Justification for closing bus stops

The REF provides information regarding the closure of bus stops and provides customers with information regarding the nearest future alternative bus stop. As described in the REF and Section 1.1 of this report bus stops are being shut down to improve the on time running of bus.

Priority to passengers and buses

The proposal is one of a range of initiatives and projects within the Bus Priority Infrastructure Program under the Easing Sydney's Congestion Program office. The Bus Priority Infrastructure Program forms part of the NSW Government's long term plan to future proof the state's bus network. The program uses various methods to improve services, such as installing more bus lanes, making buses the priority at traffic lights, changing parking restrictions on clearways, and relocating bus stops hence the program is named Bus Priority Infrastructure Program.

Safety concerns

Section 6.10 (Hazards and Risks) of the REF recognises potential hazards or risks associated with the operation of the proposal. As detailed in the REF, a safety review of all new bus stop locations will be conducted during the design phase to identify whether any additional pedestrian safety measures are required.

Commuter parking

As discussed above, following a review of the issues raised by the local community, Roads and Maritime and Transport for NSW have agreed that a number of bus stops needed to be retained to minimise impacts on the local community, in particular seniors/pensioners, children and concession card holders. The proposed changes are detailed in Chapter 4 (Changes to the proposal). Bus stop #11 (TSN #2151420), #12 (TSN #2154111), #13 (TSN #2153218) and #24

(TSN #2153207) are now proposed to be retained in their current location; these stops have a large number of commuters parking nearby or accessing these stops to commute.

Longer bus zones no longer required
Bus services will continue to be provided by a range of bus types. Bus stops, including length, may be adjusted as required to ensure safe and efficient operations.

Route location error
Figure 3-1 incorrectly showed the route M61 crossing the M2 Motorway. The figure should show the M61 joining the M2 Motorway and following it to the CBD.

3.1.3 Pedestrian safety

Submission number(s)

51

Issue description

- Removal of stops away from sets of lights on Old Northern Road may result in increased injuries and even fatalities

Response

As detailed in section 1.1.3 of this report, a key consideration in the development of the proposal was to ensure (as far as practicable) that bus stops were adjusted and located in a manner that maintained or improved pedestrian safety. Furthermore, section 6.10 (Hazards and risks) of the REF recognises potential hazards or risks associated with the operation of the proposal including the potential for changed pedestrian behaviour associated with new bus stop locations (for example, crossing major roads away from signalised crossings). As detailed in section 6.10.2 (Environmental safeguards and management measures) of the REF, a further safety review of all new bus stop locations will be conducted during the design phase prior to implementation to identify whether any additional pedestrian safety measures are required.

3.1.4 Increased walking distance

Submission number(s)

24, 72, 77

Issue description

- Removing bus stops makes travelling by bus less convenient, with passengers having to walk further, crossing roads and getting wet in the rain. Removing on-road stops will increase cut-away stops, increasing dwell times.
- Large distances between stops impacts those that take buses instead of driving, particularly retirees.

Response

Improving Transport Choice - guidelines for planning and development (NSW Department of Urban Affairs and Planning[4], 2001) and the *Sydney's Bus Future guidelines* (TfNSW 2013) are an important part of the state government's commitment to promote urban areas in NSW as attractive and convenient places in which to live and work. The guidelines are part of a package of initiatives to improve the integration of land use and transport planning and provide principles, initiatives and best practice examples for locating land uses and designing development that encourages viable and more sustainable transport modes than the private car, such as public transport, walking and cycling.

[4] The 'Department of Urban Affairs and Planning' is now the 'Department of Planning and Environment'

Based on these guidelines, stop spacings of up to 800 metres would maintain an accessible walking catchment to the nearest bus stop of 400 metres, however proposed bus stop spacings have generally been kept well below 800 metres to maintain a duplicate coverage area that potentially provides bus users with a choice of stops in some locations. Where removing a bus stop would result in excessive distance between stops for local and / or suburban routes, no changes have been proposed.

Further details on the guidelines and the reason for the selection of the distances between bus stops are further discussed in Section 1.1.3 of the submissions report.

Following a review of the issues raised by the local community, Roads and Maritime and Transport for NSW have agreed that a number of bus stops needed to be retained to minimise impacts on the local community, in particular seniors/pensioners, children and concession card holders. The proposed changes are detailed in Chapter 4 (Changes to the proposal). Bus stop #11 (TSN #2151420), #12 (TSN #2154111), #13 (TSN #2153218) and #24 (TSN #2153207) are now proposed to be retained in their current location.

3.1.5 Alternatives and options

Submission number(s)

48, 60, 78, 87, 90, 97

Issue description

Provision for bus bay

- Stops should not be replaced or relocated without provision for a bus in and out lane with kerb extension to allow traffic to pass.

Reduction in right turns

- The investigation should also cover the reduction in number of right hand turns off Old Northern Road. Project should address all traffic issues that would affect buses.

Bus stops improvements

- Bus stops should generally be in pairs, one on each side of the road, located somewhere the road can be crossed safely.
- Frequency of stops along Old Northern Road is reason why the respondent rarely uses services. Suggests distance between stops could be reviewed to no closer than 600m apart. Anything to streamline service would be welcomed.
- It should be noted that particularly during the AM peak period (Monday - Friday), the volume of buses servicing routes along this side of Old Northern Road do cause significant impact and delays to traffic flow so anything that can be done to reduce the overall number of bus stops on this side of the road should be considered (city bound).

Options for increasing reliability

- Solutions to make travel times reliable include leaving at designated times, removing manual tickets, providing more services and other public transport options.

Old Northern Road detour

- A prime objective of the bus priority program should be to allow buses to use the top 400m of Old Northern Road, instead of making buses detour via Terminus Street which causes delays and is uncomfortable for passengers.

Response

These issues are considered to be outside the scope of works being proposed. The proposal is for the purpose of improving the reliability of bus services along the M61 route by:

- Combining or removing some bus stops where they are spaced close together
- Lengthening some bus stops to accommodate longer articulated buses
- Making it easier for buses to move in and out of bus stops by removing or relocating on-street parking, or
- Reducing potential delays for buses at traffic signals by moving stops to the departure side of the intersection.

The proposal is part of the Bus Priority Infrastructure Program, itself part of Easing Sydney's Congestion Program Office (ESCPO). The aim of the ESCPO is to reduce peak period congestion as measured by increased travel speeds, improvement of travel times, and decreased traffic volumes on the corridor. Other key initiatives under this program supporting this goal include the delivery of the M4 Smart Motorway, the Parramatta Congestion Improvement Program and accelerated Pinch Point and Clearways projects across metropolitan Sydney.

Transport for NSW and the State Transit Authority will take comments regarding bus stops, bus routes, timetables, the bus fleet and additional bus priority and on-time running changes into consideration as part of future bus service reviews in the area.

Provision for bus bay
The road reservation is not sufficiently wide to enable bus bays at all locations, and the resumption of private property and homes is not within the scope of this project.

Reduction in right turns
This issue are considered to be outside the scope of works being proposed.

Bus stop improvements
Roads and Maritime acknowledges that bus stops should be in pairs to improve the customer experience by allow boarding and alighting to happen near each other, with the opposite stop clearly visible. Pairing bus stops has been considered during development of the proposal.

Improving Transport Choice - guidelines for planning and development (NSW Department of Urban Affairs and Planning 2001) and the *Sydney's Bus Future guidelines* (TfNSW 2013) are an important part of the state government's commitment to promote urban areas in NSW as attractive and convenient places in which to live and work. The guidelines are part of a package of initiatives to improve the integration of land use and transport planning and provide principles, initiatives and best practice examples for locating land uses and designing development that encourages viable and more sustainable transport modes than the private car, such as public transport, walking and cycling.

Based on these guidelines, stop spacings of up to 800 metres would maintain an accessible walking catchment to the nearest bus stop of 400 metres, however proposed bus stop spacings have generally been kept well below 800 metres to maintain a duplicate coverage area that potentially provides bus users with a choice of stops in some locations. Where removing a bus stop would result in excessive distance between stops for local and / or suburban routes, no changes have been proposed.

Further details on the guidelines and the reason for the selection of the distances between bus stops are further discussed in Section 1.1.3 of the submissions report.

One of the proposal objectives described in section 1.1.2 is to achieve more reliable travel times for bus passengers. Adjusting the number and location of bus stops along a bus corridor, including city bound bus stops, is one measure that can help reduce the risk of delays to passengers. It limits the need for buses to continually pull in and out of traffic from poorly located stops where less customers use the bus stop compared to other adjacent stops along the route or where buses may miss green traffic lights or get caught in queues behind turning cars. Reducing the number of city bound bus stops may improve traffic flow during the AM peak.

Options for increasing reliability
One of the proposal objectives described in section 1.1.2 is to achieve more reliable travel times for bus passengers. Adjusting the number and location of bus stops along a bus corridor is one measure that can help reduce the risk of delays to passengers. The scope of the proposal does not include addressing other options for increased reliability such as leaving at designated times and providing more services. Transport for NSW and State Transit Authority will take comments regarding bus stops, bus routes, timetables, the bus fleet and additional bus priority into consideration as part of future bus service reviews in the area.

The use of manual tickets has been phased out with the introduction of Opal cards.

Old Northern Road detour
This issue is considered to be outside the scope of works being proposed.

3.1.6 Socio-economic

Submission number(s)

52, 79

Issue description

- The proposal does not take assess the impact to the significant number of elderly residents impacted through reduced access to public transport.

Response

There is an opportunity to optimise the spacing of stops to reduce delays whilst maintaining an acceptable spacing between stops and an adequate walking distance based on *Improving Transport Choice - guidelines for planning and development* (NSW Department of Urban Affairs and Planning 2001) and *Sydney's Bus Future guidelines* (Transport for NSW, 2013) as described in Section 1.1.3 of this report.

Where the removal/relocation of bus stops have the potential to impact the community, no changes have been proposed; bus stop #11 (TSN #2154120), #12 (TSN #2154111), #13 (TSN #2153218) and #24 (TSN #2153207), are now proposed to be retained in their current location. This will ensure that the bus stop meets the needs of the elderly and physically impaired.

3.2 Extension of bus stop #6, Old Northern Road after Church St (southbound stop TSN #2154117)

3.2.1 Scope/Justification of works

Submission number(s)

84

Issue description

- Extending bus stop #6 could cause traffic queues behind stopped buses at the intersection of Old Northern Road and Church Street and Old Northern Road and Francis Street.

Response

The existing bus zone at bus stop #6 is too short to accommodate articulated buses. Roads and Maritime network safety team has reviewed the traffic flow at this location and indicate that lengthening the bus zone will not impact traffic queueing at the intersection of Old Northern Road and Church Street and Old Northern Road and Francis Street.

3.3 Removal of bus stop #7, Old Northern Road at St Gabriel's School (northbound stop TSN #2154113)

3.3.1 Scope/Justification of works

Submission number(s)

42, 65

Issue description

- Bus stop #7 serves St Gabriel and Gilroy College and is used by a lot of students and it should be retained.

Response

There is an opportunity to optimise the spacing of stops at this location to reduce delays whilst maintaining an acceptable spacing between stops and an adequate walking distance on *Improving Transport Choice - guidelines for planning and development* (NSW Department of Urban Affairs and Planning 2001) and *Sydney's Bus Future guidelines* (Transport for NSW 2013) as described in Section 1.1.3 of this report.

Bus stop #7 (TSN #2154113) has low customers (average 24-hour weekday demand of 42 passengers) compared with preceding stop #9 (TSN #2154112) (average 24-hour weekday demand of 197) and the following stop #5 (TSN #2154114) (average 24-hour weekday demand of 533 passengers). Bus stop #7 (TSN #2154113) is located 330 metres from the preceding bus stop #9 (TSN #2154112) and 215 metres from the following bus stop #5 (TSN #2154114). The proposed resulting spacing of the bus stops would be 545 metres.

3.3.2 Pedestrian safety

Submission number(s)

78

Issue description

- St Gabriel's is a special school so any requirements for bus access and/or safe crossing for disabled access should be taken into account.

Response

The nearest safe crossings for disabled access of Old Northern Road near bus stop #7 are located at the Excelsior Road intersection 365 metres to the south and the Kerrs Road intersection 150 meters to the north. Existing safe crossing of Old Northern Road, including for disabled access, would be from these pedestrian crossings and not impacted by the proposal.

The nearest northbound bus stop to the Excelsior Road intersection is bus stop #9 (TSN 2154112) located 44 metres from the pedestrian crossing.

The nearest northbound bus stop to the Kerrs Road intersection is bus stop #5 (TSN #2154114) located 50 metres from the pedestrian crossing.

Section 6.10 (Hazards and Risks) of the REF recognises potential hazards or risks associated with the operation of the proposal. As detailed in the REF, a safety review of all new bus stop locations will be conducted during the design phase to identify whether any additional pedestrian safety measures are required.

3.3.3 Alternatives and options

Submission number(s)

43

Issue description

- Removal of stop #7 at St Gabriel's School will result in a southbound stop but no corresponding northbound stop. Suggest reviewing patronage of southbound bus stop #8 (TSN #2154118) to see if it should be removed as well.

Response

The proposal forms part of the Bus Priority Infrastructure Program and supports Sydney's Bus Future (Transport for NSW, 2013) by delivering projects that make buses more reliable. As detailed in the REF, the removal of bus stop #7 is part of a broader program along the Metrobus M61 route aimed at improving reliability by:

- Reducing the number of locations at which buses need to stop by combining, removing or relocating some bus stops
- Lengthening some bus stops to improve access for buses and assist passenger boarding and alighting
- Improving bus stop infrastructure at some locations including changes to bus stop signage
- Reducing delays for buses by moving bus stops to the departure side of traffic lights, allowing them to take advantage of the PTIPS.

While at individual locations the proposed changes may only seem to have small benefits, collectively they can deliver an important cumulative benefit to service reliability across the corridor as a whole.

Section 1.1.3 of this submissions report details how options were assessed to achieve these objectives. Transport for NSW took into account existing and future developments, including major business and residential centres, when determining the proposed scope of works to ensure users of suburban and local services were not severely impacted.

Northbound bus stop #7 is not currently paired with a southbound bus stop. The nearest southbound bus stops to bus stop #7 are located about 114 metres to the south (bus stop #8; TSN #2154118) and about 192 metres to the north (bus stop #6; TSN #2154117). Removal of bus stop #7 would have a negligible impact on the pairing of bus stops at this location.

Opal data indicates that bus stop #7 is used by 42 customers per day (24 hour average weekday) and bus stop #8 is used by 64 customers per day (24 hour average weekday). Removal of bus stops #7 and #8 would not optimise the spacing of stops at this location. The resultant spacing would exceed the recommended walking distance in accordance with *Improving Transport Choice - guidelines for planning and development* (NSW Department of Urban Affairs and Planning 2001) and *Sydney's Bus Future guidelines* (Transport for NSW 2013).

Further details on the guidelines and the reason for the selection of the distances between bus stops are further discussed in Section 1.1.3 of the submissions report.

3.4 Extension of bus stop #9, Old Northern Road after Excelsior Avenue (northbound stop TSN #2154112)

3.4.1 Support

Submission number(s)

93

Issue description

- Extending the existing indented bus bay 15 metres to the north for bus stop #9 is welcomed as the peak hour traffic has increased dramatically in the past 20 years.

Response

Roads and Maritime and Transport for NSW acknowledge the support for the proposal.

3.4.2 Alternatives and options

Submission number(s)

84

Issue description

- Suggests that if extending bus stop #9 by 15 metres north the current bus bay should also be extended so buses can pull out of traffic.

Response

The proposed scope for the bus stop #9 (TSN #2154112) includes extending the existing indented bus bay 15 metres to the north and adjustment of bus zone signage.

3.5 Relocation of bus stop #10, Old Northern Road after Excelsior Avenue (southbound stop TSN #2154119)

3.5.1 Support

Submission number(s)

93

Issue description

- The relocation of bus stop #10 will reduce car accidents and improve traffic flow through the intersection.

Response

Roads and Maritime and Transport for NSW acknowledge the support for the proposal.

3.5.2 Alternatives and options

Submission number(s)

43

Issue description

- Changing existing bus stop #10 to a 'No Stopping' zone defeats the purpose of faster throughput of buses. Suggest extending bus zone so buses can load simultaneously.

Response

The proposal is to relocate bus stop #10 about 18 metres to the south and replace the existing bus stop #10 with 'No Stopping' zone. Section 6.9 of the REF assessed impacts to traffic and transport during operation of the proposal. The proposal will reduce total travel time and improve bus service reliability, by improving access into and out of bus stops and reducing the amount of bus stops, consistent with the aims of the Bus Priority Infrastructure Program and Sydney's Bus Future.

3.5.3 Traffic safety

Submission number(s)

43

Issue description

- Need to ensure the new shelter for stop #10 does not provide sighting issues for residents exiting driveway.

Response

Section 6.10 (Hazards and Risks) of the REF recognises potential hazards or risks associated with the operation of the proposal. As detailed in the REF, a safety review of all new bus stop locations will be conducted during the design phase to identify whether any additional pedestrian safety measures are required.

Local councils are responsible for any changes to bus shelters, signage and plinths as a result of the proposal. Your suggestion has been forwarded to Council for their consideration.

3.6 Removal of bus stop #11 (southbound stop TSN #2154120) and bus stop #12 (northbound stop TSN #2154111), Old Northern Road near Oxley Avenue

Submission number(s)

2, 18, 19, 23, 33, 38, 54, 79, 82, 87

Issue description

Ten submissions were received which objected to the proposed removal of bus stops #11 and #12 (TSN #2154120 and TSN #2154111) with a number of concerns raised in relation to:

- Scope/justification of the proposed removal of these bus stops
- Potential pedestrian safety concerns, including vision impaired users
- Increased distance for commuters to walk and park
- Suggestion to install traffic lights instead of removing bus stops

Response

Following a review of the issues raised by the local community, Roads and Maritime and Transport for NSW have agreed that a number of bus stops needed to be retained to minimise impacts on the local community, in particular seniors/pensioners, children and concession card holders. The proposed changes are detailed in Chapter 4 (Changes to the proposal). Bus stops #11 and #12 (2154120 and 2154111) are now proposed to be retained in their current location.

3.7 Relocation of bus stop #13, Hills College, Old Northern Road (northbound stop TSN #2153218)

3.7.1 Scope/Justification of works

Submission number(s)

1, 3, 4, 7, 8, 9, 10, 11, 20, 26, 27, 30, 31, 40, 42, 43, 49, 62, 64, 67, 68, 70, 73, 79, 81, 82, 83, 84, 86, 89, 94, 96, 99

Issue description

32 submissions were received which objected to the proposed relocation of bus stop #13 with a number of concerns raised in relation to:

- Scope/justification of the proposed works at this bus stop
- Potential pedestrian safety concerns
- Potential impact on accessibility for elderly and public transport due to increased walking distance
- Potential construction impacts on building works
- Potential operational noise impacts of relocated bus stop
- Suggestions for alternatives to removing bus stop #13
- Stakeholder consultation
- Potential traffic safety impacts from proposed relocation

Response

Following a review of the issues raised by the local community, Roads and Maritime and Transport for NSW have agreed that a number of bus stops needed to be retained to minimise impacts on the local community, in particular seniors/pensioners, children and concession card holders. The proposed changes are detailed in Chapter 4 (Changes to the proposal). Bus stop #13 is now proposed to be retained in its current location. However, some improvements will be made to make the bus stop in-line by infilling the bus bay with concrete hardstand.

3.8 Removal of bus stop #15 Old Northern Road at No. 140 (northbound stop TSN #2153227)

3.8.1 Pedestrian safety

Submission number(s)

94

Issue description

- The removal of bus stop #15 together with the relocation of bus stop #13 has the potential to put young lives at risk when crossing a main road without signalised pedestrian crossing.

Response

Following a review of the issues raised by the local community, Roads and Maritime and Transport for NSW have agreed that a number of bus stops needed to be retained to minimise impacts on the local community, in particular seniors/pensioners, children and concession card holders. The proposed changes are detailed in Chapter 4 (Changes to the proposal). Bus stop #13 (TSN #2153218) is now proposed to be retained in its current location and improved including the following:

- Small bus bay at present to be filled in
- Make inline bus stop
- Provide concrete hardstand.

This will ensure that the bus stop meets the needs of TAFE and school students, including those travelling at night.

3.9 Removal of bus stop #18 (southbound stop TSN #2153221) and bus stop #19 (northbound stop TSN #2153210), Old Northern Road near Cross Street

3.9.1 Support

Submission number(s)

97, 99

Issue description

- Supports removal of stop #19.
- Agrees with removal of stops #18 and #19 as they hold up traffic and are a hazard.

Response

Roads and Maritime and Transport for NSW acknowledge the support for the proposal.

3.9.2 Scope/Justification of works

Submission number(s)

34, 36, 39, 52, 80, 88

Issue description

Justification of works

- The Hills district has limited public transport options, and is restricted to buses. Transport is already overcrowded. Until the train line is built it is no time to be removing stops.
- Removal of some specific stops may cause problems for commuters in the area. Removal of stops #18 and #19 will create difficulty for commuters wishing to access the 630 bus that provides the only transport to Carlingford and Epping from Baulkham Hills.
- Request reasoning behind removal of stops #18 and #19. A vast majority of residents and parents of school children use this stop for commuting to the Sydney CBD including those that park in Cross Street. Closure would mean majority of commuters driving to the city instead of using public transportation.
- Believe the stop is used by residents of Aminya retirement village. Need to consider the retirement villagers' needs.

Community consultation and documentation

- Request decision reasoning and statistics including environmental assessments, community consultation papers or minutes.

Response

Justification of works

There is an opportunity to optimise the spacing of stops at this location to reduce delays whilst maintaining an acceptable spacing between stops and an adequate walking distance on *Improving Transport Choice - guidelines for planning and development* (NSW Department of Urban Affairs and Planning 2001) and *Sydney's Bus Future guidelines* (Transport for NSW 2013) as described in Section 1.1.3 of this report.

The resulting spacing between the preceding and next bus stops would be Stop #18 (TSN #2153221) - prestop 290 metres and post stop is 190 metres, and Stop #19 (2153210) - prestop is 210 metres and post stop is 180 metres to the next bus stop.

Bus stop #18 (TSN #2153221) has more customers (average 24-hour weekday demand of 201) compared with preceding stop (Stop #16 (TSN #2153220) - average 24-hour weekday demand of 102 passengers) but less customers compared to and the following stop (Stop #20 (TSN #2153222) - average 24-hour weekday demand of 95 passengers).

Bus stop #19 (TSN #2153210) has more customers (average 24-hour weekday demand of 158) compared with preceding stop (Stop #21 (TSN #2153209) - average 24-hour weekday demand of 116 passengers), and the following stop (Stop #17 (TSN #2153211) - average 24-hour weekday demand of 80 passengers).

Community consultation and documentation

Chapter 5 (Stakeholder and community consultation) of the REF includes the information on the consultation undertaken during the preparation of the report. Consultation during the REF preparation focused on government agencies, in particular council. Community consultation was undertaken with the local community during the display of the REF, which provided an opportunity for the wider community to provide feedback on the proposed works. The consultation activities undertaken during the display period are further described in Section 2.1 of this submissions report.

3.9.3 Alternatives and options

Submission number(s)

3, 78, 88

Issue description

- Bus stop #18 is heavily used and provides shelter. Suggest alternate removal of a little used stop (ie bus stop #16) between stop #18 and the TAFE bus stop #14 with no shelter or seat, and relocating stop #18 further back to compensate
- Suggest removal of Chelsea Avenue bus stop (Stop #17) as passengers not always seen and it can be daunting to try to catch a bus here.
- At least one of these stops could go: Old Northern Road opposite Cross Street stop #17 (TSN #2153210) and Old Northern Road at Chelsea Avenue stop #19 (TSN #2153211). The stops are 183 metres apart; it's possible to walk from one to the other within 3-4 minutes.
- There should be safe crossing facilities, preferably signal-controlled, at or near Cross Street and perhaps Chelsea Avenue (near bus stops #17, #18 and #19).

Response

There is an opportunity to optimise the spacing of stops at this location to reduce delays whilst maintaining an acceptable spacing between stops and an adequate walking distance on *Improving Transport Choice - guidelines for planning and development* (NSW Department of Urban Affairs and Planning 2001) and *Sydney's Bus Future guidelines* (Transport for NSW 2013).

Based on these guidelines, stop spacings of up to 800 metres would maintain an accessible walking catchment to the nearest bus stop of 400 metres, however proposed bus stop spacings have generally been kept well below 800 metres to maintain a duplicate coverage area that potentially provides bus users with a choice of stops in some locations. Where removing a bus stop would result in excessive distance between stops for local and / or suburban routes, no changes have been proposed.

Further details on the guidelines and the reason for the selection of the distances between bus stops are further discussed in Section 1.1.3 of the submissions report.

It is recognised that bus stop #16 and #17 are less used than bus stop #18. However, bus stop #18 is being removed to optimise spacing between stops at this location. Bus stops #16 and #17 also have a different catchment to bus stops #18 and #19.

The resulting spacing between the preceding and next bus stops would be Stop #18 (TSN #2153221) - prestop 290 metres and post stop is 190 metres, and Stop #19 (TSN #2153210) - prestop is 210 metres and post stop is 180 metres to the next bus stop.

The construction of pedestrian crossings, including near Cross Street or Chelsea Avenue, is outside the scope of the works being proposed. The proposal is for the purpose of improving the reliability of bus services along the M61 route. It is one of many projects currently being investigated and implemented to improve bus services in the Sydney region. Your submission has been forwarded to the relevant department for consideration.

3.9.4 User access impacts

Submission number(s)

98

Issue description

- User will be impacted by removal of stop #18. Many people will sorely miss stops #18 and #19 if removed.

- Stops #18 and #19 service a considerable area and removal would concentrate parking into fewer streets closer to other stops.

Response

There is an opportunity to optimise the spacing of stops at this location to reduce delays whilst maintaining an acceptable spacing between stops and an adequate walking distance on *Improving Transport Choice - guidelines for planning and development* (NSW Department of Urban Affairs and Planning 2001) and *Sydney's Bus Future guidelines* (Transport for NSW 2013) as described in Section 1.1.3 of this report.

The resulting spacing between the preceding and next bus stops would be Stop #18 (TSN #2153221) - prestop 290 metres and post stop is 190 metres, and Stop #19 (TSN #2153210) - prestop is 210m and post stop is 180m to the next bus stop. Bus stop #21 is being relocated 120 metres north and will be a suitable alternative for northbound customers.

Bus stop #18 (TSN #2153221) has more customers (average 24-hour weekday demand of 201) compared with preceding stop (Stop #16 (TSN #2153220) - average 24-hour weekday demand of 102 passengers) but less customers compared to the following stop (Stop #20 (TSN #2153222) - average 24-hour weekday demand of 95 passengers).

Bus stop #19 (TSN #2153210) has more customers (average 24-hour weekday demand of 158) compared with preceding stop (Stop #21 (TSN #2153209) - average 24-hour weekday demand of 116 passengers), and the following stop (Stop #17 (TSN #2153211) - average 24-hour weekday demand of 80 passengers).

Impacts to parking was assessed in section 6.9 of the REF. The proposal would result in no loss of on-street parking. Removing bus stops #18 and #19 may concentrate customer parking near the future alternative bus stops (Bus stop #21 and bus stop #20). However, the parking environment near these bus stops is similar to the streets near bus stop #18 and #19 and within the same walkable catchment. The impact to parking and users access would be negligible.

3.9.5 Pedestrian safety

Submission number(s)

1, 4

Issue description

- Old Northern Road is very dangerous to cross. If proposed removal of stop #19 happens there will be an extra street to negotiate and further distance to walk to lights and pedestrian crossing. Users walk further to cross safely at the Edward Street Crossing instead of stop #19.
- Stop #19 is dangerous given lack of traffic lights for pedestrian crossing. However, if more pedestrian crossings (lights) are added to Old Northern Road it will slow traffic even more.
- Stops at Cross Street (#18 and #19) are some of the safest with clean line of sight for drivers and highly used. They are safe and effective set down and pick up points.

Response

There is an opportunity to optimise the spacing of stops at this location to reduce delays whilst maintaining an acceptable spacing between stops and an adequate walking distance on *Improving Transport Choice - guidelines for planning and development* (NSW Department of Urban Affairs and Planning 2001) and *Sydney's Bus Future guidelines* (Transport for NSW 2013) as described in Section 1.1.3 of this report.

The resulting spacing between the preceding and next bus stops would be Stop #18 (TSN #2153221) - prestop 290 metres and post stop is 190m, and Stop #19 (TSN #2153210) - prestop is 210 metres and post stop is 180m to the next bus stop.

Customers required to cross Old Northern Road would not currently be using bus stop #19 as there is no pedestrian crossing near this location. The nearest northbound bus stops with pedestrian crossings are located to the north of bus stop #19 at the intersection of Old Northern Road and Edward Street (bus stop #13) and to the south at the intersection of Old Northern and Olive Street (bus stop #26). It is likely that customers who use bus stop #19 will not need to cross Old Northern Road.

Section 6.10 (Hazards and Risks) of the REF recognises potential hazards or risks associated with the operation of the proposal. As detailed in the REF, a safety review of all new bus stop locations will be conducted during the design phase to identify whether any additional pedestrian safety measures are required.

3.10 Relocation of bus stop #21, Old Northern Road at Ackling Street (northbound stop TSN #2153209)

3.10.1 Scope/Justification of works

Submission number(s)

32

Issue description

- Request for clarification on if changes apply to routes 610X and 610.

Response

Section 6.0 (Socio-Economic) of the REF identifies that the proposed changes would apply to all bus services using the M61 route, including 610X and 610. Bus services would continue to operate along the existing routes, however, less stops would be required due to the removal of some bus stops.

3.10.2 Pedestrian safety

Submission number(s)

32

Issue description

- Suggest moving stop #21 further north away from bend. This would allow passengers to cross the road at a safe location.

Response

The design development of this proposal considered pedestrian safety. Bus stops, including bus stop #21, have been considered for relocation where pedestrian safety is identified as an issue. The location of future bus stop #21 is considered suitable for pedestrian safety. Pedestrian safety was also assessed in section 6.9 and 6.10 of the REF.

3.11 Relocation of bus stop #23, Old Northern Road opposite Hill Street (northbound stop TSN #2153208)

3.11.1 Support

Submission number(s)

97

Issue description

- Support relocation of stop #23

Response

Roads and Maritime and Transport for NSW acknowledge the support for the proposal.

3.12 Removal of bus stop #24, Old Northern Road at Stockland Mall (northbound stop TSN #2153207)

Submission number(s)

6, 10, 11, 12, 13, 14, 15, 17, 20, 21, 22, 27, 28, 29, 35, 37, 40, 41, 42, 43, 44, 45, 46, 47, 49, 50, 51, 53, 55, 56, 60, 61, 63, 65, 66, 67, 68, 69, 71, 72, 73, 74, 79, 80, 81, 84, 88, 89, 90, 91, 92, 95, 96, 97, 98, 99

Issue description

51 submissions were received which objected to the proposed removal of bus stop #24 with a number of concerns raised in relation to:

- Scope/justification of the proposed removal of this bus stop
- Suggestions for alternative proposals to removal of bus stop #24
- Access for elderly, children and disabled due to increased walking distance
- Potential pedestrian safety concerns
- Potential socio-economic impacts
- Stakeholder and community consultation

Response

Following a review of the issues raised by the local community, Roads and Maritime and Transport for NSW have agreed that a number of bus stops needed to be retained to minimise impacts on the local community, in particular seniors/pensioners, children and concession card holders. The proposed changes are detailed in Chapter 4 (Changes to the proposal). Bus stop #24 (TSN #2153207) is now proposed to be retained in its current location.

3.13 Relocation of bus stop #28, Windsor Road after Railway Street (southbound stop TSN #2153226)

3.13.1 Support

Submission number(s)

16

Issue description

- Thanks for removing stop #28 as it is congested in peak times.

Response

Roads and Maritime and Transport for NSW acknowledge the support for the proposal.

3.13.2 Bus stop facilities

Submission number(s)

16

Issue description

- Requests that the relocated stop #28 has a shelter.

Response

The bus shelter will be relocated with bus stop #28 (TSN #2153226).

3.14 Removal of bus stop #29, Windsor Road near Charles Street (southbound stop TSN #2153227)

3.14.1 Scope/Justification of works

Submission number(s)

5

Issue description

- Oppose removal of stop #29 as it would not improve traffic flow.

Response

There is an opportunity to optimise the spacing of stops at this location to reduce delays by maintaining an acceptable spacing between stops and an adequate walking distance (5 minute walk on average for most commuters) based on *Improving Transport Choice - guidelines for planning and development* (NSW Department of Urban Affairs and Planning 2001) and *Sydney's Bus Future guidelines* (Transport for NSW 2013) as described in Section 1.1.3 of this report. While at individual locations the proposed changes may only seem to have small benefits, collectively they can deliver an important cumulative benefit to service reliability across the corridor as a whole.

Bus stop #29 (TSN #2153227) has low customers (average 24-hour weekday demand of 99) compared with preceding stop (Stop #28 (TSN #2153226) - average 24-hour weekday demand of 997 passengers) and the following stop (Stop #30 (TSN #2153186) - average 24-hour weekday demand of 227 passengers). The resulting spacing between the preceding and next bus stops would be 300 metres and 520 metres to the next bus stop.

3.14.2 Increased walking distance

Submission number(s)

5

Issue description

- Removal of bus stop #29 would leave a large distance between stops #28 (TSN #2153226) and stop #31 (TSN #2153228) near Oakland Avenue.

Response

There is an opportunity to optimise the spacing of stops at this location to reduce delays by removing this stop. The resulting spacing between the preceding and next bus stops would be 300 metres and 520 metres to the next bus stop.

3.14.3 Bus stop facilities

Submission number(s)

5

Issue description

- Bus stop #28 at Windsor Road and Railway Street is always busy and there is not enough shelter for commuters. Removal of stop #29 will worsen this problem.

Response

There is an opportunity to optimise the spacing of stops at this location to reduce delays by maintaining an acceptable spacing between stops and an adequate walking distance (5 minute walk on average for most commuters) based on *Improving Transport Choice - guidelines for planning and development* (NSW Department of Urban Affairs and Planning 2001) and *Sydney's Bus Future guidelines* (Transport for NSW 2013) as described in Section 1.1.3 of this report. While at individual locations the proposed changes may only seem to have small benefits,

collectively they can deliver an important cumulative benefit to service reliability across the corridor as a whole.

Bus stop #29 (TSN #2153227) has low customers (average 24-hour weekday demand of 99) compared with preceding stop (Stop #28 (TSN #2153226) - average 24-hour weekday demand of 997 passengers) and the following stop (Stop #30 (TSN #2153186) - average 24-hour weekday demand of 227 passengers). There is an opportunity to optimise the spacing of stops at this location to reduce delays by removing this stop. The resulting spacing between the preceding and next bus stops would be 300 metres and 520 metres to the next bus stop.

Improvements to bus stop infrastructure (including shelters and signs), parking on local roads, provision of local shuttle buses and local traffic management are the responsibility of the local council. Your request has been forwarded to the Hills Shire Council.

3.15 Bus stop #30, Windsor Road before Charles Street (northbound stop TSN #2153186)

3.15.1 Alternatives and options

Submission number(s)

98

Issue description

- Buses often miss stop #30 due to limited visibility for drivers due to trees in the way.

Response

Bus operators are responsible for ensuring drivers serve route stops. Tree trimming was not identified as being necessary at this location, at this time.

3.16 Out of scope

Submission number(s)

24, 49, 58, 60, 75, 76, 77, 78, 85, 91, 97, 98

Issue description

12 submissions raised a number of issues that are beyond the scope of the current proposal. These are grouped and summarised below based on common themes.

Bus stop facilities

- Complaint about location of timetable and bus shelter at stop between Ackling Street and Cross Street (stop #20 (TSN #2153222), making it dangerous to manoeuvre for elderly and disabled. Also complaint about construction waste at stop.
- A scheme should be devised for marking stops to make it obvious as to which bus stops at each location.

Traffic safety

- Potential for traffic incidents for buses at the T intersection just before the stop at Ackling Street (stop #19 (TSN #2153210), which is right before a blind turn.

Queuing at Bus Stop #3

- The existing stop on Old Northern Road between Cecil Avenue and Francis Street (Bus stop #3) has no proposed changes but this stop often has queuing buses resulting in traffic delays and dangerous conditions.

Scope/justification of works

- Two stops have already been removed (Cecil Ave and Castle Hill Post Office, near Castle Hill Mall). The distance between the two existing Castle Hill stops is about 1km. Do not reduce the service by cutting back on stops.
- Suggest that timetables need to be changed rather than inconveniencing customers.
- Preferable strategies would be to eliminate cash payments and increase frequency of bus service.

Additional bus stops and bus lanes

- Would like to see a bus stop in Terminus Street.
- Request for a bus lane all the way to and from the city as public transport needs to be priority to use the road

Alterations to Bus stop #30

- Bus stop #30 (TSN #2153186) on Windsor Road has no change proposed under this plan. Buses stopping here, especially during the afternoon / evening peak, appear to continue to experience significant difficulty progressing across the two through lanes of Windsor Road across to the right turn lanes providing access into Old Northern Road. Suggest moving stop closer to M2.

Pedestrian safety

- Suggestion to build a pedestrian bridge near stops #22 and #23 near Hill Street as people cross even though there is no traffic sign or crossing.
- Suggestion to strengthen pedestrian crossing sign one stop before bus stop #24 (TSN #2153207) (ie. Mitre Ten stop - stop #26 (TSN #2153206)) just after turning onto Old Northern Road from Windsor Road as crossing with lights is often ignored by drivers and is hazardous for people getting off the bus and crossing the road.

Alternatives and options

- Recommends 50km/h speed limit, additional bus stops at a number of locations, safe crossing facilities, and bus priority.
- Recommend changes to stops between Kerrs Road and Cecil Avenue (bus stops #3, #4, #5 and #6) including relocating stop closest to Cecil Avenue to the opposite side of Kerrs Road.
- Traffic lights at the Old Northern Road intersection near Stockland Mall take a long time to change; suggests changing to a shorter delay for pedestrians.
- Suggests removal of foliage at bus stop #30 at Windsor Road before Charles Street to improve driver's visibility of passengers.

Response

These are considered outside the scope of the works being proposed. The proposal is for the purpose of improving the reliability of bus services along the M61 route. It is one of many projects currently being investigated and implemented to improve bus services in the Sydney region. Your submission has been forwarded to the relevant department for consideration.

Following a review of the issues raised by the local community, Roads and Maritime and Transport for NSW have agreed that a number of bus stops needed to be retained to minimise impacts on the local community, in particular seniors/pensioners, children and concession card holders. The proposed changes are detailed in Chapter 4 (Changes to the proposal). Bus stops #11 (TSN #2154120), #12 (TSN #2154111), #13 (TSN #2153218) and #24 (TSN #2153207) are now proposed to be retained in their current location.

Bus stop facilities

Improvements to bus stop infrastructure (including shelters and signs) is the responsibility of the local council. Your request has been forwarded to the Hills Shire Council.

Transport for NSW is progressively installing new bus stop signs which will more clearly identify where buses on different routes stop.

Traffic safety

Section 6.10 of the REF (Hazards and Risks) recognises potential hazards or risks associated with the operation of the proposal including the potential for changed pedestrian behaviour associated with new bus stop locations (for example, crossing major roads away from signalised crossings). As detailed in the REF, a safety review of all new bus stop locations will be conducted during the design phase to identify whether any additional pedestrian safety measures are required.

Queuing at Bus Stop #3

The proposal investigated a number of options, including reviewing bus stop #3. No changes are proposed at this location as the existing bus stop meets the guideline requirements for optimal spacing.

Scope/justification of works

The removal of stops at Cecil Ave and Castle Hill Post Office are considered to be outside the scope of works being proposed. The proposal is for the purpose of improving the reliability of bus services along the M61 route by:

- Combining or removing some bus stops where they are spaced close together
- Lengthening some bus stops to accommodate longer articulated buses
- Making it easier for buses to move in and out of bus stops by removing or relocating on-street parking, or
- Reducing potential delays for buses at traffic signals by moving stops to the departure side of the intersection.

Following a review of the issues raised by the local community, Roads and Maritime and Transport for NSW have agreed that a number of bus stops needed to be retained to minimise impacts on the local community, in particular seniors/pensioners, children and concession card holders. The proposed changes are detailed in Chapter 4 (Changes to the proposal). Bus stops #11 (TSN #2154120), #12 (TSN #2154111), #13 (TSN #2154218) and #24 (TSN #2153207) are now proposed to be retained in their current location.

Additional bus stops and bus lanes

This is out of the scope of the proposed works.

Alterations to Bus stop #30 (TSN #2153186)

Roads and Maritime and Transport for NSW have not identified a feasible alternative location to the south of the bus stop #30 due to driveways and slip lane serving properties.

Pedestrian safety

These are out of the scope of the proposed works.

Alternatives and options

Section 6.10 of the REF (Hazards and Risks) recognises potential hazards or risks associated with the operation of the proposal including the potential for changed pedestrian behaviour associated with new bus stop locations (for example, crossing major roads away from signalised crossings).

As detailed in the REF, a safety review of all new bus stop locations will be conducted during the design phase to identify whether any additional pedestrian safety measures are required.

Changes to bus stop #26 (TSN #2153206) are considered outside of the scope of the works being proposed. Your request has been forwarded to the relevant department for consideration.

4 Changes to the proposal

Following consideration of submissions four key changes to the proposal are now proposed:

- Retain bus stops #11, #12 and #24
- Retain and improve bus stop #13

Table *4-1* and **Error! Reference source not found.** below provide an overview of the proposal inclusive of proposed changes as a result of the public display and has taken into consideration feedback from the local community, organisations (Stockland and Guide Dogs NSW/ACT) and a community group (APT), as described in the earlier chapters of this report.

Table 4-1 Changes to the proposal

Ref#	Location	Original proposal	Changes to the proposal
11	Old Northern Road near Oxley Avenue (Southbound) (stop TSN #2154120)	Remove bus stop 2154120. Existing clearway operation to be retained, no loss of parking.	A high number of customers park nearby in Oxley Avenue and surrounds, students and a vision impaired user. Bus stop # 11 will be retained at its current location
12	Old Northern Road near Oxley Avenue (Northbound) (stop TSN # 2154111)	Remove bus stop and replace with clearway	A high number of customers park nearby in Oxley Avenue and surrounds, students and a vision impaired user. Bus stop # 12 will be retained at its current location
13	Baulkham Hills College, Old Northern Road (Northbound) (stop TSN #2153218)	Relocate bus stop and replace with clearway	There is a high number of customers who are students accessing the TAFE and Baulkham Hills High School. The local community raised concerns about the safety of students (day and night) should this bus stop be removed. Bus stop # 13 will be retained at its current location, however, some improvements will be made to make the bus stop in-line by infilling the bus bay with concrete hardstand.
24	Stockland Mall, Old Northern Road (Northbound) (stop TSN #2153207)	Remove bus stop and replace with clearway. No loss of parking	There is a high number of customers including travellers accessing Stockland Mall, seniors/pensioners, children and concession card holders, as well as commuters. Bus stop # 24 will be retained at its current location.

A summary of the final scheme is outlined below:

- 5 bus stop removals
- 4 bus stop relocations
- 4 bus stop improvements – including extensions

5 Environmental management

The REF for the Bus Priority Infrastructure Program On-time running improvements Castle Hill to M2 Motorway corridor identified the framework for environmental management, including safeguards and management measures that would be adopted to avoid or reduce environmental impacts (section 7.2 (Summary of safeguards and management measures) of the REF).

After consideration of the issues raised in the public submissions and changes to the proposal, the safeguard and management measures contained in the REF are considered adequate.

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

5.1 Environmental management plans (or system)

A number of safeguards and management measures have been identified in order to minimise adverse environmental impacts, including social impacts, which could potentially arise as a result 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 Project Environmental Management Plan (PEMP) and a Construction Environmental Management Plan (CEMP) will be prepared to describe safeguards and management measures identified. The PEMP and CEMP will provide a framework for establishing how these measures will be implemented and who would be responsible for their implementation.

The PEMP and CEMP will be prepared prior to construction of the proposal and must be reviewed and certified by environment staff, Sydney 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 PEMP and CEMP would be developed in accordance with the specifications set out in QA Specification G36 – Environmental Protection (Management System), QA Specification G38 – Soil and Water Management (Soil and Water Plan), QA Specification G40 – Clearing and Grubbing and QA Specification G10 - Traffic Management.

5.2 Summary of safeguards and management measures

The review of environmental factors for the Bus Priority Infrastructure Program On-time running improvements Castle Hill to M2 Motorway corridor 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 project (refer to Chapter 7 (Environmental management) of the REF) are considered adequate. Should the project proceed, the environmental management measures in *Table 5-1* will guide the subsequent phases of the Bus Priority Infrastructure Program On-time running improvements Castle Hill to M2 Motorway corridor development.

Table 5-1 Summary of safeguards and environmental management measures

No.	Impact	Environmental safeguards	Responsibility	Timing
GEN1	General - minimise environmental impacts during construction	A CEMP will be prepared and submitted for review and endorsement of the Roads and Maritime 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 / Roads and Maritime	Pre-construction / detailed design
GEN2	General – notification	All businesses, residential properties and other key stakeholders (eg schools, local councils) affected by the activity will be notified at least five days prior to commencement of the activity. The notification letter will include (as a minimum): • Contact name and phone number • Working hours and proposed construction period • Complaints process.	Contractor Roads and Maritime	Pre-construction

No.	Impact	Environmental safeguards	Responsibility	Timing
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. The environmental awareness training is to include (as a minimum): • Environmentally sensitive locations • Requirement to report and the process for reporting environmental issues ineffective environmental controls • Erosion and sediment control measures • Incident management process • Site staff environmental responsibilities.	Contractor Roads and Maritime	Pre-construction / detailed design
GEN4	General – notification	The Roads and Maritime Services Project Manager must notify the Roads and Maritime Regional Environmental Officer at least five working days prior to commencement of works.	Roads and Maritime	Pre-construction
SOE1	Socio-economic – communication	A Communication Plan will be prepared and included in the CEMP. The Communication Plan will include (as a minimum): • Requirements to provide details and timing of proposed activities to affected residents • Contact name and number for complaints • Procedure to notify adjacent land users for changed conditions during the construction period such as traffic, pedestrian or driveway access. The communication plan will be prepared in accordance with G36 requirements and the Roads and Maritime *Community Engagement and Communications Manual* (2012).	Contractor	Detailed design / pre-construction

No.	Impact	Environmental safeguards	Responsibility	Timing
SOE2	Socio-economic – complaints	A complaints handling procedure and register would be included in the CEMP and maintained for the duration of the project. The environmental awareness training is to include (as a minimum): • Environmentally sensitive locations and/or no go zones • Requirement to report and the process for reporting environmental issues on site • Requirement to report and the process for reporting damaged environmental controls • Erosion and sediment control • Incident management process • Site staff environmental responsibilities.	Contractor	Pre-construction / construction
SOE3	Socio-economic – interruptions to utility services	In the event that utilities relocation would be required, residents would be informed prior to any interruptions to utility services that may be experienced as a result of utilities relocation.	Contractor	Pre-construction / construction
SOE4	Socio-economic – access	Road users, pedestrians and cyclists would be informed of changed conditions, including likely disruptions to access during construction.	Contractor	Pre-construction / construction
SOE5	Socio-economic – access	Access to residences, businesses and retained bus stops will be maintained during construction.	Contractor	Construction
BIO1	Unexpected threatened species impact	If unexpected threatened flora or fauna are discovered, works would stop immediately and the Roads and Maritime *Unexpected Threatened Species Find Procedure*, identified in the Roads and Maritime *Biodiversity Guidelines* (Roads and Traffic Authority, 2011) will be implemented.	Contractor	Construction
VIS1	Construction related visual impacts	The work site would be left in a tidy manner at the end of each work day.	Contractor	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
VIS2	Bus stop design	Bus stop signage and other infrastructure will comply with applicable Transport for NSW requirements and standards.	Transport for NSW / Roads and Maritime	Detailed design
NVI1	Construction noise and vibration	A Construction Noise and Vibration Management Plan (CNVMP) would be prepared as part of the CEMP, in accordance with the Roads and Maritime Construction Noise and Vibration Guideline (2016). This plan would include, but not be limited to: • A map indicating the locations of sensitive receivers including residential properties • Management measures to minimise the potential noise impacts (including implementation of EPA *Interim Construction Noise Guideline* (DECCW, 2009) • A risk assessment to determine potential risk for activities likely to affect receivers • Mitigation measures to avoid noise and vibration impacts during construction activities • A process for assessing the performance of the implemented mitigation measures • A process for updating the plan when activities affecting construction noise and vibration change • A process for documenting and resolving issues and complaints • Identify in toolbox talks where noise and vibration management is required.	Contractor	Pre-construction / construction
NV2	Construction noise and vibration – complaints	During work hours, a community liaison phone number and site contact would be provided to enable complaints to be received and responded to.	Contractor	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
NV3	Construction noise and vibration – complaints	If deemed necessary, attended compliance noise and vibration monitoring would be undertaken upon receipt of a complaint. Monitoring would be reported as soon as possible. In the case that exceedances are detected, the situation would be reviewed in order to identify means to minimise the impacts to residences, the appropriate changes made and the NVMP updated accordingly.	Contractor	Construction
NV4	Construction noise and vibration – training	The environmental induction program will include specific noise and vibration issues awareness training including, but not limited to, the following: Avoiding use of radios during work outside normal hours Avoiding shouting and slamming doors Where practical, operating machines at low speed or power and switching off when not being used rather than left idling for prolonged periods Avoiding dropping materials from height and avoiding metal to metal contact on material.	Contractor	Pre-construction / construction
NV5	Construction noise and vibration impacts	Where feasible and reasonable, construction will be carried out during the standard daytime working hours. Work generating high noise and/or vibration levels will be scheduled during less sensitive time periods.	Contractor	Construction
NV6	Construction noise and vibration impacts	Quieter and less vibration emitting construction methods will be used where feasible and reasonable.	Contractor	Construction
NV7	Construction noise and vibration impacts	The noise levels of plant and equipment must have operating Sound Power or Sound Pressure Levels compliant with the criteria in Appendix H of the *Construction Noise and Vibration Guideline* (Roads and Maritime Services, 2016).	Contractor	Construction
NV8	Construction noise and vibration impacts	Night time construction noise shall be limited to two consecutive nights High noise generating works will be completed before 11:00pm.	Contractor	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
NAH1	Unexpected impacts on heritage values	If unexpected heritage item/s, archaeological remains or potential relics are uncovered during the works, all works would cease in the vicinity of the material / find and the *Standard Management Procedure: Unexpected Heritage Finds* (Roads and Maritime Services, 2015) would be followed.	Roads and Maritime Contractor	Construction
NAH2	Inadvertent impacts on known heritage items and unexpected impacts on heritage values	Non-Aboriginal heritage awareness training would be provided for workers prior to commencement of construction work to communicate potential heritage items (including those associated with Windsor Road) that may be impacted during works, and the procedure required to be carried out in the event of discovery of historical heritage materials, features or deposits.	Roads and Maritime Contractor	Pre-construction
ABH1	Disturbance of Aboriginal objects	• The *Standard Management Procedure: Unexpected Heritage Finds* (Roads and Maritime Services, 2015) will be followed in the event that an unknown or potential Aboriginal object/s, including skeletal remains, is found during construction. • Work will only re-commence once the requirements of that procedure have been satisfied.	Roads and Maritime Contractor	Construction

WQU1	Erosion and Sedimentation	• Erosion and sediment control measures will be documented in the CEMP and implemented and maintained in accordance with *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004) to:
		  • Minimise sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets
		  • Reduce water velocity and capture sediment on site
		  • Minimise the amount of material transported from site to surrounding pavement surfaces
		  • Divert off site water around the site.
			Contractor	Pre-construction / construction

No.	Impact	Environmental safeguards	Responsibility	Timing
WQU2	Erosion and sedimentation	Erosion and sedimentation controls are to be checked and maintained on a regular basis and after a rain event of 10 millimetres or greater (including clearing of sediment from behind barriers) and records kept and provided on request.	Contractor	Construction
WQU3	Erosion and sedimentation	Any material transported onto pavements will be swept and removed at the end of each working shift and prior to rainfall.	Contractor	Construction
WQU4	Erosion and sedimentation	Erosion and sediment control measures are not to be removed until the works are complete or areas are stabilised.	Contractor	Construction
WQU5	Pollution from site runoff	Refuelling, storage of storage of fuels, vehicle wash down and concrete washout will occur at a dedicated location offsite.	Contractor	Construction
WQU6	Spills	An emergency spill kit is to be kept on site at all times. All staff are to be made aware of the location of the spill kit and trained in its use. If a spill or incident occurs, the *Environmental Incident Classification and Management Procedure* (Roads and Maritime Services, 2015) is to be followed and the Roads and Maritime Contract Manager notified immediately.	Contractor	Construction
WQU7	Stockpiling	If temporary stockpiles are required on site they would be located away from drainage lines and removed before the end of each shift.	Contractor	Construction
AQU1	Dust	Measures (including watering or covering exposed areas) will be documented in the CEMP and used to minimise or prevent air pollution and dust, where necessary	Contractor	Pre-construction / construction
AQU2	Dust and other emissions	Vehicles transporting waste or other materials that may produce odours or dust will be covered during transportation.	Contractor	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
AQU3	Other emissions	Works (including the spraying of paint and other materials) will not be carried out during strong winds or in weather conditions where high levels of dust or air borne particulates are likely. Plant, vehicles and equipment will be maintained in good condition and in accordance with manufacturer's specifications. Plant and machinery will be turned off when not in use.	Contractor	Construction
AQU4	Dust and other emissions	Visual monitoring of air quality will be undertaken to verify the effectiveness of controls and enable early intervention	Contractor	Construction
TTR1	Road safety and impacts to traffic flow.	A traffic management plan will be prepared and implemented in accordance with *Traffic control at worksites* (Roads and Traffic Authority, 2010).	Contractor	Pre-construction / construction
TTR2	Property access	Vehicular property access would be maintained where possible including pre-schools, places of worship and all commercial premises.	Contractor	Construction
TTR3	Pedestrian and cyclist access	Pedestrian and cyclist access is to be maintained throughout construction. Provision of signs outlining the pedestrians and cyclists diversion routes would be displayed during construction. There will be advance notification of any construction works that affect pedestrians and cyclists.	Contractor	Construction
TTR4	Bus stop access	Access for bus passengers to bus stops would be maintained during construction.	Contractor	Construction
TTR5	Operational traffic safety	A safety review of all new bus stop locations will be conducted during the design phase to assess any changes to traffic changes.	Roads and Maritime	Pre-construction
HZR1	Construction hazards and risks	As part of the site specific CEMP, a Hazard and Risk Management Plan, including an emergency response plan, will be prepared. The plan will identify construction phase hazards and risks detail measures to mitigate those risks.	Contractor	Pre-construction

No.	Impact	Environmental safeguards	Responsibility	Timing
HZR2	Pedestrian safety	A safety review of all new bus stop locations will be conducted during the design phase to identify whether any additional pedestrian safety measures are required.	Roads and Maritime	Design
HZR3	Contamination	In the event that indications of contamination are encountered (known and unexpected, such as odorous or visually contaminated materials), work in the area would cease until a contamination assessment can be prepared to advise on the need for remediation or other action, as deemed appropriate.	Contractor	Construction
WMM1	Construction waste management	The following resource management hierarchy principles will be followed: • Avoid unnecessary resource consumption as a priority • Avoidance would be followed by resource recovery (including reuse of materials, reprocessing, and recycling and energy recovery) • Disposal would be undertaken as a last resort (in accordance with the *Waste Avoidance and Resource Recovery Act 2001*).	Roads and Maritime Contractor	Construction
WMM2	Construction waste management	All wastes will be managed in accordance with the *Protection of the Environment Operations Act 1997*. All wastes will be disposed of legally in accordance with their classification under the *Waste Classification Guidelines Part 1: Classifying Waste* (Department of Environment, Climate Change and Water, 2009)	Contractor	Construction
WMM3	Resource use	Procurement will endeavour to use materials and products with a recycled content where that material or product is cost and performance effective.	Roads and Maritime Contractor	Detailed design / pre-construction
WMM4	Waste tracking	Types of waste collected, amounts, date/time and details of disposal are to be recorded in a waste register.	Contractor	Pre-construction / construction

No.	Impact	Environmental safeguards	Responsibility	Timing
WMM5	Litter	Works sites would be maintained, kept free of rubbish and cleaned up at the end of each working day.	Contractor	Construction
WMM6	Waste disposal	Suitable waste disposal locations would be identified and used to dispose of litter and other wastes on-site during construction. Suitable containers would be provided for waste collection. Wastes would be removed from each site at the end of each work shift.	Contractor	Pre-construction / construction
CUI1	Construction phase cumulative impacts	The CEMP will be revised to consider potential cumulative impacts from surrounding development activities as they become known. This will include a process to review and update mitigation measures as new work begins or complaints are received.	Contractor	Pre-construction / construction

5.3 Licensing and approvals

Where required, an applicable road occupancy licence would be in place prior to commencement of works.

No other specific licencing/approval requirements have been identified.

6 References

NSW Department of Urban Affairs and Planning (2001). Integrating Land Use and Transport: Improving Transport Choice – Guidelines for planning and development

Roads and Maritime Services (2017). Bus Priority Program On-time running improvements Castle Hill to M2 Motorway Review of Environmental Factors

Transport for NSW (2013). Sydney's Bus Future

Transport for NSW (2014). Bus Stop Location Guidelines Sydney Metropolitan Area

Appendix A

Respondents

Respondent	Submission No.	Section number where issues are addressed
Individual	1	Section 3.7.1,3.7.2,3.7.5,3.9.5
Individual	2	Section 3.6.1, 3.6.2
Individual	3	Section 3.7.1,3.7.4, 3.9.3
Individual	4	Section 3.7.1, 3.9.5
Individual	5	Section 3.15.1
Individual	6	Section 3.12.1
Individual	7	Section 3.7.3
Individual	8	Section 3.7.1
Individual	9	Section 3.7.4, 3.7.7
Individual	10	Section 3.1.2,3.7.1, 3.12.1, 3.12.4
Individual	11	Section 3.1.2, 3.7.1, 3.7.4, 3.12.4
Individual	12	Section 3.1.1, 3.12.2
Individual	13	Section 3.12.4
Individual	14	Section 3.12.4
Individual	15	Section 3.12.2, 3.12.4
Individual	16	Section 3.14.1, 3.14.2
Individual	17	Section 3.12.4

Respondent	Submission No.	Section number where issues are addressed
Individual	18	Section 3.1.2, 3.6.1
Individual	19	Section 3.6.3
Individual	20	Section 3.1.1, 3.7.1, 3.7.2, 3.12.4
Individual	21	Section 3.12.4
Individual	22	Section 3.12.4
Guide Dogs NSW/ACT	23	Section 3.6.3
Individual	24	Section 3.1.2, 3.1.4, 3.17.3
Individual	25	Section 3.1.2
Individual	26	Section 3.7.4
Individual	27	Section 3.7.4, 3.12.4
Individual	28	Section 3.12.4
Individual	29	Section 3.12.1, 3.12.3, 3.12.4
Individual	30	Section 3.7.1, 3.7.4
Individual	31	Section 3.7.1
Individual	32	Section 3.10.1, 3.10.2
Individual	33	Section 3.6.1
Individual	34	Section 3.9.2
Individual	35	Section 3.12.4
Individual	36	Section 3.9.2
Individual	37	Section 3.12.4
Individual	38	Section 3.6.1, 3.6.4
Individual	39	Section 3.9.2
Individual	40	Section 3.7.1, 3.7.2, 3.7.7, 3.12.4
Individual	41	Section 3.12.4
Individual	42	Section 3.3.1, 3.7.4, 3.12.4
Individual	43	Section 3.3.1, 3.5.2, 3.5.3, 3.7.1, 3.7.2, 3.7.4, 3.7.5, 3.12.4
Individual	44	Section 3.12.4

Respondent	Submission No.	Section number where issues are addressed
Individual	45	Section 3.12.4
Individual	46	Section 3.12.1
Individual	47	Section 3.12.4
Individual	48	Section 3.1.5
Individual	49	Section 3.7.1, 3.12.4, 3.17.1
Individual	50	Section 3.12.4, 3.12.5
Individual	51	Section 3.1.3, 3.1.6, 3.12.4
Individual	52	Section 3.1.2, 3.1.6, 3.9.2
Individual	53	Section 3.12.4
Individual	54	Section 3.6.1, 3.6.4
Individual	55	Section 3.12.3, 3.12.4
Individual	56	Section 3.12.2
Individual	57	Section 3.12.2
Individual	58	Section 3.17.1, 3.17.3
Individual	59	Section 3.1.1
Individual	60	Section 3.1.1, 3.1.5, 3.12.4, 3.17.1
Individual	61	Section 3.12.4
Individual	62	Section 3.7.1
Individual	63	Section 3.12.1, 3.12.3, 3.12.4
Individual	64	Section 3.7.5
Individual	65	Section 3.1.2, 3.3.1, 3.12.4
Individual	66	Section 3.12.1, 3.12.4
Individual	67	Section 3.7.5, 3.12.2
Individual	68	Section 3.7.4, 3.12.1, 3.12.4
Individual	69	Section 3.12.4
Individual	70	Section 3.7.1, 3.7.2, 3.7.7
Individual	71	Section 3.12.2
Individual	72	Section 3.1.2, 3.1.4, 3.12.2, 3.12.4, 3.12.5

Respondent	Submission No.	Section number where issues are addressed
Individual	73	Section 3.7.1, 3.7.2, 3.7.7, 3.12.4
Individual	74	Section 3.1.4, 3.12.3, 3.12.4
Individual	75	Section 3.1.2, 3.17.3
Individual	76	Section 3.1.2, 3.17.3
Individual	77	Section 3.1.2, 3.1.4, 3.17.3
Action for Public Transport Inc. (APT) (Donovan)	78	Section 3.1.2, 3.1.5, 3.1.7, 3.17.3, 3.3.2
Individual	79	Section 3.1.2, 3.1.6, 3.6.1, 3.6.4, 3.7.1, 3.7.4, 3.12.4, 3.12.6
Individual	80	Section 3.9.2, 3.12.4
Individual	81	Section 3.7.1, 3.7.4, 3.12.4
Individual	82	Section 3.1.2, 3.1.8, 3.6.4, 3.7.1, 3.7.7
Individual	83	Section 3.7.1, 3.7.4, 3.7.7
Individual	84	Section 3.21, 3.4.2, 3.7.1, 3.12.4
Individual	85	Section 3.10.3
Individual	86	Section 3.7.4, 3.7.6, 3.7.7
Individual	87	Section 3.1.5, 3.6.1, 3.6.4
Individual	88	Section 3.9.2, 3.9.3, 3.12.4
Individual	89	Section 3.7.1, 3.12.2, 3.12.4
Individual	90	Section 3.1.5, 3.12.1
Individual	91	Section 3.1.5, 3.12.4, 3.17.2
Stockland	92	Section 3.12.2, 3.12.3, 3.12.4
Individual	93	Section 3.4.1, 3.5.1
Individual	94	Section 3.7.2, 3.7.4, 3.8.1
Individual	95	Section 3.12.2
Individual	96	Section 3.7.1, 3.12.4, 3.12.5
Individual	97	Section 3.1.5, 3.9.1, 3.11.1, 3.12.1, 3.13.1, 3.17.1, 3.17.3
Individual	98	Section 3.9.4, 3.10.3, 3.12.2, 3.16.1, 3.17.3

Respondent	Submission No.	Section number where issues are addressed
Individual	99	Section 3.7.1, 3.9.1, 3.12.4

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