Bus Priority Infrastructure Program On-time running improvements Parramatta to Hurstville corridor

Submissions report

Roads and Maritime Services | February 2018
Bus Priority Infrastructure Program
On-time running improvements
Parramatta to Hurstville corridor
Submissions report
February 2018

Prepared by NGH Environmental and Roads and Maritime Services

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## Approval and authorisation

| Title                                                                 | Bus Priority Infrastructure – On-time running improvements  
|                                                                     | Parramatta to Hurstville corridor  
|                                                                     | Submissions Report  
| Accepted on behalf of Roads and Maritime NSW by                      | Roopa Jogunoori  
|                                                                     | Project Manager, Bus Priority Infrastructure Program  
|                                                                     | Easing Sydney’s Congestion  
| Signed                                                               | [Signature]  
| Dated                                                                | 20 February 2018 |
Executive summary

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 Parramatta and Hurstville (via Chester Hill, Bankstown and Padstow) serviced by Metrobus M91 route and a range of suburban and local bus services (the proposal).

The key features of the proposal are:
- Rationalising bus stop locations to optimise the spacing between bus stops
- Relocating some bus stops to optimise spacing and/or address traffic and safety issues.

The original proposal (as presented in the REF which went on public display) included the following:
- 46 bus stop removals (including the removal of signage and other bus stop infrastructure)
- 10 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 changes made to the original proposal by bus stop location is provided in Table 0-1.

Display of the REF
Roads and Maritime sought community feedback on the review of environmental factors (REF) between Monday 16 October 2017 and Friday 10 November 2017. As the proposal covered a large area, the proposal was explained in four community updates. Each update focused on changes to bus stops in a specific local government area. The community updates were distributed to residents and businesses in proximity to locations where changes are proposed along the impacted route. Signage was placed at bus stops identified in the proposal to be changed during the display period.

The REF was also placed on the Roads and Maritime project website and made available for download.

Issues raised
A total of 80 submissions were received in response to the display of the REF including two submissions from government agencies (Cumberland Council and Member of Auburn).

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 46 bus stop removals (including the removal of signage and other bus stop infrastructure) and 10 bus stop relocations where works are being proposed:
- 53 submissions were received objecting to the proposal described in the REF
- Between one and 12 objections on individual bus stops were received:
  - Bus stop #8 received eight objections

1 Based on specific issue points raised within submissions in relation to bus stops or the proposal as a whole. Some submissions raised more than one issue point and/or referred to multiple bus stop locations.
Bus stop #21 and #22 (combined) received seven objections
- Bus stops #34 and #35 (combined) received 12 objections
- Bus stop #177 received 11 objections
- Bus stop #180 received seven objections
- Bus stop #218 received nine objections
- Bus stop #231 received nine objections
- Bus stops #231 and #232 (combined) received eight objections

- Four bus stops received submissions that supported the proposed works (between one and 13 in support for each of these bus stops), but they also had objectors
- The proposal wide submissions received 25 objections and one submission in support.

A total of 194 issue points were raised (excluding out of scope issues) within the 80 submissions received. The key issues raised included the following:

- Overall justification of the proposed works, in terms of whether the scope of works would improve bus travel times (81 issues raised)
- Increased walking distance as a result of removing/relocating bus stops, in particular where it would impact on the elderly (41 issues raised).

Proposal changes

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

<table>
<thead>
<tr>
<th>Ref#</th>
<th>Location</th>
<th>Original proposal</th>
<th>Changes to the proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>#8</td>
<td>Halsall Street, Granville (southbound stop TSN #2142288)</td>
<td>Remove bus stop #8. Replace with unrestricted parking resulting in a gain of four parking spaces.</td>
<td>The existing bus stop will be retained at its current location.</td>
</tr>
<tr>
<td>#16</td>
<td>John Street near Blaxcell Street, Granville (northbound stop TSN #2142180)</td>
<td>Remove bus stop #16. Replace with unrestricted parking resulting in a gain of one parking space.</td>
<td>The existing bus stop will be retained at its current location.</td>
</tr>
<tr>
<td>#17</td>
<td>Blaxcell Street near Fifth Street, Granville (southbound stop TSN #2142191)</td>
<td>Remove bus stop #17. Replace with unrestricted parking resulting in a gain of two parking spaces.</td>
<td>The existing bus stop will be retained at its current location.</td>
</tr>
<tr>
<td>#34</td>
<td>Blaxcell Street near Eve Street, South Granville</td>
<td>Remove bus stop #34.</td>
<td>The existing bus stop will be retained at its current location.</td>
</tr>
</tbody>
</table>

Based on specific issue points raised within submissions in relation to bus stops or the proposal as a whole. Some submissions raised more than one issue point and/or referred to multiple bus stop locations.
<table>
<thead>
<tr>
<th>#</th>
<th>Bus Stop Location</th>
<th>Proposed Changes</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>#35</td>
<td>Blaxcell Street, near Eve Street, South Granville (southbound stop TSN #2142200)</td>
<td>Remove bus stop #35. Replace with unrestricted parking resulting in a gain of three parking spaces.</td>
<td>The existing bus stop will be retained at its current location.</td>
</tr>
<tr>
<td>#172</td>
<td>Faraday Road at Doyle Road, Padstow (northbound stop TSN #2211143)</td>
<td>Remove bus stop #172. Replace with unrestricted parking resulting in a gain of five parking spaces.</td>
<td>The existing bus stop will be retained at its current location.</td>
</tr>
<tr>
<td>#180</td>
<td>Alma Road near Wyatt Avenue, Padstow (southbound stop TSN #221159)</td>
<td>Remove bus stop #180. Replace with unrestricted parking resulting in a gain of three parking spaces.</td>
<td>The existing bus stop will be retained at its current location.</td>
</tr>
<tr>
<td>#217A</td>
<td>Forest Road before Stoney Creek Road, Peakhurst (northbound stop No TSN#3)</td>
<td>Not included</td>
<td>Remove three time-restricted parking spaces and construct new bus stop #217A including relocated signposts and plinth and installing TGSI and hardstand.</td>
</tr>
<tr>
<td>#217</td>
<td>Forest Road at Stoney Creek Road, Peakhurst (northbound stop TSN #221029)</td>
<td>No changes</td>
<td>Remove existing bus stop including seat, signposts and plinth. Gain four time-restricted parking spaces.</td>
</tr>
<tr>
<td>#220</td>
<td>Forest Road at Mavis Avenue, Peakhurst (northbound TSN #221028)</td>
<td>No changes</td>
<td>Remove existing bus stop including signposts and plinth. Gain three time-restricted parking spaces.</td>
</tr>
</tbody>
</table>

Changes have been made to the proposal in regards to these particular bus stops for the following reasons:

- Close proximity to aged care/assisted living facilities and the level of impact this would have on a number elderly and concession card holders in terms of increased walking distance (decision to retain bus stops #16, #17, #34 and #35).

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3 Transit Stop Number (TSN) to be confirmed during implementation
4 Public Transport Information and Priority System
• Spacing optimisation and operational efficiency as a result of the removal of bus stop #218 which is proposed to be removed for safety reasons (decision to remove existing bus stops #217 and #220 which are currently considered to be too close together and create a new bus stop #217A to make a pairing with existing bus stop #219 on the opposite side of the road in this location).

• Adjacent land use considerations with a school bus stop nearby, increased walking distances and impacts on elderly, school students and concession card holders (decision to retain bus stop #172).

• Topography considerations combined with increased walking distance and the level of impact this would have on a number of elderly (decision to retain bus stop #180).

• Significant increase in walking distance to alternative bus stops and the level of impact this would have on a number of elderly and concession card holders (decision to retain bus stop #8).

In addition to the changes outlined in Table 0-1, the number of parking spaces proposed to be reinstated has been reduced at some bus stop locations to reflect recent changes in land use development and to ensure compliance with the required parking setback restrictions around intersections.

As a result of the changes the final proposal includes:
• 39 bus stop removals (including the removal of signage and other bus stop infrastructure)
• 10 bus stop relocations
• One new bus stop.

A copy of the revised concept drawings for the proposal is provided in Appendix B.

**Next steps**

The submissions report will be endorsed by Transport for NSW / Roads and Maritime and REF determination prior to release of closeout community update. Prior to implementation, the relevant local authorities will be consulted for coordination of bus stop changes within their local government area.
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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 Parramatta and Hurstville (via Chester Hill, Bankstown and Padstow) serviced by Metrobus M91 route and a range of suburban and local bus services (the proposal) (Figure 1-1).

The corridor between Parramatta and Hurstville (via Chester Hill, Bankstown and Padstow), serviced by Metrobus M91 route and a range of suburban and local bus services, provides access to important centres including Parramatta, Bankstown, Padstow industrial area, Peakhurst industrial area and Hurstville, and provides opportunities for transport interchange at railway stations on the following rail lines:

- T1 North Shore, Northern and Western Line
- T2 Airport, Inner West and South Line
- T3 Bankstown Line
- T4 Eastern Suburbs and Illawarra Line.

The proposal site traverses the suburbs of Parramatta, Granville, South Granville, Guilford, Chester Hill, Sefton, Bass Hill, Yagoona, Padstow, Padstow Heights, Peakhurst, Beverley Hills, Penshurst and Hurstville. The proposal is within the Parramatta, Cumberland, Canterbury-Bankstown and Georges River local government areas.

The key features of the proposal are:

- Rationalising bus stop locations to optimise the spacing between bus stops
- Relocating some bus stops to optimise spacing and / or address traffic and safety issues.

The proposed changes (as presented in the REF which went on public display) include the following and are illustrated in Figure 1-2 to Figure 1-12:

- 46 bus stop removals (including the removal of signage and other bus stop infrastructure)
- Ten bus stop relocations.

A more detailed description of the project is found in the Bus Priority Infrastructure Program (BPIP) On-time Running (OTR) improvements Parramatta to Hurstville corridor Review of Environmental Factors (the ‘REF’) prepared by Roads and Maritime in October 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 Future. 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 services 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 customers
2. Improve on-time running for buses consistent with the State Priority to maintain or improve reliability of public transport services
3. Minimise impacts for users of suburban and local services
4. Minimise impacts on the environment and the community.

In addition to the above (but not specifically mentioned previously in the REF), some of the proposed changes would also contribute to improving road safety conditions and traffic efficiency at certain bus stop locations such as bus stops #25, #75, #76, #81, #82, #213, #218, #226, #235, #236 and #247.

1.1.3 Proposal background and methodology
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 M91.

Adjusting the number and location of bus stops along a bus corridor is one measure that can help reduce the risk of delays to customers. It limits the need for buses to continually pull in and out of traffic from poorly located bus stops where the number of customers may be considerably lower compared to other adjacent bus 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 bus 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) and those key land uses which they service, and
- providing a bus service that can keep to time and enable bus customers 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.

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

**Stage 1 – Preliminary investigations**

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

**Stage 2 – Field investigation / site observations**

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5 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.
- 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 customers using the bus 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 number counts (Opal data) to identify usage at each bus stop including identifying the busiest times and the relative numbers of seniors/pensioners and students
  - Public Transport Information and Priority System (PTIPS) data showing bus performance along routes, compared with schedule
  - Key customer number 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 and local bus operators 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 for developing the proposal were derived from the *Sydney’s Bus Future* (Transport for NSW, 2013), *Improving Transport Choice - guidelines for planning and development* (NSW Department of Urban Affairs and Planning⁶, 2001) 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 number 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 Public Transport Information and Priority System (PTIPS).
4. Adjust and locate bus stops to maintain and/or improve pedestrian safety.
5. Provide suitable bus zone length to allow buses to maneuver 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 Planning⁷, 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 bus 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 nearest bus stop in accordance with the *Sydney’s Bus Future* and Improving Transport Choice guidelines described above.

Based on these guidelines, bus 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

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⁶ Now the Department of Planning and Environment
⁷ Now the Department of Planning and Environment
potentially provides bus users with a choice of bus stops in some locations. Where removing a bus stop would result in excessive distance between bus stops for local and/or suburban routes, no changes have been proposed.

The position and dimensions of new and relocated bus stops (and those existing bus stops subject to significant alteration as a result of the proposal) would be assessed against the requirements of AS 1428.1-2001 Design for Access and Mobility prior to becoming operational. A further safeguard has been included to address this in Chapter 6 (Environmental Management) of this report. The provision of accessible bus stops is a shared responsibility between both council and Transport for NSW. Roads and Maritime would liaise directly with the relevant local council and Transport for NSW during implementation of the proposal to ensure that resulting bus stop infrastructure changes (i.e. new or relocated bus stops and existing bus stops subject to major alteration as a result of the proposal) have been considered against these requirements.
Figure 1-1 Location of the proposal as presented in the REF which went on public display
Figure 1-2 Proposed changes on the corridor from Parramatta to Hurstville as presented in the REF which went on public display (Map 1)
Note – Bus stop #14A shown here for removal should not have been included on the proposal map and was an error. Bus stop #14A has already been removed under a separate project.

Figure 1-3 Detail of proposed changes as presented in the REF which went on public display – Locations #5, #8, #14, #16 and #17
Figure 1-4 Detail of proposed changes as presented in the REF which went on public display – Locations #20, #21, #22, #25, #30, #31, #34 and #35
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Figure 1-11 Detail of proposed changes as presented in the REF which went on public display – Locations #204, #205, #208, #213 and #218
Figure 1-12 Detail of proposed changes as presented in the REF which went on public display – Locations #226, #228a, #231, #232, #235, #236 and #247
1.2 REF display

Roads and Maritime prepared a REF to assess the environmental impacts of the proposed works. The REF was publicly displayed between Monday 16 October 2017 and Friday 10 November 2017. The REF was placed on the Roads and Maritime project website and made available for download.

As the proposal covered a large area, the proposal was explained in four community updates. Each update focused on changes to bus stops in a specific local government area. The community updates were distributed to residents and businesses in proximity to locations where changes are proposed along the impacted route. Signage was placed at bus stops identified in the proposal to be changed during the display period.

1.3 Purpose of the report

This submissions report relates to the REF and should be read in conjunction with that document. The REF was placed on public display and submissions relating to the proposal and the REF were received by 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 (Additional assessment)
- Chapter 6 (Environmental management)
2 Summary of issues

Roads and Maritime received 80 submissions between Monday 16 October 2017 and Friday 10 November 2017, including one submission from the Member of Auburn and one submission from Cumberland Council. Submissions from the Member of Auburn and Cumberland Council are addressed in Chapter 3 (Response to issues) in sections 3.1.1, 3.1.8 and 3.5.1.

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 80 submissions were received in response to the display of the REF including two submissions from government agencies (Member of Auburn and Cumberland Council).

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 bus stop (ie. safety, increased walking distance). Figure 2-1 provides an overview of the number of submissions received with identified support or objection to the proposed works at specific bus stops and the proposal as a whole.

Of the 46 bus stop removals (including the removal of signage and other bus stop infrastructure) and 10 bus stop relocations where works are being proposed:

- 53 submissions were received objecting to the proposal described in the REF
- Between one and 12 objections on individual bus stops were received\(^9\):
  - Bus stop #8 received eight objections
  - Bus stops #21 and #22 (combined) received seven objections
  - Bus stops #34 and #35 (combined) received 12 objections
  - Bus stop #177 received 11 objections
  - Bus stop #180 received seven objections
  - Bus stop #218 received nine objections
  - Bus stop #231 received nine objections
  - Bus stops #231 and #232 (combined) received eight objections
- Four bus stops received submissions that supported the proposed works (between one and 13 in support for each of these bus stops), but they also had objectors
- The proposal wide submissions received 25 objections and one submission in support\(^10\).

Figure 2-2 provides an overview of the issues raised by the community and government agencies in their submissions for all bus stop locations combined, including the proposal as a whole. A total of 194 issues were raised (excluding out of scope issues). The key sub-issues raised included the following:

- Overall justification of the proposed works, in terms of whether the scope of works would improve bus travel times (81 issues raised)

\(^9\) Based on specific issue points raised within submissions in relation to bus stops or the proposal as a whole. Some submissions raised more than one issue point and/or referred to multiple bus stop locations.

\(^10\) Based on specific issue points raised within submissions in relation to bus stops or the proposal as a whole. Some submissions raised more than one issue point and/or referred to multiple bus stop locations.
• Increased walking distance as a result of removing/relocating bus stops, in particular where it would impact on the elderly (41 issues raised).

Furthermore, 39 issues raised were considered outside the scope of the proposed works.
Figure 2-1 Objections and support for proposed works at individual bus stops and proposal wide (by submission issue points raised). It includes issue points considered outside the scope of works being proposed.
Figure 2-2 Sub-issue themes raised in the submission issue points 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 by both the community and government agencies. Submissions from the Member of Auburn and Cumberland Council are addressed in sections 3.1.1, 3.18 and 3.5.1 and the community submissions are addressed in all other sections within this chapter.

Proposal wide comments made regarding the proposal as a whole are addressed in section 3.1. Specific comments on individual bus stop locations are addressed in sections 3.2 to 3.38. Out of scope submissions are addressed in section 3.39.

3.1 Proposal wide

3.1.1 Justification

Submission number(s)
1, 15, 16, 22, 24, 30, 35, 45, 46, 50, 57, 70

Issue description

Bus reliability will not improve by removing bus stops

- Questions the purpose of the proposal and whether bus stop removal will improve on time running of buses when weighed up against the inconvenience caused to customers who have to walk further to the nearest bus stop.
- Removing bus stops is a further limitation of public transport which is already limited.

Removal of bus stops that are used by fewer than about 20 customers per weekday

- Removal of bus stops that are used by fewer than about 20 customers per weekday will not save time for bus services that are not required to stop because there are no customers.

Bus reliability is impacted by road traffic

- Traffic is a major cause of travel delay.

Proposal not justified

- Many M91 passengers travel relatively short distances and would prefer bus stops to be less than 400 metres apart.
- South Granville is a suburb with a high proportion of social housing and a low level of car ownership. Many residents rely on the M91 service.
- Long term consideration needs to be given to an aging population who will rely on this service and require at least the same number of bus stops for comfort and accessibility due to mobility issues.
- Disappointing that in Padstow there are six removals and only one replacement bus stop along the route as M91 is a popular bus route and should be encouraged as a public transport option.
- Getting on and off buses also causes delays. With population increasing, will there be additional bus stop removals if this causes more travel delays?
- Bus delays between Parramatta and Hurstville are also the result of the bus route being too long. Most commuters use the train as it's convenient and faster.
- Concerned about the justification for removing bus stops along the route. Improvements to the on time running of the service must not compromise the provision of easy access to bus services.
- The proposal (as described in the REF) does not give priority to M91 bus services. Many of the proposed actions have no benefit and will work against the best interests of M91 customers.

Proposal to increase parking spaces not justified
• Benefit of creating parking spaces for cars is not justified by the extra walking distance that would be required by bus customers who depend on buses to access work, school and shops.
• Does not support the removal of bus stops in Granville, Parramatta and South Granville to free up parking spaces. There are adequate car parks available at the destination for people travelling via car.

*Rename the bus priority program*

• The Bus Priority Program should be renamed to include customer’s interest and remove priority as the proposal does not give buses priority over general traffic.

*Explanation of departure side bus stops*

• There is no explanation in the REF about how reducing potential delays for buses at traffic signals by moving bus stops to the departure side of the intersection reduces departure delays.

*Proposal documentation and affected bus routes*

• Proposed changes will also affect bus route 943 from Lugarno to Hurstville, not just the M91 bus route.

*Response*

*Bus reliability will not improve by removing bus stops*

*Removal of bus stops that are used by fewer than about 20 customers per weekday*

*Bus reliability is impacted by road traffic*

*Proposal not justified*

Easing Sydney’s Congestion Program Office (‘ESCPO’) is developing projects on the State road network, in accordance with government initiatives, for managing and improving traffic congestion and road safety within the Sydney region.

The proposal forms part of the Bus Priority Infrastructure Program (‘BPIP’) under the ESCPO and supports *Sydney’s Bus Future* (Transport for NSW, 2013). Buses are a key part of Sydney’s growing and evolving public transport network. *Sydney’s Bus Future* is the NSW Government’s long term plan to redesign our city’s bus network to meet customer needs now and into the future (Transport for NSW, 2013). Sydney’s buses provide more than 220 million trips a year across the city. As Sydney grows, the bus system needs to meet the challenges growth brings. *Sydney’s Bus Future* sets out step-by-step actions to deliver fast and reliable bus services for customers where and when they are needed.

Road and Maritime supports *Sydney’s Bus Future* by delivering projects in the Bus Priority Infrastructure Program that make bus services faster and more reliable. These projects help to provide:

• Bus lanes
• Bus priority at traffic lights
• More efficient bus stop placement

Transport for NSW and bus operators regularly receive thousands of complaints annually 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.

Making adjustments to the number and location of bus stops along a bus corridor is one measure that can help reduce the risk of delays to customers. It limits the need for buses to continually pull in and out of traffic from poorly located stops where there are less customers compared to other adjacent bus stops along the route or where buses may miss green traffic lights or get caught in queues behind turning cars.
Chapter 2 (Need and options considered) of the REF describes the strategic need for the proposal and establishes its consistency with key strategic planning and policy documents. As noted in Section 2.1 of the REF, the proposal forms part of the Bus Priority Infrastructure Program which focuses on improvements in Rapid and Suburban routes, as outlined in *Sydney’s Bus Future* (Transport for NSW, 2013), and targets corridors that experience lower service reliability. Overall the proposal, as part of the Bus Priority Infrastructure Program, supports targeted improvements for bus on-time running through a range of initiatives, including:

- 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 potential 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).

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 Parramatta to Hurstville corridor, as well as other local and suburban routes which use parts of this corridor.

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.

Section 1.1.3 of this submissions report details how options were assessed to achieve these objectives. Identified bus stop changes along the corridor also took into account customer usage at preceding and following bus stops, existing and future developments (including major business and residential centres), and the demography of the area when determining the proposed scope of works to ensure users of suburban and local services were not severely impacted.

Customer usage was determined by analysing Opal data at bus stops in the area. To determine if a bus stop had high or low customer use at the preceding and following bus stops, Opal data was analysed to determine the least used bus stop in the area. There was no threshold of less than 20 customers being applied to bus stops affected by the proposal to determine whether they were more frequently used or not.

Improving bus service reliability would encourage more people to use public transport which would contribute to easing current 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. Improving bus reliability would reduce bunched platoons of buses.

Roads and Maritime note that feedback regarding the length of the route between Parramatta and Hurstville and will direct the feedback to the relevant section of Transport for NSW.

**Proposal to increase parking spaces not justified**

As described in section 1.1.2 of this submissions report the objectives of the proposal are to:

1. Achieve more reliable travel times for bus customers
2. Improve on-time running for buses consistent with the State Priority to maintain or improve reliability of public transport services
3. Minimise impacts for users of suburban and local services
4. Minimise impacts on the environment and the community.

Improvements in parking by the addition of new parking spaces on local roads are secondary to the rationalisation of bus stops to improve the on-time running of buses and are not an objective of this proposal. The resulting changes to parking conditions on local roads will be determined by the local council during implementation of the proposal.

Rename the bus priority program

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 (‘ESCPO’).

The Bus Priority Infrastructure Program (‘BPIP’) 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 bus 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 BPIP. The projects under this program are intended to improve the day to day operation of the bus network. The improvements are expected to benefit customers in terms of having a more responsive and reliable bus network.

Explanation of departure side bus stops

Where bus stops are on the approach side of traffic signals, delays can arise where buses departing a bus stop are immediately stopped by a red light. Hence, it is preferable to have a bus stop after the traffic signals to avoid further delays caused by red lights at an intersection.

Proposal documentation and affected bus routes

Bus routes 943 and M91 both operate on Forest Road. Transport for NSW and Roads and Maritime carefully considered the impact on other bus service routes using these bus stops (refer to section 6.1.2 of the REF). All bus operators of affected bus stops are consulted as part of the development of the project.

3.1.2 Increased walking distance to next stop

Submission number(s)

1, 15, 37

Issue description

- The proposal will inconvenience customers by having to walk a longer distance to the nearest bus stop.
- Removing the bus stops may result in people missing buses, being late or being tired for work or school.

Response

The proposal forms part of the Bus Priority Infrastructure Program (‘BPIP’) 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 stops is part of a broader program 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 Public Transport Information and Priority System (‘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.
There is an opportunity to optimise the spacing of bus stops to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations would still maintain a walkable catchment (ie. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility). As described in section 1.1.3, 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.

An important consideration in developing the proposal was to ensure bus stops used by local and suburban services in the corridor remain accessible. Where distances between bus 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 nearest bus stop in accordance with the guidelines of Sydney’s Bus Future and Improving Transport Choice. Based on these guidelines, stop spacings of up to 800 metres 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.

### 3.1.3 Bus services

**Submission number(s)**
16

**Issue description**
- Bus stops should be in pairs to simplify customer trip planning.

**Response**

Roads and Maritime acknowledge 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 bus stop being clearly visible.

While this is the ideal situation, adjacent land uses, specific local road layouts, road widths and traffic arrangements may constrain the ability to install pairs of bus stops in close proximity to each other. Wherever possible, the proposal has considered and provided for bus stop pairing when removing or relocating existing bus stops or creating new bus stops.

### 3.1.4 Community and stakeholder consultation

**Submission number(s)**
25, 57, 69

**Issue description**
- It is inadequate to implement the proposed changes and only address community feedback in a submissions report.
- More information is required to know where the replacement/alternative bus stops will be.
- Documents requested in large print.

**Response**

All communications materials are prepared, sized and formatted in a manner that is clear and legible to the public.

All feedback received during the public display period is considered and reviewed by Transport for NSW, bus operators and Roads and Maritime. In some instances, changes have occurred as a result of community feedback (refer to Chapter 4 (Changes to the proposal)).
Prior to implementation of the works the submissions report will be made available on the Roads and Maritime website. Submitters, key stakeholders and the community will be notified when the submissions report is made available via:

- A further community update notification via mail box drop along the affected route
- Electronic mail (submitters and key stakeholders only)
- Advertisements in local papers
- Roads and Maritime Facebook Page
- Signs at affected bus stops
- Posters displayed inside the M91 buses.

The submissions report is made web accessible to provide vision impaired readers with the ability to listen to a narration of the report. Appendix A of this submissions report details where submitter’s concerns have been addressed.

The REF displayed on the website included details on the location of replacement and alternative bus stops and can be downloaded from the Roads and Maritime website. The community update provided on the website at the time of public display also included maps which clearly showed where changes are proposed to occur relative to adjacent bus stops. The REF displayed on the website was made web accessible and a contact number was provided during the public display period for submitters to call and make enquiries about the proposal.

### 3.1.5 Pedestrian safety

**Submission number(s)**

16

**Issue description**

- On busy roads (such as most of Forest Road), bus stops should always be close to safe crossings. On main roads, this generally means traffic signals, although sometimes a bridge or subway is available. On collector roads, a marked foot crossing might suffice. The REF should pay more attention to safety than it does.

**Response**

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.

As described in section 1.1.3 of this report, Roads and Maritime’s Network and Safety team also undertook a safety review of the bus stop locations identified for potential relocation, removal or extension, taking into consideration location in relation to traffic signals and pedestrian crossings.

Due to existing land use and road constraints, it is not always possible to have a dedicated pedestrian crossing directly next to a bus stop. Where practicable, Roads and Maritime has located new bus stop locations close to existing safe pedestrian crossings and considered the potential pedestrian crossing requirements at remaining alternative bus stops where customers may need to walk to if a bus stop is proposed to be removed.

As described in section 6.10.2 of the REF, a further pedestrian safety review of all new bus stop locations will be conducted during the detailed design phase to identify whether any additional new pedestrian safety measures are required in certain locations. The provision of new dedicated pedestrian crossings on local roads is the responsibility of local council and provision of new dedicated pedestrian crossings on State roads is the responsibility of Roads and Maritime.

### 3.1.6 Proposal documentation

**Submission number(s)**

19, 34
Issue description

• The bus stop on the corner of Alma Road and Chamberlain Road (TSN #221160) was removed some years ago. This area is now a No Stopping zone on the corner of Alma Road and Chamberlain Road.

Response

Roads and Maritime acknowledge and confirm that the bus stop on the corner of Alma Road and Chamberlain Road (TSN #221160) near bus stop #180 (TSN #221159) is a former bus stop that is no longer in use. Roads and Maritime apologises for this error in the proposal documentation.

It is now proposed to retain bus stops #180 (TSN #221159) and #181 (TSN #221180) near to this former bus stop location (refer to Chapter 4 (Changes the proposal) of this report). Bus stops #180 and #181 are close to the intersection of Alma Road and Chamberlain Road and are a paired set of bus stops.

3.1.7 Support
Submission number(s)
36

Issue description

• Support for the reduction in the number of bus stops along the M91 bus route between Bankstown and Parramatta. Would have to walk further, however travel time to both Parramatta and Bankstown should be significantly reduced.

Response

Roads and Maritime acknowledge support of the proposal.

3.1.8 Alternatives and options
Submission number(s)
1, 39

Issue description

• Removing bus stops is not the right solution to improving on-time running of buses. Reconsider the decision of removing bus stops and come up with a different solution to address the problem.

• The timetable should be amended to improve running times and performance. Removing bus stops will only decrease the level of service.

Response

The purpose of the proposal is to improve the reliability of bus services along the proposal 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 justification for the proposal is described in section 3.1.1 of the REF. Changes to bus timetables are considered to be outside the scope of works being proposed.
3.2 Bus stops in Parramatta, Granville and South Granville

Bus stop locations #5 (TSN #2150415), #8 (TSN #2142288), #14 (TSN #214291), #14A (TSN #214292), #16 (TSN #2142180), #17 (TSN #2142191), #20 (TSN #214281), #21 (TSN #2142193), #22 (TSN #214280), #25 (TSN #2142195), #30 (TSN #214276), #31 (TSN #2142198), #34 (TSN #214274) and #35 (TSN #2142200) are located in these suburbs.

3.2.1 Community and stakeholder consultation
Submission number(s)
80
Issue description
- A phone message was left in relation to bus stops in Parramatta, Granville and South Granville with no further comments.

Response
Roads and Maritime followed up on this and received no response from the submitter.

3.3 Bus stops in Padstow

Bus stop locations #172 (TSN #2211143), #176 (TSN #221157), #177 (TSN #221190), #180 (TSN #221159), #182 (TSN #2211144), #186 (TSN #221162) and #187 (TSN #221177) are located in this suburb.

3.3.1 Justification
Submission number(s)
48
Issue description
- Does not want bus stops removed as it will result in more spaces for cars to park on the street and become a nuisance.

Response
As described in section 1.1.2 of this submissions report, the objectives of the proposal are to:

1. Achieve more reliable travel times for bus customers
2. Improve on-time running for buses consistent with the State Priority to maintain or improve reliability of public transport services
3. Minimise impacts for users of suburban and local services
4. Minimise impacts on the environment and the community.

Increases in street parking on local roads are secondary to the rationalisation of bus stops to improve the on-time running of buses and are not an objective of the proposal. The resulting changes to parking conditions on local roads will be determined by the local council during implementation of the proposal.

3.3.2 Community and stakeholder consultation
Submission number(s)
77
Issue description
- A phone message was left in relation to bus stops in Padstow with no further comments.

11 Not an operational bus stop – was included in error on the documentation maps.
3.3.3 Traffic and pedestrian safety
Submission number(s)
48

Issue description
- Proposed changes will create more car spaces in this location which would be a nuisance and a hazard in some cases as driver vision would be blocked for turning vehicles.

Response
The resulting new parking spaces will be reinstated in accordance with road safety standards set by Roads and Maritime and the relevant local council. The parking spaces to be reinstated are located on local roads, which are managed and implemented by the local council. New parking areas shown on the concept plans are indicative only and do incorporate the relevant road safety setback requirements enforced by council (on local roads) and Roads and Maritime (on State roads). Parking to be reinstated as a result of the proposal is subject to approval by the relevant local council in accordance with the intersection setback requirements.

Roads and Maritime and local councils require a 20 metre No Stopping zone back from the stop line of a signalised intersection. This is to allow for turn paths of heavy vehicles around intersections and improve sightlines for motorists. Where a bus stop is to be removed and overlaps with, or is next to a No Stopping zone at a signalised intersection, the bus stop zone would be returned to a No Stopping zone and not car parking spaces.

At roundabouts and non-signalised intersections, Roads and Maritime and local councils require a 10 metre of No Stopping zone back from the stop line. Where a bus stop is to be removed and is in close proximity to the approach of a roundabout or non-signalised intersection, Roads and Maritime and local councils do not allow parking within 10 metres of the roundabout or non-signalised intersection. These setbacks provide for greater bus manoeuvrability and driver safety in terms of clear sightlines.

3.4 Bus stops in Yagoona

Bus stop locations #101 (TSN #219927), #105 (TSN #219923), #106 (TSN #219929), #107 (TSN #219930), #108 (TSN #219922), #110 (TSN #219921), #111 (TSN #219932), #112 (TSN #219920), #115 (TSN #2199152), #116 (TSN #2199150), #119 (TSN #2199149), #120 (TSN #219917) are located in this suburb.

3.4.1 Community and stakeholder consultation
Submission number(s)
79

Issue description
- A phone message was left in relation to bus stops in Yagoona with no further comments.

Response
Roads and Maritime followed up on this and received no response from the submitter.
3.5 Removal of bus stops in Cumberland Local Government Area

Bus stop locations within the Cumberland Local Government Area subject to the original proposal are bus stop locations #8 (TSN #2142288), #14 (TSN #214291), #14A (TSN #214292), #16 (TSN #2142180), #17 (TSN #2142191), #20 (TSN #214281), #21 (TSN #2142193), #22 (TSN #214280), #25 (TSN #2142195), #30 (TSN #214276), #31 (TSN #2142198), #34 (TSN #214274) and #35 (TSN #2142200).

3.5.1 Justification

Submission number(s)

43

Issue description

- Council requests that the impacts to elderly residents be considered in all instances where the bus stops are to be removed in the Cumberland Local Government Area.

Response

The proposal methodology is described in section 1.1.3 of this report. The methodology for the initial assessment included customer number counts (Opal data) to identify usage at each bus stop including identifying the busiest times and the relative numbers of seniors/pensioners and students that use these bus stops. Feedback from elderly residents has also been considered in this submissions report and changes have been made to the proposal in some locations in response to their feedback as described in Chapter 4 (Changes to the proposal).

Specific bus stops in the Cumberland Local Government Area which are now proposed to be retained as a result of community feedback are bus stops #8, #16, #17, #34 and #35. We note that bus stop #14A shown for removal on the community update map is not an operational bus stop and has been shown in error. Bus stop #14A was removed under a separate scope of works and Roads and Maritime apologise for any confusion caused by this error.

3.6 Removal of bus stops along George Street, Penshurst

Bus stops for removal along George Street, Penshurst include bus stop locations #226 (TSN #222234), #228A (TSN #222215), #231 (TSN #222217) and #232 (TSN #222231).

3.6.1 Justification

Submission number(s)

40

Issue description

Justification

- Suggest reducing the number of bus stops that are proposed to be removed along George Street route as it does not align with the aim of the project to create a safe and more efficient bus route.

Increased customers at alternative bus stops

- The removal of bus stops #226, #228A, #231, #232, #235 and #236 will create an increase of people moving towards the remaining bus stops along the road from the surrounding areas resulting in overcrowding and delays at these bus stops during boarding and alighting.
- The M91 bus route already carries a high volume of passengers during peak hours, often resulting in the bus not stopping to pick up additional passengers. This situation will be worsened with the removal of existing bus stops and increase driver frustration in this location.

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12 Not an operational bus stop – was included in error on the documentation maps.
Impacts to traffic at the roundabout on George and Cambridge Street

- Removing bus stops #226, #228A, #231 and #232 on George Street will increasing the number of customers using bus stops #233 and #234. George Street and Cambridge Street are single lane and buses have limited room to pull on and off the road. The increase in customers at bus stops #233 and #234 will increase congestion as buses will stop traffic when using bus stops #233 and #234 to pick up and drop off customers. This contradicts the justification of the proposal.

Response

Justification

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 stops along George Street is part of a broader program 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 Public Transport Information and Priority System (‘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.

There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (ie. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

An important consideration in developing the proposal was to ensure bus stops used by local and suburban services in the corridor remain accessible. Where distances between bus 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 nearest bus stop in accordance with the guidelines of Sydney’s Bus Future and Improving Transport Choice. Based on these guidelines, stop spacings of up to 800 metres 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 bus stops in some locations. Where removing a bus stop would result in excessive distance between bus stops for local and / or suburban routes, no changes have been proposed.

Increased customers at alternative bus stops

Alternative bus stops on George Street will be located within a walkable catchment (ie. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

Bus stops identified for removal on George Street (bus stops #226 (TSN #222234), #228A (TSN #222215), #231 (TSN #222217), #232 (TSN #222231) are dispersed evenly along George Street and will result in customers spreading out to future alternative bus stops and not being concentrated to only one or two bus stops near this location.
The removal of bus stops #226 (TSN #222234), #228A (TSN #222215), #231 (TSN #222217), #232 (TSN #222231), #235 (TSN #222219) and #236 (TSN #222229) will require customers to use alternative bus stops on George Street and Cambridge Street. Opal boarding and alighting data has been analysed for all bus stops with careful consideration of bus stops that attract high usage compared to other adjacent bus stops along the route. Opal data indicates that the nine bus stops on George Street are used by 265 customers per day (24-hour average weekday). Removing bus stops #226, #228A, #231 and #232 will change the average total customers per bus stop per day from 29 customers per bus stop per day to 53 customers per bus stop per day. Overcrowding of bus stops is not expected to occur based on this data and there is adequate footpath space available in this area.

The number of customers using the M91 bus route and other bus routes in this location during peak hours is unlikely to change as a result of this proposal. Similarly, driver frustration is unlikely to be impacted as a result of consolidation, removal and relocation of bus stops as buses will be stopping less frequently along the route.

Impacts to traffic at the roundabout on George and Cambridge Street

At roundabouts and non-signalised intersections Roads and Maritime and local councils requires a 10 metre of No Stopping zone back from the stop line. Where a bus stop is in close proximity to the approach of a roundabout or non-signalised intersection, Roads and Maritime and local councils do not allow parking between the bus stop and the roundabout or non-signalised intersection to improve bus manoeuvrability and driver vision.

Buses would stop less along the route as a result of these changes (ie. fewer bus stops to pick up and drop off customers) therefore traffic would be held up less frequently in this location as a result of buses pulling in and out of bus stops.

3.6.2 Increased walking distance to next stop

Submission number(s)
76

Issue description

- Removing bus stops around George Street in Penshurst will increase walking distances and make catching the bus for appointments in Hurstville more difficult.

Response

There are nine bus stops on George Street between Forest Road and Cambridge Street over a distance of about 760 metres. There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the bus spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (i.e. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

As detailed in section 1.1.3 of this report, the removal of the bus stops has taken into account the population size, demography, local facilities, current and future land use development, and other relevant factors when determining which bus stops to remove or relocate to ensure users of suburban and local services were not severely impacted.

Following removal of bus stops on George Street including bus stops #226 (TSN #222234), #228A (TSN #222215), #231 (TSN #222217), #232 (TSN #222231) customers will be required to walk to future alternative bus stops:

- Paired bus stop #223 (TSN 222212) and bus stop #224 (TSN #222224) (located on Forest Road)
- Paired bus stop #227 (TSN #222214) and bus stop #228 (TSN #222233)
- Paired bus stop #229 (TSN #222232) and bus stop #230 (TSN #222216)
• Paired bus stop #233 (TSN #222218) and bus stop #234 (TSN #222230) (located on Cambridge Street)

This increased walking distance may inconvenience some customers, however the distance between retained paired bus stops on George Street would be between 250 metres to 350 metres in either direction of these affected bus stops which is consistent with the *Improving Transport Choice* and *Sydney’s Bus Future* Guidelines.

### 3.7 Removal of bus stops on Blaxcell Street, Granville

Bus stops proposed for removal on Blaxcell Street, Granville, included bus stops #16 (TSN #2142180), #17 (TSN #2142191), #20 (TSN #214281), #21 (TSN #2142193), #22 (TSN #214280), #25 (TSN #2142195), #30 (TSN #214276), #31 (TSN #2142198), #34 (TSN #214274) and #35 (TSN #2142200).

#### 3.7.1 Justification

**Submission number(s)**

41

**Issue description**

- The proposed changes leave no bus stops between Granville Station and the Granville Woolworths or the childcare centre opposite John Street and reduce transport options.
- Most users of the bus service in this area are elderly and would use a gold Opal card.

**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 #16 and #17, located between Granville Station and Granville Woolworths, are now proposed to be retained in their current location.

There is an opportunity to optimise the spacing of bus stops on Blaxcell Street by removing bus stops #20, #21, #22 #25, #30, #31, #34 and #35 to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations would still maintain a walkable catchment (ie. bus stops within a 400 metre radius or a five minute walk) consistent with the *Improving Transport Choice* and *Sydney’s Bus Future* guidelines (refer to section 1.1.3 for further information about bus stop accessibility). Following implementation of the proposed changes, there will be bus stops available for use on Blaxcell Street between Granville Station and the Woolworths (including near the childcare centre opposite John Street). These include bus stops #9 (TSN #214288), #10 (TSN #214289), #11 TSN #2142183), #12 (TSN #214290), #13 (TSN # 2142182), #14 (TSN # 214291), #16, #17 and #18 (TSN # 214282).

Roads and Maritime understands that many elderly people use bus stops on Blaxcell Street. The proposal methodology is described in section 1.1.3 of this report. The methodology for the initial assessment included customer number counts, which included gold Opal card users (Opal data) to identify usage at each bus stop relative to adjacent bus stops and identifying the busiest times and the relative numbers of seniors/pensioners and students. This methodology was used to select bus stops on Blaxcell Street for removal.

### 3.8 Removal of bus stops on Brodie Street, Yagoona

Bus stops for removal on Brodie Street, Yagoona, include bus stops #105 (TSN #219923), #106 (TSN #219929), #107 (TSN #219930), #108 (TSN 219922), #111 (TSN #219932) and #112 (TSN #219920).
3.8.1 Justification

Submission number(s)
26, 42

Issue description
- Do not remove bus stops on Brodie Street as they are popular with customers travelling to work and school.
- Removal of bus stops on Brodie Street will also negatively impact elderly people and people with limited mobility.

Response

There are currently nine bus stops on Brodie Street between Rose Street and McMahon Road, a distance of about 750 metres, including bus stops #105 (TSN #219923) to #113 (TSN #219933). Of these bus stops, six bus stops would be removed including bus stops #105, #106 (TSN #219929), #107 (TSN #219930), #108 (TSN 219922), #111 (TSN #219932) and #112 (TSN #219920). One bus stop (bus stop #110 (TSN #219921)) would be relocated about 50 metres west of its current location.

Following removal of the bus stops above, bus stops #109 and #110 would be centrally located on Brodie Street between Rose Street and McMahon Road. Bus stop #109 will be 360 metres from previous bus stop #104 (TSN #219928) and 367 metres from the next bus stop #113 (TSN #219933). Bus stop #110 will be 410 metres from previous bus stop #114 (TSN #2199153) and 430 metres from the next bus stop #103 (TSN #219924).

There is an opportunity to optimise the spacing of bus stops to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations would still maintain a walkable catchment (ie. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

Roads and Maritime understands that many elderly people use bus stops on Brodie Street. The proposal methodology for selecting bus stops for removal is described in section 1.1.3 of this report. The methodology for the initial assessment included customer number counts (Opal data) to identify usage at each bus stop relative to adjacent bus stops including identifying the busiest times and the relative numbers of seniors/pensioners and students. This methodology was used to assist in determining which bus stops should be on Brodie Street.

Opal data shows that bus stops for removal on Brodie Street, including bus stops #105, #106, #107, #108, #111 and #112, have low customers usage with an average 24-hour weekday demand between 1 and 27 customers. The future alternative bus stops on Brodie Street, including bus stops #103, #104, #109 and #110 are more popular with an average 24-hour weekday demand of between 21 and 56 customers.

For people who experience difficulty walking long distances, a better alternative to the public bus route may be a community transport service. Community transport programs provide a range of supplementary and specialised services across the Sydney metropolitan area that respond to the specific needs of the community. These services are provided by a number of different transport operators and can provide eligible customers with access to recreational activities, shops and other services such as doctors. Customers may wish to refer to the Community Transport programs sponsored by Transport for NSW.

Customers can contact the Community Transport group on phone 02 8265 6962 (or email: community.transport@transport.nsw.gov.au) to ascertain whether they are eligible.

Further information can be found at www.transport.nsw.gov.au/operations/community-transport-operators.

3.8.2 Increased walking distance to next stop

Submission number(s)
**Issue description**

- Removal of bus stops on Brodie Street will require elderly residents with limited mobility to walk further.

**Response**

There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (i.e. bus stops within a 400 metre radius or a five minute walk) consistent with the *Improving Transport Choice* and Sydney’s *Bus Future* guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

As detailed in section 1.1.3 of this report, the removal of the bus stops has taken into account the population size, demography, local facilities, current and future land use developments, and other relevant factors when determining which bus stops to remove or relocate to ensure users of suburban and local services were not severely impacted.

The REF has considered all bus services running along the M91 route that use the bus stops. Section 6.1 (Socio-economic) of the REF assessed the impacts of the removal of bus stops on other routes.

There are currently nine bus stops on Brodie Street between Rose Street and McMahon Road, a distance of about 750 metres, including bus stops #105 (TSN #219923) to #113 (TSN #219933). Of these bus stops, six bus stops would be removed including bus stops #105, #106 (TSN #219929), #107 (TSN #219930), #108 (TSN #219922), #111 (TSN #219932) and #112 (TSN #219920). One bus stop (bus stop #110 (TSN #219921)) would be relocated about 50 metres west.

Following removal of the bus stops above, bus stops #109 and #110 would be centrally located on Brodie Street between Rose Street and McMahon Road. Bus stop #109 will be 360 metres from the previous bus stop #104 (TSN #219928) and 367 metres from the next bus stop #113 (TSN #219933). Bus stop #110 will be 410 metres from the previous bus stop #114 (TSN #2199153) and 430 metres from the next bus stop #103 (TSN #219924).

Customers walking to future alternative bus stops #109 and #110 would be required to descend a gentle slope if travelling from the west. Customers walking from the east of future alternative bus stops #109 and #110 would be required to ascend a gently slope west of the stormwater channel.

There are footpaths in good condition on both sides of Brodie Street that can be used by pedestrian to access the future alternative bus stops #109 and #110.

Roads and Maritime understands that many elderly people use bus stops on Brodie Street. The proposal methodology for selecting bus stops for removal is described in section 1.1.3 of this report. The methodology for the initial assessment included customer number counts (Opal data) to identify usage at each bus stop relative to adjacent bus stops including identifying the busiest times and the relative numbers of seniors/pensioners and students. This methodology was used to select bus stops for removal on Brodie Street.

For people who experience difficulty walking long distances, a better alternative to the public bus route may be a community transport service. Community transport programs provide a range of supplementary and specialised services across the Sydney metropolitan area that respond to the specific needs of the community. These services are provided by a number of different transport operators and can provide eligible customers with access to recreational activities, shops and other services such as doctors. Customers may wish to refer to the Community Transport programs sponsored by Transport for NSW.

Customers can contact the Community Transport group on phone 02 8265 6962 (or email: community.transport@transport.nsw.gov.au) to ascertain whether they are eligible.
Further information can be found at: www.transport.nsw.gov.au/operations/community-transport-operators.

3.8.3 Pedestrian safety
Submission number(s)
42, 53

Issue description
• There are no footpaths and in some locations the ground on Brodie Street is uneven. These walking conditions are a safety risk for elderly persons and people with limited mobility and will be difficult given the increased walking distance from bus stop changes along with customer mobility issues and needing to carry shopping bags and other items.

Response
The increase in walking distances as a result of the proposal at this location is addressed in section 3.8.2.
The scope of works for this proposal is limited to:
• 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 Public Transport Information and Priority System (PTIPS).

There are footpaths in good condition on both sides of Brodie Street that can be used by customers to access the future alternative bus stops #109 and #110. The construction and maintenance of footpaths is undertaken by the local council. Roads and Maritime will forward these comments to the relevant local council.

For people who experience difficulty walking long distances, a better alternative to the public bus route may be a community transport service. Community transport programs provide a range of supplementary and specialised services across the Sydney metropolitan area that respond to the specific needs of the community. These services are provided by a number of different transport operators and can provide eligible customers with access to recreational activities, shops and other services such as doctors. Customers may wish to refer to the Community Transport programs sponsored by Transport for NSW.

Customers can contact the Community Transport group on phone 02 8265 6962 (or email: community.transport@transport.nsw.gov.au) to ascertain whether they are eligible.

Further information can be found at: www.transport.nsw.gov.au/operations/community-transport-operators.

3.9 Removal of bus stops on Buist Street, Yagoona

Only one bus stop is proposed to be removed on Buist Street in Yagoona which is bus stop #101 (TSN #219927).

3.9.1 Alternatives and options
Submission number(s)
45

Issue description
• Request that the removal of the bus stops on Buist Street be abandoned.
Response

There are currently eight bus stops on Buist Street between Hector Street and Rose Street over a distance of about 670 metres, including bus stops #96 (TSN #219718) to #103 (TSN #219924). Of these bus stops, only one bus stop would be removed as part of this proposal (bus stop #101 (TSN #219927)).

There is an opportunity to optimise the spacing of bus stops in this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations on this street would still maintain a walkable catchment (ie bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

The removal of bus stop #101 will require customers to walk to alternative bus stops, including from the Hume Highway. Bus stop #101 is located 210 metres from the previous bus stop #98 (TSN #219719) and 190 metres from the next bus stop #102 (TSN #2199173). Bus stop #101 has low customer usage relative to the previous bus stop with Opal data showing an average 24-hour weekday demand of ten passengers, compared with 23 for bus stop #98. The resulting spacing between the preceding and next bus stops would be about 400 metres.

3.10 Removal of bus stop #8, Halsall Street, Granville (TSN #2142288)

Submission number(s)
11, 16, 41, 64, 66

Issue description
Five submissions were received which objected to the proposed removal of bus stop #8 with a number of concerns raised in relation to:

- Increased walking distance to the next bus stop for elderly residents
- Justification of the works
- Loss of amenity
- Proposal documentation

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 #8 is now proposed to be retained in its current location.

3.11 Removal of bus stop #14A, Blaxcell Street, near Elizabeth Street, Granville (TSN #214292)

3.11.1 Justification
Submission number(s)
67

Issue description
- Bus stop #14a should be retained as it is used regularly.

Response
The proposal, as described in the REF, does not include changes to bus stop #14A. Furthermore, bus stop #14A was closed in late 2017 and is no longer in use.
Roads and Maritime acknowledge bus stop #14A was included by error in the community update for bus stops in Parramatta, Granville and South Granville.

3.12 Relocation of bus stop #14, Blaxcell Street, near Elizabeth Street, Granville (TSN #214291)

3.12.1 Proposal documentation

Submission number(s)

5

Issue description

- The proposal documentation is unclear where bus stop #14 will be relocated to and how many car parking spaces will be created/reduced. Is it a combined bus stop or is there going to be two bus stops created?

Response

Bus stop #14 (TSN #214291) is proposed to be relocated about 100 metres south of its existing location on Blaxcell Street. Figure 3-2 of the REF and Figure 1-3 in this report includes details of the proposed location for relocated bus stop #14. The concept plans provided in the appendices of the REF and Appendix B of this report show the indicative parking changes in this location as a result of this proposal. Relocation of bus stop #14 would result in a loss of five car spaces (partly offset by a gain of three car spaces in its previous location). The final parking arrangement will be confirmed by council as Blaxcell Street is a local road.

3.13 Removal of bus stop #16, John Street near Blaxcell Street, Granville (TSN #2142180)

Submission number(s)

3

Issue description

One submission was received which objected to the proposed removal of bus stop #16 with concerns raised in relation to:

- Increased walking distance to the next bus stop for elderly residents
- Justification of the works

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 #16 is now proposed to be retained in its current location.

3.14 Removal of bus stops #16 and #17, Blaxcell Street, Granville (TSNs #2142180 and #2142191)

Submission number(s)

41, 63, 73

Issue description

Three submissions were received which objected to the proposed removal of bus stops #16 and #17 with a number of concerns raised in relation to:
• Increased walking distance to the next bus stop for children and elderly residents
• Justification of the works

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 #16 and #17 are now proposed to be retained in their current location.

3.15 Removal of bus stop #20, Blaxcell Street near Celia Street, Granville (TSN #214281)

3.15.1 Justification

Submission number(s)
74

Issue description
• Many customers use bus stop #20 as it is near Woolworths.

Response

Key considerations for developing the proposal were derived from the Sydney’s Bus Future (Transport for NSW, 2013), Improving Transport Choice - guidelines for planning and development (NSW Department of Urban Affairs and Planning 13, 2001) and the draft Bus Stop Location Guidelines Sydney Metropolitan Area (Transport for NSW, 2014) and includes ensuring bus stops are located close to major customer number generators and community facilities to maximise the efficiency of a bus stop and eliminating redundant and underutilised bus stops.

The removal of bus stop #20 would not impact customers of Woolworths at it is not the closest bus stop to this supermarket. The nearest northbound bus stop to Woolworths is bus stop #18 (TSN #214282) located on Blaxcell Street near Charles Street which is not proposed to be removed.

Bus stop #20 is located 187 metres from the previous bus stop #22 (TSN #214280) and 136 metres from the next bus stop #18 (TSN #214282). Opal data indicates there are no passengers using this bus stop.

There is an opportunity to optimise the spacing of bus stops at this location to reduce delays by removing this bus stop. The resulting spacing between the preceding and next bus stops would be about 426 metres (taking into account the proposed removal of bus stop #22).

3.15.2 Proposal documentation

Submission number(s)
56

Issue description
• Bus stop #20 doesn’t exist.

Response

Roads and Maritime have confirmed that this bus stop does currently exist but currently lacks the appropriate bus stop infrastructure.

13 Now the Department of Planning and Environment
3.16 Removal of bus stop #21, Blaxcell Street near Membrey Street, Granville (TSN #2142193)

3.16.1 Justification
Submission number(s)
74

Issue description
• Many customers use bus stop #21 as it is near Woolworths.

Response
Key considerations for developing the proposal were derived from the Sydney’s Bus Future (Transport for NSW, 2013), Improving Transport Choice - guidelines for planning and development (NSW Department of Urban Affairs and Planning 14, 2001) and the draft Bus Stop Location Guidelines Sydney Metropolitan Area (Transport for NSW, 2014). These considerations included ensuring that bus stops are located close to major customer number generators and community facilities in order to maximise the efficiency of a bus stop and eliminate any redundant and underutilised bus stops.

Bus stop #21 is located 150 metres from the previous bus stop #19 (TSN #2142192) and 236 metres from the next bus stop #24 (TSN #2142194). This bus stop has low customer usage relative to adjacent bus stops with Opal data showing an average 24-hour weekday demand of eight customers, compared with 63 for bus stop #24 and 201 for bus stop #19.

The removal of bus stop #21 would not impact customers of Woolworths at it is not the closest southbound stop to this supermarket. The nearest southbound bus stop to Woolworths is bus stop #19 (TSN #2142192) located on Blaxcell Street near Charles Street which is not proposed to be removed.

There is an opportunity to optimise the spacing of bus stops at this location to reduce delays by removing this bus stop. The resulting spacing between the preceding and next bus stops would be about 386 metres.

3.16.2 Increased walking distance to next stop
Submission number(s)
18

Issue description
• Children also use bus stop #21 and also have to walk a long way to get home.

Response
There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the bus spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (i.e. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

As detailed in section 1.1.3 of this report, the removal of the bus stops has taken into account the population size, demography, local facilities, current and future land use developments, and other relevant factors when determining which bus stops to remove or relocate to ensure users of suburban and local services were not severely impacted.

14 Now the Department of Planning and Environment
Bus stop #21 is located 150 metres from the previous bus stop #19 (TSN #2142192) and 236 metres from the next bus stop #24 (TSN #2142194). This bus stop has low customer usage relative to adjacent bus stops with Opal data showing an average 24-hour weekday demand of eight passengers, compared with 63 for bus stop #24 and 201 for bus stop #19.

There is an opportunity to optimise the spacing of bus stops at this location to reduce delays by removing this stop. The resulting spacing between the preceding and next bus stops would be about 386 metres.

Bus stop #21 is only used by eight customers per day (24 hour weekday average). Opal data analysis indicates that the eight customers include about 22% or about two school students per day. Future alternative bus stops #19 and #24 are used by 201 and 63 customers per day (24 hour weekday average), respectively. Future alternative bus stop (bus stop #19) is used by more school students (8%) and child/youth (5%) equating to 16 school students and 10 child/youths respectively. Future alternative bus stop (bus stop #24) is used by more school students (17%) and child/youth (5%) equating to about 11 school students and three child/youths respectively.

The topography of this area on Blaxcell Street is flat with good footpaths and safe crossings are provided near Thomas Street, Louis Street and Membrey Street.

3.17 Removal of bus stops #21 and #22, Blaxcell Street, Granville (TSNs #2142193 and #214280)

3.17.1 Justification
Submission number(s)
39, 74

Issue description
- Removing bus stops #21 and #22 that service many customers to create four parking spaces is not justified.
- The bus service is late due to traffic along the bus route. Removing bus stops #21 and #22 won’t improve running times.

Response
Easing Sydney’s Congestion Program Office (‘ESCPO’) is developing projects on the State road network, in accordance with government initiatives, for managing and improving traffic congestion and road safety within the Sydney region.

The proposal forms part of the Bus Priority Infrastructure Program under the ESCPO and supports Sydney’s Bus Future (Transport for NSW, 2013). Buses are a key part of Sydney’s growing and evolving public transport network. Sydney’s Bus Future is the NSW Government’s long term plan to redesign our city’s bus network to meet customer needs now and into the future (Transport for NSW, 2013). Sydney’s buses provide more than 220 million trips a year across the city. As Sydney grows, the bus system needs to meet the challenges growth brings. Sydney’s Bus Future sets out step-by-step actions to deliver fast and reliable bus services for customers where and when they are needed.

There is an opportunity to optimise the spacing of bus stops to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations would still maintain a walkable catchment (ie bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

As described in section 1.1.2 of this submissions report the objectives of the proposal are to:
1. Achieve more reliable travel times for bus customers
2. Improve on-time running for buses consistent with the State Priority to maintain or improve reliability of public transport services
3. Minimise impacts for users of suburban and local services
4. Minimise impacts on the environment and the community.

Improvements in parking by the addition of new parking spaces on local roads are secondary to the rationalisation of bus stops to improve on-time running of buses and are determined by the local council during implementation of the proposal.

Bus stops #21 and #22 are being removed as they are underutilised by customers. Opal data indicates bus stop #21 has an average 24-hour weekday demand of eight customers. The future alternative southbound bus stops (bus stops #19 (TSN #2142192) and #24 (TSN #2142194)) have an average 24-hour weekday demand of 201 and 63 customers respectively.

Opal data indicates bus stop #22 has an average 24-hour weekday demand of zero customers. The future alternative northbound bus stops (bus stops #18 (TSN #214214282) and #23 (TSN #214279)) have an average 24-hour weekday demand of 213 and 73 customers respectively.

### 3.17.2 Increased walking distance to next stop

**Submission number(s)**
18, 39, 74

**Issue description**
- Removing bus stops #21 and #22 on Blaxcell Street would increase walking distance for the elderly, who may not be able to walk to the next bus stop due to distance, steep hills and unpaved surfaces.

**Response**

There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the bus spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (i.e. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

As detailed in section 1.1.3 of this report, the removal of the bus stops has taken into account the population size, demography, local facilities, current and future land use developments, and other relevant factors when determining which bus stops to remove or relocate to ensure users of suburban and local services were not severely impacted.

There are several bus stops on Blaxcell Street positioned close to each other and have low customer numbers relative to adjacent bus stops. There is an opportunity to reduce delays by removing bus stops #21 and #22. Opal data indicates bus stop #21 has an average 24-hour weekday demand of eight customers. The future alternative southbound bus stops (bus stops #19 (TSN #2142192) and #24 (TSN #2142194)) have an average 24-hour weekday demand of 201 and 63 customers, respectively.

Opal data indicates bus stop #22 has an average 24-hour weekday demand of zero customers. The future alternative northbound bus stops (bus stops #18 (TSN #214214282) and #23 (TSN #214279)) have an average 24-hour weekday demand of 213 and 73 customers, respectively.

Removing bus stops #21 and #22 would still maintain a walkable catchment (i.e. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

Customers who use bus stop #21 would be required to use previous bus stop #19 (TSN #2142192) located 150 metres away to the north or next bus stop #24 (TSN #2142194) located about 236 metres away to the south.

Customers who use bus stop #22 would be required to use previous bus stop #23 (TSN #214279) located about 103 metres away to the south or next bus stop #18 (TSN #214282) located about 187 metres away to the north.
Customers walking to the future alternative bus stops described above would only be required to walk on a gentle to flat slope generally grading downhill from north to south. The footpaths in the area of Blaxcell Street are paved and in good condition.

3.18 Removal of bus stops #34 and #35, Blaxcell Street, South Granville (TSNs #214274 and #2142200)

Submission number(s)
2, 12, 20, 22, 43, 55

Issue description
Six submissions were received which objected to the proposed removal of bus stops #34 and #35 with a number of concerns raised in relation to:

- Increased walking distance to the next bus stop for elderly residents
- Pedestrian safety
- Justification of the works
- Community and stakeholder 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 stops #34 and #35 are now proposed to be retained in their current location.

3.19 Relocation of bus stops #81 and #82, Proctor Parade, Chester Hill (TSNs #216227 and #216292)

3.19.1 Traffic safety

Submission number(s)
10

Issue description
- Bus stops #81 and #82 (corner of Proctor Parade and Hector Street) should remain in their current location as they prevent cars from parking too close to the corner of Proctor Street and Hector Street and obstructing the view of cars turning at that location.

Response
The intersection of Proctor Parade and Hector Street is a signalised intersection. Roads and Maritime and local councils require a 20 metre of No Stopping zone back from the stop line of a signalised intersection. This is to allow for turn paths of heavy vehicles around intersections and to provide for adequate sight distances for turning vehicles. Where a bus stop to be removed currently overlaps with, or is next to, a No Stopping zone at a signalised intersection, the bus stop zone is being returned to a No Stopping zone and not car parking spaces. This will improve driver vision for turning vehicles at intersections.

The required setback address driver and pedestrian safety and provides for adequate sight distances close to signalised intersections if parked cars are required to park near the intersection. The setbacks also reduce the risk of turning vehicles swiping parked cars near the intersection, especially heavy vehicles when they try to turn around tight intersections.
3.20 Removal of bus stop #101, Buist Street near Smith Road, Yagoona (TSN #219927)

3.20.1 Justification
Submission number(s)
45

Issue description
- There are lots of elderly people and children in the area who will have little or no public transport available if the bus stop is removed.

Response
Key considerations for developing the proposal were derived from the *Sydney’s Bus Future* (Transport for NSW, 2013), *Improving Transport Choice - guidelines for planning and development* (NSW Department of Urban Affairs and Planning15, 2001) and the draft *Bus Stop Location Guidelines Sydney Metropolitan Area* (Transport for NSW, 2014) and includes ensuring bus stops are located close to major customer number generators and community facilities to maximise the efficiency of a bus stop and eliminating any redundant and underutilised bus stops.

Opal data indicates that bus stop #101 is used by 10 customers per day (24-hour weekday average) including school students (15%) and child/youth (4%). The previous bus stop #98 is used by 23 customers per day (24-hour weekday average) including a higher proportion of school students (46%) and child/youth (6%). Similarly, the next bus stop #102 (used by 12 customers per day), is also used by a higher proportion of school students (43%) and child/youth (13%) than bus stop #101.

Bus stop #101 is located 210 metres from the previous bus stop #98 (TSN #219719) and 190 metres from the next bus stop #102 (TSN #2199173). There is an opportunity to optimise the spacing of bus stops at this location to reduce delays by removing this bus stop. The resulting spacing between the preceding and next bus stops would be about 400 metres consistent with *Sydney’s Bus Future* and *Improving Transport Choice* guidelines.

3.20.2 Increased walking distance to next stop
Submission number(s)
45

Issue description
- Bus stop #101 is very convenient for older people, its removal will require a long walk to Hume Highway for alternative transport which may or may not be available.

Response
There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (i.e. bus stops within a 400 metre radius or a five minute walk) consistent with the *Improving Transport Choice* and *Sydney’s Bus Future* guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

As detailed in section 1.1.3 of this report, the removal of bus stops has taken into account the population size, demography, local facilities, current and future land use developments, and other relevant factors when determining which bus stops to remove or relocate to ensure users of suburban and local services were not severely impacted.

The REF has considered all bus services running along the bus routes that use the bus stop. Section 6.1 (Socio-economic) of the REF assessed the impacts of the removal of bus stops on

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other routes. By removing bus stop #101 an acceptable spacing still is maintained for all bus routes in accordance with Sydney’s Bus Future and Improving Transport Choice guidelines.

Removal of bus stop #101 will require customers to walk to alternative bus stops, including from the Hume Highway. Bus stop #101 is located 210 metres from the previous bus stop #98 (TSN #219719) and 190 metres from the next bus stop #102 (TSN #2199173). The resulting spacing between the preceding and next bus stops would be about 400 metres.

Bus stop #101 has low customer usage relative to the previous and following bus stops with Opal data showing an average 24-hour weekday demand of ten passengers, compared with 23 for bus stop #98 and 12 for bus stop #102. Of the ten customers who use bus stop #101 per day senior/pensioner customers make up about 38%, or four customers per day.

Of the 23 customers who use previous bus stop #98 per day senior/pensioner customers make up about 19%, or four customers per day. Of the 12 customers who use next bus stop #102 per day senior/pensioner customers make up about 22%, or three customers per day.

Customers walking to the future alternative bus stops described above would only be required to walk on a gentle to flat slope. The footpaths on the northern side of Buist Street are paved and in good condition.

### 3.21 Removal of bus stops #101 to #120, Yagoona (TSNs #219927, #2199173, #219924, #219928, #219923, #219929, #219930, #219922, #219931, #219921, #219932, #219920, #219933, #2199153, #2199152, #2199150, #2199184, #2199174, #2199149 and #219917)

#### 3.21.1 Justification

**Submission number(s)**

45

**Issue description**

- Congestion of street traffic is a growing concern due to new developments in the area. Removing bus stops will make congestion worse along the route as more vehicles are purchased or Taxis are ordered.

**Response**

Easing Sydney’s Congestion Program Office (‘ESCPO’) is developing projects on the State road network, in accordance with government initiatives, for managing and improving traffic congestion and road safety within the Sydney region.

The proposal forms part of the Bus Priority Infrastructure Program under the ESCPO and supports Sydney’s Bus Future (Transport for NSW, 2013). Buses are a key part of Sydney’s growing and evolving public transport network. Sydney’s Bus Future is the NSW Government’s long term plan to redesign our city’s bus network to meet customer needs now and into the future (Transport for NSW, 2013). Sydney’s buses provide more than 220 million trips a year across the city. As Sydney grows, the bus system needs to meet the challenges growth brings. Sydney’s Bus Future sets out step-by-step actions to deliver fast and reliable bus services for customers where and when they are needed.

Road and Maritime supports Sydney’s Bus Future by delivering projects in the Bus Priority Infrastructure Program that make bus services faster and more reliable. These projects help to provide:

- Bus lanes
- Bus priority at traffic lights
- More efficient bus stop placement
Transport for NSW and bus operators regularly receive thousands of complaints annually 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. The improvements to bus services in terms of reliability would likely result in an increase in customer use of bus services, including the M91 bus route.

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

Chapter 2 (Need and options considered) of the REF describes the strategic need for the proposal and establishes its consistency with key strategic planning and policy documents. As noted in section 2.1 of the REF, the proposal forms part of the Bus Priority Infrastructure Program which focuses on improvements in Rapid and Suburban routes, as outlined in Sydney's Bus Future (Transport for NSW, 2013), and targets corridors that experience lower service reliability. Overall the proposal, as part of the Bus Priority Infrastructure Program, supports targeted improvements for bus on-time running through a range of initiatives, including:

- 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 potential 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').

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 Parramatta to Hurstville corridor, as well as other local and suburban routes which use parts of this corridor.

### 3.22 Removal of bus stops #105, #106, #107 and #108, Brodie Street, Yagoona (TSNs #219923, #219929, #219930 and #219922)

#### 3.22.1 Justification

**Submission number(s)**

30

**Issue description**

- Bus stops #105 and #106 are used by elderly with mobility issues to access doctors and shopping centres. Removing these bus stops will impact accessibility of the bus service for the elderly who rely on the bus services.

**Response**

Key considerations for developing the proposal were derived from the Sydney’s Bus Future (Transport for NSW, 2013), Improving Transport Choice - guidelines for planning and development
The REF has considered all bus services running along the bus routes that use the bus stops. Section 6.1 (Socio-economic) of the REF assessed the impacts of the removal of bus stops on other routes.

There is an opportunity to optimise the spacing of bus stops at this location to reduce delays by removing these bus stops. By removing bus stops #105 (TSN #219923), #106 (TSN #219929), #107 (TSN #219930), and TSN #108 (TSN 219922) an acceptable spacing still is maintained for all bus routes in accordance with Sydney’s Bus Future and Improving Transport Choice guidelines.

Following removal of the bus stops above, future alternative bus stops #109 and #110 would be centrally located on Brodie Street between Rose Street and McMahon Road. Bus stop #109 will be 360 metres from the previous bus stop #104 (TSN #219928) and 367 metres from the next bus stop #113 (TSN #219933). Bus stop #110 will be 410 metres from the previous bus stop #114 (TSN #2199153) and 430 metres from the next bus stop #103 (TSN #219924).

Opal data shows northbound bus stops #105 and #108 have an average 24-hour weekday demand of 25 and 20 passengers respectively. Future alternative northbound bus stops #103 and #110 have an average 24-hour weekday demand of 21 and 30 passengers respectively.

Opal data shows southbound bus stops #106 and #107 have an average 24-hour weekday demand of 14 and one passenger/s respectively. Future alternative northbound bus stops #104 and #109 have an average 24-hour weekday demand of 44 and 56 passengers respectively.

For people who experience difficulty walking long distances, a better alternative to the public bus route may be a community transport service. Community transport programs provide a range of supplementary and specialised services across the Sydney metropolitan area that respond to the specific needs of the community. These services are provided by a number of different transport operators and can provide eligible customers with access to recreational activities, shops and other services such as doctors. Customers may wish to refer to the Community Transport programs sponsored by Transport for NSW.

Customers can contact the Community Transport group on phone 02 8265 6962 (or email community.transport@transport.nsw.gov.au) to ascertain whether they are eligible.

Further information can be found at: www.transport.nsw.gov.au/operations/community-transport-operators.

3.22.2 Increased walking distance to next stop
Submission number(s)
30

Issue description
- The next closest bus stop requires an uphill walk as well as greater distance. There is no concrete footpath or solid ground on this route which will be difficult with a walker and shopping.

Response

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There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the remaining alternative bus stop locations in this area would still maintain a walkable catchment (i.e. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

As detailed in section 1.1.3 of this report, the removal of bus stops has taken into account the population size, demography, local facilities, current and future land use developments, and other relevant factors when determining which bus stops to remove or relocate to ensure users of suburban and local services were not severely impacted.

There are currently nine bus stops on Brodie Street between Rose Street and McMahon Road, a distance of about 750 metres, including bus stops #105 to #113 (TSN #219933). Of these bus stops, six bus stops would be removed including bus stops #105, #106, #107, #108, #111 (TSN #219932) and #112 (TSN #219920). One bus stop (bus stop #110 (TSN #219921)) would be relocated about 50 metres west.

Following removal of the bus stops above, future alternative bus stops #109 and #110 would be centrally located on Brodie Street between Rose Street and McMahon Road. Bus stop #109 will be 360 metres from the previous bus stop #104 (TSN #219928) and 367 metres from the next bus stop #113 (TSN #219933). Bus stop #110 will be 410 metres from previous bus stop #114 (TSN #2199153) and 430 metres from the next bus stop #103 (TSN #219924).

Customers walking to future alternative bus stops #109 and #110 would be required to descend a gentle slope if travelling from the west. Customers walking from the east of future alternative bus stops #109 and #110 would be required to ascend a gentle slope west of the stormwater channel. Roads and Maritime have observed well maintained and complete footpaths along Brodie Street in this area that are not expected to obstruct customers walking in this area.

3.23 Removal of bus stops #111 and #112, Brodie Street, Yagoona (TSNs #219932 and #219920)

3.23.1 Justification

Submission number(s)

4

Issue description

- Many residents around Brodie Street (near Albury Street) use bus stops #111 and #112.
- Buses only stop on request only so removing these bus stops is unlikely to improve bus journey times.

Response

Easing Sydney’s Congestion Program Office (‘ESCPO’) is developing projects on the State road network, in accordance with government initiatives, for managing and improving traffic congestion and road safety within the Sydney region.

The proposal forms part of the Bus Priority Infrastructure Program under the ESCPO and supports Sydney’s Bus Future (Transport for NSW, 2013). Buses are a key part of Sydney’s growing and evolving public transport network. Sydney’s Bus Future is the NSW Government’s long term plan to redesign our city’s bus network to meet customer needs now and into the future (Transport for NSW, 2013). Sydney’s buses provide more than 220 million trips a year across the city. As Sydney grows, the bus system needs to meet the challenges growth brings. Sydney’s Bus Future sets out step-by-step actions to deliver fast and reliable bus services for customers where and when they are needed.
Road and Maritime supports *Sydney’s Bus Future* by delivering projects in the Bus Priority Infrastructure Program that make bus services faster and more reliable. These projects help to provide:

- Bus lanes
- Bus priority at traffic lights
- More efficient bus stop placement

Transport for NSW and bus operators regularly receive thousands of complaints annually 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.

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

Chapter 2 (Need and options considered) of the REF describes the strategic need for the proposal and establishes its consistency with key strategic planning and policy documents. As noted in section 2.1 of the REF, the proposal forms part of the Bus Priority Infrastructure Program which focuses on improvements in Rapid and Suburban routes, as outlined in *Sydney’s Bus Future* (Transport for NSW, 2013), and targets corridors that experience lower service reliability. Overall the proposal, as part of the Bus Priority Infrastructure Program, supports targeted improvements for bus on-time running through a range of initiatives, including:

- 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 potential 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’).

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 Parramatta to Hurstville corridor, as well as other local and suburban routes which use parts of this corridor.

Bus stop #111 (TSN #219932) is located 202 metres from the previous bus stop #109 (TSN #219931) and 165 metres from the next bus stop #113 (TSN # 219933). This bus stop has low customer usage relative to the previous and next bus stop with Opal data showing an average 24-hour weekday demand of 27 passengers, compared with 56 for previous bus stop #109 and 28 for next bus stop #113. The resulting spacing between the previous and next bus stops would be about 367 metres.

Bus stop #112 (TSN #219920) is located 170 metres from the previous bus stop #114 (TSN #2199153) and 190 metres from the next bus stop #110 (TSN #219921). This bus stop has similar usage relative to previous and next bus stop with Opal data showing an average 24-hour weekday demand of 27 passengers, compared with 19 for previous bus stop #114 and 30 for next bus stop #110. The resulting spacing between the preceding bus stop #114 and the next bus stop #110
would be about 410 metres (taking into account the proposed relocation of bus stop #110 (TSN #219921).

There are currently nine bus stops on Brodie Street between Rose Street and McMahon Road, a distance of about 750 metres, including bus stops #105 (TSN #219923) to #113 (TSN #219933). Of these bus stops, six bus stops would be removed including bus stops #111 and #112.

Following the removal of bus stops #111 and #112, the future alternative bus stops will be #109, #110, #113 and #114. Bus stop #109 will be 367 metres from the next bus stop #113 (TSN #219933). Bus stop #110 will be 410 metres from bus stop #114 (TSN #2199153).

3.23.2 Increased walking distance to next stop

Submission number(s)

4

Issue description

• Removal of bus stops #111 and #112 would be inconvenient for residents around Brodie Street/Albury Street due to an increased walking distance to the nearest bus stop.

Response

There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (i.e., bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

As detailed in section 1.1.3 of this report, the removal of bus stops has taken into account the population size, demography, local facilities, current and future land use developments, and other relevant factors when determining which bus stops to remove or relocate to ensure users of suburban and local services were not severely impacted.

The REF has considered all bus services running along the bus routes that use the bus stops. Section 6.1 (Socio-economic) of the REF assessed the impacts of the removal of bus stops on other routes. By removing bus stops #111 and #112 an acceptable spacing still is maintained for all bus routes in accordance with Sydney’s Bus Future.

Bus stop #111 (TSN #219932) is located 202 metres from the previous bus stop #109 (TSN #219931) and 165 metres from the next bus stop #113 (TSN #219933). This bus stop has low customer usage relative to the previous bus stop with Opal data showing an average 24-hour weekday demand of 27 passengers, compared with 56 for bus stop #109. Bus stop #111 also has similar usage relative to the next bus stop with Opal data showing an average 24-hour weekday demand of 28 at next bus stop #113. The resulting spacing between preceding bus stop #109 and the next bus stop #113 would be about 367 metres following the removal of bus stop #111.

Bus stop #112 (TSN #219920) is located 170 metres from the previous bus stop #114 (TSN #2199153) and 190 metres from the next bus stop #110 (TSN #219921). This bus stop has similar usage relative to previous and next bus stop with Opal data showing an average 24-hour weekday demand of 27 passengers, compared with 19 for previous bus stop #114 and 30 for next bus stop #110. The resulting spacing between the preceding bus stop #114 and the next bus stop #110 would be about 410 metres (taking into account the proposed relocation of bus stop #110).

There is an opportunity to optimise the spacing of bus stops at this location to reduce delays by removing bus stops #111 and #112. Following removal of the bus stops #111 and #112, the future alternative bus stops will be #109, #110, #113 and #114. Bus stop #109 will be 367 metres from the bus stop #113 (TSN #219933). Bus stop #110 will be 410 metres from bus stop #114 (TSN #2199153). Customers walking from bus stops #111 or #112 to future alternative bus stops #109, #110, #113 or #114 will be required to ascend a gentle slope.
3.24 Removal of bus stop #172, Faraday Road at Doyle Road, Padstow (TSN #221143)

Submission number(s)
23, 31, 47, 52

Issue description
Four submissions were received which objected to the proposed removal of bus stop #172 with a number of concerns raised in relation to:

- Increased walking distance to the next bus stop for elderly residents
- Justification of the works
- Loss of amenity
- Traffic and pedestrian safety
- Proposal documentation
- Alternatives and options

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 #172 is now proposed to be retained in its current location.

3.25 Relocation of bus stop #176, Faraday Road near Springfield Road, Padstow (TSN #221157)

3.25.1 Justification
Submission number(s)
31

Issue description
- Moving bus stop #176 would make it closer to bus stop #174 and not save any time on the route.

Response
Easing Sydney’s Congestion Program Office (‘ESCPO’) is developing projects on the State road network, in accordance with government initiatives, for managing and improving traffic congestion and road safety within the Sydney region.

The proposal forms part of the Bus Priority Infrastructure Program under the ESCPO and supports Sydney’s Bus Future (Transport for NSW, 2013). Buses are a key part of Sydney’s growing and evolving public transport network. Sydney’s Bus Future is the NSW Government’s long term plan to redesign our city’s bus network to meet customer needs now and into the future (Transport for NSW, 2013). Sydney’s buses provide more than 220 million trips a year across the city. As Sydney grows, the bus system needs to meet the challenges growth brings. Sydney’s Bus Future sets out step-by-step actions to deliver fast and reliable bus services for customers where and when they are needed.

Road and Maritime supports Sydney’s Bus Future by delivering projects in the Bus Priority Infrastructure Program that make bus services faster and more reliable. These projects help to provide:

- Bus lanes
- Bus priority at traffic lights
- More efficient bus stop placement
Transport for NSW and bus operators regularly receive thousands of complaints annually 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.

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

Chapter 2 (Need and options considered) of the REF describes the strategic need for the proposal and establishes its consistency with key strategic planning and policy documents. As noted in section 2.1 of the REF, the proposal forms part of the Bus Priority Infrastructure Program which focuses on improvements in Rapid and Suburban routes, as outlined in Sydney's Bus Future (Transport for NSW, 2013), and targets corridors that experience lower service reliability. Overall the proposal, as part of the Bus Priority Infrastructure Program, supports targeted improvements for bus on-time running through a range of initiatives, including:

- 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 potential 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).

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 Parramatta to Hurstville corridor, as well as other local and suburban routes which use parts of this corridor.

There is an opportunity to relocate bus stop #176 about 80 metres to the north to optimise the spacing of bus stops in this location and create a pair with bus stop #175 (TSN #221191). Bus stop #176 is located 291 metres from the previous bus stop #174 (TSN #221156) and 204 metres from the next bus stop #179 (TSN #221158). The resulting distance from the previous bus stop #174 would be about 206 metres and the distance to the next bus stop #179 would be about 289 metres.

3.25.2 Increased walking distance to next stop
Submission number(s)
34

Issue description
- If bus stop #176 is moved further down Faraday Road, it means that the elderly people presently using this bus stop would have to walk quite a distance uphill to get to an alternative bus stop, which wouldn't be practical for them if they suffer ill health and can't walk this uphill distance.

Response
There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus
stop locations in this area would still maintain a walkable catchment (i.e. bus stops within a 400 metre radius or a five minute walk) consistent with the *Improving Transport Choice* and *Sydney’s Bus Future* guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

As detailed in section 1.1.3 of this report, the removal of bus stops has taken into account the population size, demography, local facilities, current and future land use developments, and other relevant factors when determining which bus stops to remove or relocate to ensure users of suburban and local services were not severely impacted.

The REF has considered all bus services running along the bus routes that use the bus stops. Section 6.1 (Socio-economic) of the REF assessed the impacts of the removal of bus stops on other routes.

There is an opportunity to relocate bus stop #176 to the north to optimise the spacing of bus stops and create a pair with bus stop #175 (TSN #221191). Bus stop #176 is located 291 metres from the previous bus stop #174 (TSN #221156) and 204 metres from the next bus stop #179 (TSN #221158). The resulting distance from the preceding bus stop #174 would be about 206 metres and the distance to the next bus stop #179 would be about 289 metres. By relocating bus stop #176 an acceptable spacing still is maintained for all bus routes in accordance with *Sydney’s Bus Future*. Customers would be required to descend a moderate slope to reach relocated bus stop #176 if walking from Alma Road.

For people who experience difficulty walking long distances, a better alternative to the public bus route may be a community transport service. Community transport programs provide a range of supplementary and specialised services across the Sydney metropolitan area that respond to the specific needs of the community. These services are provided by a number of different transport operators and can provide eligible customers with access to recreational activities, shops and other services such as doctors. Customers may wish to refer to the Community Transport programs sponsored by Transport for NSW.

Customers can contact the Community Transport group on phone 02 8265 6962 (or email community.transport@transport.nsw.gov.au) to ascertain whether they are eligible.


### 3.25.3 Proposal documentation

**Submission number(s)**

34

**Issue description**

- Relocation of bus stop #176 will only create two extra parking spots as there are now additional driveways in this location.

**Response**

Roads and Maritime acknowledge the number of parking spaces identified on the REF concept drawing for the relocation of bus stop #176 is incorrect and apologise for this error. The relocation of bus stop #176 would result in two extra parking spots in the existing location, not three. A revised concept plan has been provided in Appendix B of this report showing the two new parking spots at this location.

### 3.25.4 Traffic safety

**Submission number(s)**

31

**Issue description**
• Removing bus stop #176 would not create enough space for three cars. It would require one car parked on the corner of Springfield Avenue, blocking visibility to cars trying to turn into Faraday Road. This area is already a black spot.

Response
Roads and Maritime acknowledge the number of parking spaces identified on the REF concept drawing for the relocation of bus stop #176 is incorrect and apologise for this error. The relocation of bus stop #176 would result in two extra parking spots in the existing location, not three. A revised concept plan has been provided in Appendix B of this report showing the two new parking spots at this location.

At non-signalised intersections (such as this location), Roads and Maritime and local councils require a 10 metre No Stopping zone back from the stop line. Where a bus stop to be removed is in close proximity to the approach of a non-signalised intersection, Roads and Maritime and council do not allow parking within the 10 metre setback from the non-signalised intersection in order to improve bus manoeuvrability and provide for driver vision.

This recommended setback address driver safety and sight distance issues close to the intersections (and pedestrians) as a result of cars parking too close. The setbacks also reduce the risk of turning vehicles swiping parked cars near the intersection, especially heavy vehicles when they try to turn around tight intersections.

3.25.5 Support
Submission number(s)
28, 68
Issue description
• Agrees with repositioning bus stop number #176 as its current location is unsafe as when a bus is stopped it blocks visibility for drivers turning out of the street and from driveways.
• In favour of moving bus stop #176 as it is dangerous.

Response
Roads and Maritime acknowledges support for the proposal.

3.25.6 Alternatives and options
Submission number(s)
68
Issue description
• Bus stop #176 should be moved to outside the school so people can use the pedestrian crossing.

Response
Section 1.1.3 of this submissions report details how options were assessed to achieve these objectives. Identified bus stop changes along the corridor also took into account customer usage at preceding and following bus stops, existing and future land use developments (including major business and residential centres), pedestrian access include distance to pedestrian crossings and the demography of the area when determining the proposed scope of works to ensure users of suburban and local services were not severely impacted.

Bus stop #176 is not located near any schools. The nearest school is Padstow Public School. The nearest bus stop pair to Padstow Public School is bus stop #170 (TSN #221192) and #171 (TSN #221154). There are no proposed changes to bus stops #170 and #171 as they are located within 20 metres of a pedestrian crossing.
3.26  Removal of bus stop #177, Faraday Road near Springfield Road, Padstow (TSN #221190)

3.26.1  Justification

Submission number(s)
28, 34

Issue description
- A pedestrian refugee island was recently installed at bus stop #177 which would go to waste if this bus stop was abandoned.
- Council have recently completed construction of a step on/off platform at bus stop #177 as it is regularly used by the elderly.

Response

Easing Sydney’s Congestion Program Office (‘ESCPO’) is developing projects on the State road network, in accordance with government initiatives, for managing and improving traffic congestion and road safety within the Sydney region.

The proposal forms part of the Bus Priority Infrastructure Program under the ESCPO and supports Sydney’s Bus Future (Transport for NSW, 2013). Buses are a key part of Sydney’s growing and evolving public transport network. Sydney’s Bus Future is the NSW Government’s long term plan to redesign our city’s bus network to meet customer needs now and into the future (Transport for NSW, 2013). Sydney’s buses provide more than 220 million trips a year across the city. As Sydney grows, the bus system needs to meet the challenges growth brings. Sydney’s Bus Future sets out step-by-step actions to deliver fast and reliable bus services for customers where and when they are needed.

Road and Maritime supports Sydney’s Bus Future by delivering projects in the Bus Priority Infrastructure Program that make bus services faster and more reliable. These projects help to provide:

- Bus lanes
- Bus priority at traffic lights
- More efficient bus stop placement

Transport for NSW and bus operators regularly receive thousands of complaints annually 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.

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

Chapter 2 (Need and options considered) of the REF describes the strategic need for the proposal and establishes its consistency with key strategic planning and policy documents. As noted in Section 2.1 of the REF, the proposal forms part of the Bus Priority Infrastructure Program which focuses on improvements in Rapid and Suburban routes, as outlined in Sydney’s Bus Future (Transport for NSW, 2013), and targets corridors that experience lower service reliability. Overall the proposal, as part of the Bus Priority Infrastructure Program, supports targeted improvements for bus on-time running through a range of initiatives, including:

- 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 potential 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).

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 Parramatta to Hurstville corridor, as well as other local and suburban routes which use parts of this corridor.

Bus stop #177 is located 130 metres from the previous bus stop #178 (TSN #221189) and 196 metres from the next bus stop #175 (TSN #221191). This bus stop has low customer usage relative to the preceding and following bus stops with Opal data showing an average 24-hour weekday demand of seven passengers, compared with 92 for bus stop #178 and 42 for bus stop #175.

Analysis of Opal data indicates that of the seven customers that use bus stop #177 per day (24-hour weekday average) 55% (or three to four customers) are senior/pensioner customers and 14% (or one customer), are concession customers. The previous bus stop #178 and next bus stop #175 are used by 29% (or about 27 customers) and 36% (or about 15 customers) senior/pensioner customers respectively.

There is an opportunity to optimise the spacing of bus stops at this location to reduce delays by removing this bus stop. The resulting spacing between the preceding and next bus stops would be about 326 metres.

The pedestrian island located on Faraday Road near Springfield Road will continue to remain for use by the public to cross safely in this location. Roads and Maritime will pass any further safety concerns on to the relevant local council for consideration.

Roads and Maritime will inform the relevant local council of the potential need for new step on/off platforms at the alternative bus stops which are being retained in this area.

3.26.2 Increased walking distance to next stop

Submission number(s)
28, 34, 51

Issue description
• Elderly customers would be required to walk further and up a hill to the next bus stop if bus stop #177 if removed.

Response
There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (i.e. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

As detailed in section 1.1.3 of this report, the removal of bus stops has taken into account the population size, demography, local facilities, current and future land use developments, and other relevant factors when determining which bus stops to remove or relocate to ensure users of suburban and local services were not severely impacted.

The REF has considered all bus services running along the bus routes that use the bus stops. Section 6.1 (Socio-economic) of the REF assessed the impacts of the removal of bus stops on
other routes. By removing bus stop #177 an acceptable spacing still is maintained for all bus routes in accordance with Sydney’s Bus Future.

Bus stop #177 is located 130 metres from the previous bus stop #178 (TSN #221189) and 196 metres from the next bus stop #175 (TSN #221191). This bus stop has low customer usage relative to the preceding and following bus stops with Opal data showing an average 24-hour weekday demand of seven passengers, compared with 92 for bus stop #178 and 42 for bus stop #175.

Analysis of Opal data indicates that of the seven customers that use bus stop #177 per day (24 hour weekday average) 55% (or three to four customers) are senior/pensioner customers and 14% (or one customer), are concession customers. The previous bus stop #178 and next bus stop #175 are used by 29% (or about 27 customers) and 36% (or about 15 customers) senior/pensioner customers respectively.

Following removal of bus stop #177, customers will be required to walk 130 metres up a moderate slope to previous bus stop #178. Alternative customers can walk down a moderate slope and up a gentle slope to next bus stop #175 located about 196 metres away. Roads and Maritime and Transport for NSW consider the slope and distance to be acceptable to customer.

For people who experience difficulty walking long distances, a better alternative to the public bus route may be a community transport service. Community transport programs provide a range of supplementary and specialised services across the Sydney metropolitan area that respond to the specific needs of the community. These services are provided by a number of different transport operators and can provide eligible customers with access to recreational activities, shops and other services such as doctors. Customers may wish to refer to the Community Transport programs sponsored by Transport for NSW.

Customers can contact the Community Transport group on phone 02 8265 6962 (or email: community.transport@transport.nsw.gov.au) to ascertain whether they are eligible.

Further information can be found at: www.transport.nsw.gov.au/operations/community-transport-operators.

### 3.26.3 Proposal documentation

#### Submission number(s)

28, 34

#### Issue description

- Proposal documentation is incorrect in stating that the removal of bus stop #177 will create three extra parking spaces. The aerial included on the concept drawing in the REF is out of date. There is now a pair of duplexes where the bus stop stands outside 160 and 160A Faraday Road, removing the bus stop would only create one small extra space.

#### Response

Roads and Maritime acknowledge that the parking spaces identified in the REF are incorrect and apologise for this error. The revised concept plan provided in Appendix B, confirms that only one new parking space could be provided at this location.

### 3.26.4 Traffic and pedestrian safety

#### Submission number(s)

28, 34

#### Issue description

- Removing bus stop #177 will create pedestrian safety issues due to the poor accessibility of the alternative bus stops and lack of pedestrian crossings in this location. The first alternative bus stop on Alma Road requires crossing Alma Road, which has no safety infrastructure and very high traffic volumes. The roundabout on Alma Road/Faraday Road is on a blind corner for
pedestrians, and vehicles approach it with speed as there is rarely any traffic coming from their right (Mars Street) to give way to. The second bus stop option (on Faraday Road between Anthony Avenue and Uranus Road) also offers no safe passage across the road and is near another busy roundabout.

- The alternative bus stop on Alma Road requires pedestrians to negotiate traffic coming up Faraday Road which is dangerous as pedestrians and drivers cannot see each other from a distance.
- Federal member Mr David Coleman recently secured government funding for a black spot programme in the area concerned, various safety measures were put in place which have helped immensely in reducing traffic and pedestrian incidents. The proposed removal of bus stop #177 will negate the improvements that have occurred in this location since the programme was put in place.

Response
There are designated footpaths with gentle grades and crossing facilities to the nearest alternative bus stops, including a pedestrian refuge at the intersection of Alma Road and Faraday Road where the nearest bus stop is, about 124 metres away (bus stop #178). This is also the case at the intersection of Faraday Road and Uranus Street where bus stop #175 is located.

Currently bus stop locations #175 and #178 are considered safe as on approach to the roundabout vehicles are generally travelling slower than on mid-block locations in light of potentially having to give way to other traffic going through the roundabout. This is considered to improve opportunities for pedestrians to cross safely.

The roads in this location are owned and managed by council. These matters will be referred to the relevant local council to consider further and address as required.

3.26.5 Traffic safety
Submission number(s)
34
Issue description
- Parking in the space provided by removal of bus stop #177 would reduce visibility for vehicles reversing onto the road from the driveway of 108 Faraday Road.

Response
On-street parking next to driveways is not uncommon in urban areas. Faraday Drive is a local road with a speed limit of 60 km/hour. Visibility is not considered to be an issue in this location. There is no existing vegetation or topographical issues in this location that would reduce driver visibility when reversing. Drivers are required to exercise caution when reversing out of driveways onto the road applying safe driving practices, particularly where there are parked vehicles on the road.

3.26.6 Alternatives and options
Submission number(s)
28
Issue description
- Suggest removing both bus stops on the western side of Faraday Road (bus stop #177 and the bus stop between Uranus Road and Anthony Avenue (bus stop #175)) and creating a new bus stop in the middle of the two bus stops, perhaps near the canal between the properties at 94 and 96 Faraday Road.

Response
There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the bus spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (i.e. bus stops within a
400 metre radius or a five minute walk) consistent with the *Improving Transport Choice* and *Sydney’s Bus Future* guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

As detailed in section 1.1.3 of this report, the removal of bus stops has taken into account the population size, demography, local facilities, current and future land use developments, and other relevant factors when determining which bus stops to remove or relocate to ensure users of suburban and local services were not severely impacted. No issues or opportunities were identified for bus stops #175 and #177 in the development of the proposal.

### 3.27 Relocation of bus stop #176 and removal of bus stop #177, Faraday Road near Springfield Road, Padstow (TSNs #220039 and #2200361)

#### 3.27.1 Justification

**Submission number(s)**

75

**Issue description**

- Bus stops #176 and #177 are used all day every day and should not be removed.

**Response**

Easing Sydney’s Congestion Program Office (‘ESCPO’) is developing projects on the State road network, in accordance with government initiatives, for managing and improving traffic congestion and road safety within the Sydney region.

The proposal forms part of the Bus Priority Infrastructure Program under the ESCPO and supports *Sydney’s Bus Future* (Transport for NSW, 2013). Buses are a key part of Sydney’s growing and evolving public transport network. *Sydney’s Bus Future* is the NSW Government’s long term plan to redesign our city’s bus network to meet customer needs now and into the future (Transport for NSW, 2013). Sydney’s buses provide more than 220 million trips a year across the city. As Sydney grows, the bus system needs to meet the challenges growth brings. *Sydney’s Bus Future* sets out step-by-step actions to deliver fast and reliable bus services for customers where and when they are needed.

Road and Maritime supports *Sydney’s Bus Future* by delivering projects in the Bus Priority Infrastructure Program that make bus services faster and more reliable. These projects help to provide:

- Bus lanes
- Bus priority at traffic lights
- More efficient bus stop placement

Transport for NSW and bus operators regularly receive thousands of complaints annually 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.

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

Chapter 2 (Need and options considered) of the REF describes the strategic need for the proposal and establishes its consistency with key strategic planning and policy documents. As noted in Section 2.1 of the REF, the proposal forms part of the Bus Priority Infrastructure Program which
focuses on improvements in Rapid and Suburban routes, as outlined in *Sydney’s Bus Future* (Transport for NSW, 2013), and targets corridors that experience lower service reliability. Overall the proposal, as part of the Bus Priority Infrastructure Program, supports targeted improvements for bus on-time running through a range of initiatives, including:

- 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 potential 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).

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 Parramatta to Hurstville corridor, as well as other local and suburban routes which use parts of this corridor.

There is an opportunity to relocate bus stop #176 about 80 metres to the north to optimise the spacing of bus stops and create a pair with bus stop #175 (TSN #221191). Bus stop #176 is located 291 metres from the previous bus stop #174 (TSN #221156) and 204 metres from the next bus stop #179 (TSN #221158). The resulting distance from the preceding bus stop #174 would be about 206 metres and the distance to the next bus stop #179 would be about 289 metres.

Bus stop #177 is located 130 metres from the previous bus stop #178 (TSN #221189) and 196 metres from the next bus stop #175 (TSN #221191). This bus stop has low customer usage relative to the preceding and following bus stops with Opal data showing an average 24-hour weekday demand of seven passengers, compared with 92 for bus stop #178 and 42 for bus stop #175. There is an opportunity to optimise the spacing of bus stops at this location to reduce delays by removing this bus stop. The resulting spacing between the preceding and next bus stops would be about 326 metres.

### 3.28 Removal of bus stop #180, Alma Road near Wyatt Ave, Padstow (TSN #221159)

**Submission number(s)**

19, 34, 44, 54

**Issue description**

Four submissions were received which objected to the proposed removal of bus stop #180 with a number of concerns raised in relation to:

- Increased walking distance to the next bus stop especially for elderly residents
- Traffic and pedestrian safety
- Alternatives and options considered
- Proposal documentation
- Justification of the works

**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 #180 is now proposed to be retained in its current location.

3.29 Removal of bus stop #186, Chamberlain Road near Courtney Road, Padstow (TSN #221162)

3.29.1 Alternatives and options
Submission number(s)
34
Issue description
- Suggests keeping bus stop #186 and removing bus stop #184 if necessary, as bus stop #186 is convenient for elderly residents on Courtney Road.

Response
There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the bus spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (i.e. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

As detailed in section 1.1.3 of this report, the removal of the bus stops has taken into account the population size, demography, local facilities, current and future land use development, and other relevant factors when determining which bus stops to remove or relocate to ensure users of suburban and local services were not severely impacted.

Analysis of Opal data indicates that bus stop #186 is used by 25 customers (24 hour weekday average) with customers comprising 9% senior/pensioner customers. Bus stop #184 (TSN #221161) is more popular with the elderly being used by 44 customers (24-hour weekday average) with customers comprising 39% senior/pensioner customers.

Bus stop #186 is located 220 metres from the previous bus stop #184 (TSN #221161) and 211 metres from the next bus stop #189 (TSN #221163). There is an opportunity to optimise the spacing of bus stops at this location to reduce delays by removing this bus stop. The resulting spacing between the preceding and next bus stops would be about 431 metres.

This area of Chamberlain Road has a gently slope that ascends in both directions from bus stop #186. There are paved footpaths in good condition in this area.

3.30 Removal of bus stop #187, Chamberlain Road near Courtney Road, Padstow Heights (TSN #221177)

3.30.1 Justification
Submission number(s)
34
Issue description
- Map shows two existing bus stops further down Chamberlain Road towards Alma Road (bus stops #183 and #184) but no indication of the middle one (bus stop #185). This indicates that bus stop #187 should stay.

Response
Bus stop #185 (TSN #221178) is not used by M91 services and will not be impacted by the proposal. Existing bus stop infrastructure will remain for other services that use bus stop #185.
3.30.2 Proposal documentation

Submission number(s) 34

Issue description
- Given the existing driveways, removing bus stop #187 would only create space for two car spaces, rather than four.

Response
Roads and Maritime acknowledge the parking spaces identified in the REF are incorrect for this location. The revised concept plans provided in Appendix B, show that only one parking space can be provided at this location as a result of the removal of bus stop #187.

3.31 Removal of bus stops #186 and #187, Chamberlain Road near Courtney Road, Padstow (TSNs #221162 and #221177)

3.31.1 Justification

Submission number(s) 33

Issue description
- Chamberlain Road is a long stretch and only having bus stops at either end without a mid-point doesn't make sense particularly for elderly residents on Courtney Road, close to the mid-point of Chamberlain Road.

Response
Key considerations for developing the proposal were derived from the Sydney’s Bus Future (Transport for NSW, 2013), Improving Transport Choice - guidelines for planning and development (NSW Department of Urban Affairs and Planning17, 2001) and the draft Bus Stop Location Guidelines Sydney Metropolitan Area (Transport for NSW, 2014) and includes ensuring bus stops are located close to major customer number generators and community facilities to maximise the efficiency of a bus stop and eliminating redundant and underutilised bus stops.

Bus stop #186 is located 220 metres from the previous bus stop #184 (TSN #221161) and 211 metres from the next bus stop #189 (TSN #221163). 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 about 431 metres.

Analysis of Opal data indicates that bus stop #186 is used by 25 customers per day (24 hour weekday average) with customers comprising 9% senior/pensioner customers. Future alternative bus stops #184 (TSN #221161) and #189 (TSN #221163) are more popular with Opal data indicating 44 and 38 customers (24-hour weekday average) use these bus stops per day respectively. Future alternative bus stop #184 is also more popular with senior/pensioner comprising 39% of customers at this bus stop.

Bus stop #187 is located 144 metres from the previous bus stop #188 and 320 metres from the next bus stop #183. There is an opportunity to optimise the spacing of stops at this location to reduce delays by removing this bus stop. The resulting spacing between the preceding and next bus stops would be about 464 metres.

Analysis of Opal data indicates that bus stop #187 is used by 17 customers per day (24-hour weekday average) with customers comprising 10% senior/pensioner customers. Future alternative bus stops #188 (TSN #221176) and #183 (TSN #221179) are more popular with Opal data

17 Now the Department of Planning and Environment
indicating 56 customers per day (24 hour weekday average) at each bus stop. Future alternative bus stop #183 is also more popular the elderly with 34% senior/pensioner customers using this stop.

This area of Chamberlain Road has a gently slope that ascends in both directions from bus stop #186 and #187. There are paved footpaths in good condition in this area.

3.31.2 Increased walking distance to next stop
Submission number(s)
27, 32, 33

Issue description
- Removing bus stops #186 and #187 to make room for car spaces would require people, including the elderly and residents on Courtney Road, to walk further to future alternative bus stop pairs #183 and #184 or #188 and #189.
- Customers would not use paired bus stops #183 and #184 as there is inadequate pedestrian crossings and would be required to walk to future alternative bus stops #188 and #189 instead.

Response
There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (i.e. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

As detailed in section 1.1.3 of this report, the removal of bus stops has taken into account the population size, demography, local facilities, current and future land use developments, and other relevant factors when determining which bus stops to remove or relocate to ensure users of suburban and local services were not severely impacted.

The REF has considered all bus services running along the bus routes that use the bus stops. Section 6.1 (Socio-economic) of the REF assessed the impacts of the removal of bus stops on other routes. By removing bus stops #186 and #187 an acceptable spacing still is maintained for all bus routes in accordance with Sydney’s Bus Future.

Bus stop #186 is located 220 metres from the previous bus stop #184 (TSN #221161) and 211 metres from the next bus stop #189 (TSN #221163). This bus stop has low customer usage relative to the preceding and following bus stops with Opal data showing an average 24-hour weekday demand of 25 passengers, compared with 38 for bus stop #189 and 44 for bus stop #184. The resulting spacing between the preceding and next bus stops would be about 431 metres.

Bus stop #187 (TSN #221177) is located 144 metres from the previous bus stop #188 (TSN #221176) and 320 metres from the next bus stop #183. There is an opportunity to optimise the spacing of bus stops at this location to reduce delays by removing this bus stop. The resulting spacing between the preceding and next bus stops would be about 464 metres.

There are suitable pedestrian crossings near paired bus stops #183 and #184 including an unsignalised raised pedestrian crossing about 50 metres south of paired bus stops #183 and #184 near Starr Avenue. Customers using this pedestrian crossing would not be required to walk further to access safe crossing of Chamberlain Road.

In addition to the unsignalised pedestrian crossing on Chamberlain Road there are two pedestrian islands on Alma Road near Chamberlain Road.

There is an opportunity to optimise the spacing of bus stops by removing bus stops #186 and #187 to reduce delays.
3.31.3 Pedestrian safety
Submission number(s)
32

Issue description
- The removal of bus stops #186 and #187 could be detrimental to pedestrian safety. These bus stops are used in preference to the bus stops on Alma Road as Alma Road has no pedestrian crossings or traffic lights and high car volumes.

Response
There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (i.e. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

When considering changes to bus stops, Transport for NSW and Roads and Maritime carefully consider bus stop spacing, bus stop usage, adjacent land uses and operational issues. There are suitable pedestrian crossings near paired bus stops #183 and #184 including an unsignalised raised pedestrian crossing about 50 metres south of paired bus stops #183 and #184 near Starr Avenue. Customers using this pedestrian crossing would not be required to walk further to access safe crossing of Chamberlain Road.

In addition to the unsignalised pedestrian crossing on Chamberlain Road there are two pedestrian islands on Alma Road near Chamberlain Road.

3.31.4 Alternatives and options
Submission number(s)
33

Issue description
- Removal of the bus stop #185 instead of bus stop #187 would make more sense as there is no bus stop opposite and there are two more bus stops close by.

Response
The proposal aims to optimise spacing between bus stops to about 400 metres, or approximately a five minute walk, as recommended in the guidelines for rapid and suburban routes in Sydney’s Bus Future (2013). When considering changes to bus stops, Transport for NSW and Roads and Maritime carefully consider bus stop spacing, bus stop usage, adjacent land uses and operational issues.

Bus stop #187 and its pair (bus stop #186) are being removed to optimise the spacing between bus stops.

Analysis of Opal data indicates that bus stop #187 is used by 17 customers per day (24-hour weekday average) with customers comprising 10% senior/pensioner customers. Bus stop #186 is used by 25 customers per day (24-hour weekday average) with customers comprising 9% senior/pensioner customers. Bus stop #185 is used by seven customers per day (24-hour weekday average) with customers comprising 8% senior/pensioner customers.

Future alternative bus stops #188 (TSN #221176) and #183 (TSN #221179) are being retained as they are more popular with Opal data indicating 56 customers per day (24-hour weekday average) at each bus stop. Opal data indicates that bus stops #188 and #183 are used by 9% and 34% senior/pensioner customers, respectively.
3.32  Relocation of bus stop #213, Forest Road at Bonds Road, Peakhurst (TSN #221020)

3.32.1  Justification

Submission number(s)
16

Issue description

- Proposed action 213 is difficult to understand. M91 bus stops should be moved closer to Bonds Road rather than further away. That intersection affords safe crossing of Forest Road and useful interchange with bus 945 services.

Response

This bus stop is to be relocated to improve road safety and traffic flows at the intersection of Forest Road and Bonds Road. The existing bus stop is a safety hazard for left turning vehicles from Bonds Road into Forest Road. When buses stop they block the left turning vehicles and vehicles do try and get around the bus when this occurs. By relocating the bus stop approximately 70 metres to the east outside 784 Forest Road this will improve the safety and traffic flow for all road users. We do recognise that this will increase the distance to the pedestrian crossing, but consider that this is the most practical solution for all road users.

3.33  Removal of bus stop #218, Forest Road at Stoney Creek Road, Peakhurst (TSN #221023)

3.33.1  Justification

Submission number(s)
6, 25

Issue description

- The Forest Road and Stoney Creek Road bus stop (bus stop #218) is a crucial bus stop for passengers living on Stoney Creek Road, Forest Road and Baumans Road and will cause significant issues for customers in terms of reduced access to public transport if removed.
- The removal of bus stop #218 may limit elderly and disabled customers’ ability to leave their homes contributing to social isolation.

Response

Bus stop #218 is to be removed to improve safety at the intersection. Bus stop #218 is located within the slip lane immediately after the intersection and poses a hazard to vehicles turning left from Stoney Creek Road and is difficult for bus access from Forest Road. Removal of bus stop #218 will improve road safety and bus access. This change would also improve safety and traffic flow, by moving the bus stop outside of the left-turn slip lane from Stoney Creek Road.

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 #218 is part of a broader program 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 Public Transport Information and Priority System (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.

There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (i.e. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

An important consideration in developing the proposal was to ensure bus stops used by local and suburban services in the corridor remain accessible. Where distances between bus 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 nearest bus stop in accordance with the guidelines of Sydney’s Bus Future and Improving Transport Choice.

Bus stop #218 is located 270 metres from the previous bus stop #216 (TSN #221022) and 184 metres from the next bus stop #219 (TSN #221024). Opal data shows an average 24-hour weekday demand at bus stop #218 of 44 customers compared to 16 customers at previous bus stop #216 and 35 customers at the next bus stop #219. Analysis of customer type indicates that bus stop #218 is used by 22% senior/pensioner customers compared to 15% at previous bus stop #216 and 24% at next bus stop #219.

There is an opportunity to improve road safety and optimise the spacing of bus stops at this location to reduce delays by removing this bus stop. The resulting spacing between the preceding and next bus stops would be about 454 metres.

The footpaths between bus stop #218 and future alternative bus stops #216 to the north and #219 to the south are in good condition. The topography of the area includes a flat to gentle slope.

3.33.2 Increased walking distance to next stop

Submission number(s)
6, 25, 35

Issue description
• Removal of bus stop #218 would result in inconsistent spacing between bus stops and require school children and elderly residents who use bus stop #218 to walk an additional 200 metres to bus stops #219 or #213.

Response
There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (i.e. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

As detailed in section 1.1.3 of this report, the removal of bus stops has taken into account the population size, demography, local facilities, current and future land use developments, and other relevant factors when determining which bus stops to remove or relocate to ensure users of suburban and local services were not severely impacted.

The REF has considered all bus services running along the bus routes that use the bus stops. Section 6.1 (Socio-economic) of the REF assessed the impacts of the removal of bus stops on other routes. By removing bus stop #218 an acceptable spacing still is maintained for all bus routes in accordance with Sydney’s Bus Future.
There is an opportunity to optimise the spacing of bus stops at this location to reduce delays by removing this bus stop. Bus stop #218 is located 270 metres from the previous bus stop #216 (TSN #221022) and 184 metres from the next bus stop #219 (TSN #221024). The resulting spacing between the preceding and next bus stops would be about 454 metres.

Bus stop #218 is located 270 metres from the previous bus stop #216 (TSN #221022) and 184 metres from the next bus stop #219 (TSN #221024). Opal data shows an average 24-hour weekday demand at bus stop #218 of 44 customers compared to 16 customers at previous bus stop #216 and 35 customers at the next bus stop #219.

Analysis of customer type indicates that bus stop #218 is used by 22% senior/pensioner customers compared to 15% at previous bus stop #216 and 24% at next bus stop #219. Bus stop #218 is used by 13% school students compared to 17% at previous bus stop #216 and 9% at next bus stop #219.

For people who experience difficulty walking long distances, a better alternative to the public bus route may be a community transport service. Community transport programs provide a range of supplementary and specialised services across the Sydney metropolitan area that respond to the specific needs of the community. These services are provided by a number of different transport operators and can provide eligible customers with access to recreational activities, shops and other services such as doctors. Customers may wish to refer to the Community Transport programs sponsored by Transport for NSW.

Customers can contact the Community Transport group on phone 02 8265 6962 (or email: community.transport@transport.nsw.gov.au) to ascertain whether they are eligible.

Further information can be found at: www.transport.nsw.gov.au/operations/community-transport-operators.

3.3.3 Community and stakeholder consultation
Submission number(s)
25

Issue description
- The majority of residents will not be aware of the proposed changes as the brochure was not clear or conducive to being read and likely to have been thrown out with junk mail.

Response
Roads and Maritime prepared a REF to assess the environmental impacts of the proposed works. The REF was publicly displayed between Monday 16 October 2017 and Friday 10 November 2017. The REF was placed on the Roads and Maritime project website and made available for download.

As the proposal covered a large area, the proposal was explained in four community updates. Each update focused on changes to bus stops in a specific local government area. The community updates were distributed to residents and businesses in proximity to locations where changes are being proposed along the impacted route. Signage was placed at bus stops identified in the proposal to be changed during the display period.

3.3.4 Pedestrian safety
Submission number(s)
25, 35

Issue description
- Bus stop #218 is near a signalised pedestrian crossing for customers, including the elderly and school children, who use the signalised pedestrian crossing to safely cross. Alternative bus stops do not offer safe crossings and encourage dangerous pedestrian behaviour.

Response
Roads and Maritime acknowledge that signalised pedestrian crossings are required to safely cross Forest Road in this location. There are existing signalised pedestrian crossings on Forest Road at the Stoney Creek Road intersection which can be used to access the alternative bus stops.

The signalised pedestrian crossing on Forest Road at the Stoney Creek Road intersection is located about 340 metres from the previous bus stop #216 (TSN #221022) and about 210 metres from the following bus stop #219 (TSN #221024). Roads and Maritime acknowledge that there will be some additional walking distance required to access the signalised pedestrian crossings.

Pedestrian access to bus stop #219 may require customers to cross Mavis Street, a one-way local road that is relatively quiet. Pedestrians required to cross Forest Road would be required to alight at an earlier or later bus stop and cross the road at signalised pedestrian crossings on Forest Road (at the Stoney Creek Road intersection) or at the Penshurst West Public School crossing.

3.33.5 Traffic safety
Submission number(s)
25

Issue description
- Removing bus stop #218 would encourage usage of next bus stop #219 which is a hazard as it is close to a dangerous "T" intersection at Mavis Street. There are regular car accidents and near misses at this location.
- Future alternative bus stop #219 does not have space for buses to pull over. Increasing customer usage of bus stop #219 will increase traffic disruption and raise issues of safety for road users.

Response
The justification for the removal of bus stop #218 is provided in section 3.33.1. Bus stop #219 (TSN #221024) is located about 20 metres before the intersection of Forest Road and Mavis Road. Pedestrian access to bus stop #219 may require customers to cross Mavis Street, a one-way local road that is relatively quiet receiving low volumes of traffic. Bus stop #219 is an existing bus stop and the proposal did not identify any issues or opportunities at this bus stop. Buses stopping at this location are required to stop in the kerbside lane while customers board and alight the bus.

3.34 Relocation of bus stop #213 and removal of bus stop #218, Bonds Road and Forest Road, Peakhurst (TSNs #221020 and #221023)

3.34.1 Justification
Submission number(s)
35, 65

Issue description
- Relocating bus stop #213 and removing bus stop #218 is a disadvantage to elderly and school children.

Response
The justification for the relocation of bus stop #213 and removal of bus stop #218 is included in sections 3.32.1 and 3.33.1, respectively. Bus stop #213 is being relocated about 70 metres to the east. This is unlikely to disadvantage elderly and school students as it is only a gentle slope and the footpaths in this area are in good condition. Furthermore, there are no additional roads to cross as a result of the relocation of bus stop #213.

Opal data shows an average 24-hour weekday demand at bus stop #213 of 29 customers compared to 62 customers at previous bus stop #212 (TSN #221019) and 16 customers at the next bus stop #216 (TSN #221022). Analysis of Opal data indicates that senior/pensioners comprise 40% of customers (four customers) and school students comprise 9% of customers.
(three customers) at bus stop #213. Previous bus stop #212 customers include 40% senior/pensioners (25 customers) and 9% school students (19 customers). Next bus stop #216 customers include 15% senior pensioners (two customers) and 17% school students (three customers).

The analysis of Opal data indicates that senior/pensioner customers are more likely to use previous bus stop #212 (25 customers) compared to bus stop #213 (four customers). Next bus stop #216 is used by a similar amount of senior/pensioner (two customers) and school student customers (three customers).

Opal data shows an average 24-hour weekday demand at bus stop #218 of 44 customers compared to 16 customers at previous bus stop #216 (TSN #221022) and 35 customers at the next bus stop #219 (TSN #221024). Analysis of customer type indicates that bus stop #218 is used by 22% senior/pensioners (10 customers) compared to 15% at previous bus stop #216 (two customers) and 24% at next bus stop #219 (eight customers). School students comprise 13% of customers at bus stop #218 (six customers) compared to 17% at previous bus stop #216 (three customers) and 9% at next bus stop #219 (three customers).

3.34.2 Environment and amenity
Submission number(s)
38
Issue description
- Existing bus stop #213 and #218 both have shelters which provide protection from inclement weather, particularly rain.

Response
Roads and Maritime would liaise directly with the relevant local council and Transport for NSW during the implementation of the proposal to ensure that resulting bus stop infrastructure changes have considered the potential provision of shelters at alternative bus stops nearby where none are currently provided. The provision of bus shelters is the responsibility of the local council.

3.35 Removal of bus stop #226, Seven Eleven at George Street near Queensbury Road, Peakhurst (TSN #222234)

3.35.1 Justification
Submission number(s)
7
Issue description
- Bus stop #226 receives high usage due to its proximity to convenience stores and other shops. Its removal would cause inconvenience for commuters.

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 #226 is part of a broader program 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 Public Transport Information and Priority System (‘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.

There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (i.e. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

An important consideration in developing the proposal was to ensure bus stops used by local and suburban services in the corridor remain accessible. Where distances between bus 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 nearest bus stop in accordance with the guidelines of Sydney’s Bus Future and Improving Transport Choice. Based on these guidelines, stop spacings of up to 800 metres 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.

Bus stop #226 is located 179 metres from the previous bus stop #228 (TSN #222233) and 180 metres from the next bus stop #224 (TSN #222224). There is an opportunity to optimise the spacing of bus stops at this location to reduce delays and address existing safety issues on this road (near the Forest Road intersection) by removing this bus stop. The resulting spacing between the preceding and next bus stops would be about 359 metres. The removal of bus stop #226 would improve intersection safety at Forest Road by removing the need for left-turning vehicles from George Street to pass in front of a stopped bus.

In addition to removal for bus stop spacing optimisation, bus stop #226 is being removed due to a lack of a southbound bus stop pairing on George Street.

3.35.2 Increased walking distance to next stop
Submission number(s)
7

Issue description

• Removing bus stop #226 will make accessing south Forest Road shops difficult for the elderly. Alighting at the prior bus stop would require a steep ascent of George Street.

Response

There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (i.e. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

As detailed in section 1.1.3 of this report, the removal of bus stops has taken into account the population size, demography, local facilities, current and future land use developments and other relevant factors when determining which bus stops to remove or relocate to ensure users of suburban and local services were not severely impacted.

The REF has considered all bus services running along the bus routes that use the bus stops. Section 6.1 (Socio-economic) of the REF assessed the impacts of the removal of bus stops on
other routes. By removing bus stop #226 an acceptable spacing still is maintained for all bus routes in accordance with Sydney’s Bus Future.

Bus stop #226 (TSN #222234) is located 179 metres from the previous bus stop #228 (TSN #222233) and 180 metres from the next bus stop #224 (TSN #222224). The resulting spacing between the preceding and next bus stops would be about 359 metres.

Customers alighting at future alternative bus stop #228 (previous bus stop) would be required to ascend a moderate slope toward Forest Road to get to the shops, a distance of about 180 metres. Alternatively, customers may alight at future alternative bus stop #224 and walk about 275 metres (via a signalised pedestrian crossing) up a gentle slope to get to the shops.

For people who experience difficulty walking long distances, a better alternative to the public bus route may be a community transport service. Community transport programs provide a range of supplementary and specialised services across the Sydney metropolitan area that respond to the specific needs of the community. These services are provided by a number of different transport operators and can provide eligible customers with access to recreational activities, shops and other services such as doctors.

Customers may wish to refer to the Community Transport programs sponsored by Transport for NSW. Customers can contact the Community Transport group on phone 02 8265 6962 (or email: community.transport@transport.nsw.gov.au) to ascertain whether they are eligible.

Further information can be found at: www.transport.nsw.gov.au/operations/community-transport-operators.

### 3.35.3 Pedestrian safety

#### Submission number(s)

7

#### Issue description

- The removal of bus stop #226 would increase risk to pedestrian safety as a customer would need to cross the busy Forest Road to get back to the shops on the southern side of the road.

#### Response

There is signalised pedestrian crossing about 215 metres away to the north from bus stop #226 at the intersection of Forest Road and Morts Road. Following the removal of bus stop #226, most customers who are required to cross Forest Road would have to walk to this signalised pedestrian crossing and use bus stop #224. Bus stop #224 is located about 45 metres from the signalised pedestrian crossing. The total distance from bus stop #226 to alternative bus stop #224 via the signalised pedestrian crossing is about 275 metres.

There is another signalised pedestrian located about 85 metres south east of bus stop #226 that customers may also use to safely cross Forest Road.

### 3.36 Removal of bus stop #231, George Street near Arcadia Street, Penshurst (TSN #222217)

#### 3.36.1 Justification

#### Submission number(s)

13, 21, 46

#### Issue description

- There are many customers of bus stop #231 who are children and elderly with limited mobility who rely on bus services daily to get to Hurstville and elsewhere.
- Removing the bus stop #231 to allow for more car parking does not make sense.
• Bus delays occur during peak hours. Few people use the bus stop during these times. Most residents use the bus stop during off peak hours and should not cause significant delays.

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 #231 is part of a broader program 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 Public Transport Information and Priority System (‘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.

There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (ie bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

An important consideration in developing the proposal was to ensure bus stops used by local and suburban services in the corridor remain accessible. Where distances between bus 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 nearest bus stop in accordance with the guidelines of Sydney’s Bus Future and Improving Transport Choice. Based on these guidelines, stop spacings of up to 800 metres 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.

As described in section 1.1.2 of this submissions report the objectives of the proposal are to:

1. Achieve more reliable travel times for bus customers
2. Improve on-time running for buses consistent with the State Priority to maintain or improve reliability of public transport services
3. Minimise impacts for users of suburban and local services
4. Minimise impacts on the environment and the community.

Bus stop #231 is located 184 metres from the previous bus stop #230 (TSN #222216) and 145 metres from the next bus stop #233 (TSN #222218). Opal data indicates that bus stop #231 is used by 13 customers per day (24-hour weekday average) including 38% senior pensioner customers (five customers), 9% school students (one customer) and 40% adults (five customers).

Previous bus stop #230 is used by 12 customers per day (24-hour weekday average) including 16% senior pensioner customers (two customers), 7% school students (one customer) and 63% adults (eight customers). Next bus stop #233 is used by 42 customers per day (24-hour weekday average) including 28% senior/pensioner customers (12 customers), 9% school students (four customers) and 50% adults (21 customers).
Analysis of Opal data above indicates that next bus stop #233 is more popular with senior/pensioner customers and school children than bus stop #231. Previous bus stop #230 and bus stop #231 are used by a similar number of senior/pensioner customers and school students.

Analysis of Opal data indicates that bus stop #231 is used by 40% adults (five customers) and 9% school students (one customer). This indicates that the bus stop and bus route is relatively popular for customers that are required to travel during peak hours.

The primary objectives of the proposal are described in section 1.1.2 of this submissions report and do not include increasing parking spaces. The increase in parking spaces is the result of reducing the number of locations at which buses need to stop by combining, removing or relocating some bus stops. Improvements in parking by the addition of new parking spaces on local roads are secondary to the rationalisation of bus stops to improve on-time running of buses and are determined by the local council during implementation of the proposal.

3.36.2 Increased walking distance to next stop

Submission number(s)
13, 46

Issue description
- Removal of bus stop #231 will increase the walking distance for customers including the elderly. The two nearest alternative bus stops require either an uphill walk #233 or require the crossing of Penshurst Street #230. Both of these alternatives are challenging for users of bus stop #231, given their limited mobility.

Response

There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (i.e. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

As detailed in section 1.1.3 of this report, the removal of bus stops has taken into account the population size, demography, local facilities, current and future land use developments, and other relevant factors when determining which bus stops to remove or relocate to ensure users of suburban and local services were not severely impacted.

The REF has considered all bus services running along the bus routes that use the bus stops. Section 6.1 (Socio-economic) of the REF assessed the impacts of the removal of bus stops on other routes. By removing bus stop #231 an acceptable spacing still is maintained for all bus routes in accordance with Sydney’s Bus Future.

Bus stop #231 is located 184 metres from the previous bus stop #230 (TSN #222216) and 145 metres from the next bus stop #233 (TSN #222218). Opal data indicates that bus stop #231 is used by 13 customers per day (24 hour weekday average) including 38% senior pensioner customers, 9% school students and 40% adults.

Previous bus stop #230 is used by 12 customers per day (24-hour weekday average) including 16% senior pensioner customers, 7% school students and 63% adults. Next bus stop #233 is used by 42 customers per day (24-hour weekday average) including 28% senior/pensioner customers, 9% school students and 50% adults.

Analysis of Opal data indicates that bus stop #231 is used by five customers per day compared to 2 customers at previous bus stop #230 and 12 customers at next bus stop #233.

Customers who are required to cross Penshurst Street can safely do so at the roundabout of Penshurst Street and George Street. The roundabout has a refuge island where pedestrians can wait for gaps in traffic. Furthermore, there is a raised speed hump located within 20 metres of this refuge island which is intended to slow down oncoming vehicles.
Customers may be required to ascend a gentle to moderate slope grading from Penshurst Street to Cambridge Street to reach the future alternative bus stop #233. However, the resulting spacing between the previous bus stop #230 and next bus stop #233 would be only 329 metres. This is considered acceptable in accordance with Sydney’s Bus Future guidelines.

For people who experience difficulty walking long distances, a better alternative to the public bus route may be a community transport service. Community transport programs provide a range of supplementary and specialised services across the Sydney metropolitan area that respond to the specific needs of the community. These services are provided by a number of different transport operators and can provide eligible customers with access to recreational activities, shops and other services such as doctors. Customers may wish to refer to the Community Transport programs sponsored by Transport for NSW.

Customers can contact the Community Transport group on phone 02 8265 6962 (or email: community.transport@transport.nsw.gov.au) to ascertain whether they are eligible.

Further information can be found at: www.transport.nsw.gov.au/operations/community-transport-operators.

### 3.36.3 Pedestrian safety

**Submission number(s)**

13

**Issue description**

- Crossing Penshurst Street to get to bus stop #230 (TSN #222216) will be challenging for the elderly and those with walking difficulties. The roundabout at the Penshurst Street and George Street intersection is very busy in the morning peak with many parents dropping off kids to school at St Declan’s Penshurst at the top of Penshurst Street.

**Response**

The roundabout has a refuge island located on George Street on the approach to Penshurst Street where pedestrians can wait for gaps in traffic. Furthermore, there is a raised speed hump located within 20 metres of this refuge island which is intended to slow down oncoming vehicles.

As this is a local road, Roads and Maritime will raise this issue with the local council to look at options to improve pedestrian crossing facilities in this location.

For people who experience difficulty walking long distances, a better alternative to the public bus route may be a community transport service. Community transport programs provide a range of supplementary and specialised services across the Sydney metropolitan area that respond to the specific needs of the community. These services are provided by a number of different transport operators and can provide eligible customers with access to recreational activities, shops and other services such as doctors. Customers may wish to refer to the Community Transport programs sponsored by Transport for NSW.

Customers can contact the Community Transport group on phone 02 8265 6962 (or email: community.transport@transport.nsw.gov.au) to ascertain whether they are eligible.

Further information can be found at: www.transport.nsw.gov.au/operations/community-transport-operators.

### 3.36.4 Traffic safety

**Submission number(s)**

21

**Issue description**

- If bus stop #231 is removed and cars are allowed to park there, the line of sight will be impeded when turning from Arcadia Street onto George Street or when travelling straight ahead.
Response

At non-signalised intersections such as this location, Roads and Maritime and local councils require a 10 metre No Stopping zone back from the stop line. Where a bus stop is proposed to be removed and is in close proximity to the approach of a non-signalised intersection, Roads and Maritime and council do not allow parking within the 10 metre setback from the non-signalised intersection.

The required setback address driver (and pedestrian) safety, manoeuvrability and sight distance issues close to intersections by preventing cars from parking too close. The setback also reduces the risk of turning vehicles swiping parked cars near the intersection, especially heavy vehicles when they try to turn around tight intersections.

3.37 Removal of bus stops #231 and #232, George Street near Arcadia Street, Penshurst (TSNs #222217 and #222231)

3.37.1 Justification

Submission number(s)
14

Issue description

- There are a number of people who travel up and down Arcadia Street in the morning and evening who utilise bus stops #231 and #232 including elderly who are unable to drive.

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 stops #231 and #232 is part of a broader program 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 Public Transport Information and Priority System (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.

There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (ie. bus stops within a 400 metre radius or a five minute walk) consistent with the *Improving Transport Choice* and *Sydney’s Bus Future* guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

An important consideration in developing the proposal was to ensure bus stops used by local and suburban services in the corridor remain accessible. Where distances between bus 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 nearest bus stop in accordance with the guidelines of *Sydney’s Bus Future* and *Improving Transport Choice*. Based on these guidelines, stop spacings of up to 800 metres 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.

There are nine bus stops on George Street between Forest Road and Cambridge Street, a distance of about 760 metres. There is an opportunity to optimise the spacing of bus stops at this location to reduce delays by removing bus stop #231 and #232.

Bus stop #231 is located 184 metres from the previous bus stop #230 (TSN #222216) and 145 metres from the next bus stop #233 (TSN #222218). Opal data shows an average 24-hour weekday demand of 13 customers compared to 12 customers for bus stop #230 and 42 for bus stop #233.

Bus stop #232 is located 154 metres from the previous bus stop #234 (TSN #222230) and 260 metres from the next bus stop #229 (TSN #222232). Opal data shows an average 24-hour weekday demand of 20 passengers compared to 45 customers for bus stop #234 and 13 customers for bus stop #229.

For people who experience difficulty walking long distances, a better alternative to the public bus route may be a community transport service. Community transport programs provide a range of supplementary and specialised services across the Sydney metropolitan area that respond to the specific needs of the community. These services are provided by a number of different transport operators and can provide eligible customers with access to recreational activities, shops and other services such as doctors. Customers may wish to refer to the Community Transport programs sponsored by Transport for NSW.

Customers can contact the Community Transport group on phone 02 8265 6962 (or email: community.transport@transport.nsw.gov.au) to ascertain whether they are eligible.

Further information can be found at: www.transport.nsw.gov.au/operations/community-transport-operators.

### 3.37.2 Increased walking distance to next stop

**Submission number(s)**

14, 21, 29, 40

**Issue description**

- Removal of bus stops #231 and #232 would require many customers, including the elderly, to walk up to 500 metres to alternative bus stops.
- If bus stop #232 is removed, when travelling from the roundabout at Cambridge Street and George Street, the next closest bus stop would be over two blocks away, with an uphill walk along George Street.
- Some elderly residents may not be able to walk up the hill to the bus stop at the corner of George Street and Cambridge Street, or cross Penshurst Street.

**Response**

There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (i.e. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

As detailed in section 1.1.3 of this report, the removal of bus stops has taken into account the population size, demography, local facilities, current and future land use developments, and other relevant factors when determining which bus stops to remove or relocate to ensure users of suburban and local services were not severely impacted.

The REF has considered all bus services running along the bus routes that use the bus stops. Section 6.1 (Socio-economic) of the REF assessed the impacts of the removal of bus stops on other routes. By removing bus stop #231 and #232 an acceptable spacing still is maintained for all bus routes in accordance with Sydney’s Bus Future.
Bus stop #231 is located 184 metres from the previous bus stop #230 (TSN #222216) and 145 metres from the next bus stop #233 (TSN #222218). Opal data shows an average 24-hour weekday demand of 13 passengers compared to 12 customers for bus stop #230 and 42 for bus stop #233. There is an opportunity to optimise the spacing of bus stops at this location to reduce delays by removing this bus stop. The resulting spacing between the preceding and next bus stops would be about 329 metres.

Opal data indicates that bus stop #231 is used by 38% senior/pensioner customers. Previous bus stop #230 and next bus stop #233 are used by 16% and 28% senior/pensioner customers respectively.

Bus stop #232 is located 154 metres from the previous bus stop #234 (TSN #222230) and 260 metres from the next bus stop #229 (TSN #222232). Opal data shows an average 24-hour weekday demand of 20 passengers compared to 45 customers for bus stop #234 and 13 customers for bus stop #229. There is an opportunity to optimise the spacing of bus stops at this location to reduce delays by removing this bus stop. The resulting spacing between the preceding and next bus stops would be about 414 metres.

Opal data indicates that bus stop #232 is used by 33% senior/pensioner customers. Previous bus stop #234 and next bus stop #229 are used by 26% and 14% senior/pensioner customers respectively.

Bus stops should be in pairs to improve the customer experience by allowing boarding and alighting to happen near each other, with the opposite bus stop clearly visible. Wherever possible, the proposal has considered and provided for bus stop pairing when retaining, removing and relocating existing bus stops or including new bus stops. At this location paired bus stops #231 and #232 have been selected for removal. Removing only one of these stops would result in an unpaired bus stop.

For people who experience difficulty walking long distances, a better alternative to the public bus route may be a community transport service. Community transport programs provide a range of supplementary and specialised services across the Sydney metropolitan area that respond to the specific needs of the community. These services are provided by a number of different transport operators and can provide eligible customers with access to recreational activities, shops and other services such as doctors. Customers may wish to refer to the Community Transport programs sponsored by Transport for NSW.

Customers can contact the Community Transport group on phone 02 8265 6962 (or email: community.transport@transport.nsw.gov.au) to ascertain whether they are eligible.

Further information can be found at: www.transport.nsw.gov.au/operations/community-transport-operators.

### 3.37.3 Pedestrian safety

#### Submission number(s)

21

#### Issue description

- Removing the bus stops creates a pedestrian safety issue due to the crossing of busy Penshurst Street and lack of lighting during the night at the alternative bus stop.

#### Response

Customers may access multiple crossing points on Penshurst Street including pedestrian refuge islands at the approach to each entry point to the roundabout at Cambridge Street and George Street and the roundabout at Penshurst Street and George Street. There is street lighting at both of these roundabouts.

Roads and Maritime will raise this with the local council to further investigate street lighting in this area.
3.37.4 Proposal documentation

Submission number(s)
21

Issue description
- There is not enough room to accommodate the additional four car parks described as cars are required to park at a minimum of six metres from the corner.

Response
Roads and Maritime acknowledge the parking spaces identified in the REF are incorrect. The revised concept plans in Appendix B, show that only one parking spot can be provided at this location as a result of the bus stop removals.

3.37.5 Traffic safety

Submission number(s)
46

Issue description
- Removing bus stops #231 and #232 and replacing it with parking would block the bus driver vision when turning from Arcadia Street to George Street.

Response
At non-signalised intersections such as this location, Roads and Maritime and local councils require a 10 metre No Stopping zone back from the stop line. Where a bus stop to be removed is in close proximity to the approach of a non-signalised intersection, Roads and Maritime and council does not allow parking between the former bus stop and the non-signalised intersection in order to improve bus manoeuvrability and driver vision.

The required setback addresses driver safety and sight distance issues close to intersections (and pedestrian safety) by preventing cars from parking too close. The setback also reduces the risk of turning vehicles swiping parked cars near the intersection, especially heavy vehicles when they try to turn around tight intersections.

3.37.6 Alternatives and options

Submission number(s)
14, 21, 40

Issue description
- Suggests removing bus stops #227 and #228 rather than bus stops #231 and #232 as it will evenly distribute the load of passengers along George Street.
- There are bus stops along George Street such as the bus stops before Inverness Avenue and Salisbury Street (#228A and #229) that will not be removed that are only 38 metres apart. Removing of these bus stops as opposed to #231 and #232 will evenly distribute the load of passengers along George Street.
- There are two bus stops on George Street between Penshurst Street and Salisbury Street (bus stops #230 and #229) (TSNs #222216 and #222232) which are located close together. Suggest moving these bus stops to between Gilmour Place and Penshurst Street (instead of removing bus stops #231 and #232), thereby more evenly distributing the gap between bus stops.
- Consider removing the bus stops before and after the roundabout at Inverness Avenue and Salisbury Street (bus stops #230 and #229) (TSN #222216 and #222232) to prevent traffic congestion and keep bus stops #231, #232, #235 and #236 as these bus stops have more room for the bus to pull into. The bus stops at the roundabout are at a bottleneck position blocking tracking when loading passengers on and off.
Response

The justification for removal of bus stops #231 and #232 is included in section 3.37.1. The justification for removal of bus stops #235 and #236 is included in section 3.38.1.

An important consideration in developing the proposal was to ensure bus stops used by local and suburban services in the corridor remain accessible. Where distances between bus 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 nearest bus stop in accordance with the guidelines of Sydney's Bus Future and Improving Transport Choice. Based on these guidelines, stop spacings of up to 800 metres 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.

Removing the suggested bus stops #227 (TSN #222214), #228 (TSN #222233), #228A (No TSN #), #229 (TSN #222232) and/or #230 (TSN #222216) would result in a walkable catchment much greater than 400 metres and would not be in accordance with Sydney’s Bus Future and Improving Transport Choice guidelines.

The two bus stops on George Street between Penshurst Street and Salisbury Street (bus stops #230 and #229) are a pair and are for travel in either direction. Bus stops should be in pairs to improve the customer experience by allowing boarding and alighting to happen near each other, with the opposite bus stop clearly visible. Wherever possible, the proposal has considered and provided for bus stop pairing when retaining, removing and relocating existing bus stops or including new bus stops.

3.38 Removal of bus stops #235 and #236, Cambridge Street near Clarence Street and Clarence Street near Cambridge Street, Penshurst (TSN #222219 and #222229)

3.38.1 Justification

Submission number(s)

8

Issue description

- Removing the bus stops on corner of Clarence Street and Cambridge Street (bus stops #235 and #236) considerably reduces the accessibility of the bus service for elderly residents in the area who use these bus stops regularly. Their removal would limit their means of travel to get to the shops and appointments.
- Bus only stops here if it is hailed by customers and would only stop for a minute or two. Benefits of removing the bus stop are not justified.
- Releasing additional parking does not justify the removal of the bus stop as parking in Penshurst is already at a premium.

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 stops #235 and #236 is part of a broader program 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 Public Transport Information and Priority System (‘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.

There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (ie. bus stops within a 400 metre radius or a five minute walk) consistent with the Improving Transport Choice and Sydney’s Bus Future guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

An important consideration in developing the proposal was to ensure bus stops used by local and suburban services in the corridor remain accessible. Where distances between bus 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 nearest bus stop in accordance with the guidelines of Sydney’s Bus Future and Improving Transport Choice. Based on these guidelines, stop spacings of up to 800 metres 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.

Bus stop #235 is located 236 metres from the previous bus stop #233 (TSN #222218) and 217 metres from the next bus stop #237 (TSN #222220). This bus stop has low customer usage relative to preceding and following bus stops with Opal data showing an average 24-hour weekday demand of 24 passengers, compared with 42 for bus stop #233 and 56 for bus stop #237. Bus stop #235 is used by 25% senior/pensioner customers compared to 28% for previous bus stop #233 and 28% for next bus stop #237.

Bus stop #236 is located 242 metres from the previous bus stop #238 (TSN #222228) and 206 metres from the next bus stop #234 (TSN #222230). This bus stop has low customer usage relative to the preceding and following bus stops with Opal data showing an average 24-hour weekday demand of 26 passengers, compared to 59 for bus stop #238 and 45 for bus stop #234. Bus stop #236 is used by 22% senior/pensioner customers compared to 26% for previous bus stop #238 and 26% for next bus stop #234.

Removing bus stops #235 and #236 may impact accessibility to elderly residents. Customers, including the elderly, would be required to walk to future alternative bus stops #233, #234, #237 and #238. Customers will be required to ascend or descend a moderate slope from George Street downhill to Percival Street. Customers walking to future alternative bus stops would be able to use footpaths that are in good condition.

For people who experience difficulty walking long distances, a better alternative to the public bus route may be a community transport service. Community transport programs provide a range of supplementary and specialised services across the Sydney metropolitan area that respond to the specific needs of the community. These services are provided by a number of different transport operators and can provide eligible customers with access to recreational activities, shops and other services such as doctors. Customers may wish to refer to the Community Transport programs sponsored by Transport for NSW.

Customers can contact the Community Transport group on phone 02 8265 6962 (or email: community.transport@transport.nsw.gov.au) to ascertain whether they are eligible.

Further information can be found at: www.transport.nsw.gov.au/operations/community-transport-operators.

As described in section 1.1.2 of this submissions report the objectives of the proposal are to:
1. Achieve more reliable travel times for bus customers
2. Improve on-time running for buses consistent with the State Priority to maintain or improve reliability of public transport services
3. Minimise impacts for users of suburban and local services
4. Minimise impacts on the environment and the community.

Improvements in parking by the addition of new parking spaces on local roads are secondary to the rationalisation of bus stops to improve on-time running of buses and are determined by the local council during implementation of the proposal.

### 3.38.2 Increased walking distance to next stop

**Submission number(s)**

8

**Issue description**

- Removal of bus stops #235 and #236 would increase walking distance for elderly who are unable to walk long distances to other bus stops.

**Response**

There is an opportunity to optimise the spacing of bus stops at this location to improve the overall reliability of the bus route. While the spacing between bus stops would increase, the proposed bus stop locations in this area would still maintain a walkable catchment (i.e. bus stops within a 400 metre radius or a five minute walk) consistent with the *Improving Transport Choice* and *Sydney’s Bus Future* guidelines (refer to section 1.1.3 for further information about bus stop accessibility).

As detailed in section 1.1.3 of this report, the removal of bus stops has taken into account the population size, demography, local facilities, current and future land use developments, and other relevant factors when determining which bus stops to remove or relocate to ensure users of suburban and local services were not severely impacted.

The REF has considered all bus services running along the bus routes that use the bus stops. Section 6.1 (Socio-economic) of the REF assessed the impacts of the removal of bus stops on other routes. By removing bus stop #235 and #236 an acceptable spacing still is maintained for all bus routes in accordance with guidelines under *Sydney’s Bus Future* and *Improving Transport Choice*.

Bus stop #235 is located 236 metres from the previous bus stop #233 (TSN #222218) and 217 metres from the next bus stop #237 (TSN #222220). This bus stop has low customer usage relative to preceding and following bus stops with Opal data showing an average 24-hour weekday demand of 24 passengers, compared with 42 for bus stop #233 and 56 for bus stop #237. Bus stop #235 is used by 25% senior/pensioner customers compared to 28% for previous bus stop #233 and 28% for next bus stop #237.

Bus stop #236 is located 242 metres from the previous bus stop #238 (TSN #222228) and 206 metres from the next bus stop #234 (TSN #222230). This bus stop has low customer usage relative to the preceding and following bus stops with Opal data showing an average 24-hour weekday demand of 26 passengers, compared to 59 for bus stop #238 and 45 for bus stop #234. Bus stop #236 is used by 22% senior/pensioner customers compared to 26% for previous bus stop #238 and 26% for next bus stop #234.

There is an opportunity to optimise the spacing of bus stops at this location to reduce delays by removing these bus stops. The resulting spacing between the preceding and next bus stops would be about 453 metres and 448 metres for bus stops #235 and #236 respectively.

Removing bus stops #235 and #236 may impact accessibility to elderly residents. Customers, including the elderly would be required to walk to future alternative bus stops. Customers will be required to ascend or descend a moderate slope from George Street downhill to Percival Street. Customers walking to future alternative bus stops would be able to use footpaths that are in good condition.
For people who experience difficulty walking long distances, a better alternative to the public bus route may be a community transport service. Community transport programs provide a range of supplementary and specialised services across the Sydney metropolitan area that respond to the specific needs of the community. These services are provided by a number of different transport operators and can provide eligible customers with access to recreational activities, shops and other services such as doctors. Customers may wish to refer to the Community Transport programs sponsored by Transport for NSW.

Customers can contact the Community Transport group on phone 02 8265 6962 (or email: community.transport@transport.nsw.gov.au) to ascertain whether they are eligible.

Further information can be found at: www.transport.nsw.gov.au/operations/community-transport-operators.

3.38.3 Support
Submission number(s)
29

Issue description
- Whilst not ideal (as these bus stops are close to their home), agree to the removal of bus stops #235 and #236.

Response
Roads and Maritime acknowledges support for the proposal.

3.39 Out of scope
Submission number(s)
7, 9, 16, 17, 34, 36, 38, 41, 46, 49, 52, 53, 58, 59, 60, 61, 62, 65, 70, 71, 72, 78

Issue description
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. In some cases, out of scope submissions regarding particular bus stops have been addressed under the specific bus stop location under the 'alternatives and options' heading.

Additional changes to bus routes and bus stop locations not part of the proposal
- Request to remove bus stops:
  - Either side of Salisbury Street (near Inverness Street) (bus stops #227 and #228 (TSN #222214 and #222233)).
  - Outside a complex of townhouses and villas at 11-15 Campbell Road, Chester Hill (bus stop #54 (TSN #2162159)).
- Proposal justification is inconsistent.
- Request for bus shelters and/or seats to be installed at:
  - Proctor Road bus stop near Chester Hill Public School (bus stop #77 (TSN #216290))
  - Alternative bus stops following the relocation of bus stop #213 and removal of bus stop #218
  - Bus stop #172 for elderly commuters who use this bus stop.
- The M91 bus route has been travelling through Hall Crescent to Padstow for many years and it should not be stopped.
- Keep bus stop for Eventide Homes in Hall Crescent (bus stop #193).
- Query if the S4 and S2 bus still running from Sefton to Chester Hill.
- Request that the bus stop opposite The Avenue on Railway Parade remain.
- Query as to whether Padstow to Bankstown bus is still running.
- Plans for bus stop on Railway Parade and The Avenue in Granville are unclear. Would like to see this bus stop remain as it is a popular stop for many residents. This bus stop assists with
carrying bulky items from Westfield Parramatta and assists train depot employees at the Granville train depot.

Bus services and timetable

- The timetable should be padded to reduce variability at the expense of speed.
- There is a need for express buses on the M91 bus route, even if only one per hour which stopped at the train stations e.g. Parramatta, Granville, Chester Hill etc.
- Suggestion to provide a bus service that would allow commuters to travel by bus to Chester Hill and Sefton directly to Lidcombe.
- There needs to be coordination between rail services and bus services.
- Suggestions that rather than removing bus stops, the M91 service route should not go from Hurstville to Parramatta and should be divided into two, stopping in a suburb between Parramatta and Hurstville.

Changes to road infrastructure and existing road conditions

- To reduce bus delays, angle parking in Forest Road between Queens Road and MacMahon Street could be replaced with parallel parking to free up road space for buses travelling on these narrow twisted streets which are often subject to delays as a result of single occupant vehicles.
- Improvements could be made by restricting Forest Road (between MacMahon Street and Rose Street) to buses and delivery vehicles only.
- Northbound buses in Parramatta are delayed by single-occupant cars on Church Street between Great Western Highway and Campbell Street. Bus drivers solve the problem by illegally crossing double unbroken centre lines and driving a short distance on the wrong side of the road. This should not be necessary.
- Solving congestion problems in Parramatta and Hurstville, including establishing bus only areas, would save more time than other adjustments identified in the REF. Why aren’t solutions to the core problem canvassed in the REF?
- Wayfinding in major centres, particularly Hurstville, should be improved by increasing signage in the area to help customers find their bus stop.
- Parramatta interchange is well organised but bus stops are spread along Argyle Street. We think that Parramatta should have better signage around the interchange station to help passengers find the correct bus stop.
- A pedestrian crossing should be installed on Alma Road, on the opposite side of the shops to Faraday Road.
- The roundabout on Brodie Street and Albury Street has slowed down the traffic and is too big as it requires buses to drive over it.
- Buses have difficulty coming out of side streets due to cars queuing across intersections.
- Suggests having ‘Keep Clear’ road markings to allow buses to travel more easily.

Train services

- Chester Hill has suffered greatly with the loss of a direct train service on the Inner West between Chester Hill and Strathfield.
- Daily travel time commute to Macquarie University for work has greatly increased since loss of train service.

Car parking

- Car parking spaces on South Street should be targeted if parking is the real rationale behind these proposals.
- Parked cars make it difficult to get on and off the bus at bus stop #86 (Batt Street Shops, Hector Street in Sefton).

Changes in Granville

- Granville has suffered significant transport burdens including:
• Being near the only stretch of the M4 Motorway that has a toll (resulting in significant traffic delays at Bold Street),
• having a new train timetable that shall add 10 minutes to city travel times and
• having no lifts at Clyde Station (which is a significant interchange for the Carlingford spur line).
• Granville is being disproportionately targeted for transportation cuts.

Changes to Bankstown Central

• Resident of Albury Street unable to use buses due to mobility so utilises taxi’s to travel to Bankstown Central shops instead.
• Suggests making the top floor of Bankstown central a taxi drop off rank to get away from the buses.
• Why can’t Bus Ways contact the government or local council and offer free transport for the elderly to/from Bankstown Square?

Proposal justification

• Residents have been paying taxes and rates but have no say in what happens to the bus service.

Proposal documentation

• Request to post two copies of the Community Update’s to Action for Transport K606 Haymarket 1240 (if not done so already).
• There is a bus stop opposite The Avenue on Railway Parade which is not shown on the map.

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 corridor between Parramatta and Hurstville (via Chester Hill, Bankstown & Padstow), serviced by Metrobus M91 route and a range of suburban and local bus services 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.

Easing Sydney’s Congestion Program Office (‘ESCPO’) is developing projects on the State road network, in accordance with government initiatives, for managing and improving traffic congestion and road safety within the Sydney region. The aim of the ESCPO program is to reduce peak period congestion as measured by increased travel speeds, improvement of travel times, and decreased traffic volumes on the corridor. Key initiatives include the delivery of the M4 Smart Motorway, Bus Priority Infrastructure, Parramatta Congestion Improvement and accelerated Pinch Point and Clearways Programs.

The proposal forms part of the Bus Priority Infrastructure Program under the ESCPO and supports Sydney’s Bus Future (Transport for NSW, 2013). Buses are a key part of Sydney’s growing and evolving public transport network. Sydney’s Bus Future is the NSW Government’s long term plan to redesign our city’s bus network to meet customer needs now and into the future (Transport for NSW, 2013). Sydney’s buses provide more than 220 million trips a year across the city. As Sydney grows, the bus system needs to meet the challenges growth brings. Sydney’s Bus Future sets out step-by-step actions to deliver fast and reliable bus services for customers where and when they are needed.

Additional changes to bus routes and bus stops
The removal of additional bus stops outside the scope of the current proposal is subject to further consultation with the relevant local council, bus operators, the community and Transport for NSW. Roads and Maritime will discuss the request for removal of bus stops with the local council and Transport for NSW bus operations team. These changes would occur under a separate project.

The justification of the proposal is provided in section 3.1.1 of this report.

The design, location and construction of bus shelters and seats would be undertaken by the local council and is outside the scope of this proposal.

The M91 bus service would not be stopped as a result of the proposal.

The proposal does not include changes to bus stop #193.

The proposal does not include any changes to the S4 and S2 bus routes. Any queries regarding these routes should be directed to Transport NSW and the bus operator that runs these services.

The proposal does not include changes to the bus stop opposite The Avenue on Railway Parade. The existing bus stop on Railway Parade and The Avenue service other bus routes, not the M91 route.

We confirm that the existing Padstow to Bankstown bus service routes will continue to operate following the changes.

Bus service and timetable

Transport for NSW, Roads and Maritime and bus operators are continually endeavouring to improve bus service reliability; and bus timetables are updated where necessary. It is noted that variable traffic conditions in certain locations can make setting appropriate travel times for buses challenging.

The submissions regarding bus services and timetables have been noted. This feedback will be directed to the relevant section of Transport for NSW.

Changes to road infrastructure

The scope of the proposal does not include changes to road infrastructure other than that stated in the REF. Local traffic management is the responsibility of the relevant local council and should be directed to the relevant local council. State road management is the responsibility of Roads and Maritime. This feedback will be forwarded to the relevant sections of local council, Roads and Maritime and/or Transport for NSW for consideration.

Train services

This feedback will be forwarded to the relevant section of Transport for NSW for consideration.

Car parking

The scope of the proposal does not include further changes to parking (other than the changes identified in the REF). Local traffic management (including parking) is the responsibility of the relevant local council and should be directed them for consideration.

Changes in Granville

This feedback will be directed to the relevant section of Transport for NSW.

Changes to Bankstown Central

This feedback will be directed to the relevant local council.

The request for free transport to/from Bankstown Square is outside the scope of the proposal, however, Roads and Maritime do understand that there are community shuttles that operate in some areas for the elderly and less mobile.

Proposal justification

The proposal justification is provided in section 3.1.1 of this report.

Proposal documentation
Roads and Maritime prepared a REF to assess the environmental impacts of the proposed works. The REF was publicly displayed between Monday 16 October 2017 and Friday 10 November 2017. The REF was placed on the Roads and Maritime project website and made available for download.

As the proposal covered a large area, the proposal was explained in four community updates. Each update focused on changes to bus stops in a specific local government area. The community updates were distributed to residents and businesses in proximity to locations where changes are proposed along the impacted route. Signage was placed at bus stops identified in the proposal to be changed during the display period and the project team doorknocked the residents and businesses near these affected bus stops.

In addition to the above public display, an invitation to comment and copy of the REF was sent directly to several identified stakeholders.

The existing bus stop on Railway Parade and The Avenue service other routes, not the M91 route and hence were not included in the proposal documentation which went on public display. No changes are proposed to the bus stop on Railway Parade or The Avenue. Bus stop #8 on Halsall Street (previously proposed to be removed near Railway Parade and The Avenue) is now proposed to be retained.
4 Changes to the proposal

Following consideration of the submissions received from the community, 10 key changes to the proposal are now proposed. Table 4-1 below provides an overview of the proposed changes to the original proposal as a result of the public display and review of submissions received which has taken into consideration feedback from the local community as described in the earlier chapters of this report.

Table 4-1 Changes made to the proposal following the submissions period

<table>
<thead>
<tr>
<th>Ref#</th>
<th>Location</th>
<th>Original proposal</th>
<th>Changes to the proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>#8</td>
<td>Halsall Street, Granville (southbound stop TSN #2142288)</td>
<td>Remove bus stop #8. Replace with unrestricted parking resulting in a gain of four parking spaces.</td>
<td>The existing bus stop will be retained at its current location.</td>
</tr>
<tr>
<td>#16</td>
<td>John Street near Blaxcell Street, Granville (northbound stop TSN #2142180)</td>
<td>Remove bus stop #16. Replace with unrestricted parking resulting in a gain of one parking space.</td>
<td>The existing bus stop will be retained at its current location.</td>
</tr>
<tr>
<td>#17</td>
<td>Blaxcell Street near Fifth Street, Granville (southbound stop TSN #2142191)</td>
<td>Remove bus stop #17. Replace with unrestricted parking resulting in a gain of two parking spaces.</td>
<td>The existing bus stop will be retained at its current location.</td>
</tr>
<tr>
<td>#34</td>
<td>Blaxcell Street near Eve Street, South Granville (northbound stop TSN #214274)</td>
<td>Remove bus stop #34. Replace with unrestricted parking resulting in a gain of five parking spaces.</td>
<td>The existing bus stop will be retained at its current location.</td>
</tr>
<tr>
<td>#35</td>
<td>Blaxcell Street, near Eve Street, South Granville (southbound stop TSN #2142200)</td>
<td>Remove bus stop #35. Replace with unrestricted parking resulting in a gain of three parking spaces.</td>
<td>The existing bus stop will be retained at its current location.</td>
</tr>
<tr>
<td>#172</td>
<td>Faraday Road at Doyle Road, Padstow (northbound stop TSN #2211143)</td>
<td>Remove bus stop #172. Replace with unrestricted parking resulting in a gain of five parking spaces.</td>
<td>The existing bus stop will be retained at its current location.</td>
</tr>
</tbody>
</table>
Changes have been made to the proposal in regards to these particular bus stops for the following reasons:

- Close proximity to aged care/assisted living facilities and the level of impact this would have on a number elderly and concession card holders in terms of increased walking distance (decision to retain bus stops #16, #17, #34 and #35).
- Spacing optimisation and operational efficiency as a result of the removal of bus stop #218 which is proposed to be removed for safety reasons (decision to remove existing bus stops #217 and #220 which are currently considered to be too close together and create a new bus stop #217A to make a pairing with existing bus stop #219 on the opposite side of the road in this location).
- Adjacent land use considerations with a school bus stop nearby, increased walking distances and impacts on elderly, school students and concession card holders (decision to retain bus stop #172).
- Topography considerations combined with increased walking distance and the level of impact this would have on a number of elderly (decision to retain bus stop #180).
- Significant increase in walking distance to alternative bus stops and the level of impact this would have on a number of elderly and concession card holders (decision to retain bus stop #8).

In addition to the changes in Table 4-1 some changes to parking have been updated to reflect recent changes in land use and parking restrictions around intersections as described in the responses to submissions in Chapter 3 (Response to issues).

18 TSN to be confirmed during implementation
As a result of the changes the final proposal includes:

- 39 bus stop removals (including the removal of signage and other bus stop infrastructure)
- 10 bus stop relocations
- One new bus stop.

A copy of the revised concept drawings for the proposal is provided in Appendix B.
5  Additional assessment

5.1  Remove existing bus stops #217 and #220 (TSNs #221029, #221028) and construct new bus stop #217A, Forest Road, Peakhurst (No TSN #19)

The following chapter provides an assessment of the proposed new bus stop #217A on Forest Road and removal of existing bus stops #217 and #220 on Forest Road as identified in the Chapter 4 (Changes to the proposal). These existing bus stops and the new bus stop location were not assessed under the original proposal in the REF which went on public display.

5.1.1  Description

Roads and Maritime propose to remove bus stops #217 and #220 and consolidate the bus stops into new bus stop #217A. Table 5-1 provides a summary of the justification for the new bus stop in this location. The proposed location and the resulting works required to establish this new bus stop is shown on Figure 5-1.

Table 5-1 Proposed works

<table>
<thead>
<tr>
<th>Ref#</th>
<th>Location</th>
<th>Identified bus stop issues / adjustments</th>
<th>Proposed action</th>
</tr>
</thead>
<tbody>
<tr>
<td>#217, #220 and #217A</td>
<td>Forest Road, Peakhurst (TSN #221029, #221028, No TSN #)</td>
<td>Roads and Maritime propose to remove bus stops #217 and #220 and construct new bus stop #217A to improve spacing optimisation in accordance with Sydney’s Bus Future (Transport for NSW, 2013) and to create a paired bus stop with bus stop #219.</td>
<td>Remove existing bus stop infrastructure at bus stop #217 and #220 including signposts and plinths. Gain a total of seven time-restricted parking spaces (subject to PM clearway restrictions from 3.00pm to 7.00pm). Remove three time-restricted parking spaces (subject to PM clearway restrictions from 3.00pm to 7.00pm) and construct new bus stop #217A including relocated signposts and plinth and installing TGSI and hardstand. Door knocks were undertaken for properties within the vicinity of the new bus stop location in early December 2017. Where people were not home a flyer was left in their letterbox informing them of the proposed changes and a contact number to ring if they had any queries or concerns.</td>
</tr>
</tbody>
</table>

The land use adjacent to bus stop #217 includes medium density apartments, residential houses and a financial services business (across Forest Road). The land use adjacent to bus stop #220 includes primarily residential houses.

19  TSN to be confirmed during implementation
The nearest residential properties to new bus stop #217A are 611 and 613 Forest Road, Peakhurst located adjacent to the footpath (refer to Figure 5-1). New bus stop #217A has been designed to minimise impacts to existing residential property accesses from Forest Road.

The construction methodology for the installation of bus stop #217A would be the same as the methodology provided in Chapter 3 (Description of the proposal) of the REF and include:

- Pour concrete for new hardstand area at the same level as the existing footpath.
- Check that there is no sag point and that water drains away from the area sufficiently.
- Install new bus stop plinth, signage and TGSI.

The construction methodology for the removal of bus stops #217 and #220 would be the same as the methodology provided in Chapter 3 (Description of the proposal) of the REF and include:

- Remove existing bus stop plinth and signage
- Remove TGSI
- Make good to match existing.
Figure 5-1 Proposed location of new bus stop #217A (source: Bitzios concept design)
5.1.2 Environmental assessment

Table 5-2 details the potential environmental impacts from the removal of bus stops #217 and #220 and construction and operation of new bus stop #217A based on the environmental aspects described and considered in the original REF. Additional management and mitigation measures have been recommended where required.
### Table 5-2 Environmental impact assessment - new bus stop location #217A and the removal of existing bus stops #217 and #220

<table>
<thead>
<tr>
<th>Environmental aspect</th>
<th>Existing environment</th>
<th>Potential impacts</th>
<th>Additional management and mitigation measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socio economic</td>
<td>Refer to section 5.1.3 of this report.</td>
<td>Refer to section 5.1.3 of this report for impacts from new bus stop #217A. There would be minor impacts from the removal of bus stops #217 and #220.</td>
<td>Refer to section 5.1.3 of this report.</td>
</tr>
<tr>
<td>Biodiversity</td>
<td>The site is a highly urbanised environment and does not include remnant native vegetation or mature trees. There are some turfed areas adjacent to the footpath.</td>
<td>The construction of the hardstand at new bus stop #217A will require the removal of some turfed area (about 15 metres by 2 metres). There would be no impact to mature trees. There would be negligible impacts from the removal of bus stops #217 and #220 and no impacts to mature trees.</td>
<td>No additional management and mitigation measures from those identified in the REF are required.</td>
</tr>
<tr>
<td>Visual amenity</td>
<td>The visual impact has been assessed in accordance with the Guidelines for landscape character and visual impact assessment (Roads and Maritime Services, 2013) as described in section 6.3 (Visual amenity) of the REF. New bus stop #217A has been assessed as low sensitivity as it occurs in an urban arterial road environment.</td>
<td>Due to the low sensitivity of the area and small scale of works (i.e. construction of a hardstand, plinth and signage) there would be negligible visual impacts associated with new bus stop 217A. There would be negligible impacts from the removal of bus stops #217 and #220.</td>
<td>No additional management and mitigation measures from those identified in the REF are required.</td>
</tr>
<tr>
<td>Noise and vibration</td>
<td>Existing noise in the area is dominated by road traffic noise. The nearest sensitive residential receivers are 611 and 613 Forest Road, Peakhurst located</td>
<td>The Roads and Maritime Construction Noise and Vibration Guideline (Roads and Maritime Services, 2016) and associated Construction Noise Estimator were used to determine the potential for construction noise impacts at the nearest residential receivers as described in section 6.4 (Noise and vibration) of the REF.</td>
<td>No additional management and mitigation measures from those identified in the REF are required.</td>
</tr>
</tbody>
</table>
Environmental aspect | Existing environment | Potential impacts | Additional management and mitigation measures
--- | --- | --- | ---
| | immediately adjacent to the footpath. | **Construction**
Due to the proximity of receivers, noise management levels are likely to be exceeded for the nearest residential receivers. Construction noise is summarised in the table below.

Having regard to the types of equipment that could be used and the typical distance to nearby buildings, vibration is not expected to be an issue in terms of both structural damage and human response.

Transport for NSW’s *Construction Noise Strategy* (Transport for NSW, 2012) sets out minimum working distances for vibration intensive plant to avoid building damage and human response. These are summarised below.

<table>
<thead>
<tr>
<th>Ref#</th>
<th>Receiver distance (metres)</th>
<th>NML</th>
<th>Prediction $L_{Aeq}$ 15min dBA</th>
<th>Exceedance above NMLA (standard hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>#217</td>
<td>5</td>
<td>60</td>
<td>97</td>
<td>37</td>
</tr>
<tr>
<td>#220</td>
<td>5</td>
<td>60</td>
<td>97</td>
<td>37</td>
</tr>
<tr>
<td>#217A</td>
<td>5</td>
<td>60</td>
<td>97</td>
<td>37</td>
</tr>
</tbody>
</table>

Plant Item | Rating / Description | Safe Working Distance
--- | --- | ---


<table>
<thead>
<tr>
<th>Environmental aspect</th>
<th>Existing environment</th>
<th>Potential impacts</th>
<th>Additional management and mitigation measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Cosmetic Damage</td>
<td>Human Response</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jackhammer</td>
<td>Hand held</td>
</tr>
</tbody>
</table>

**Operation**

The proposal would not result in changes to road geometry, traffic volumes or traffic mix and therefore a change in operational road traffic noise is not expected. At new bus stop #217A some short term static noise associated with pick-up and departure of buses, and waiting passengers at bus stops, may be noticeable, however the existing area experiences high background noise from the high volumes of traffic on Forest Road (a State road) in this location.

The proposal would not introduce new sources of vibration during operation and therefore vibration impacts are not expected.

<p>| Non-Aboriginal heritage | A search of the NSW State Heritage Inventory was undertaken for relevant local government areas on 18 July 2017. A similar search of the Australian Heritage Database was also conducted along with checks of local environmental plans and the Roads and Maritime Heritage Conservation Register. None of the proposed works locations are adjacent to heritage items. | Based on the background searches undertaken for the original REF and the nature of the proposed works, there is unlikely to be any non-Aboriginal heritage impacts. | No additional management and mitigation measures from those identified in the REF are required. |</p>
<table>
<thead>
<tr>
<th>Environmental aspect</th>
<th>Existing environment</th>
<th>Potential impacts</th>
<th>Additional management and mitigation measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aboriginal heritage</td>
<td>The proposal site has been highly disturbed by urban development, road construction and the utilities placement. Aboriginal cultural heritage impacts are not expected as a result of the proposal as detailed in section 6.6 (Aboriginal heritage) of the REF.</td>
<td>Based on the background searches undertaken for the original REF and the nature of the proposed works, there is unlikely to be any Aboriginal heritage impacts.</td>
<td>No additional management and mitigation measures from those identified in the REF are required.</td>
</tr>
<tr>
<td>Water Quality</td>
<td>Water quality is generally poor in this location and flows are altered by the constructed stormwater system. Stormwater from the urban catchment is generally not treated (except for gross pollutants). Common urban stormwater pollutants would include gross pollutant and litter, sediments and suspended solids, nutrients, toxic organics, heavy metals and hydrocarbons.</td>
<td>There would be no additional water quality impacts from those already assessed in the REF in section 6.7 (Water quality).</td>
<td>No additional management and mitigation measures from those identified in the REF are required.</td>
</tr>
<tr>
<td>Air quality</td>
<td>The main influence on air quality at the proposal sites is road traffic. The nearest Environment Protection Authority air quality monitoring site is in Southern Sydney TAFE, Worth Street, Chullora Table 6-10 in the REF displays recorded air quality in the area.</td>
<td>There would be no additional air quality impacts from those already assessed in the REF in section 6.8 (Air quality).</td>
<td>No additional management and mitigation measures from those identified in the REF are required.</td>
</tr>
<tr>
<td>Environmental aspect</td>
<td>Existing environment</td>
<td>Potential impacts</td>
<td>Additional management and mitigation measures</td>
</tr>
<tr>
<td>----------------------------</td>
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<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Traffic and transport</td>
<td>Bus stops #217 and #220 and new bus stop #217A are located on Forest Road. Forest Road at this location has two-lanes in each direction.</td>
<td>There would be no additional construction traffic and transport impacts from those already assessed in the REF in section 6.9 (Traffic and transport). Operation of the proposal, including the removal of bus stops #217 and #220 and installation new bus stop #217A, would improve the consistency of bus stop spacing in this area of Forest Road and maintain a walkable catchment (ie bus stops within a 400 metre radius or a five minute walk), consistent with the <em>Improving Transport Choice</em> and <em>Sydney’s Bus Future</em> guidelines (refer to section 1.1.3 for further information about bus stop accessibility).</td>
<td>No additional management and mitigation measures from those identified in the REF are required.</td>
</tr>
<tr>
<td>Hazards and risks</td>
<td></td>
<td>Potential hazards and risks are described in Section 6.10 (Hazards and risks) of the REF. There are no additional hazards and risks associated with the removal of bus stops #217 and #220 or the installation of new bus stop #217A. There is a signalised pedestrian crossing located about 140 metres north west of proposed bus stop #217A customers can use to cross Forest Road.</td>
<td>No additional management and mitigation measures from those identified in the REF are required.</td>
</tr>
<tr>
<td>Waste minimisation and management</td>
<td></td>
<td>Transport for NSW and Roads and Maritime are committed to ensuring the responsible management of unavoidable waste and promotes the reuse of such waste in accordance with the resource management hierarchy principles outlined in the <em>Waste Avoidance and Resource Recovery Act 2001</em>. Further details are provided in section 6.11 (Waste minimisation and management) of the REF. There would be no additional waste impacts from those already assessed in section 6.11 (Waste minimisation and management) of the REF.</td>
<td>No additional management and mitigation measures from those identified in the REF are required.</td>
</tr>
<tr>
<td>Cumulative impacts</td>
<td>A discussion of potential cumulative impacts is discussed in section 6.12 (Cumulative impacts) of the REF. There are no additional potential cumulative impacts associated with the removal of bus stops #217 and #220 or the installation of new bus stop #217A.</td>
<td></td>
<td>No additional management and mitigation measures from those identified in the REF are required.</td>
</tr>
</tbody>
</table>
5.1.3 Socio-economic

5.1.3.1 Existing environment
The location for removal of bus stops #217 and #220 and the installation of new bus stop #217A occurs in an urban context on Forest Road (a State road) in Peakhurst. The immediate area is residential. There are a number of existing bus stops near the proposed changes to bus stops #217, #220 and #217A which are noted below.

- Southbound bus stops:
  - #216 (TSN #221022)
  - #218 (TSN #221023)
  - #219 (TSN #221024)
- Northbound bus stops:
  - #222 (TSN #222311)
  - #220 (TSN #221028) (being removed as part of this proposal)
  - #217 (TSN #221029) (being removed as part of this proposal)
  - #215 (TSN #221030)

The new bus stop (bus stop #217A) would be located outside 611 and 613 Forest Road, Peakhurst. These two properties are immediately adjacent to the footpath and less than five metres away (refer to Figure 5-1). The location of new bus stop #217A is presented in Figure 5-2.

Further details on the existing environment are provided in section 6.1 (Socio-economic) of the REF.
5.1.4 Potential impacts

5.1.4.1 Construction

General amenity impacts during construction of the proposal would be minor and temporary. There would be no additional construction impacts from those already assessed in section 6.1 (Socio-economic) of the REF.

5.1.5 Operation

Accessibility

The removal of bus stops #217 and #220 and construction of new bus stop #217A would improve spacing optimisation on Forest Road and is considered acceptable based on Improving Transport Choice and Sydney's Bus Future guidelines explained in sections 1.1.3 of this report. Following implementation of the proposal, bus stop #217A would be 360 metres from the previous bus stop #222 (TSN #222311) and 448 metres to the next bus stop #215 (TSN #221030). The topography of Forest Road near bus stops #217 and #220 and proposed bus stop #217A is flat in either direction.

Service reliability

With the proposal, bus customers along the route would benefit from improved service reliability and reduced journey times.

New bus stop #217A would be paired with bus stop #219 on Forest Road. Paired bus stops improve the customer experience by allow boarding and alighting to happen near each other, with the opposite bus stop being clearly visible.
Loss of parking

Removing bus stop #217 and #220 would gain a total of seven time-restricted parking spaces (subject to PM clearway restrictions from 3.00pm to 7.00pm). However, construction of bus stop #217A would result in the loss of three time-restricted parking spaces (subject to PM clearway restrictions 3.00pm to 7.00pm). There would be a net increase of four car parking spaces on Forest Road.

Business impacts

There are no businesses in the vicinity of the new bus stop location that would be impacted.

5.1.6 Revised management and mitigation measures

Following a review of community submissions and changes to the proposal the following additional safeguard is required:

- The position and dimensions of new and relocated bus stops (and those existing bus stops subject to significant alteration as a result of the proposal) would be assessed against the requirements of AS 1428.1-2001 Design for Access and Mobility prior to becoming operational.
6 Environmental management

The REF for the Bus Priority Infrastructure Program On-time running improvements Parramatta to Hurstville identified the framework for environmental management, including safeguards and management measures that would be adopted to avoid or reduce environmental impacts (Chapter 7 (Environmental management) of the REF).

After consideration of the issues raised in the public submissions and changes to the proposal, one additional safeguard (in bold and italicised in Table 6.1) is required in addition to the safeguard and management measures contained in the REF.

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

6.1 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.

6.2 Summary of safeguards and management measures

The review of environmental factors for the Bus Priority Infrastructure Program On-time running improvements Parramatta to Hurstville 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 subject to the addition of one new safeguard as described above. Should the project proceed, the environmental management measures in Table 6-1 will guide the subsequent phases of the Bus Priority Program On-time running improvements Parramatta to Hurstville project.
Table 6.1 Summary of environmental safeguards and management measures

<table>
<thead>
<tr>
<th>No.</th>
<th>Impact</th>
<th>Environmental safeguards</th>
<th>Responsibility</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEN1</td>
<td>General - minimise environmental impacts during construction</td>
<td>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.</td>
<td>Contractor / Roads and Maritime</td>
<td>Pre-construction / detailed design</td>
</tr>
<tr>
<td>GEN2</td>
<td>General - notification</td>
<td>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.</td>
<td>Contractor / Roads and Maritime</td>
<td>Pre-construction</td>
</tr>
<tr>
<td>No.</td>
<td>Impact</td>
<td>Environmental safeguards</td>
<td>Responsibility</td>
<td>Timing</td>
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</tr>
</tbody>
</table>
| 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 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 |
<table>
<thead>
<tr>
<th>No.</th>
<th>Impact</th>
<th>Environmental safeguards</th>
<th>Responsibility</th>
<th>Timing</th>
</tr>
</thead>
</table>
| 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 |
<p>| 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                |
| SOE6| Socio-economic – access                    | <em>The position and dimensions of new and relocated bus stops (and those existing bus stops subject to significant alteration as a result of the proposal) would be assessed against the requirements of AS 1428.1-2001 Design for Access and Mobility prior to becoming operational.</em> | Contractor      | Construction                |</p>
<table>
<thead>
<tr>
<th>No.</th>
<th>Impact</th>
<th>Environmental safeguards</th>
<th>Responsibility</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO1</td>
<td>Unexpected threatened species impact</td>
<td>If unexpected threatened flora or fauna are discovered, works would stop immediately and the Roads and Maritime <em>Unexpected Threatened Species Find Procedure</em>, identified in the Roads and Maritime <em>Biodiversity Guidelines</em> (Roads and Traffic Authority, 2011) will be implemented.</td>
<td>Contractor</td>
<td>Construction</td>
</tr>
<tr>
<td>VIS1</td>
<td>Construction related visual impacts</td>
<td>The work site would be left in a tidy manner at the end of each work day.</td>
<td>Contractor</td>
<td>Construction</td>
</tr>
<tr>
<td>VIS2</td>
<td>Bus stop design</td>
<td>Bus stop signage and other infrastructure will comply with applicable Transport for NSW requirements and standards.</td>
<td>Transport for NSW / Roads and Maritime</td>
<td>Detailed design</td>
</tr>
</tbody>
</table>
| 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 from the quantitative noise assessment (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 |
<table>
<thead>
<tr>
<th>No.</th>
<th>Impact</th>
<th>Environmental safeguards</th>
<th>Responsibility</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>NV2</td>
<td>Construction noise and vibration - complaints</td>
<td>During work hours, a community liaison phone number and site contact would be provided to enable complaints to be received and responded to.</td>
<td>Contractor</td>
<td>Construction</td>
</tr>
<tr>
<td>NV3</td>
<td>Construction noise and vibration - complaints</td>
<td>• 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.</td>
<td>Contractor</td>
<td>Construction</td>
</tr>
</tbody>
</table>
| 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 |
<p>| 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   |</p>
<table>
<thead>
<tr>
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<th>Responsibility</th>
<th>Timing</th>
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<tbody>
<tr>
<td>NV7</td>
<td>Construction noise and vibration impacts</td>
<td>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 <em>Construction Noise and Vibration Guideline</em> (Roads and Maritime Services, 2016).</td>
<td>Contractor</td>
<td>Construction</td>
</tr>
<tr>
<td>NV8</td>
<td>Construction noise and vibration impacts</td>
<td>Night time construction noise shall be limited to two consecutive nights. High noise generating works will be completed before 11:00pm.</td>
<td>Contractor</td>
<td>Construction</td>
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<tr>
<td>NAH1</td>
<td>Unexpected impacts on heritage values</td>
<td>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 <em>Standard Management Procedure: Unexpected Heritage Finds</em> (Roads and Maritime Services, 2015) would be followed.</td>
<td>Roads and Maritime Contractor</td>
<td>Construction</td>
</tr>
<tr>
<td>ABH1</td>
<td>Disturbance of Aboriginal objects</td>
<td>The <em>Standard Management Procedure: Unexpected Heritage Finds</em> (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.</td>
<td>Roads and Maritime Contractor</td>
<td>Construction</td>
</tr>
<tr>
<td>ABH2</td>
<td>Disturbance of Aboriginal objects</td>
<td>Construction workers will be advised of the locations of aboriginal sites 45-6-2471 and #45-6-2470 near location #172. No works is to occur at these locations.</td>
<td>Contractor</td>
<td>Construction</td>
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<tr>
<td>WQU1</td>
<td>Erosion and sedimentation</td>
<td>Erosion and sediment control measures will be documented in the CEMP and implemented and maintained in accordance with <em>Managing Urban Stormwater: Soils and Construction</em> (Landcom, 2004) to:</td>
<td>Contractor</td>
<td>Construction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Minimise sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets</td>
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<td></td>
<td></td>
<td>• Reduce water velocity and capture sediment on site</td>
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<td></td>
<td>• Minimise the amount of material transported from site to surrounding pavement surfaces</td>
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<td></td>
<td></td>
<td>Divert off site water around the site.</td>
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<tr>
<td>WQU2</td>
<td>Erosion and sedimentation</td>
<td>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.</td>
<td>Contractor</td>
<td>Construction</td>
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<tr>
<td>WQU3</td>
<td>Erosion and sedimentation</td>
<td>Any material transported onto pavements will be swept and removed at the end of each working shift and prior to rainfall.</td>
<td>Contractor</td>
<td>Construction</td>
</tr>
<tr>
<td>WQU4</td>
<td>Erosion and sedimentation</td>
<td>Erosion and sediment control measures are not to be removed until the works are complete or areas are stabilised.</td>
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<td>Construction</td>
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<tr>
<td>WQU5</td>
<td>Pollution from site runoff</td>
<td>Refuelling, storage of fuels, vehicle wash down and concrete washout will occur at a dedicated location offsite.</td>
<td>Contractor</td>
<td>Construction</td>
</tr>
<tr>
<td>WQU6</td>
<td>Spills</td>
<td>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 <em>Environmental Incident Classification and Management Procedure</em> (Roads and Maritime Services, 2015) is to be followed and the Roads and Maritime Contract Manager notified immediately.</td>
<td>Contractor</td>
<td>Construction</td>
</tr>
<tr>
<td>WQU7</td>
<td>Stockpiling</td>
<td>If temporary stockpiles are required on site they would be located away from drainage lines and removed before the end of each shift.</td>
<td>Contractor</td>
<td>Construction</td>
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<tr>
<td>WQU8</td>
<td>New hardstand</td>
<td>Concrete for new hardstand is to be poured so that there is no sag point and water drains away from the area sufficiently.</td>
<td>Contractor</td>
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<tr>
<td>AQU1</td>
<td>Dust</td>
<td>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</td>
<td>Contractor</td>
<td>Construction</td>
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<tr>
<td>AQU2</td>
<td>Dust and other emissions</td>
<td>Vehicles transporting waste or other materials that may produce odours or dust will be covered during transportation.</td>
<td>Contractor</td>
<td>Pre-construction / construction</td>
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<tr>
<td>AQU3</td>
<td>Other emissions</td>
<td>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.</td>
<td>Contractor</td>
<td>Construction</td>
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<tr>
<td>AQU4</td>
<td>Dust and other emissions</td>
<td>Visual monitoring of air quality will be undertaken to verify the effectiveness of controls and enable early intervention</td>
<td>Contractor</td>
<td>Construction</td>
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<tr>
<td>TTR1</td>
<td>Road safety and impacts to traffic flow.</td>
<td>A traffic management plan will be prepared and implemented in accordance with <em>Traffic control at worksites</em> (Roads and Traffic Authority, 2010).</td>
<td>Contractor</td>
<td>Pre-construction</td>
</tr>
<tr>
<td>TTR2</td>
<td>Property access</td>
<td>Vehicular property access would be maintained where possible including pre-schools, places of worship and all commercial premises.</td>
<td>Contractor</td>
<td>Construction</td>
</tr>
</tbody>
</table>
| 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        |
<p>| TTR4| Bus stop access                            | Access for bus passengers to bus stops would be maintained during construction.                                                                                                                                                  | Contractor     | 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    |
| 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        |</p>
<table>
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<th>Responsibility</th>
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<tbody>
<tr>
<td>WMM1</td>
<td>Construction waste management</td>
<td>The following resource management hierarchy principles will be followed:</td>
<td>Roads and Maritime Contractor</td>
<td>Construction</td>
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<tr>
<td></td>
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<td>• Avoid unnecessary resource consumption as a priority</td>
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<td>• Avoidance would be followed by resource recovery (including reuse of materials, reprocessing, and recycling and energy recovery)</td>
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<td></td>
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<td>• Disposal would be undertaken as a last resort (in accordance with the Waste Avoidance and Resource Recovery Act 2001).</td>
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</tr>
<tr>
<td>WMM2</td>
<td>Construction waste management</td>
<td>All wastes will be managed in accordance with the Protection of the Environment Operations Act 1997.</td>
<td>Contractor</td>
<td>Construction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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)</td>
<td></td>
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</tr>
<tr>
<td>WMM3</td>
<td>Resource use</td>
<td>Procurement will endeavor to use materials and products with a recycled content where that material or product is cost and performance effective.</td>
<td>Roads and Maritime Contractor</td>
<td>Detailed design / pre-construction</td>
</tr>
<tr>
<td>WMM4</td>
<td>Waste tracking</td>
<td>Types of waste collected, amounts, date/time and details of disposal are to be recorded in a waste register.</td>
<td>Contractor</td>
<td>Pre-construction / construction</td>
</tr>
<tr>
<td>WMM5</td>
<td>Litter</td>
<td>Works sites would be maintained, kept free of rubbish and cleaned up at the end of each working day.</td>
<td>Contractor</td>
<td>Construction</td>
</tr>
<tr>
<td>WMM6</td>
<td>Waste disposal</td>
<td>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.</td>
<td>Contractor</td>
<td>Pre-construction / construction</td>
</tr>
<tr>
<td>No.</td>
<td>Impact</td>
<td>Environmental safeguards</td>
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</tr>
<tr>
<td>CUI1</td>
<td>Construction phase cumulative impacts</td>
<td>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.</td>
<td>Contractor</td>
<td>Pre-construction / construction</td>
</tr>
</tbody>
</table>
2.1 Licensing and approvals

Where required, an applicable Road Occupancy Licence would be in place prior to the commencement of works.

No other specific licencing/approval requirements have been identified.
References


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20 Now referred to as the ‘Department of Planning and Environment’
21 Now referred to as Roads and Maritime
22 Now referred to as Roads and Maritime
# Appendix A

## Respondents

<table>
<thead>
<tr>
<th>Submission No.</th>
<th>Respondent</th>
<th>Section number where issues are addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Individual</td>
<td>3.1.1, 3.1.2, 3.1.8</td>
</tr>
<tr>
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<td>3.12.2</td>
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<tr>
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Appendix B

Revised concept drawings