Kosciuszko Road (MR286) Barry Way to Alpine Way Lane Addition
Submissions report
October 2017
Executive summary

Roads and Maritime Services (Roads and Maritime) proposes to build an additional westbound lane on Kosciuszko Road, between Barry Way and Alpine Way. The total length of the proposal would be about 1.6 kilometres. The proposal is located on the western outskirts of Jindabyne, (refer to Map 1-1 and Map 1-2) in the Snowy Monaro Regional Council (SMRC) Local Government Area (LGA).

Key features of the proposal, as presented in the project review of environmental factors (EnviroKey 2017) include:

- Building an additional westbound lane between Barry Way and Alpine Way (about 1.5 kilometres), built wholly within the westbound side of the road
- Relining and extending several culverts
- Repairing the existing road
- Clearing about 0.41 hectares of native vegetation
- Installing new guardrail, kerb and gutter.

The additional westbound lane would reduce the severe traffic congestion experienced on Kosciuszko Road around Jindabyne in busy winter traffic.

The review of environmental factors was placed on public display between 28 July and 18 August 2017. A total of 48 submissions were received. This report summarises the issues raised in the submissions and provides responses to each issue.

Of the 48 submissions, two (4%) objected to the proposal, 37 (77%) supported the proposal and nine (19%) did not offer a position on the proposal.

The key issues raised by respondents, and Roads and Maritime's responses to these issues, are summarised below.

- **Congestion on Barry Way at the Barry Way – Alpine Way roundabout**
  A large number of respondents expressed concerns about the current traffic queuing at the Barry Way roundabout. This traffic build up on Barry Way is caused by the lack of opportunity for vehicles to enter the roundabout due to the high volume of westbound Kosciuszko Road traffic. This problem could potentially get worse once the additional westbound lane is constructed because it would allow Kosciuszko Road traffic to move more freely through the roundabout further reducing merge opportunities for Barry Way.

  Roads and Maritime has considered the potential traffic impact at the roundabout, particularly the impact on the Barry Way traffic entering Kosciuszko Road. Traffic modelling has been carried out to determine the impact the additional lane would have and identify a possible solution.

  The solution Roads and Maritime proposes, and is investigating, is to implement roundabout metering. This would consist of a traffic light on Kosciuszko Road at the westbound approach to the Barry Way roundabout and some line marking changes. The traffic light would periodically stop traffic on Kosciuszko Road to allow Barry Way traffic to enter the roundabout. This traffic light would only be operational in peak periods. Linemarking changes made to Barry Way would allow both lanes to turn left onto Kosciuszko Road. Traffic modelling and assessment has shown this option would significantly improve traffic queues on Barry Way and result in only a minor delay to traffic on Kosciuszko Road.

  These changes could be implemented if required at the end of the project, once the new westbound lane is complete and new traffic patterns have been observed. There is a chance
less traffic will use Barry Way once the westbound lane is built, as Barry Way has anecdotally been used as a “rat run” to avoid queues on Kosciuszko Road.

Roads and Maritime would monitor the traffic flow once the proposal is completed and if it is determined the metering is required, a temporary traffic light would be installed immediately and followed up with the installation of a permanent traffic light soon after.

- **Consideration for a traffic flow management option using the existing three lanes**
  Roads and Maritime considered two options for managing traffic flow on Kosciuszko Road during peak periods, including using traffic control staff or bollards. There were a number of operational safety and maintenance concerns around these options.

  The set up for this two kilometre length would need to be done before the peak traffic period. During winter this would require setting up in the dark as there is no street lighting in the area, which would be an ongoing safety issue for workers and motorists. A speed limit reduction would need to be in place during set up and staff would need to monitor the set up to ensure barriers remain in place throughout operation.

  The bollard type traffic flow arrangement would consist of bollards seated in sockets located on each side of the centre lane. The bollards would be shifted to either side of the centre lane depending on the flow of traffic. The sockets that house the bollard would need regular cleaning, and if not used regularly are likely to result in the bollards being stuck in the sockets. There were also concerns about whether this setup would have issues with snow and ice at this location. Regular patrols and maintenance would be required by staff to ensure the set up is working.

  The potential impact to peak traffic on Kosciuszko Road due to the failure of these systems would be severe.

  Construction of an additional westbound lane would eliminate the ongoing Work Health and Safety risk, with less ongoing operational costs and risks to road users.

  There have been three changes made to the proposal since the public exhibition of the review of environmental factors. These changes are summarised below:

- **The provision for a traffic light if required on Kosciuszko Road at the Barry Way roundabout**
  Roads and Maritime proposes to monitor traffic congestion on completion of the proposal and if required, modify the roundabout at Barry Way to alleviate the congestion on Barry Way caused by the free flowing Kosciuszko Road traffic. These changes would consist of:
  - Changing the line marking on the southern approach to the roundabout (Barry Way) to allow both lanes to turn left. This would convert Barry Way into a dual left turn arrangement
  - Installing a traffic light on the westbound approach to the roundabout (Kosciuszko Road), this traffic light would use a fixed time meter or a queue detector on Barry Way.

- **Revised location of the site compound for construction**
  The review of environmental factors originally proposed to have the site compound for the proposal located across the road from Snowy Mountains Grammar School. In consideration of feedback provided by the school and for practicality, the proposed site compound location has been moved to the westbound side of Kosciuszko Road, 200 metres west of the school entrance (Figure 4-1).

- **Implementation of a ‘rock ramp’ at the Widows Creek outlet to improve aquatic passage**
  The scope of work at the Widows Creek outlet consists of removing non native trees, excavating the channel embankment, backfilling the scour and installing rock protection. The scope of work has been modified to include a rock ramp at the pipe outlet that provides
protection to the creek bed and addresses the requirements of DPI Fisheries. The detailed 
design of the outlet work would be provided to Fisheries before starting outlet work to complete 
the requirements of the section 199 Fisheries Management Act 1994 notification.

One additional assessment has been carried out since the public exhibition of the review of 
environmental factors in response to the submission from DPI Fisheries. An ‘Assessment of 
significance’ has been undertaken to assess the potential impact from the proposal on the Snowy 
River Aquatic endangered ecological community (EEC). The assessment determined the proposal 
would ‘unlikely’ have a ‘significant’ impact on the Snowy River Aquatic EEC, therefore no Species 
Impact Statement is required. The assessment is located in Appendix 1.

Two safeguards and mitigation measures have resulted from the changes to the review of 
environmental factors and additional assessments. These are summarised below:

<table>
<thead>
<tr>
<th>Impact</th>
<th>Environmental safeguard</th>
<th>Responsibility</th>
<th>Timing</th>
</tr>
</thead>
</table>
| Traffic  | • Post completion traffic monitoring must be carried out at the Barry Way roundabout at 
          the start of the snow season to verify traffic modelling and identify any traffic 
          management modifications required to ensure traffic efficiency.               | Project Manager| Prior to completion         |
| Biodiversity | • Detailed design of the pipe outlet remediation must be submitted to DPI Fisheries for review and comment prior to starting work on the Widows Creek outlet. | Project Manager| Prior to work at Widows Creek outlet |

The environmental safeguards are shown in table 3-1 of this report.
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Appendix 1 Additional assessment for site compound and seven part test by EnviroKey
1 Introduction and background

1.1 The proposal

Roads and Maritime Services (Roads and Maritime) propose to construct an additional westbound lane on Kosciuszko Rd between Barry Way and Alpine Way. The total length of the proposal would be about 1.6 kilometres. The proposal is located on the western outskirts of Jindabyne, (refer to Map 1-1 and Map 1-2) in the Snowy Monaro Regional Council (SMRC) local government area (LGA), previously the Snowy River LGA.

Key features of the proposal would include:
- Constructing an additional westbound lane between Barry Way and Alpine Way (approximately 1.5 kilometres), constructed wholly within the westbound side of the road
- The relining and extension of several culverts
- Rehabilitation of existing road
- Improving the stability to two large cutting batters through benching, scaling and blasting
- Clearing about 0.41 hectares of native vegetation
- Installation of new guardrail, kerb and gutter.

A more detailed description of the Kosciuszko Rd, Barry Way to Alpine Way lane addition proposal is found in the Kosciuszko Rd, Barry Way to Alpine Way lane addition Review of Environmental Factors, prepared by EnviroKey in July 2017. The review of environmental factors can be found on the project website: rms.nsw.gov.au/mko
Map 1-1: Regional location of the proposal.
Map 1-2: Location of the proposal.
1.2 Review of environmental factors display

Roads and Maritime prepared a review of environmental factors to assess the environmental impacts of the proposed works. The review of environmental factors was publically displayed for 21 days between 28 July 2017 and 18 August 2017 at two locations, as detailed in Table 1.1. The review of environmental factors was placed on the Roads and Maritime project website and made available for download. The display locations and website link were advertised in the Monaro Post.

A letter was provided to residents and businesses in Jindabyne prior to the consultation period. A VMS board was also placed at the Kosciuszko Rd, Barry Way roundabout to inform passing motorists.

Table 1.1: Display locations

<table>
<thead>
<tr>
<th>Location</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Snowy Monaro Regional Council</td>
<td>2/1 Gippsland Street, Jindabyne</td>
</tr>
<tr>
<td>Snowy Region Visitor Centre</td>
<td>49 Kosciuszko Road, Jindabyne</td>
</tr>
</tbody>
</table>

1.3 Purpose of the report

This submissions report relates to the review of environmental factors prepared for the Kosciuszko Road, Barry Way to Alpine Way lane addition, and should be read in conjunction with that document.

The review of environmental factors was placed on public display and submissions relating to the proposal and the REVIEW OF ENVIRONMENTAL FACTORS were received by Roads and Maritime. This submissions report summarises the issues raised and provides responses to each issue (Chapter 2). It details investigations carried out since finalisation of the review of environmental factors (Chapter 3), describes and assesses the environmental impact of changes to the proposal (Chapter 4) and identifies new or revised environmental management measures (Chapter 5).
2 Response to issues

Roads and Maritime Services received 48 submissions, accepted up until the 18th August. Table 2.1 lists the respondents and each respondent’s allocated submission number. The table indicates the key issues from each submission. These are addressed in section 2.2 - 2.9 of this report.

Table 2.1: Respondents

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Submission No.</th>
<th>Issues raised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>1</td>
<td>Suggestion to utilise the existing three lanes in a traffic flow management arrangement</td>
</tr>
<tr>
<td>Individual</td>
<td>2</td>
<td>Concerns about the current congestion at Alpine Way</td>
</tr>
<tr>
<td>Business</td>
<td>3</td>
<td>Supportive of the proposal</td>
</tr>
<tr>
<td>Business</td>
<td>4</td>
<td>Supportive of the proposal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prefers option 2</td>
</tr>
<tr>
<td>Individual</td>
<td>5</td>
<td>Supportive of the proposal</td>
</tr>
<tr>
<td>Individual</td>
<td>6</td>
<td>Concerns about congestion on Barry Way at the Roundabout</td>
</tr>
<tr>
<td>Individual</td>
<td>7</td>
<td>Supportive of the proposal</td>
</tr>
<tr>
<td>Individual</td>
<td>8</td>
<td>Supportive of the proposal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Would like the additional lane completed prior to the 2018 Ski season</td>
</tr>
<tr>
<td>Individual</td>
<td>9</td>
<td>Supportive of the proposal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Issues raised outside of scope:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Limited facilities for pedestrians to cross Kosciuszko Road</td>
</tr>
<tr>
<td>Individual</td>
<td>10</td>
<td>Supportive of the proposal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No roadwork through the snow season</td>
</tr>
<tr>
<td>Individual</td>
<td>11</td>
<td>Not supportive of the proposal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Issues raised outside of scope:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The money needs to be spent on local road maintenance</td>
</tr>
<tr>
<td>Individual</td>
<td>12</td>
<td>Concerned local aboriginal Elders were not consulted in the development of the proposal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>REVIEW OF ENVIRONMENTAL FACTORS needs to be displayed in Cooma</td>
</tr>
</tbody>
</table>

Kosciuszko Road (MR286) Barry Way to Alpine Way lane addition
Submissions Report
<table>
<thead>
<tr>
<th>Respondent</th>
<th>Submission No.</th>
<th>Issues raised</th>
</tr>
</thead>
</table>
| Individual | 13             | Supportive of the proposal  
The proposal needs to include traffic signs to indicate the correct lane to be in well in advance of the Alpine Way intersection  
Proposal should include fauna fencing  
Heavy traffic makes it difficult to turn right onto Kosciuszko Rd |
| Individual | 14             | Suggestion to utilise the existing three lanes in a traffic flow management arrangement                                                      |
| Individual | 15             | Supportive of the proposal  
Concerns about congestion on Barry Way at the roundabout  
Lack of opportunities for vehicles to merge onto Kosciuszko Road from side roads around Jindabyne due to high traffic |
| Individual | 16             | Supportive of the proposal  
Concerns about congestion on Barry Way at the roundabout |
| Individual | 17             | Supportive of the proposal                                                                                                                                 |
| Individual | 18             | Supportive of the proposal  
Concerns about congestion on Barry Way at the roundabout |
| Individual | 19             | Concerns about congestion on Barry Way at the roundabout                                                                                                                                 |
| Individual | 20             | Supportive of the proposal  
Concerns about the removal of Native trees  
Proposal should include Fauna underpasses  
Issues raised out of scope:  
- Limited facilities for pedestrians to cross Kosciuszko Road |
<table>
<thead>
<tr>
<th>Respondent</th>
<th>Submission No.</th>
<th>Issues raised</th>
</tr>
</thead>
</table>
| Individual | 21             | Can the breakdown of the overall cost of the proposal be provided  
|            |                | There needs to be more community consultation  
|            |                | Suggestion to utilise the existing three lanes in traffic flow management arrangement |
| Business   | 22             | Supportive of the proposal  
|            |                | Concerns about congestion on Barry Way at the roundabout  
|            |                | Concerns about current driver awareness and congestion at Alpine Way |
| Individual | 23             | Supportive of the proposal  
|            |                | Concerns about congestion on Barry Way at the roundabout |
| Individual | 24             | Not supportive of the proposal  
|            |                | Concerns about congestion on Barry Way at the roundabout |
| Business   | 25             | Supportive of the proposal  
|            |                | The proposal needs to include signage to indicate the correct lane to be in well in advance of the Alpine Way intersection |
| Individual | 26             | Supportive of the proposal |
| Individual | 27             | Supportive of the proposal  
|            |                | Concerns about the current congestion on Alpine Way turning onto Kosciuszko Road  
|            |                | Concerns about congestion on Barry Way at the roundabout |
| Individual | 28             | Supportive of the proposal |
| Individual | 29             | Supportive of the proposal |
| Individual | 30             | Issues raised out of scope:  
<p>|            |                | • There needs to be a rail service from the ACT to Jindabyne via Cooma |</p>
<table>
<thead>
<tr>
<th>Respondent</th>
<th>Submission No.</th>
<th>Issues raised</th>
</tr>
</thead>
</table>
| Individual | 31 | Supportive of the proposal  
Concerns about congestion on Barry Way at the roundabout  
Issues raised out of scope:  
- Traffic on Reedys Cutting Road is getting worse with each new development, new developments need an separate access on to Barry Way |
| Individual | 32 | Supportive of the proposal  
Would like the additional lane completed prior to the 2018 Ski season |
| Business | 33 | Suggestion to utilise the existing three lanes in a traffic flow management arrangement  
Concerns about current driver awareness and congestion on Alpine Way turning onto Kosciuszko Road  
Issues raised outside of scope:  
- Drainage on Kosciuszko Road south of the Alpine Way intersection drains uncontrolled to Lake Jindabyne causing erosion |
| Individual | 34 | Suggestion to utilise the existing three lanes in a traffic flow management arrangement |
| Individual | 35 | Supportive of the proposal  
Concerns about congestion on Barry Way at the roundabout forcing road users to use local roads to access Jindabyne |
| Individual | 36 | Supportive of the proposal  
Wants to retain pull over area just west of the school  
Wants stormwater treatment devices incorporated into the proposal |
| Business | 37 | Wants the area outside the school a 'no stopping zone'  
Wants to retain right turns out of the school onto Kosciuszko Road  
Concerns about the location of the site compound being across from the School entrance |
<table>
<thead>
<tr>
<th>Respondent</th>
<th>Submission No.</th>
<th>Issues raised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>38</td>
<td>Requested the cost comparison be made available on the options provided in the review of environmental factors&lt;br&gt;The high cost does not justify the benefit for such a limited number of days&lt;br&gt;Prefers proposed option 4 to utilise the existing three lanes in traffic flow management in peak periods&lt;br&gt;The proposal has no justification improving regional road safety and there are other sections of Kosciuszko road where improving road safety would be a much higher priority&lt;br&gt;No data is provided on the improved travel times in the review of environmental factors</td>
</tr>
<tr>
<td>Individual</td>
<td>39</td>
<td>Supportive of the proposal&lt;br&gt;Concerns about driveways and intersections being blocked by busy traffic on Kosciuszko Road&lt;br&gt;Concerns about congestion on Barry Way at the roundabout and the lack of opportunities for vehicles to enter the roundabout from Barry Way&lt;br&gt;Wants more public transport to access the Ski fields from Jindabyne</td>
</tr>
<tr>
<td>Individual</td>
<td>40</td>
<td>Concerns about congestion on Barry Way at the Roundabout and the lack of opportunities for vehicles to enter the roundabout from Barry Way</td>
</tr>
<tr>
<td>Individual</td>
<td>41</td>
<td>Supportive of the proposal&lt;br&gt;Wants to retain the pull over area just west of the school</td>
</tr>
<tr>
<td>Individual</td>
<td>42</td>
<td>Supportive of the proposal</td>
</tr>
<tr>
<td>Individual</td>
<td>43</td>
<td>Supportive of the proposal</td>
</tr>
<tr>
<td>Individual</td>
<td>44</td>
<td>Supportive of the proposal</td>
</tr>
<tr>
<td>Individual</td>
<td>45</td>
<td>Supportive of the proposal</td>
</tr>
<tr>
<td>Individual</td>
<td>46</td>
<td>Supportive of the proposal</td>
</tr>
<tr>
<td>Respondent</td>
<td>Submission No.</td>
<td>Issues raised</td>
</tr>
<tr>
<td>------------</td>
<td>----------------</td>
<td>---------------</td>
</tr>
</tbody>
</table>
| Organisation | 47 | Supportive of the proposal  
Concerns around erosion and sediment control implementation  
Concerns around construction work impacting access to the sailing club |
| Agency | 48 | The biodiversity assessment for the proposal has not identified that Widows creek forms part of the Snowy River Aquatic EEC. To comply with legislative requirements, a test of significance of ‘7 part test’ on the potential impact of the works on the Snowy River Aquatic EEC needs to be completed.  
The current culvert outlet does not allow the passage of fish/aquatic biota. The proposed works to the culvert outlet should include a 5:1 rock ramp tying the culvert outlet to the downstream bed. |

### 2.1 Overview of issues raised

A total of 48 submissions were received in response to the display of the review of environmental factors. This included submissions from 1 Agency, 5 organisations and businesses and 42 from the community.

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

Of the 48 submissions made, 2 (4%) objected to the proposal, 37 (77%) supported the proposal and 9 (19%) did not offer a position on the proposal.

### 2.2 Congestion on Barry Way at the roundabout

**Submission number(s)**  
6, 15, 18, 19, 23, 24, 27, 31, 35, 39, 40

**Issue description**

- Traffic on Barry Way entering Kosciuszko Road tends to build up significantly on busy days. This is due to the vehicles on Barry Way not getting an opportunity to enter the roundabout.  
- Vehicles are currently only able to ‘merge’ into the roundabout due to the slow ‘bottlenecked’ traffic on Kosciuszko Road
• Once the bottleneck is removed from Kosciuszko Road, the ability for vehicles to enter the roundabout would be even worse due to the faster flowing traffic on Kosciuszko Road
• Impatient commuters on Barry Way would take extra risks to enter the roundabout adding a safety risk

Response

Roads and Maritime has considered the potential traffic impacts at the roundabout, particularly the impacts on the Barry Way traffic entering Kosciuszko Road. Traffic modelling has been carried out to determine the impacts that the additional lane would have and identify a possible solution.

The solution Roads and Maritime proposes, and is investigating, is to implement roundabout metering. This would consist of a traffic light on Kosciuszko Road at the westbound approach to the Barry Way roundabout and some line marking changes. The traffic light would periodically stop traffic on Kosciuszko Road to allow Barry Way traffic to enter the roundabout. The traffic light would only be operational in peak periods. The linemarking changes would allow both lanes of Barry Way to turn left onto Kosciuszko Road. Traffic modelling and assessment has shown this option would significantly improve traffic queues on Barry Way and result in only a minor delay to traffic of Kosciuszko Road.

These changes could be implemented if required at the end of the project, once the new west bound lane is complete and new traffic patterns have been observed. There is a chance that less traffic will use Barry Way once the west bound lane is built, as Barry Way has anecdotally been used as a “rat run” to avoid queues on Kosciuszko Road.

Roads and Maritime would monitor the traffic flow once the proposal is completed and if it is determined that the metering is required, a temporary traffic light would be installed immediately and followed up with the installation of a permanent solution soon after.

2.3 Consideration of a reversible lane (traffic flow management) option

Submission number(s)
1, 13, 14, 21, 33, 34

Issue description

• Not enough consideration is shown in the review of environmental factors toward implementing a ‘traffic flow management’ arrangement in which the middle lane of the existing three lanes on Kosciuszko road could be modified on a daily basis in peak periods to accommodate the flow of traffic in the morning and afternoon.
• A traffic flow management could be implemented quicker and cheaper than the proposed option

Response

Roads and Maritime considered two options of a ‘traffic flow management’ on Kosciuszko Road during peak periods. This would use either traffic controllers or bollards to control the traffic. There were a number of operational safety and maintenance concerns regarding these options.

The set up for this 2km length would need to be done prior to the peak traffic period. During winter this would require setting up in the dark as there is no street lighting in the area, which would be an
ongoing safety issue for workers and motorists. A speed limit reduction would be in place during set up and staff would need to monitor the set up to ensure barriers remain in place throughout operation.

The bollard type ‘traffic flow management’ arrangement would consist of bollards seated in sockets located on each side of the centre lane. The bollards would be shifted to either side of the centre lane depending on the flow of traffic. The sockets that house the bollard would need regular cleaning, and if not used regularly are likely to result in the bollards being stuck in the sockets. There were also concerns about whether this setup would have issues with snow and ice at this location. Regular patrols and maintenance would be required by staff to ensure the setup is working.

The potential impact to peak traffic on Kosciuszko Road due to the failure of these systems would be severe.

Construction of an additional westbound lane would eliminate the ongoing Work Health and Safety risk, with less ongoing operational costs and risks to road users.

### 2.4 Completion date

**Submission number(s)**
8, 32

**Issue description**
- Can the construction of the additional westbound lane be completed prior to the 2018 ski season

**Response**

The proposal consists of an extensive scope of works including significant earthworks, rehabilitating the existing culvert at Widows Creek and rehabilitation to the existing road in the form of an overlay.

The risks have been considered in the construction program and could cause delays to the completion date:

- Extensive earthworks with unpredictable geology
- Adverse weather such as wind, fog and rain
- Cold weather at a time in the construction project that requires warm weather, such as road sealing in the cold months of April and May.

Roads and Maritime will make every effort to complete the work as soon as possible in order to limit impacts on road users. However, due to the reasons stated above, it is hard to give assurance that work will be completed in time for the 2018 snow season. Roads and Maritime would ensure that Kosciuszko Road returns to its full operation for the 2018 snow season if work is not completed.
2.5  Biodiversity

2.5.1  Fauna fencing and crossings

Submission number(s)
13, 20

Issue description
• The proposal needs to consider the implementation of fauna fencing to reduce the amount of animals hit by traffic

Response
Fauna fencing is typically employed where there are threatened and endangered species present and at risk of being hit by traffic. It is designed in conjunction with other fauna connectivity infrastructure such as fauna underpasses or rope bridges. Fauna fencing has not been included in this proposal as there is not a specific fauna connectivity issue identified that would be mitigated by the installation of fencing and fauna connectivity infrastructure.

2.5.2  Removal of native vegetation and habitat

Submission number(s)
20, 38

Issue description
• Snow Gums grow slowly around Jindabyne, the removal of Snow Gums should be replaced with new ones
• The impacts on threatened species is understated as altitudinal migrant bird species potential habitat would be removed
• The removal of wildlife habitat should be offset by the re-incorporation of boulders and woodland habitat nearby

Response
Section 6.1 of the review of environmental factors assessed the potential impacts on biodiversity from the proposal. The existing potential habitat that would be impacted by the proposal was found to be relatively low. The project would require a total of 0.41 ha of native vegetation to be removed and, given its proximity to the road and that larger, higher quality woodland remnants occur in the general locality, the impact was considered to be relatively minor. The review of environmental factors and Biodiversity assessment also noted that it is unlikely that migratory species listed on the EPBC Act could occur. No offsetting would be carried out as the impacts to the native vegetation and potential habitat did not trigger the need for offsetting.
2.5.3 Widows Creek - Snowy River Aquatic EEC and Fish passage

Submission number(s)
48

Issue description

- The biodiversity assessment for the proposal has not identified that Widows creek forms part of the Snowy River Aquatic EEC. To comply with legislative requirements, a test of significance of ‘7 part test’ on the potential impact of the works on the Snowy River Aquatic EEC needs to be completed.
- The current culvert outlet does not allow the passage of fish/aquatic biota. The proposed works to the culvert outlet should include a 5:1 rock ramp tying the culvert outlet to the downstream bed.

Response

In response to the submission raised by DPI Fisheries, an additional study has been undertaken to assess the potential impact from the proposal on the Snowy River Aquatic EEC. This study included a test of significance ('7 part test') on the potential impact on the Snowy River Aquatic EEC. The assessment determined that the proposal would ‘unlikely’ have a ‘significant effect’ on the Snowy River Aquatic EEC, therefore no Species Impact Statement is required. The Assessment of Significance is located in appendix 1.

The scope of works at the Widows Creek outlet consists of removing non native trees, excavating the channel embankment and backfilling the scour and installing rock protection. The scope of work has been modified and clarified to include a 5:1 rock ramp at the culvert outlet that provides scour protection and addresses the requirements of DPI Fisheries. The detailed design of the outlet work would be provided to fisheries prior to starting outlet work to complete the requirements of the section 199 Fisheries Management Act 1994 notification.

2.6 Improvements to Alpine Way intersection

Submission number(s)
22, 27, 33

Issue description

- Traffic queues up on the Alpine Way trying to turn right on to Kosciuszko Road
- Some drivers currently experience confusion turning right from Alpine Way onto Kosciuszko Road as they are unaware of the dedicated right turn slip lane on Kosciuszko Road
- Vehicles wait unnecessarily for a gap in the Kosciuszko Road traffic from Perisher to turn right onto Kosciuszko Road, the right turn slip lane needs to be made more prominent
- Recommend incorporating a roundabout at Alpine Way into the scope of works

Issue Response

The suggestion to improve the intersection of Alpine Way and Kosciuszko Road falls outside the objectives of this specific proposal, which aims to improve traffic efficiency on Kosciuszko Road. Motorists turning right onto Kosciuszko Road currently have a dedicated turning lane. There is also no significant crash history at this intersection. Signage on Alpine Way has been reviewed and is typical for this type of intersection.
2.7 Aboriginal stakeholder consultation

Submission number
12

Issue description

- Why weren’t the Ngarigo Elders invited to be part of this proposal

Issue Response

The Procedure for Aboriginal Cultural Heritage Consultation and Investigation, and the Due Diligence Assessment are located in appendix 5 of the review of environmental factors relating to the impact on Aboriginal Cultural Heritage.


As part of this process, Roads and Maritime undertook a preliminary assessment and carried out a site walkthrough with NSW Archaeology and a representative from the Bega Local Aboriginal Land Council in order to determine the presence of; or potential for any Aboriginal objects.

The outcome of the Procedure for Aboriginal Cultural Heritage Consultation and Investigation determined that the proposal was unlikely to have an impact on Aboriginal Cultural Heritage. If the preliminary assessment and walkthrough did find that an impact to Aboriginal Cultural Heritage is expected, the next step in the procedure would have been to seek and notify all Aboriginal people who may have an interest in the proposal. Targeted consultation with the Ngarigo elders and other Aboriginal stakeholders would have occurred at this stage.

2.8 Additional issues raised related to the proposal

2.8.1 Retention of pull over area west of the school

Submission number
36, 41

Issue description

- The current pull over area just west of the school is a well established pickup point for hitchhikers
- The layby provides a safe area for people to wait and for lifts and for vehicles pulling off the road
- Police also utilise this area for speed tests, pulling over traffic and RBTs
- Ensure the layby / pick-up area is retained with the proposal

Issue Response

It is proposed to retain the pull over area as part of the proposal
2.8.2 Need for advanced warning on the correct lane to be in

Submission number
13, 25

Issue description

- Vehicles will need to know the correct lane to be in well in advance of the Alpine Way intersection to prevent last minute erratic merging manoeuvres
- This is currently not a problem due to one lane, but will be a problem introduced by having two lanes of traffic

Issue Response

As part of the proposal, signage along Kosciuszko Road between Barry Way and Alpine Way will be upgraded. The upgrade would include the replacement of existing signs and the installation of additional signs well in advance of the Alpine Way turn off.

2.8.3 Proposed site compound location

Submission number
37

Issue description

- Due to large vehicle movements and turns around the school the proposed site compound area should not be opposite the school

Issue Response

The proposed site compound location across the road from the school will be moved up to the existing pull over area on the westbound side of the road.

2.8.4 Stormwater treatment around the proposal

Submission number
36, 47

Issue description

- Major works present an ideal opportunity to construct stormwater treatment devices to treat runoff before it enters into the lake.
- Vegetation clearing and earthworks will increase the risk of erosion and sediment potentially leaving site and blocking up downstream water ways / culverts or running-off into Lake Jindabyne

Issue Response

Operational water quality devices can be employed where road stormwater discharges are in close proximity to sensitive receiving environments, and the impact of a pollution event is high. This proposal is not immediately adjacent to Lake Jindabyne, however, it does cross Widows Creek which feeds into the lake. The construction of operational water quality devices is outside of the scope of this project. Minor modifications to the design will be investigated to include grass swales before the culvert inlets where possible.
An Erosion and Sediment Control Plan prepared in accordance with *Managing Urban Stormwater: Soils and Construction (DECC 2008)* is required for the project. The ESCP would be prepared specifically to ensure water discharges from the construction site would not impact on the water quality objective of Lake Jindabyne.

### 2.8.5 Increase public transport

**Submission number**

30, 38, 39

**Issue description**

- The area needs a regular public transport system to access the ski fields.
- The provision for a shuttle bus and increased use of the ski tube should be considered.
- A rail service between ACT and Jindabyne (via Cooma) should be considered as a long term solution to traffic and safety along the Monaro Hwy and Kosciuszko Road.

**Issue Response**

Increasing public transport falls outside the scope of this specific proposal. These recommendations have been forwarded to the appropriate department within Transport for NSW for consideration.

### 2.9 Issues outside of scope

#### 2.9.1 Pedestrian crossings on Kosciuszko Road

**Submission number**

9,20

**Issue description**

- It is very difficult for pedestrians to cross Kosciuszko Road in Winter due to the high traffic volumes.
- There needs to be more pedestrian crossing facilities to accommodate pedestrians on Kosciuszko Road around Jindabyne.
- Pedestrian underpasses should be installed on Kosciuszko Road.

**Issue Response**

The suggestion to improve pedestrian crossing opportunities along Kosciuszko Road falls outside the objectives of this specific proposal, which aims to improve the traffic efficiency.

#### 2.9.2 Maintenance of local roads

**Submission number**

11

**Issue description**

- More money needs to be repairing and maintaining local roads.
- The local roads around Jindabyne are very rutted and potholed.
Issue Response

Roads and Maritime is responsible for the management of State roads, in this case Kosciuszko Road. Local roads around Jindabyne are managed and maintained by Snowy Monaro Regional Council. Issues relating to defects on local roads are managed by Snowy Monaro Regional Council and are outside the scope of this project.

2.9.3 Traffic management around the Snowy Mountains Grammar School

Submission number

37

Issue description

- The right hand turn out of Snowy Mountains Grammar School onto Kosciuszko Road should be retained.
- Vehicles park out in the shoulders around the front of the School obstructing views for other motorists. The areas out the front of the school should be dedicated ‘no stopping’ zone.

Issue Response

No modifications are planned to the entrance and front of the Snowy Mountains Grammar School. Right hand turns out of the school would be retained during and after the proposal, unless significant safety concerns arise.
3  Additional assessment

3.1  Impact on Snowy River Aquatic EEC

3.1.1  Summary

One additional assessment has been carried out since the public exhibition of the review of environmental factors in response to the submission from DPI Fisheries. An ‘Assessment of significance’ has been undertaken to assess the potential impact from the proposal on the Snowy River Aquatic EEC. The assessment determined that the proposal would ‘unlikely’ have a ‘significant’ impact on the Snowy River Aquatic EEC, therefore no Species Impact Statement is required. The assessment is located in appendix 1.

3.1.2  Additional management and mitigation measures

The assessment identified there is no need for additional management and mitigation measures.
4 Changes to the proposal

4.1 Provision for metering at the Barry Way roundabout

4.1.1 Description

The review of environmental factors did not discuss or assess ongoing traffic impacts on Barry Way as a result of the proposal. Traffic modelling has shown a potential for increased congestion on Barry Way once the proposal is completed.

Roads and Maritime propose to monitor traffic congestion upon completion of the proposal and if required, modify the roundabout at Barry Way to alleviate the congestion on Barry Way caused by the free flowing Kosciuszko Road traffic. These changes would consist of:

- Changing the line marking on the southern approach to the roundabout (Barry Way) to allow both lanes to turn left. This would effectively convert Barry Way into a dual left turn arrangement
- Installing a traffic light on the eastbound approach to the roundabout (Kosciuszko Road), this traffic light would either use a fixed time meter or a queue detector on Barry Way.

These modifications would periodically stop traffic on Kosciuszko Road to allow traffic on Barry Way to enter the roundabout. This traffic light would only be operational during winter.

4.1.2 Environmental assessment

The proposed work would consist of linemarking changes on Barry Way and the installation of a traffic light, signage and stop line on Kosciuszko Road. A small trench would also be excavated if a queue detector is installed on Barry Way.

This work would be contained within the ‘disturbed zone’ of the existing road. The proposed work would not have an impact on environmental factors other than traffic and noise.

Traffic

Once the additional lane is completed on Kosciuszko Road, there is potential for traffic on Barry Way to experience higher congestion and longer travel times. This is because traffic on Barry Way would be less able to access the roundabout due to the free flowing Kosciuszko Road traffic. To address this, a plan would be implemented to monitor traffic and modify the roundabout at Barry Way if required.

Work at the roundabout that would impact traffic would not be carried out during winter. The work would require a lane closure, there may also be stop slow required which would cause delays up to 5 minutes. Work would take approximately 3 days to complete.

Noise

The Barry Way roundabout is located within 150m of residents and a school. Given the relatively short duration of work and the implementation of the safeguards in the review of environmental factors, no significant impact would like result from the work.
4.1.3 Revised management and mitigation measures

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<tr>
<th>Impact</th>
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<th>Responsibility</th>
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<tr>
<td>Traffic</td>
<td>• Post completion traffic monitoring must be carried out at the Barry Way roundabout at the commencement of the snow season to verify traffic modelling and identify any traffic management modifications required to ensure traffic efficiency.</td>
<td>Project manager</td>
<td>Prior to completion</td>
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4.2 Relocation of the proposed site compound location

4.2.1 Description

The review of environmental factors originally proposed to have the site compound for the proposal located across the road from Snowy Mountains Grammar School. In consideration of feedback provided by the school and for practicality, the proposed site compound location has been moved to the westbound side of Kosciuszko Road, 200m west of the school entrance (Figure 4-1).

Figure 4-1 – Revised site compound location
4.2.2 Environmental assessment

The revised site compound area falls outside the area of investigation carried out in the review of environmental factors. An additional assessment was carried out to determine potential additional impacts and check consistency of the proposed site compound with the review of environmental factors and biodiversity assessment. This assessment is located in appendix 1.

The revised site compound location would not result in additional impacts to traffic, noise, waste, Aboriginal heritage, Non-Aboriginal Heritage, socio-economics, Landscape character and visual amenity.

Biodiversity

The proposed site compound area would be located in cleared/disturbed land best described as non-native vegetation. This is consistent with the findings of the review of environmental factors and Biodiversity Assessment in that the majority of the Area of Investigation comprises non-native vegetation. The proposed compound area would result in the removal of 0.26 hectares of non-native vegetation. The loss of 0.26 hectares of non-native vegetation is ‘unlikely’ to have a ‘significant effect’ on threatened species, population, communities or their habitat.

Soil, water and air quality

The site compound area would result in a larger area of cleared land, potentially increasing the amount of erosion from rain and wind. The site compound area would be stabilised with a ‘hard stand’ area and the safeguards proposed in the review of environmental factors would adequately address this increased compound size.

4.2.3 Revised management and mitigation measures

The additional assessment identified that the existing safeguards in the review of environmental factors adequately address the additional scope of works and no additional safeguards are warranted.

4.3 Rock ramp at Widows Creek outlet

4.3.1 Description

The existing environment at the Widows Creek outlet is heavily scoured creating a ‘waterfall’ effect which has created a barrier to the passage of fish/aquatic biota. DPI Fisheries have requested that the scour at the Widows Creek downstream outlet be rehabilitated to reinstate fish/aquatic biota passage in accordance with DPI Fisheries Policy & Guideline document: Policy and Guidelines for Fish Habitat Conservation and Management (Update 2013). The build up of exotic trees and a rock are also creating a barrier for water to release from the outlet, promoting the amount of scour occurring at the outlet and road formation.

The proposed work would consist of:

- Removing the non-native trees immediately downstream of outlet
- Removing about 5m3 of rock and sediment
- Concreting cut off wall to prevent further scour of the outlet apron
- Backfill with rock up to invert level of the outlet apron
- Design and construction of a 5:1 rock ramp tying the culvert outlet to the downstream bed in consultation with DPI Fisheries

4.3.2 Environmental assessment

The existing environment at Widows Creek outlet was assessed as part of the review of environmental factors and biodiversity assessment. The vegetation is mostly dominated by introduced species and the aquatic habitat was considered to be low quality. There is currently
significant scouring at the Widows creek outlet resulting in a 1-1.5m step from the culvert outlet to the creek bed below. This ‘step’ is currently creating a barrier for fish passage within the Widows Creek.

The proposed work would not result in additional impacts to traffic, noise, waste, Aboriginal heritage, Non-Aboriginal Heritage, socio-economics, landscape character and visual amenity.

The proposed work is unlikely to have an impact to biodiversity during work, the existing environment and potential impacts are consistent with the assessment in the review of environmental factors and biodiversity assessment. The proposed work would have a positive long term impact to biodiversity due to the removal of weeds and construction of rock scour protection and ramp.

The potential impact to soil and water are consistent with the review of environmental factors.

### 4.3.3 Revised management and mitigation measures

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<tr>
<td>Biodiversity</td>
<td>• Detailed design of the culvert outlet remediation must be submitted to DPI Fisheries for review and comment prior to starting work on the Widows Creek outlet.</td>
<td>Project Manager</td>
<td>Prior to work at Widows Creek outlet</td>
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Kosciuszko Road (MR286) Barry Way to Alpine Way lane addition
Submissions Report
5 Environmental management

The review of environmental factors for the Kosciuszko Road, Barry Way to Alpine Way lane addition identified the framework for environmental management, including safeguards and management measures that would be adopted to avoid or reduce environmental impacts (section 7 of the review of environmental factors).

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

5.1 Environmental management plans (or system)

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

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

The CEMP will be prepared prior to construction of the proposal and must be reviewed and certified by environment staff, southern region, prior to the commencement of any on-site works. The CEMP will be a working document, subject to ongoing change and updated as necessary to respond to specific requirements. The CEMP would be developed in accordance with the specifications set out in the QA Specification G36 – Environmental Protection (Management System), QA Specification G38 – Soil and Water Management (Soil and Water Plan), QA Specification G40 – Clearing and Grubbing and QA Specification G10 - Traffic Management.

5.2 Summary of safeguards and management measures

The review of environmental factors for the Kosciuszko Road, Barry Way to Alpine Way lane addition 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 of the review of environmental factors) have been revised. Should the project proceed, the environmental management measures in Table 3.1 will guide the subsequent phases of the Kosciuszko Road, Barry Way to Alpine Way lane addition development. Additional environmental safeguards and management measures to those presented in the review of environmental factors have been underlined.
Table 3.1: Summary of environmental safeguards and management measures

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| 1   | General | • All environmental safeguards must be incorporated within the following:  
• Detailed design stage  
• Contract specifications for the proposal  
• Construction Environmental Management Plan  
• Environmental Work Method Statements | Project manager                    | Pre-construction                  |
| 2   | General | • A risk assessment must be carried out on the proposal in accordance with the Roads and Maritime Services Project Pack and PMS risk assessment procedures to determine an audit and inspection program for the work. The recommendations of the risk assessment are to be implemented  
• A review of the risk assessment must be carried out after the initial audit or inspection to evaluate if the level of risk chosen for the project is appropriate  
• The proposal will be subject to environmental audit(s) and/or inspection(s) at any time during construction. | Project manager and regional environmental staff | Pre-construction | After first audit |
| 3   | General | • The environmental contract specification must be forwarded to the Roads and Maritime Services Environment Manager Southern Region for review at least 10 working days prior to the tender stage  
• A contractual hold point must be maintained until the CEMP is reviewed by the Roads and Maritime Services Environment Manager Southern Region. | Project manager                    | Pre-construction                  |
<p>| 4   | General | • The Roads and Maritime Services Project Manager must notify the Roads and Maritime Services Environment Officer Southern Region at least ten working days prior to work commencing. | Project manager                    | Pre-construction                  |
| 5   | General | • All businesses and residences likely to be affected by the proposed work must be notified at least 10 working days prior to the commencement of the proposed activities. | Project manager                    | Pre-construction                  |</p>
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<tr>
<td>6</td>
<td>General</td>
<td>- At induction environmental awareness training must be provided, by the contractor, to all field personnel and subcontractors&lt;br&gt;- Ongoing environmental toolbox discussions will be provided by the Contractor as the work progresses.</td>
<td>Contractor</td>
<td>Pre-construction and during construction as required.</td>
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<tr>
<td>7</td>
<td>General</td>
<td>- Any change in the project scope of works must be reviewed by the regional environment section to assess consistency with the project environmental assessment and approval.</td>
<td>Project Manager, Roads and Maritime Environmental Officer, Site Manager</td>
<td>Pre-construction, construction and operation</td>
</tr>
<tr>
<td>8</td>
<td>Removal of native vegetation</td>
<td>- Exclusion zones must be established around any areas of TEC that are outside the limit of clearing. &lt;br&gt;- Should disturbed soil within the proposal footprint (such as cuttings) be exposed for lengthy periods, these areas will be stabilised using an appropriate seeding mix to minimise potential erosion impacts.</td>
<td>Contractor</td>
<td>Construction</td>
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<tr>
<td>10</td>
<td>Removal of threatened species habitat and habitat features</td>
<td>- Habitat removal must be carried out in accordance with Guide 4: Clearing of vegetation and removal of bushrock of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA 2011).</td>
<td>Contractor</td>
<td>Construction</td>
</tr>
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<td>11</td>
<td>Removal of threatened plants</td>
<td>- The unexpected species find procedure will be followed under Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA 2011), if threatened flora species not assessed in the biodiversity assessment, are identified in the proposal site.</td>
<td>Contractor</td>
<td>Construction</td>
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<td>13</td>
<td>Injury and mortality of fauna</td>
<td>- Fauna will be managed in accordance with Guide 9: Fauna handling of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA 2011).</td>
<td>Contractor</td>
<td>Construction</td>
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<td>14</td>
<td>Invasion and spread of</td>
<td>➢ Noxious weeds present within the proposal footprint will be managed in</td>
<td>Contractor</td>
<td>Construction</td>
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| 16  | Erosion and sedimentation     | • Erosion and sediment control measures must be implemented and maintained to:  
  • Prevent sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets.  
  • Reduce water velocity and capture sediment on site.  
  • Minimise the amount of material transported from site to surrounding pavement surfaces.  
  • Divert clean water around the site.  
  (in accordance with the Landcom/Department of Housing *Managing Urban Stormwater, Soils and Construction Guidelines* (the Blue Book 1 &2))  
  • Erosion and sedimentation controls are to be checked and maintained on a regular basis (including clearing of sediment from behind barriers) and records kept and provided on request  
  • Erosion and sediment control measures are not to be removed until the work is complete and areas are stabilised  
  • Work areas will be stabilised progressively during the work  
  • The maintenance of established stockpile sites during work must be in accordance with the Roads and Maritime *Stockpile Site Management Guideline, 2015*. | Contractor      | Construction |
| 17  | Water quality                 | • There must be no release of dirty water into drainage lines and/or waterways  
  • Visual monitoring of local water quality (i.e. turbidity, hydrocarbon spills/slicks) must be carried out on a regular basis to identify any potential spills or deficient erosion and sediment controls  
  • Water quality control measures must be used to prevent any materials (e.g. concrete, grout, sediment etc.) entering drain inlets or waterways  
  • An Environmental Work Method Statement must be prepared for culvert extension and relining activities. | Contractor      | Construction |
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<tr>
<td>18</td>
<td>Chemical runoff</td>
<td>- Fuels, chemical and liquids must be stored in an impervious bunded area a minimum of 50 metres away from:&lt;br&gt;  - Rivers, creeks, or any areas of concentrated water flow.&lt;br&gt;  - Flooded or poorly drained areas.&lt;br&gt;  - Or on slopes above 10%.&lt;br&gt;  - Cleaning of spray bars (or equivalent equipment) is to occur in suitable areas (e.g. not table drains) and not cause water pollution&lt;br&gt;  - Refuelling of plant and equipment must occur in impervious bunded areas located a minimum of 50 metres away for drainage lines of waterways unless within a bunded stockpile site&lt;br&gt;  - Vehicle wash down and/or cement truck washout must occur in a designated bunded area&lt;br&gt;  - Moveable plant such as pumps and generators must be bunded&lt;br&gt;  - An Emergency spill kit must be kept onsite at all times. All staff must be made aware of the location of the spill kit and trained in its use&lt;br&gt;  - If an incident (e.g. spill) occurs, the Roads and Maritime <em>Environmental Incident Classification and Management Procedure</em> would be followed and the Roads and Maritime Services Contract Manager notified as soon as practicable.</td>
<td>Contractor</td>
<td>Construction</td>
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<td>19</td>
<td>Waste minimisation and management</td>
<td>- Resource management hierarchy principles must be followed:&lt;br&gt;  - Avoid unnecessary resource consumption as a priority&lt;br&gt;  - Avoidance is followed by resource recovery (including reuse of materials, reprocessing, recycling and energy recovery)&lt;br&gt;  - Disposal is carried out as a last resort (in accordance with the <em>Waste Avoidance &amp; Resource Recovery Act 2001</em>).&lt;br&gt;  - A Section 143 form must be completed for project waste (eg. fill) sent to a site not owned by the Roads and Maritime Services (excluding Office and Environment and Heritage licensed landfills) for land disposal in accordance with the Roads and Maritime <em>Technical Guide Management of Road Construction and Maintenance Wastes</em>&lt;br&gt;  - Waste must not be burnt onsite</td>
<td>Contractor</td>
<td>Construction</td>
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<td>• Waste material other than vegetation and tree mulch, must not be left on site once the work has been completed&lt;br&gt;• Working areas must be maintained, kept free of rubbish and cleaned up at the end of each working day.&lt;br&gt;• A Mulch Management Plan must be prepared if mulch is to be disposed of offsite</td>
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<td>20</td>
<td>Traffic and Access</td>
<td>• Consultation with stakeholders and the community will be carried out by Roads and Maritime&lt;br&gt;• Current traffic movements and property accesses must be maintained during the work, where possible&lt;br&gt;• A traffic management plan must be prepared in accordance with the Traffic Controls at Work Sites Manual be prepared prior to work commencing and must accommodate the needs of planned community events.&lt;br&gt;• Activities that would impact traffic must be not be undertaken throughout the peak winter period.</td>
<td>Contractor</td>
<td>Pre-construction/Construction</td>
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<td></td>
<td>• Post completion traffic monitoring must be carried out at the Barry Way roundabout at the commencement of the snow season to verify traffic modelling and identify any traffic management modifications required to ensure traffic efficiency.</td>
<td>Project manager</td>
<td>Prior to completion</td>
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<td>21</td>
<td>Noise and vibration</td>
<td>• Construction noise and vibration impacts will be managed in accordance with a Noise Management Plan prepared with consideration of the Roads and Maritime Construction Noise and Vibration Guideline</td>
<td>Contractor</td>
<td>Construction</td>
</tr>
<tr>
<td>22</td>
<td>Aboriginal Heritage</td>
<td>• If Aboriginal heritage items are uncovered during the work, all work in the vicinity of the find must cease and the Roads and Maritime Aboriginal Cultural Heritage Officer and the regional Environment Officer be contacted immediately. Steps in the Roads and Maritime Standard Management Procedure: Unexpected Archaeological Finds will be followed.</td>
<td>Contractor</td>
<td>Construction</td>
</tr>
<tr>
<td>23</td>
<td>Non-Aboriginal</td>
<td>• If unexpected archaeological remains are uncovered during the work, all</td>
<td>Contractor</td>
<td>Construction</td>
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<td>Heritage</td>
<td>work must cease in the vicinity of the material/find and the steps in the Roads and Maritime <em>Standard Management Procedure: Unexpected Archaeological Finds</em> will be followed. Roads and Maritime Services Regional Environment Manager be contacted immediately. • If any items defined as relics under the NSW <em>Heritage Act 1977</em> are uncovered during the work, all work must cease in the vicinity of the find and the Roads and Maritime Regional Environment Manager be contacted immediately.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Air quality</td>
<td>• Measures (including watering or covering exposed areas) must be used to minimise or prevent air pollution and dust • Work must not to be carried out during strong winds or in weather conditions where high levels of dust or airborne particulates are likely • Vegetation or other materials must not to be burnt on site • Vehicles transporting waste or other materials that may produce odours or dust must be covered during transportation • Stockpiles or areas that may generate dust must be managed to suppress dust emissions in accordance with the Roads and Maritime <em>Stockpile Site Management Guideline (2015)</em></td>
<td>Contractor</td>
<td>Construction</td>
</tr>
<tr>
<td>25</td>
<td>Landscape Character and Visual Amenity</td>
<td>• Work areas will be stabilised progressively during the work to minimise potential erosion impacts. These areas will be stabilised using an appropriate seeding mix.</td>
<td>Contractor</td>
<td>Construction/Post Construction</td>
</tr>
<tr>
<td>26</td>
<td>Biodiversity</td>
<td>• <em>Detailed design of the culvert outlet remediation must be submitted to DPI Fisheries for review and comment prior to starting work on the Widows Creek outlet.</em></td>
<td>Project Manager</td>
<td>Prior to work at Widows Creek outlet</td>
</tr>
</tbody>
</table>
5.3 Licensing and approvals

Licensing and approvals will be required for this proposal. Table 3.2 provides a summary.

Table 3.2: Summary of licensing and approval required

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minister for Primary Industries (Fisheries) would be notified of any work in the drainage line prior to the carrying out of such work.</td>
<td>A minimum of 28 days prior to the commencement of work.</td>
</tr>
<tr>
<td>The proposal would require an Environment Protection Licence (EPL) as it meets the definition of 'extractive activities' under clause 19 of Schedule 1</td>
<td>Prior to work commencing</td>
</tr>
</tbody>
</table>
6 References

EnviroKey (2017) Kosciuszko Road (MR286) Barry Way to Alpine Way lane addition Review of Environmental Factors

EnviroKey (2017) Kosciuszko Road (MR286) Barry Way to Alpine Way lane addition Biodiversity Impact Assessment

Appendix 1

Additional Assessment for site compound and 7 part test by EnviroKey
25 September 2017

Shaun Foster
Roads and Maritime Services
Regional Maintenance Delivery | Asset Maintenance
Level 4, 90 Crown Street,
WOLLONGONG NSW 2500

Re: Koscuszko Road (Main Road 286) Review of Environmental Factors (Barry Way to Alpine Way lane addition)

Dear Shaun,

EnviroKey were requested by Roads and Maritime Services (Roads and Maritime) to assess the environmental impact of a proposed stockpile/compound site that was not included in a previously prepared Review of environmental factors (REF) for the proposed Barry Way to Alpine Way Lane Addition on Kosciuszko Road (Main Road 286).

This addendum letter includes the following:

- Provides a description of the additional impact
- Provides a map showing the location of the additional impact
- Discusses the additional impact in the context of the REF
- Provides an assessment of significance for any impact to the Aquatic Ecological Community in the catchment of the Snowy River, listed as endangered under the NSW Fisheries Management Act 1994 (FM Act).

Additional impact proposed

Roads and Maritime propose an additional area of impact for a site compound. EnviroKey carried out a site inspection on 23 September 2017 to review the existing environment, and to inform this addendum letter.
The proposed site compound is located in cleared/disturbed land best described as non-native vegetation. The stockpile site as proposed would result in the removal of 0.26 hectares of non-native vegetation.

**Location of the additional impact proposed**

The area proposed for the site compound is west of the existing school on the southern side of Kosciuszko Road. A larger area of investigation (AoI) for the site inspection was considered to allow Roads and Maritime a level of flexibility in deciding the exact location of the proposed site compound.

The location of both the site compound and the area of investigation is provided in Map 1. Photographs of the Area of Investigation and proposed site compound location are detailed in Figures 1-3.

Map 1: Location of Area of Investigation and proposed site compound (provided by Roads and Maritime).
Figure 1: Looking west toward the boundary of the AoI

Figure 2: Central portion of the AoI

Figure 3: Eastern portion of the AoI
Additional impacts and consistency with REF and Biodiversity Assessment

The proposed site compound is located in cleared/disturbed land best described as non-native vegetation. This is consistent with the findings of the REF and Biodiversity Assessment in that the majority of the AoI comprises non-native vegetation.

The stockpile site as proposed would result in the removal of 0.26 hectares of non-native vegetation. The loss of 0.26 hectares of non-native vegetation is ‘unlikely’ to have a ‘significant effect’ on threatened species, populations, communities or their habitat.

Assessment of significance: Aquatic Ecological Community in the catchment of the Snowy River (listed as endangered under the FM Act)

EnviroKey had initially assessed Widows Creek as not being part of the Aquatic Ecological Community in the catchment of the Snowy River (listed as endangered under the FM Act), largely due to the highly disturbed nature of the existing environment within the AoI. However, it is acknowledged that the aquatic ecological community may occur downstream, closer to Lake Jindabyne. According to the NSW scientific committee, the aquatic ecological community is defined as ‘all native fish and aquatic invertebrates within all (underline added) rivers, creeks and streams of the Snowy River catchment’. Within the AoI, Widows Creek is a Class 4 classification (unlikely key fish habitat) according to the classification of waterways for fish passage (DPI, 2013).

The NSW Environmental Planning and Assessment Act 1979 includes in Section 5A, seven factors which are to be considered when determining if a proposed development or activity ‘is likely to have a significant effect on the threatened species, populations or ecological communities, or their habitats’. These seven factors must be taken into account by consent or determining authorities when considering a development proposal or development application. This enables a decision to be made as to whether there is likely to be a significant effect on the species and hence if a Species Impact Statement is required (DECC, 2007).

As such, EnviroKey provide an assessment of significance for this aquatic ecological community for the proposal.

(a) in the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

The Aquatic ecological community in the catchment of the Snowy River is not a threatened species.

(b) in the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the
endangered population such that a viable local population of the species is likely to be placed at risk of extinction,

The Aquatic ecological community in the catchment of the Snowy River is not listed as an endangered population.

(c) in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

The Aquatic ecological community in the catchment of the Snowy River has been listed as an endangered ecological community under the F M Act. The listing includes all native fish and aquatic invertebrates within all rivers, creeks and streams of the Snowy River catchment.

DPI identify the following threats to this aquatic ecological community (DPI, 2011):

- Altered flow regimes
- Construction of water storage dams for Snowy Hydro Scheme
- Inappropriate grazing
- Presence of introduced fish species
- Removal of native riparian vegetation and habitat
- Disruption to fish passage

The proposal is likely to have short term, temporary impacts on this aquatic ecological community. Additional, the aquatic ecological community within Widows Creek is already highly modified and unlikely to be critical to the extent and condition of this aquatic ecological community in the locality. Mitigation measures detailed within Chapter 5 of the REF would ensure that potential impacts to the aquatic ecological community are minimised to the greatest extent possible.

Therefore, the proposal is unlikely to have an adverse effect on the extent of the aquatic ecological community such that its local occurrence is likely to be placed at risk of extinction.

(d) in relation to the habitat of a threatened species, population or ecological community:

(i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and
(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality,

i. The proposed work would result in the minor, temporary removal of about 0.1 hectares of the aquatic ecological community.

ii. The proposal would not isolate or fragment other areas of habitat as Widows Creek is already highly modified, and at best, considered Class 4 (unlikely fish habitat).

iii. Large areas of this aquatic ecological community are present in the locality, including the Thredbo River. Widows Creek by definition is part of the community, however, its extent and existing quality is unlikely to be of importance to the community in the locality. Additionally, the proposed work would help stabilise Widows Creek and reduce erosion, therefore, improving the aquatic ecological community in the long-term.

(e) whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly),

No critical habitat has been declared for this aquatic ecological community.

(f) whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan,

At the time of writing, there was no recovery plan for this aquatic ecological community.

(g) whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

The proposed activity – lane addition – is not recognised as a key threatening process (KTP) under schedule 3 of the TSC Act.

Minor work is proposed within Widows Creek, and given the extent and quality of existing habitats, it is unlikely to constitute a KTP. Nonetheless, recommendations detailed within Chapter 5 of the REF provide a framework for minimising potential direct and indirect impacts to this aquatic ecological community.

With consideration of these factors, the proposal is unlikely to result in the operation of, or increase the impact of, a key threatening process.
Conclusion

This Assessment of Significance has determined that the proposed activity is 'unlikely' to have a 'significant effect' on the Aquatic Ecological Community of the Snowy River. Therefore, the proposed activity will not require a Species Impact Statement.

Suitability of existing safeguards within REF

EnviroKey have reviewed the existing safeguards provided within the REF. No additional safeguards are warranted.

Should you require any additional information or you wish to discuss this addendum letter further, please contact me directly.

Regards,

Steve Sass
Principal Ecologist
B.App.Sci (Env.Sci) (Hons)

Accredited Person (Biodiversity Assessment Methodology) Biodiversity Conservation Act 2016
Certified Environmental Practitioner, Environment Institute of Australia & New Zealand
Practicing Member, Ecological Consultants Association of New South Wales
References


DPI 2013. Policy and guidelines for fish habitat conservation and management. *Department of Primary Industries.*