Intersection upgrade, Great Western Highway and Ross Street, Glenbrook

Submissions report

Roads and Maritime Services | January 2018
### Document controls

### Approval and authorisation

<table>
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<tr>
<th>Title</th>
<th>Intersection upgrade, Great Western Highway and Ross Street, Glenbrook - Submissions Report</th>
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<tr>
<td>Accepted on behalf of Roads and Maritime NSW by</td>
<td></td>
</tr>
<tr>
<td>Signed</td>
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<td>Dated</td>
<td>January 2018</td>
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### Document status

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<th>Prepared by</th>
<th>Reviewed by</th>
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<tr>
<td>Final</td>
<td>January 2018</td>
<td>Steven Lyras</td>
<td>Sarah Jones</td>
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Executive summary

The proposal
Roads and Maritime Services (Roads and Maritime) propose to upgrade the intersection of the Great Western Highway and Ross Street, Glenbrook (the proposal).

Key features of the proposal include:
- new traffic lights at the Ross Street intersection that allow for all vehicle turning movements to and from the Great Western Highway and signalised pedestrian crossings on all approaches to the intersection
- changing the configuration of the Hare Street/Mann Street/Wascoe Street intersection to close access for general traffic between Mann Street and the Great Western Highway while maintaining access for emergency vehicles
- extending the two right turn bays on the Great Western Highway between Hare Street and Ross Street
- providing new road signs, line marking and footpath connections to suit the revised road configuration
- installing a new water main on the northern side of the Great Western Highway
- installing intelligent transport systems (ITS) conduits
- adjusting the stormwater drainage infrastructure to suit the revised road configuration;
- trimming trees on the southern side of the Great Western Highway to achieve minimum vertical and horizontal clearances from the new edge line
- installing and relocating directional road signs, as required.

Display of Review of Environmental Factors report
Roads and Maritime prepared a Review of Environmental Factors report (REF) for the Intersection upgrade, Great Western Highway and Ross Street, Glenbrook to assess the potential environmental impacts and to obtain planning approval for the proposal. The REF report was publicly displayed between Monday 16 October 2017 and Sunday 12 November 2017 at Blaxland Library and Glenbrook Visitor Information Centre. The REF was also published on the Roads and Maritime project website and made available for download.

The display locations and website link were advertised in the Blue Mountains Gazette local newspaper and on Facebook. During this time, Roads and Maritime invited the public to provide feedback on the proposal. Roads and Maritime also held stakeholder meetings with residents and businesses who are directly affected by the proposal.

Summary of main issues
The display of the REF and the supporting consultation generated 97 submissions, of which:
- one submission was from Blue Mountains City Council
- one submission was from a business, Glenbrook Panthers Bowling Club
- one submission was from a utility service provider, TransGrid
- 94 submissions were from the general community.

Of these submissions, 30 of 97 submissions were in support of the proposal, 35 of 97 submissions objected to the proposal and 18 of 97 submissions were partially supportive of the proposal. The remaining 14 of 97 submissions offered no position on whether they supported or objected to the proposal.
The main issues raised in submissions relating to the proposal are summarised under the following headings:

- Need and justification for the proposal
- Traffic and congestion
- Road safety
- Access
- Options clarification
- Other.

**Changes to the proposal**

There was a minor change to the proposal which was not assessed in the REF. This change relates to minor street light re-location work. In this regard Endeavour Energy has undertaken its own Environmental Assessment for the minor street light re-location work within the project footprint and there is no need for additional safeguards (Endeavour Energy environmental report PLT0986 FAT0038 20170915).

The REF documented safeguards and management measures that would be undertaken as part of the project proposal. Following feedback from the Office of Environmental Heritage, one of the measures documented in Table 6.3.3 of the REF, “Safeguards and Management Measures,” is not required. An excerpt from this table is shown below with the measure that is no longer required.

<table>
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<th>Impact</th>
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<th>Responsibility</th>
<th>Timing</th>
<th>Standard / additional safeguard</th>
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<td>Impacts on archaeological resources</td>
<td>Roads and Maritime will confirm with the Office of Environment and Heritage the application of an exception (via a notification under Section 139(4) of the Heritage Act 1977) in relation to potential impacts on subsurface relics that may be present near the Great Western Highway / Ross Street intersection.</td>
<td>Roads and Maritime</td>
<td>Pre-construction</td>
<td>Additional Measure</td>
</tr>
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</table>

There are no other changes to the proposal as described in the REF.

**Next Steps**

Once the REF is determined and a decision is made to proceed, Roads and Maritime will progress with the implementation and construction of the project. The project would be constructed by an external contractor who has been selected through a competitive tendering process and assessed by a panel of three people including two people from within Roads and Maritime and one independent member from outside Roads and Maritime. It is planned to start construction in early 2018 and be completed by late 2018. The community will be informed of the exact date, of the project commencement, by advertisement placed in the local press and by newsletter distribution in the areas surrounding the project as well as a media statement that will be offered to local newspapers for publication.
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1 Introduction and background

1.1 The proposal

Roads and Maritime Services (Roads and Maritime) propose to upgrade the intersection of the Great Western Highway and Ross Street, Glenbrook (the proposal).

Key features of the proposal include:

- new traffic lights at the Ross Street intersection that allow for all vehicle turning movements to and from the Great Western Highway and signalised pedestrian crossings on all approaches to the intersection
- changing the configuration of the Hare Street/Mann Street/Wascoe Street intersection to close access for general traffic between Mann Street and the Great Western Highway while maintaining access for emergency vehicles
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- installing a new water main on the northern side of the Great Western Highway
- installing intelligent transport systems (ITS) conduits
- adjusting the stormwater drainage infrastructure to suit the revised road configuration
- trimming trees on the southern side of the Great Western Highway to achieve minimum vertical and horizontal clearances from the new edge line
- installing and relocating directional road signs as required

1.2 Display of Review of Environmental Factors report

Roads and Maritime prepared a Review of Environmental Factors (REF) for the Intersection upgrade, Great Western Highway and Ross Street, Glenbrook to assess the potential environmental impacts and to obtain planning approval for the proposal. The REF was publicly displayed between Monday 16 October 2017 and Sunday 12 November 2017 at Blaxland Library and Glenbrook Visitor Information Centre, as detailed in Table 1.1. The REF was also published on the Roads and Maritime project website and made available for download.

The display locations and website link were advertised in the Blue Mountains Gazette local newspaper and on Facebook. During this time, Roads and Maritime invited the public to provide feedback on the proposal. Roads and Maritime also held stakeholder meetings with residents and businesses who are directly affected by the proposal.

In addition to the public display, there were several activities carried out during the consultation period to give the community a chance to learn more about the project, meet the project team and ‘have their say’ (refer to Table 1.2). During this period, Roads and Maritime also engaged and consulted with property owners who would be impacted by this proposal.

Community members and stakeholders were asked to make submissions via email, mail and phone directly to the project team. Roads and Maritime also responded to stakeholder comments and feedback on Facebook. The community could contact Roads and Maritime and leave comments and submissions by:

Email  wsip@rms.nsw.gov.au
Phone  1800 703 457
Mail    Glenbrook intersection upgrade
        PO Box 973
        Parramatta CBD NSW 2124
### Table 1.1: Display locations

<table>
<thead>
<tr>
<th>Location</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blaxland Library</td>
<td>33 Hope St, Blaxland</td>
</tr>
<tr>
<td>Glenbrook Visitor Information Centre</td>
<td>Hamment Pl, Glenbrook</td>
</tr>
</tbody>
</table>

### Table 1.2: Consultation activities during the public display period

<table>
<thead>
<tr>
<th>Tool / Activity</th>
<th>Reach</th>
<th>Details</th>
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<tbody>
<tr>
<td>Community update newsletter (Appendix A)</td>
<td>3000</td>
<td>A community update newsletter was produced including the key features of the proposal, and how to provide feedback on the REF and concept design. The community update newsletters were letterbox dropped to about 3000 properties. The newsletter was also made available on the Roads and Maritime website.</td>
</tr>
<tr>
<td>Doorknocks/meetings with stakeholders</td>
<td>20</td>
<td>About 20 property owners, businesses and stakeholders in the immediate vicinity of the proposal were doorknocked or met the project team at the beginning of the consultation period. The purpose was to notify and discuss with owners and stakeholders any potential impacts to their property and to encourage their feedback to the proposal. A community update newsletter was left with each property owner and stakeholder. Where the property owner was not home a ‘sorry we missed you’ flyer was left.</td>
</tr>
<tr>
<td>Frequently Asked Questions (FAQs)</td>
<td>50</td>
<td>A ‘frequently asked questions’ (FAQ) document was produced to provide stakeholders with a summary of responses to questions that were asked as part of the proposal’s announcement. The FAQs were placed on the website and supplied at display locations.</td>
</tr>
<tr>
<td>Media release</td>
<td>As per circulation numbers</td>
<td>A media release was issued by Roads and Maritime on 18 October 2017. It was titled ‘Have a say on the Glenbrook intersection upgrade’ and encouraged local community members and stakeholders to engage in the consultation.</td>
</tr>
<tr>
<td>Newspaper advertisement</td>
<td>As per circulation numbers</td>
<td>Newspaper advertisements appeared in local paper Blue Mountains Gazette between Wednesday 18 October and Wednesday 1 November, 2017 to raise awareness of the consultation.</td>
</tr>
<tr>
<td>Email notifications</td>
<td>43</td>
<td>Roads and Maritime emailed 43 stakeholders (community members and groups) and other Government stakeholders from 16 to 20 October 2017 to announce the REF display and concept design and raise awareness of the consultation.</td>
</tr>
<tr>
<td>Webpage</td>
<td>1,963 page views</td>
<td>The project webpage was updated on Monday 16 October 2017 with project information including the community update newsletter, REF, concept design, and information on how to submit feedback. A total 1,963 page views were recorded during the consultation period.</td>
</tr>
<tr>
<td>Social Media (Facebook)</td>
<td>1st post – 37,752 2nd post – 2,559</td>
<td>Two Facebook advertisements were posted between 16 October 2017 and 12 November 2017. Both the posts targeted a 17-kilometre radius around the Glenbrook area. The posts targeted a broad geographic area and encouraged community members to make a formal submission.</td>
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</table>
1.3 Purpose of the report

This submissions report relates to the “Intersection Upgrade, Great Western Highway and Ross Street, Glenbrook” 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. This submissions report summarises the issues raised and provides responses to each issue (refer to Chapter 2).
2 Response to Issues

Roads and Maritime received 97 submissions to the proposal. 93 submissions were received by the due date of 12 November 2017. Four submissions were received after the closing date, however all submissions have been considered and responses to individual submissions captured in this report. Table 2.1 lists the respondents and each respondent’s allocated submission number. The table also indicates where the comments from each submission have been addressed in the report. The full submissions are tabulated in Appendix B.

Table 2.1: Respondents

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<th>Respondent</th>
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2.1 Overview of issues raised

The display of the REF and the supporting consultation generated 97 submissions, of which:

- One submission was from Blue Mountains City Council
- One submission was from a business, Glenbrook Panthers Bowling Club
- One submission was from a utility service provider, TransGrid
- 94 submissions were from the general community.

Of these submissions, 30 of 97 submissions were in support of the proposal, 35 of 97 submissions objected to the proposal and 18 of 97 submissions were partially supportive of the proposal. The remaining 14 of 97 submissions offered no position on whether they supported or objected to the proposal.

Each submission was examined individually to understand the issues being raised. The issues raised in each submission have been extracted and collated, and corresponding responses have been provided. Where similar issues have been raised in different submissions, only one response has been provided. The issues raised and responses form the basis of this Chapter.

Table 2.2: Summary of the main issues by respondent group

<table>
<thead>
<tr>
<th>Respondent group</th>
<th>Main comments or issues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Community</strong></td>
<td>- The main concerns of the community related to restricted access at The Hare Street intersection on the southern side of the Great Western Highway</td>
</tr>
<tr>
<td></td>
<td>- Some respondents were concerned about the proximity of the new traffic lights to the existing traffic lights</td>
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<tr>
<td></td>
<td>- Community members were concerned about potential congestion into the Glenbrook Village</td>
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<tr>
<td></td>
<td>- Community members also welcomed the proposed redesign of the Hare Street (south)/Mann Street and Wascoe Street intersection and welcomed the proposed simplification of this intersection</td>
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<tr>
<td></td>
<td>- Community members also welcomed the additional pedestrian crossings across Great Western Highway and pedestrian connectivity improvements</td>
</tr>
<tr>
<td></td>
<td>- Community members acknowledged the safety improvements.</td>
</tr>
<tr>
<td><strong>Council</strong></td>
<td>- Council’s preference was for Option 3 which allowed ‘left in’ and ‘left out’ movements at the Great Western Highway intersection with Hare Street (south) but retained new traffic lights at Ross Street as part of the proposal.</td>
</tr>
<tr>
<td><strong>Business</strong></td>
<td>- Only one business responded, did not raise any major concerns and was supportive of the proposal, but preferred that ‘left in’ and ‘left out’ movements be adopted at the Great Western Highway intersection with Hare Street (south).</td>
</tr>
<tr>
<td><strong>Utility companies</strong></td>
<td>- Advised that the proposal does not impact their infrastructure or easements</td>
</tr>
<tr>
<td></td>
<td>- Provided a copy of their Easement Guidelines for Third Party Developments.</td>
</tr>
</tbody>
</table>
2.2 Need and justification for the proposal

Submission numbers
4, 35, 44, 46, 51, 78, 82, 85, 90, 97

Issue

10 submissions raised issues about the need and justification for the proposal. The issues raised, relate to the cost of the project and the perception that nothing needs to be done. Comments received as part of these submissions include:

“What part of ‘if it ain’t broke, don’t fix it’ don’t you understand!”

“This proposal is a criminal waste of money to spend $5 million to have a worse intersection, and very little benefit.”

“The existing traffic lights Cnr. Mann and Hare St. are working perfectly well for traffic.”

“The reality is this project was announced as a desperate attempt by four members of parliament to stay elected, something which was unsuccessful for three out of four. Despite this the project continues on.”

“..a band aid fix”

“There are other ways to get around this problem, take alternative route.”

Response to justification issues raised

On 9 March 2015 the Minister for Roads, Maritime and Freight, Duncan Gay, announced that state and federal funding would be made available to upgrade the intersection of Ross Street and Great Western Highway, Glenbrook. This announcement followed concerns raised by residents about access to and from Glenbrook from the Great Western Highway and also about the operation of the Hare Street/Wascoe Street and Great Western Highway intersections.

The intersection of Great Western Highway and Ross Street is the most direct entry and exit point to Glenbrook Shopping Centre and Glenbrook Visitor Information Centre. This intersection is not currently controlled by traffic lights. Traffic movements from Ross Street turning right onto Great Western Highway are not permitted for safety reasons. Therefore traffic heading to Penrith and Sydney from the Glenbrook shopping precinct turns right onto the Great Western Highway using the traffic lights at Hare Street. These lights are usually accessed via Mann Street or Wascoe Street. The geometric layout and close proximity of the Mann Street/Wascoe Street intersection to the Hare Street/Great Western Highway intersection presents a number of untenable issues and concerns which have been raised by sections of the Glenbrook community for many years.

These issues include:

- confusion over who has right of way
- lack of lane storage capacity and queuing issues on the Mann Street approach to Great Western Highway
- traffic blocking the intersection
- impatient motorists driving on the wrong side of Wascoe Street to avoid the traffic queue waiting to enter the highway
- right turning traffic from Hare Street (south) ignoring the right of way for through traffic from Hare Street (north)
In order to address these issues and the lack of a traffic controlled right turn at Ross Street onto Great Western Highway, this project proposes to simplify the operation of traffic lights at the intersection of Hare Street and Great Western Highway, and to provide new traffic lights allowing all movements, at the intersection of Ross Street and the Great Western Highway.

During development of the project proposal an independent traffic and transport consultant, Traffic and Urban Planning Associates (TUPA), was engaged to model the operation of both intersections in order to test the operation of the proposal for current and future traffic demands. The modelling used the internationally recognised tool called SIDRA. The primary purpose of the modelling was to determine any impacts to the level of service at both intersections including a projection of queue lengths. For this purpose, a lineal growth factor of 10.5 per cent was applied to both intersections using 2015 traffic volumes and then increasing the volumes to enable modelling of traffic conditions through to the year 2025. This included the re-distribution of traffic volumes which would occur after implementation of the proposal and changes at Hare Street.

The proposal, as modelled, will generate longer queues for the right turn movement from Great Western Highway turning into Hare Street travelling westbound to northbound, and also on Great Western Highway turning into Ross Street travelling eastbound to southbound. In order to address this issue, the existing right turn bays on Great Western Highway will be extended as part of this proposal to eliminate or minimise any adverse impacts.

2.3 Traffic and congestion

Submission numbers

11, 19, 20, 31, 33, 37, 59, 60, 72, 74, 84, 91, 94, 95

Issue

14 submissions, opposed to the proposal, cited traffic management as the main reason for not supporting the proposal. Respondents specifically mentioned the potential for queuing and congestion in Ross Street and in the Glenbrook village. Other submissions were concerned about the proximity of the proposed traffic lights at Ross Street to the existing traffic lights at Hare Street and requested that they be “synchronised”. Comments received as part of these submissions include:

“Your (sic) doubling the amount of traffic potentially causing a huge traffic jam in the morning.”

“Adding another set of traffic lights to this already congested area is a terrible idea.”

“I also fear long queues will form down Ross Street while waiting for the light changes that will cause flow on congestion through other local streets.”

“This change only moves the traffic 100 metres down the road & the traffic will then cause congestion in the village…”

“Two sets of traffic lights close together repeating the farce at Wentworth Falls at Glenbrook.”

“Improve efficiency, traffic flow and safety, no way.”

“The proposed upgrade will do nothing for traffic flows on the highway and will cause problems for motorists leaving the Information Centre, it will cause problems for people leaving the theatre….”

“Drivers coming from Wascoe Street, particularly on peak traffic times, will have long waiting times to turn left as they have to give way to cars already on Ross Street.”
Response to traffic issues raised by those opposed to the proposal

The existing traffic lights at Hare Street and the new traffic lights at Ross Street will be connected to the Sydney Coordinated Adaptive Traffic System (SCATS). SCATS is a dynamic traffic control system used across Australia and in many countries around the world to ensure that traffic lights are coordinated and working as efficiently as possible within the constraints of road capacity and traffic demands. Further, the new lights at Ross Street will include a CCTV camera to enable traffic controllers at the Transport Management Centre to monitor both intersections in real time during peak traffic times and also help manage any unplanned incidents along the Great Western Highway between Ross Street and Hare Street.

During development of the project proposal an independent traffic and transport consultant, Traffic and Urban Planning Associates (TUPA), was engaged to model the operation of both intersections in order to test the operation of the proposal for current and future traffic demands. The modelling used the internationally recognised tool known as SIDRA. The primary purpose of the modelling was to determine any impacts to the level of service at both intersections including a projection of queue lengths. For this purpose a lineal growth factor of 10.5 per cent was applied to both intersections using 2015 traffic volumes and then increasing the volumes to enable modelling of traffic conditions through to the year 2025. This included the re-distribution of traffic volumes which would occur after implementation of the proposal and changes at Hare Street.

The proposal, as modelled, will generate longer queues for the right turn movement from Great Western Highway turning into Hare Street travelling westbound to northbound, and also on Great Western Highway turning into Ross Street travelling eastbound to southbound. The existing right turn bays on Great Western Highway will be extended as part of this proposal to eliminate or minimise any adverse impacts.

The TUPA modelling report found that following implementation of the proposal and taking into account redistribution of traffic, both intersections would retain a satisfactory to good operation. It demonstrated that the existing Level of Service (LoS) A/B operation with average vehicle delays in the order of 12-20 seconds at the individual intersections, would be maintained with no adverse impact to the overall operation of the intersections. Average vehicle delay for intersections controlled by traffic signals is based on the delay for all vehicles using the intersection and not individual traffic movements. Provided that the average vehicle delay for all vehicles at the intersection is equivalent to a Level of Service D or better, then the intersection is considered to have a satisfactory operation.

The traffic modelling confirms that this proposal would result in good and acceptable operation at both traffic light controlled intersections.

To manage access from Wascoe Street to Ross Street the project proposes to mark “Keep Clear” on the road pavement at this intersection as well as erecting supporting regulatory signs.

Submission numbers

2, 6, 21, 24, 25, 28, 30, 32, 36, 40, 58, 62, 64, 69, 71, 76, 79, 80, 81, 88, 92, 93, 96

Issue

23 submissions that were in favour or partially in favour of the proposal cited traffic management as the reason for adopting this position. One submission specifically mentioned the Glenbrook Fire and Rescue facility and the difficulty in accessing the Great Western Highway under the present intersection arrangements at Hare Street and hence supported the proposal to limit access to emergency vehicles. One submission agreed as long as the traffic lights are coordinated and another submission expressed a desire to have the existing ‘STOP’ signs at Hare Street Wascoe Street intersection removed. Comments received as part of these submissions include:
“I approve the additional set of traffic lights personally, despite the delay caused by additional traffic lights.”

“I am thrilled to see the intersection at Glenbrook being upgraded. The addition of a right turn from Ross Street onto the (Great) Western Highway is most welcome.”

“I am writing to say I think this is the best option.”

Regarding STOP signs at the Hare Street South/Wascoe Street intersection; “I hope you propose to remove them as it will further benefit traffic flow.”

“I agree with the proposal to upgrade the GWH intersection at Glenbrook.”

“As long as both sets of lights are synchronized to change at the same time, it will work.”

“I have seen the guys from Glenbrook Fires and Rescue trying to negotiate the inconsiderate motorists who queue up through the middle of the intersection, trying to get out onto the highway. The new intersection will be a welcomed addition.”

“The current Hare St intersection is a nightmare and should be totally redesigned as proposed.”

“This may not be Council’s preferred choice, I personally like the proposal.”

“This option would reduce the road rage caused by the congestion at the current exit on Hare St.”

“I am a local bus driver and in that capacity enter and exit Glenbrook several times each day…. Option 5 is my preference.”

“I fully support the upgrade to the Great Western Highway, Wascoe Street intersection. I have been a resident of Glenbrook for almost 30 years. I was a member of the NSW Police Force and NSW Police Rescue Squad, Blue Mountains.”

“Construction of a set of lights and pedestrian crossings at the intersection of Ross Street and Great Western Highway is a good idea.”
Response to traffic comments made by those in favour of the proposal

Elements of the proposal that address comments seeking clarification and assurances include: the two sets of traffic lights, Hare Street/Great Western Highway and Ross Street Great Western Highway, will form part of the Sydney Coordinated Adaptive Traffic System (SCATS). This is a dynamic traffic signal control system, which enables the traffic lights to be monitored remotely in real time; SCATS ensures the lights are working as efficiently as possible and that the traffic light phasing is coordinated for each intersection. Once the work is completed at the Hare Street/Wascoe/Mann Street intersection the ‘STOP’ signs will be removed and the intersection will operate as a conventional “T” junction.

After the REF is determined, the RMS will proceed to deliver the project as assessed and displayed in the REF. The community will be advised by notification regarding the start of work which is estimated to be early in 2018.

2.4 Road safety

Submission number

84

Issue

One submission cited safety as one of the reasons for being opposed to the proposal. A comment from this submission includes:

“Improve road safety and access…..not so.”

Response to the safety issue

The proposal includes new traffic lights at the intersection of Ross Street and Great Western Highway, with all traffic movements permitted under traffic signal control, including the ability to manage right turns from Ross Street onto Great Western Highway. This movement is currently prohibited because it is unsafe. New pedestrian crossings and footpath connections are included as part of the traffic lights to enable safer pedestrian crossings of Great Western Highway and Ross Street. Safety, access and amenity will be improved by the proposal, particularly for pedestrians crossing Great Western Highway between the Glenbrook shopping village, Glenbrook Information Centre, Glenbrook cinema and the residential catchment north east of Glenbrook oval.

Submission numbers

3, 10, 12, 17, 22, 26, 38, 39, 41, 43, 47, 49, 57, 58, 70, 71, 73, 87

Issue

18 submissions supporting the proposal cited safety as the key reason for their support. Many of the respondents specifically mentioned the proposed changes to the Great Western Highway, Hare Street/Mann Street and Wascoe Street intersection as being a welcomed safety improvement to the existing situation. Partial responses, in this regard, include:

“We feel the current intersection at Hare Street, allowing entrance to GWH is a risk to local pedestrians entering from any direction as there are so many cars coming from so many different directions…….. it is dangerous turning from Glenbrook across the GWH……I have lost count of cars nearly colliding”
“As I live and work in Glenbrook and my workplace is sitting right on the intersection in question I am delighted with the changes shown to me. I cross through the Hare Street/Great Western Highway intersection 4 times a day and have experienced many near misses whilst crossing from Hare Street North to Hare Street South.”

“I’ve looked at your proposal and think it is a great solution to the major problem here” “There is so much aggression at this current intersection…..there are accidents and it’s a really nasty intersection…..thank you for the proposal please do this ASAP”.

“The current situation, with access from Hare Street South to the Great Western Highway creates many problems, road rage, and danger for drivers and pedestrians.”....“The new proposal will also resolve the problem of speeding vehicles on Park Street heading West onto Mann Street and then onto the Highway.”....“The planners for this new proposal are to be congratulated”

“I feel this upgrade option will improve the current safety and congestion problems, and improve access to and through Glenbrook in general”

“This has been talked about for far too long now. Please get on with it! The Mann St intersection is diabolical as it is so, again, let’s get moving!!”

“Yes the current intersection is difficult and dangerous. Decision was made just do it”

“Yessssssss!! (sic) I nearly had an accident here because people didn’t know who to give way to!!”

“Worst intersection known to man…”

“I think that the proposed changes to the intersections at Glenbrook of Ross St/Great Western Highway and Hare St Great Western Highway are a massive improvement on what we have now”.

“The current Hare St intersection is a nightmare and should be totally redesigned as proposed.”

“My family and I are in great favour of this upgrade as being locals her for 30 years we find this intersection dangerous.”

“I have read the $5 Million project proposal and fully support it. I believe these improvements may save lives in the future or in the very least prevent injuries and motor vehicle collisions”.

Response to safety comments made by those in favour of the proposal

The intersections of Great Western Highway with Hare Street (south) and Hare Street (south)/Mann Street with Wascoe Street will be simplified by restricting access to the highway for general traffic and allowing emergency vehicles to access the highway. The ‘STOP’ signs in Wascoe Street will no longer be required and the intersection will be configured as a standard ‘T’ junction. This work will lead to improvements in vehicular and pedestrian safety due to the simplification of the intersection and elimination of opposing and conflicting traffic movements. Pedestrian and motorists safety will be vastly improved at the Ross Street Great Western Highway intersection under the proposal since all movements of traffic and pedestrians will be controlled by traffic lights.

After the REF is determined, Roads and Maritime will proceed to deliver the project as assessed and displayed in the REF. The community will be advised by notification regarding the start of work which is estimated to be early in 2018.

2.5 Access

Submission numbers

1, 5, 11, 27, 29, 54, 56, 66, 75, 79, 83, 84, 89, 91, 94, 95
Issue

15 submissions cited reduced access as one of the reasons for being opposed to the proposal. The issue of access specifically relates to residents living on the northern side of Great Western Highway wishing to access destinations on the southern side of Great Western Highway including the Glenbrook village shops. One submission mentioned buses and delivery trucks using Hare Street. Comments received as part of these submissions are as follows:

“Won’t closing access to the highway from the village side just switch the congestion over to Ross Street?”

“As a resident of Woodville Street anyone who lives in this area is going to never get out onto the highway, we will be forced into the village and on weekends it will be a nightmare.”

“Cutting off access to Wascoe and Mann Street from Hare Street is unnecessarily restrictive.”

“Yes stop traffic turning right onto the highway from Wascoe Street but do not restrict access for Glenbrook north residents from accessing easily their retail outlets.”

“I would be pleased if you would explain just how are (we) going to come into Glenbrook Village from Hare Street (north), if we can’t come straight across. How are we going to get into the turning lane for Ross Street legally – given that if you turn out of a kerbside lane then you turn into a kerbside lane on the new road? How are we going to get into that turning lane given the short distance?”

“Buses use Hare Street as do delivery trucks.”

“If the Mann Street, Hare Street intersection is closed to all traffic, traffic which wishes to cross or turn left onto the GW Highway will have to do a rat run up Wascoe St, Fletcher, Powell St, Lapstone Cr and Coughlan Rd to access the highway.”

“From a commercial perspective I would think that those with commercial interests in Wascoe Street would sorely miss the trade that passes their door if the Hare Street intersection is closed as proposed.”

Response to access issues

The intersection of Great Western Highway and Ross Street is the most direct entry and exit point to access Glenbrook Shopping Centre and Glenbrook Visitor Information Centre. At present this intersection is not controlled by traffic lights. The movement of traffic from Ross Street turning right onto Great Western Highway is not permitted because it is not safe. Traffic travelling towards Penrith and Sydney, from the Glenbrook shopping precinct, currently uses the traffic lights at Hare Street and Great Western Highway which is usually accessed via Mann Street or Wascoe Street. The geometric layout and close proximity of the Mann Street/Wascoe Street intersection to the Hare Street/Great Western Highway intersection presents a number of untenable issues and concerns which have been raised by members of the Glenbrook community for many years, but have not been adequately addressed in the past. These issues include, confusion over who has right of way, storage and queuing issues on the approach to Great Western Highway from Mann Street, traffic blocking the intersection, impatient motorists driving on the wrong side of Wascoe Street to avoid the traffic queue waiting to enter the highway, and right turning traffic from Hare Street (south) ignoring the right
of way for through traffic from Hare Street (north). In order to address these issues, and the lack of a controlled right turn at Ross Street onto the Great Western Highway, this project proposes to simplify the traffic light operation at the intersection of Hare Street and Great Western Highway and to provide new traffic lights, allowing all movements, at the intersection of Ross Street and Great Western Highway.

It is acknowledged that more traffic will be directed to the Ross Street and Great Western Highway intersection, as a result of the proposal; however, the Ross Street intersection has better storage capacity on the approach to the highway compared to Hare Street (south) and Great Western Highway. It is expected that traffic queuing on Ross Street during peak times will go past Wascoe Street, however, to assist Wascoe Street traffic, “Keep Clear” pavement markings and associated regulatory signs will be implemented at this intersection. The traffic control system called SCATS will also manage the different traffic demands throughout the day to ensure that the intersection is operating as efficiently as possible.

Roads and Maritime has discussed the proposal with Blue Mountains Transit and they have agreed to alter bus routes and timetables in accordance with the proposed changes. It is envisaged that the re-routing will be minimal and the community will be informed about the changes before they occur.

Regarding traffic coming from Hare Street (north) crossing the Great Western Highway to access Glenbrook shopping village area, right turns and left turns onto the highway will still be permitted as per the current arrangement but traffic will not be permitted to drive straight across the intersection to access Hare Street (south). This traffic will need to turn left at the highway and then enter the right turn bay on Great Western Highway and turn right into Ross Street to access the village and other destinations south of Great Western Highway. The proposed changes will make this movement possible without any issues. Features of the proposal that will contribute to making this movement safe and comfortable for motorists include: all traffic movements will occur under traffic signal control with no conflicting movements; both traffic lights will be coordinated using the system called SCATS; the distance between both intersections is approximately 200m; and the right turn bay on Great Western Highway will be extended from Ross Street back to Hare Street along with the right turn bay on Great Western Highway for the westbound direction.

With respect to the issue raised regarding impacts on commercial businesses located in Wascoe Street, Morning and afternoon vehicle counts for traffic modelling indicate only a small potential impact on passing trade for the two Wascoe Street businesses, as most trips originate or end locally. The traffic counts show that approximately 60% of all vehicles appear to be local traffic travelling east and west along Wascoe St, south along Hare Street and north along Mann Street. Vehicles turning right from the Great Western Highway into Mann and Wascoe Street include a mixture of local through traffic and some regional passing trade vehicles accessing the Wascoe Street businesses. The new Ross Street traffic lights will offer a safer turning option for all of these groups. RMS has agreed to relocate and amend Great Western Highway signage along the Great Western Highway promoting Ross Street as the main access into this area to minimise any potential impact on passing trade.
2.6 Partially Supportive

Submission numbers
7, 8, 15, 52, 55, 65, 68

Issue
Seven submissions that were partially supportive of the proposal commented or sought clarification on issues related to either vehicle or pedestrian access. Comments received as part of these submissions include:

“Are there to be pedestrian lights at Hare Street?”

“...the changes to the footpaths is to be commended – but do these pathways include provisions for bicycles and pedestrians.”

Regarding Hare Street - “Will this intersection still be open for pedestrian traffic across the highway and across Hare Street north?”

Response to issues
The proposal will retain traffic lights for pedestrians crossing the Great Western Highway at the Hare Street intersection on the western and eastern side of the intersection as per the existing arrangement. The pedestrian lights across Hare Street (north) will also remain as they are currently.

The new footpaths will connect with existing footpaths and will benefit residents living in the area north east of the Glenbrook oval who will have direct access to the new traffic lights at Ross Street. Footpaths will also connect to existing bus stops. These footpaths are for pedestrian use and will not be designated as a shared bicycle path. Provision has been made for cyclists using the Great Western Highway to eliminate squeeze points at the new Ross Street traffic lights.

2.7 Options clarification

Submission numbers
9, 29, 31, 89, 93

Issue
Five submissions sought clarification or questioned why the REF was carried out for Option 5 and not Option 3. Comments received as part of these submissions include:

“Interesting that Option 5 was not among the options canvassed in December 2015, why not?”

“The previous community consultation process, coordinated by council on behalf of the RMS, clearly identified a strong community preference for including the left in left out option for Hare Street, which back then was option 3. Now we have an Option 5.”

“Where was this submission (option) when council displayed their options for comments from the public in 2015?”

“Whilst I am fully in support of the project, I am writing to state my surprise that the previously agreed to option of Option 3 has been supplanted by an option that was not presented to the community.”
Response to selected option issue

Blue Mountains City Council (BMCC) and Roads and Maritime explored a number of options to improve safety and access along Great Western Highway, while enhancing the primary gateway to Glenbrook village. Council engaged consultant J. Wyndham Prince to do a traffic study and Molino Stewart Pty Ltd carried out the community consultation as a sub-contractor to J. Wyndham Prince. The initial community consultation occurred between October 2015 and December 2015 when the Glenbrook community was asked to comment on three design options and one option to ‘do nothing’.

All of the three design options proposed new traffic lights at the intersection of Great Western Highway and Ross Street, Glenbrook, a small roundabout at the intersection of Wascoe Street and Ross Street, and extensive landscaping on the northern side of Great Western Highway and on the eastern side of Ross Street. The difference between the options relates to the proposed treatment of the Great Western Highway and Hare Street (south) intersection and also the Hare Street (south)/Mann Street and Wascoe Street intersection.

A brief description of the three design options follows:

**Option 1**
New traffic lights at the Ross Street and Great Western Highway intersection, a new roundabout at the Wascoe Street and Ross Street intersection and full closure of access to the Great Western Highway from Mann Street, Hare Street (south) and Wascoe Street.

**Option 2**
New traffic lights at the Ross Street and Great Western Highway intersection, a new roundabout at the Wascoe Street and Ross Street intersection and left turn only from the Great Western Highway to Hare Street (South) and left only access to Wascoe Street from Hare Street (south).

**Option 3**
New traffic lights at the Ross Street and Great Western Highway intersection, a new roundabout at the Wascoe Street and Ross Street intersection and left turn only from the Great Western Highway to Hare Street (south), with left turn only access to Wascoe Street from Hare Street (south) and also left turn access from Wascoe Street to the Great Western Highway, via Hare Street (south).

All three options were shown graphically on the Roads and Maritime and Council websites and at the display locations chosen by Council.

Option 4 was to ‘do nothing’ to either intersection.

These options were placed on public display in December 2015 and the display session was facilitated by Molino Stewart Pty Ltd which then wrote the report documenting the community’s response to these options. This report is called “Community consultation for proposed upgrade of the Ross Street and Great Western Highway intersection” and was published on the Blue Mountains Council website in April 2016.

At the close of the 2015 consultation period, and following the display of options, 111 individual (separate) submissions were received.

The results of these submissions, in order of option preference were as follows:

54 submissions favoured Option 1 (Roads and Maritime preferred option)
37 submissions favoured Option 3 (Council preferred option)
11 submissions favoured Option 4 (One of these submissions was in the form of a petition with 42 signatures)

Six submissions favoured a variety of suggestions different to or outside the scope of the options displayed.

Three submissions favoured Option 2.

After the 2015 community consultation process one major issue that required resolution was that all three options were estimated to cost 82.5 per cent over the funding allocated. A value management workshop was then held between Blue Mountains City Council, Roads and Maritime and Council’s consultant J. Wyndham Prince. The purpose of the workshop was to identify elements of the design that could be changed to bring the project cost estimate back within the provisional budget of $5M.

It should be noted that the difference in estimated cost between the three design options, as displayed, was negligible so that the estimated cost of each of the three design options can be considered to be equal.

The value management workshop identified that removal of the following design elements would contribute to cost savings without altering the proposal’s main objectives. These elements included; removal of new formal landscaping, replacing the proposed roundabout at the Wascoe Street/Ross Street intersection with “Keep Clear” pavement markings and reducing the proposed new kerb and gutter on the northern alignment of Great Western Highway. It was decided that Council would engage a third party to provide a new cost estimate for the amended scope proposal.

This process is documented in the report prepared by Molino Stuart with the report concluding:

“The final design option for the Upgrade of Ross Street/Great Western Highway Intersection, Glenbrook is Option 3B*. This issue (option) has been determined via a community engagement process, Councillor briefing and a Value Management Workshop. The (Blue Mountains City Council) preferred option has been submitted to the Roads and Maritime Services to seek funding from the Australian and NSW government for the project.”

(*Option 3 was renamed as Option 3B after the Value Management Workshop’s minor scope changes to distinguish it from Option 3).

On receiving Council’s submission seeking funding for Option 3B, Roads and Maritime identified two main issues which would hinder the proposal’s further progress.

1. Option 3B was not the same as the option favoured by the majority of community respondents, (which was Option 1), as documented in the report prepared by Molino Stewart Pty Ltd, commissioned by Council’s consultant J. Wyndham Prince.
2. The estimated cost of Option 3B was still significantly above the project estimate.

At this point, Blue Mountains Council advised Roads and Maritime that Council was unable to complete the project development or manage the project delivery, as was intended; and requested that Roads and Maritime complete these tasks.

In finalising the project development, including completion of detailed design, Roads and Maritime took into account the two issues identified above, community preference, inflated project costs, a yet to be determined aboriginal land claim on the northern side of Great Western Highway, and Council’s concern that Option 1 would restrict access to the Fire and Rescue Station located further west in Wascoe Street.

To address these issues Roads and Maritime slightly modified the design of Option 1 as follows:
• allowing emergency vehicles to access the Great Western Highway from the Hare Street (south) intersection
• shifting the whole proposal to the southern alignment of Great Western Highway to avoid impact on the aboriginal land claim
• using the existing shoulder area on the southern side of Great Western Highway instead of building new road pavement on the northern side, considerably reducing the overall project cost

Option 1 was then renamed Option 5 to acknowledge these changes and for the purposes of the REF. As a result, the REF assessment and associated specialist reports and studies were all based on Option 5.

It should be noted that the Option 5 layout and general configuration at the Ross Street intersection and the Hare Street (south) intersection is the same as Option 1, which is the option most favoured by the community in December 2015 as documented in the Molino Stewart report. Option 5 will meet the same objects as Option 1 and can be delivered within the approved budget.

2.8 Other

Submission numbers

9, 13, 14, 16, 18, 23, 34, 42, 45, 48, 50, 53, 61, 63, 67, 77, 86

Issue

A number of respondents made general comments about the proposal without stating if they were in favour or against the proposal. Some respondents made comments indicating opposition or indicating that they were in favour without making strong statements in this regard. Some respondents raised issues or made suggestions unrelated to the proposal or outside the scope of the proposal. Comments received as part of these submissions include:

“(I) would urge that RMS make provision for these ‘open areas’ to be planned.” This relates to formalising the unsealed area to the north of Great Western Highway as a truck inspection bay and as a staging area for emergency vehicles”.

“We are amazed that there haven’t been more accidents at these intersections.”

“Suggest moving the Disabled Parking to create (or create additional) Disabled Parking in Hunt Street.”

“Access from service station Caltex on back road will lead to people going in to skip Ross Street lights.”

“Why can you not simply lengthen the western right turn lane and fix the weird village intersection?”

“Always lucky enough to get through this one without an issue.”

“Make the road behind GWH one way.”

“I haven’t been that way in two weeks but it looks dangerous.”

“Bore a tunnel; enter from Ross Street exit ramp to Great Western Highway just east of the Native Plant Nursery.”

“If people just followed the road rules it wouldn’t be half as bad!!!!”

“This intersection upgrade was petitioned for at least 20 years before the NSW Government found funding to fix it. That was 8 years ago. So 28 years in the making now.”
Response to other issues

Suggestions of tunnels or other high cost road infrastructure is outside the scope and budget of this proposal. Such suggestions would be difficult to justify and are economically not viable at this time. Formalising the shoulder area to the north of Great Western Highway as a truck inspection station or other similar use requires consideration of a number of factors including operational suitability and safety. This suggestion is also outside the scope and budget of the current proposal, however, Roads and Maritime will review the use of this area and consult the community regarding any future plans. Other suggestions such as parking rationalisation will be referred to Blue Mountains Council for consideration.
3 Environmental management

The REF for the proposal identified the framework for environmental management, including safeguards and management measures that would be adopted to mitigate or reduce environmental impacts (refer to Chapter 7 in the REF).

Following feedback from the Office of Environmental Heritage, one of the measures documented in Table 6.3.3 of the REF, “Safeguards and Management Measures,” is not required. An excerpt from this table is shown below with the measure that is no longer required.

<table>
<thead>
<tr>
<th>Impact</th>
<th>Environmental safeguards</th>
<th>Responsibility</th>
<th>Timing</th>
<th>Standard / additional safeguard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impacts on archaeological resources</td>
<td>Roads and Maritime will confirm with the Office of Environment and Heritage the application of an exception (via a notification under Section 139(4) of the Heritage Act 1977) in relation to potential impacts on subsurface relics that may be present near the Great Western Highway / Ross Street intersection.</td>
<td>Roads and Maritime</td>
<td>Pre-construction</td>
<td>Additional Measure</td>
</tr>
</tbody>
</table>

There was a minor change to the proposal which was not assessed in the REF. This change relates to minor street light re-location work. In this regard, Endeavour Energy has undertaken its own Environment Assessment for the minor street light re-location works within the project footprint and there is no need for additional safeguards. (Endeavour Energy environmental report PLT0986 FAT0038 20170915)

There were no issues raised in the submissions regarding, noise, biodiversity, heritage, visual or other environmental impact that has not already been covered by the REF, so no additional safeguards and management measures will be required.

Should the proposal proceed, environmental management would be guided by the framework and measures outlined in the REF.

3.1 Environmental management plans

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

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

The CEMP will be prepared before construction of the proposal and must be reviewed and certified by Roads and Maritime’s environment staff before the start of any onsite work. The CEMP will be a working document (subject to ongoing change) and updated as necessary to respond to specific requirements. The CEMP would be developed in accordance with the specifications set out in Roads and Maritime’s quality assurance (QA) Specifications:
• G10: traffic management
• G36: environmental protection
• G38: soil and water management

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

As there were no additional environmental issues raised in the public submissions, the environmental management measures for the proposal will be carried out as outlined in the project REF and in the subsequent CEMP.
4 Next Steps

Once the REF is determined and a decision is made to proceed, Roads and Maritime will progress with the implementation and construction of the project. The project would be constructed by an external contractor who has been selected through a competitive tendering process and assessed by a panel of three people including two people from within Roads and Maritime and one independent member from outside Roads and Maritime. It is planned to start construction in early 2018 and be completed by late 2018. The community will be informed of the exact date, of the project commencement, by advertisement placed in the local press and by newsletter distribution in the areas surrounding the project as well as a media statement that will be offered to local newspapers for publication.
5 References


Roads and Maritime, 2008a, G10 Control of Traffic.

Roads and Maritime, 2008b, Landscape Guideline.


Roads and Maritime, 2011a, Guidelines for Biodiversity Offset.


Roads and Maritime, 2012b, Procedure for Aboriginal Cultural Heritage Consultation and Investigation


Roads and Maritime, 2014a, Beyond the Pavement.


Roads and Maritime, 2015, Unexpected Heritage Finds.


Appendix A

Public display notices
Have your say – Glenbrook intersection upgrade

The Australian and NSW Governments are funding this $5 million project to upgrade the Great Western Highway and Ross Street intersection to improve safety and ease congestion.

Roads and Maritime Services is seeking your feedback on the design and Review of Environmental Factors for the Glenbrook intersection upgrade, until Sunday, 12 November 2017.

In December 2015, Blue Mountains City Council displayed three options for public comment for the proposed upgrade. After reviewing the community’s preferred option and comments, we have now developed the design and Review of Environmental Factors for the project.

Key features of the proposal

- New traffic lights at the Great Western Highway and Ross Street intersection with pedestrian crossings
- Right turns permitted from Ross Street onto the Great Western Highway
- Restricting access to the Great Western Highway from Hare Street (south), while maintaining access for emergency vehicles only, with a mountable kerb
- Extending the existing right turn lanes on the Great Western Highway allowing for more vehicles turning right into Ross Street and Hare Street (north)
- New signage, line marking and footpath connections.

How can you give feedback?

We invite your feedback on the proposal by **Sunday, 12 November 2017**. Please send your comments to:

Post: Roads and Maritime Services

PO Box 973

Parramatta NSW 2124

Email: [wsip@rms.nsw.gov.au](mailto:wsip@rms.nsw.gov.au)

Phone: 1800 703 457 (toll free)


It is also available to view in hard copy at:

**Blaxland Library**

33 Hope St, Blaxland

Monday to Friday 10am – 5:30pm

Saturday 9am – 4pm

**Glenbrook Visitor Information Centre**

Hamment Place, Glenbrook

Monday to Saturday 8:30am – 4pm

Sunday 8:30am – 3pm
Contact

If you have any questions, please contact the project team on 1800 703 457 or wsip@rms.nsw.gov.au. For more information on our projects, visit rms.nsw.gov.au/wsip.

Translating and Interpreting Service

If you need an interpreter, please call the Translating and Interpreting Service (TIS National) on 131 450 and ask them to telephone 1800 703 457.