



Tyagarah to Brunswick Heads Koala Grids Project Submissions report

April 2018

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Roads and Maritime Services

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Prepared by GeoLINK and Roads and Maritime Services
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Executive summary

This submissions report has been prepared following the public exhibition of the review of environmental factors (REF) for the installation of seven koala grids at the Brunswick Heads and Gulgán Road Pacific Highway interchanges. The works are part of a wider Roads and Maritime Services (Roads and Maritime) program to install additional (and improve existing) koala fencing along the Pacific Highway between Ewingsdale and the Sleepy Hollow rest area.

The REF was placed on public display from 2 November 2016 to 12 December 2016 with comments accepted until 21 December 2016.

In addition to the above public display, an invitation to comment and copy of the review of environmental factors was sent directly to several identified stakeholders as follows:

- Friends of the Koala
- Ken Gainger, General Manager, Byron Shire Council
- Joanne Green, Koala Officer, Byron Shire Council
- Tamara Smith MP, Member for Ballina
- Bundjalung of Byron Bay Aboriginal Corporation – Arakwal
- Byron Bay Cycling Club
- Nigel Stewart, National Parks Wildlife Service Byron Coast Area.

A total of three submissions were received in response to the display of the REF from the community. One of these submissions was received from the Friends of the Koala community group. The two remaining submissions were received from individuals.

The main issues raised in the submissions included:

Additional Koala Fencing

Issue: Submissions raised three issues regarding the need for additional koala/fauna fencing

Response: Roads and Maritime will review any gaps in fencing as part of its ongoing maintenance and review of fauna fencing in this locality.

Additional Koala Grids

Issue: An additional koala grid should be installed at the Bluesfest off ramp

Response: Additional koala fencing proposed as part of this Proposal will avoid the need to construct a koala grid in the Bluesfest Off ramp area.

Fauna Crossings

Issue: Submissions raised issues requesting various additional fauna crossing points and connectivity structures be installed as part of the proposal at additional locations. Additional Fauna crossing points requested include:

- Pole/net crossing
- Ledges or log pole crossings installed in culverts
- Fauna under and over passes

Response: The project is solely focussed on the local threatened koala population and the provision of koala fencing and koala grids at identified hot spots, based on a previous scoping study by koala expert Steve Phillips (Biolink). Such measures are included in the Biolink report

2014 and are noted by Roads and Maritime. However they are not included in this stage of the upgrade program and they may be upgraded in the future.

Koala Fence Repairs

Issue: Koala proof fencing along the Pacific Highway between the Gulgan Road Northern Intersection and the Brunswick River intersection needs repair.

Response: Roads and Maritime agree that existing fauna fencing that is damaged in the locality should be repaired to ensure ongoing protection of koalas and other native fauna. The scheduled repair and maintenance of fauna fencing is managed in accordance with RMS QA Specifications. This fencing has been investigated and repaired as part of this project to ensure ongoing protection of koalas and other native fauna.

Consideration of other threatened species

Issue: Consideration should be given to other threatened species in the vicinity.

Response: While improving connectivity for arboreal mammals in general would be beneficial, the Proposal focusses on the koala due to its threatened species status, and studies confirming numerous threats to populations within the Byron and Tweed LGAs. It should be noted that exclusion fencing will also result in reducing the potential for other threatened species becoming roadkill

Since display of the REF, the proposal has been refined to take into consideration, submissions received and additional environmental assessment undertaken. These refinements include:

- Installation of an additional pathway and self-closing gate at the Saddle Road koala grid.

The potential environmental impacts of these refinements have been outlined in the submissions report and proposed safeguard and mitigation measures amended accordingly.

The issues raised during the public display of the REF have been adequately summarised and responded to. All potential environmental impacts have been assessed adequately with appropriate safeguards and management measures identified to avoid, minimise and mitigate impacts. The implementation of the safeguards and management measures identified in the submissions report would appropriately manage and mitigate the potential impacts.

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1 Introduction and background

1.1 The Proposal

This submissions report has been prepared following the public exhibition of the review of environmental factors (REF) for the installation of seven koala grids at the Brunswick Heads and Gulgan Road Pacific Highway interchanges. The works are part of a wider Roads and Maritime Services (Roads and Maritime) program of works to install additional (and improve existing) koala fencing along the Pacific Highway between Ewingsdale and the Sleepy Hollow rest area. The Program of works is to be undertaken by the Roads and Maritime Services to reduce the incidence of koala road strikes between Tyagarah and Brunswick Heads.

A more detailed description of the Tyagarah to Brunswick Heads Koala Grids Project is found in the Tyagarah to Brunswick Heads Koala Grids Review of Environmental Factors prepared by Roads and Maritime in November 2016.

The location of the proposal and its key features, including the regional context, is shown in Illustrations 1.1 and 1.2. The program of works is located within the Byron Shire Council and Tweed Shire Council local government areas.

1.2 Review of Environmental Factors display

Roads and Maritime prepared a review of environmental factors (REF) to assess the environmental impacts of the proposed works. The REF was publically displayed for 40 days between 2 November 2016 and 12 December 2016 at the three locations identified in Table 1.1. The REF was placed on the Roads and Maritime project website and made available for download. The display locations and website link were advertised in The Northern Star on 19 November 2016, the Byron Shire Echo on 15 November 2016, and the Byron Shire News on 17 November 2016.

An invitation to comment and receive a copy of the REF was sent directly to the following stakeholders:

- Friends of the Koala Inc.
- Ken Gainger, General Manager, Byron Shire Council
- Joanne Green, Koala Officer, Byron Shire Council
- Tamara Smith MP, Member for Ballina
- Bundjalung of Byron Bay Aboriginal Corporation – Arakwal
- Byron Bay Cycling Club
- Nigel Stewart, National Parks and Wildlife Service, Byron Coast Area.

Roads and Maritime hand delivered a letter and postcard to 30 residents of Ocean Way, Kingsford Drive, Pacific Place and Coral Court in Brunswick Heads. An unaddressed mail service was used to deliver a further 5,000 postcards to surrounding residents in Brunswick Heads, Mullumbimby, Myocum and Ewingsdale.

Table 1.1: Display locations

Location	Address
Byron Shire Council Offices	70-90 Station St, Mullumbimby NSW
Brunswick Heads Library	11 Fingal St, Brunswick Heads NSW
Roads and Maritime Grafton Regional Office	76 Victoria St, Grafton NSW

1.3 Purpose of the report

This submissions report relates to the review of environmental factors (REF) prepared for the Tyagarah to Brunswick Heads Koala Grids Project, 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 (Chapter 2). No revisions have been made to the assessment or environmental management measures as described in the REF since the project was placed on public exhibition.

Illustration 1.1: Location of the koala grids – Gulgan Road Pacific Highway interchange

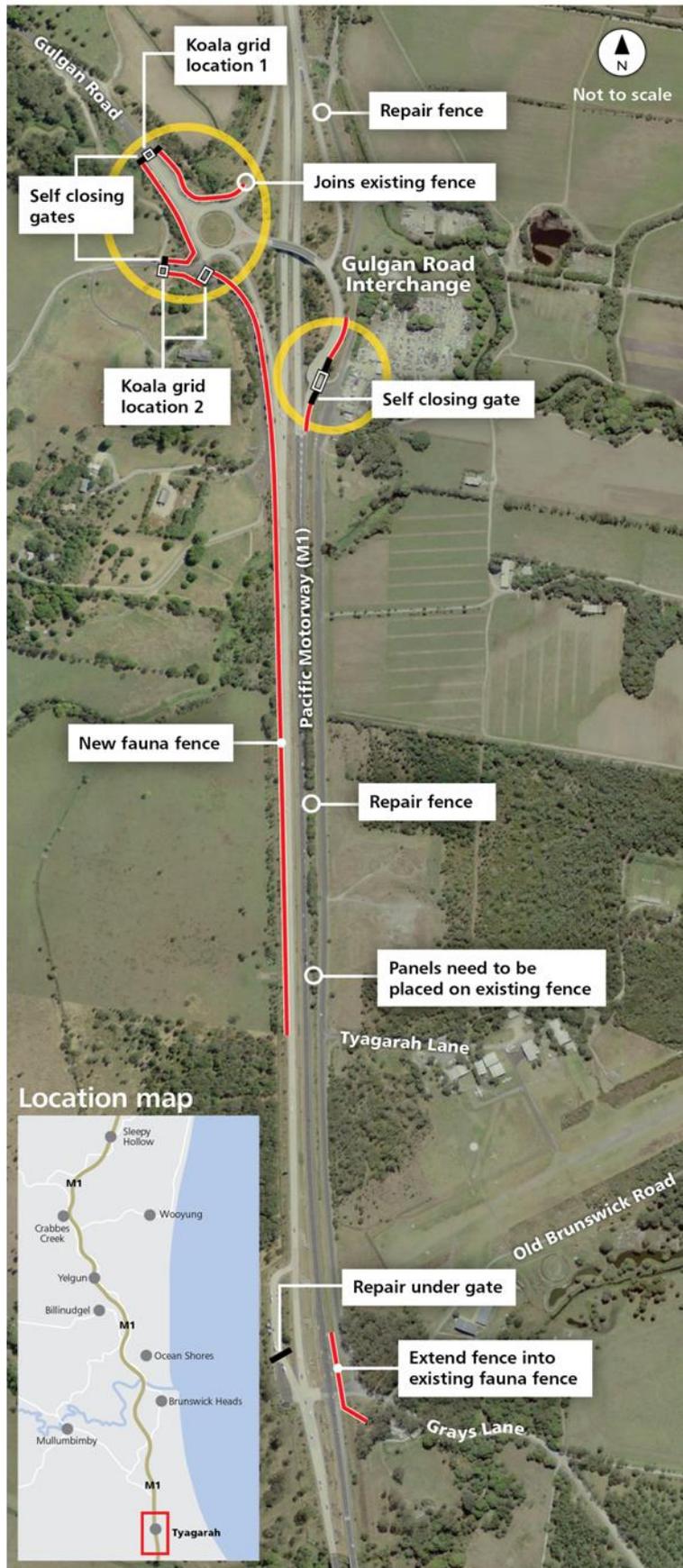
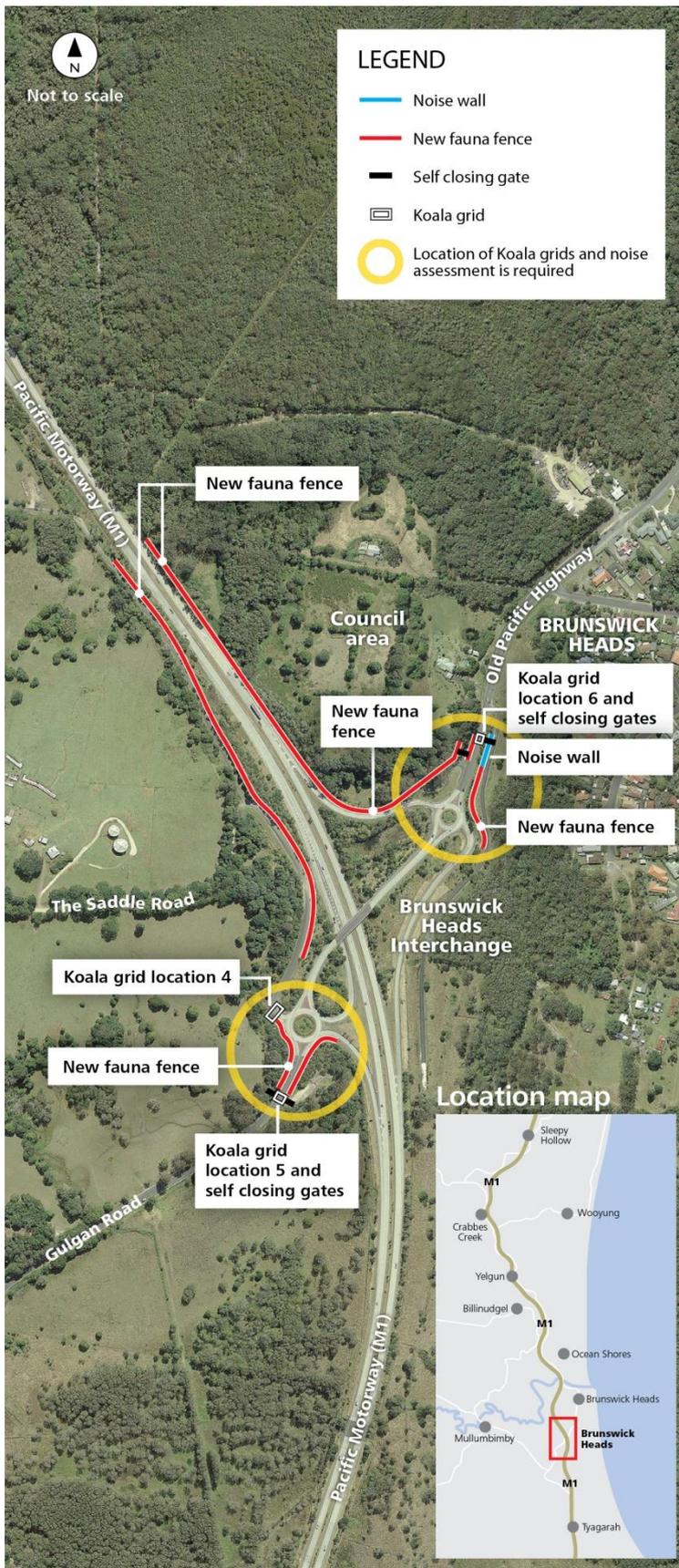


Illustration 1.2: Location of the koala grids – Southern Brunswick Heads Pacific Highway interchange



2 Response to issues

Roads and Maritime Services accepted submissions in response to the REF until the 16 January 2017. Three submissions were received and Table 2.1 lists the respondents, their allocated submission number and where the issues from each submission have been addressed in Chapter 3 of this report.

Table 2.1: Respondents

Respondent	Submission no.	Section number where issues are addressed
Individual submission	1A, 1B and 1C	Chapter 3, Sections 2.2 to 2.7
Individual submission	2	Chapter 3, Section 2.4
Friends of the Koala Inc.	3	Chapter 3, Section 2.4 and 2.8

2.1 Overview of issues raised

Of the three submissions received in response to the display of the review of environmental factors (REF) two submissions were from individuals and one submission from the community group, Friends of the Koala. One person made three separate submissions to the proposal (referred to as submissions 1A, 1B and 1C).

Each submission has been examined to understand the specific issues being raised. The issues raised in each submission have been extracted and collated, and corresponding responses to the issues have been provided in Chapter 3. Where similar issues have been raised in different submissions, only one response has been provided. The chapter details the issues raised in the submissions and Roads and Maritime's response to them.

While the three submissions supported the proposal they all recommended implementing further improvements to fauna protection infrastructure. The issues and responses are outlined in the following sections of this chapter:

- 2.2 Additional koala fencing
- 2.3 Additional koala grids
- 2.4 Fauna crossings
- 2.5 Koala fence repairs
- 2.6 Consider other threatened species
- 2.7 Provide an additional pathway and self-closing gate
- 2.8 Clarify specific aspects of the Proposal.

2.2 Additional koala fencing

Submission number

Submission number 1A raised three issues about the need for additional koala/fauna fencing.

Issue 1 description

The respondent raised the issue that there is a lack of koala proof fencing along the Pacific Highway between the Gulgan Road North Intersection and the Tandys Lane overpass.

Roads and Maritime response to Issue 1

Roads and Maritime acknowledge the gaps in fauna fencing between the Gulgan Road North Intersection and the Tandys Lane overpass on the Pacific Highway and will review these gaps as

part of its ongoing maintenance and review of fauna fencing in this locality. The Koala Grids Proposal was based on the results and recommendations of the Biolink (2014) scoping study (which was not part of the REF exhibition package). The Biolink report did not recommend additional fencing at this location. The report shows existing fencing along the highway south of the Brunswick Heads interchange (Figure 2, page 13). The report also refers to gaps in this fencing approximately 150 metres long on either side of the Tandy's Lane Overpass. Koala populations are known to exist in the general area but the report did not confirm any koala road strikes.

Issue 2 description

The respondent raised the issue that there is a lack of koala proof fencing along Saddle Road and Bashforth's Lane where they run parallel to the Pacific Highway. New fencing is proposed along this stretch of road but it is not stated whether it will connect to the 'floppy top' koala proof fencing along the highway adjacent to Brunswick Heads nature reserve. The respondent said that the new fencing needs to connect to the 'floppy top' koala proof fencing along the highway adjacent to Brunswick Heads nature reserve.

Issue 2 response

Roads and Maritime confirms that the new fauna fencing will connect to the existing koala fencing along the highway adjacent to the Brunswick Heads Nature Reserve.

Roads and Maritime will review these identified gaps in fencing as part of its ongoing maintenance and review of fauna fencing in this locality.

Issue 3 description

The respondent highlighted the issue that fauna proof fencing should also be installed in median sections of the Pacific Highway that can be accessed from culverts.

Issue 3 response

Fauna access to median sections of the Pacific Highway was not identified in the Biolink (2014) study as key factor in koala road strikes. Therefore the fencing of the culverts to prevent access to the median sections of the highway did not form part of the Proposal. Roads and Maritime will review the need for these culverts to be fenced as part of ongoing consideration of koala safety improvements in the locality.

2.3 Additional koala grids

Submission number

Submission number 1A raised one issue about the need for additional koala grids.

Issue 1 description

The respondent suggested an additional koala grid should be installed at the 'Bluesfest' off ramp north of the Gulgan Road north interchange.

Issue 1 response

The Biolink (2014) study recommends that the Bluesfest off-ramp is located in an area of known koala road strikes and is intended for limited use coinciding with festival events outside of which it is to remain closed by way of a locked gate. The study indicates that exclusion fencing should extend to this gate which must also be koala-proof, that is, either being centrally located over a koala-grid and/or ensuring that there is no gap greater than 100 millimetres below the gate's lower edge.

Additional koala fencing proposed as part of this Proposal will avoid the need to construct a koala grid in the Bluesfest Off ramp area.

2.4 Fauna crossings

Submission number(s)

A total of seven different issues were raised by all three respondents about fauna crossings:

- Submission number 1A raised six issues
- Submission number 1B raised one issue
- Submission number 1C raised one issue
- Submission number 2 raised one issue
- Submission number 3 raised one issue.

Issue 1 description

Improved arboreal animal (including the koala) crossing points between the Brunswick River and Tyagarah are required.

Response

The Roads and Maritime Proposal that was assessed by the review of environmental factors (REF) is focused on implementing one the recommendations of the Biolink (2014) study, which is the provision of koala fencing and grids at identified hot spots. These hotspots are located at various interchanges and intersections along the Pacific Highway within the study area. While improving connectivity for arboreal mammals in general would be beneficial, the Proposal focusses on the koala due to its threatened species status and other studies confirming numerous threats to populations within the Byron and Tweed local government areas.

Issue 2 description

There is a lack of koala pole/net crossings just north of the Gulgan Road intersection where the Pacific Highway cuts through Saddle Ridge.

Response

The Biolink (2014) study does not recommend establishing koala pole and net crossings north of Gulgan Road intersection and does not form part of the Proposal. The study does identify numerous potential fauna crossing points north of the Brunswick interchange allowing east-west koala (and fauna) movement (Figure 4, p.19). Based on this information additional crossing structures are not required in this area.

Issue 3 description

Koala pole/net crossings should also be installed where koala grids are being installed.

Response

The Biolink (2014) study does not recommend establishing koala pole and net crossings at the proposed koala grid locations and does not form part of the Proposal. Other studies in New South Wales and Queensland indicate that net crossings are not favoured by koalas. A recent study of a custom built koala overpass in Queensland, made of a steel gantry with modified wooden poles, was not used in the eight months it was monitored (Dexter et al. 2016).

Issue 4 description

Ledges or log pole crossings should be installed in drainage culverts under the Pacific Highway.

Response

There is good evidence that ledges and log pole crossings in culverts provide good outcomes for koalas but this is not part of the Proposal. There is potential for retro-fitting of culverts on the Pacific Highway and this has been noted and may be reviewed by Roads and Maritime in the future.

Issue 5 description

Fauna under or over passes are recommended along Gulgan Road.

Response

The proposal is solely focussed on the threatened koala and based on the Biolink (2014) scoping study done by koala expert Steve Phillips. The study focuses specifically on the Pacific Highway and entry and exit points between Tyagarah and Brunswick Heads and does not include local roads. Gulgan Road has not been identified as a koala fatality blackspot so it has not been included in the project. While there are no over or underpasses being build, the exclusion fencing that has been installed as part of this project will also benefit other fauna.

Issue 6 description

No underpasses and ledges in culverts have been installed on the eastern side of the Brunswick Heads bypass.

Response

There is good evidence that ledges and log pole crossings in culverts provide good outcomes for koalas but this is not part of the Proposal. There is potential for retro-fitting of culverts on the Pacific Highway and this has been noted and may be reviewed by Roads and Maritime in the future.

Issue 7 description

There is a lack of reference to the need for connectivity structures in the REF.

Response

As noted previously, the Proposal is solely focussed on the koala and providing koala fencing and koala grids at identified hot spots. These hotspots are located at various interchanges and intersections along the Pacific Highway within the study area.

2.5 Koala fence repairs

Submission number

Submission number 1A raised one issue about the need for repairs to koala fencing.

Issue 1 description

Koala proof fencing along the Pacific Highway between the Gulgan Road Northern Intersection and the Brunswick River intersection needs repair.

Response

Roads and Maritime acknowledge that existing fauna fencing is damaged in the locality. This fencing has been repaired as part of this project to ensure ongoing protection of koalas and other native fauna.

2.6 Consider other threatened species

Submission number

Submission number 1A raised one issue about other species.

Issue description

Consideration should be given to other threatened species in the area.

Response

As noted previously, the Proposal is solely focussed on the koala and providing koala fencing and koala grids at identified hot spots. These hotspots are located at various interchanges and intersections along the Pacific Highway within the study area. While improving connectivity for arboreal mammals in general would be beneficial, the Proposal focusses on the koala due to its threatened species status, and studies confirming numerous threats to populations within the

Byron and Tweed LGAs. It should be noted that exclusion fencing will also benefit other threatened species.

2.7 Provide an additional pathway and self-closing gate

Submission number(s)

Submission number 1A raised one issue about providing an additional pathway and self-closing gate at Saddle Road.

Issue description

Recommend installing a pathway and self-closing gate at Saddle Road koala grid location.

Response

Roads and Maritime have noted this suggestion and will investigate the matter further.

2.8 Clarify what koala grids are included in the Proposal

Submission number(s)

Submission number 3 raised one issue about clarifying what koala grids are and suggested including it in the Proposal.

Issue description

The REF refers to seven koala grids and only six can be found on the maps.

Response

There are seven koala grids at six locations. Koala grid location 2 has two koala grids. Illustrations 3.1 and 3.2 show the location of the koala grids at the six locations.

3 Environmental management

The review of environmental factors (REF) for the Tyagarah to Brunswick Heads Koala Grids project 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 REF).

If the Proposal proceeds environmental management will be guided by the framework and measures outlined below.

3.1 Environmental management plans (or system)

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

A project environmental management plan (PEMP) and a construction environmental management plan (CEMP) will be prepared to describe identified safeguards and management measures. The PEMP and the CEMP will provide a framework for establishing who is responsible and how these measures will be implemented.

The PEMP and the CEMP will be prepared before construction of the Proposal starts and must be reviewed and certified by Roads and Maritime Services Environmental Officer, Northern Region, before 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 and PEMP would be developed in accordance with the specifications set out in the QA Specification G36 - Environmental Protection (Management System) and QA Specification G38 - Soil and Water Management (Soil and Water Plan).

3.2 Summary of safeguards and management measures

The review of environmental factors for the Tyagarah to Brunswick Heads Koala Grids identified a range of environmental outcomes and management measures that would be required to avoid or reduce the environmental impacts.

Environmental safeguards outlined in this document would be incorporated into the detailed design phase of the Proposal and during construction and operation of the Proposal if it proceeds. These safeguards would minimise any potential adverse impacts arising from the proposed works on the surrounding environment. The safeguards and management measures are summarised in Table 2.1.

Table 3.1: Summary of environmental safeguards and management measures

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing
1	General	<ul style="list-style-type: none"> All environmental safeguards must be incorporated within the following: <ul style="list-style-type: none"> Project Environmental Management Plan Detailed design stage Contract specifications for the Proposal Contractor's Environmental Management Plan. 	Project manager	Pre-construction
2	General	<ul style="list-style-type: none"> 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 works. The recommendations of the risk assessment are to be implemented. A review of the risk assessment must be undertaken after the initial audit or inspection to evaluate if the level of risk chosen for the project is appropriate. Any works resulting from the Proposal and as covered by the REF may be subject to environmental audit(s) and/or inspection(s) at any time during their duration. 	Project manager and regional environmental staff	Pre-construction After first audit
3	General	<ul style="list-style-type: none"> The environmental contract specification must be forwarded to the Roads and Maritime Services Senior Environmental Officer 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 Senior Environmental Officer. 	Project manager	Pre-construction
4	General	<ul style="list-style-type: none"> All businesses and residences likely to be affected by the proposed works must be notified at least 5 working days before the proposed activities start. 	Project manager	Pre-construction
5	General	<ul style="list-style-type: none"> The Roads and Maritime Services Project Manager must notify the Roads and Maritime Services Environmental Officer Northern at least 5 days before work starts. 	Project manager	Pre-construction

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing
6	General	<ul style="list-style-type: none"> Environmental awareness training must be provided, by the contractor, to all field personnel and subcontractors. 	Contractor	Pre-construction and during construction as required.
7	Biodiversity - Impacts to adjoining sensitive environments.	<ul style="list-style-type: none"> Every effort should be made to avoid damage to habitat and vegetation outside the construction zone. Silt fencing should be used to prevent any soil or sediments from entering drainage lines below the clearing sites. Weeds and pathogens hygiene would be implemented in accordance with Guideline 6 (Weed Management) and Guideline 7 (Pathogen) of the Roads and Maritime Biodiversity Guidelines 2011. This will reduce spread of weeds and pathogens. Machinery should be cleaned down before entry to the work site. 	Contractors	Pre-construction and construction
8	Biodiversity - Impacts to unexpected threatened flora and fauna.	<ul style="list-style-type: none"> If unexpected threatened flora and fauna species are found during construction, stop work immediately and follow the Roads and Maritime Threatened Species Find Procedures in the Roads and Maritime Biodiversity Guidelines 2011 – Guide 1 (Pre Clearing Process). 	Contractors	Pre-construction and construction
9	Erosion and sedimentation	<ul style="list-style-type: none"> An Erosion and Sediment Control Plan would be prepared and implemented to minimise erosion and sedimentation impacts. Described site stabilisation/rehabilitation, and erosion and sedimentation control maintenance and monitoring procedures would also be adhered to. Works would be scheduled during dry periods when no or minimal rainfall is forecast. 	Contractor	Pre-construction, construction, and post construction.

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing
10	Sediments and pollutants entering sensitive water environments.	<ul style="list-style-type: none"> • Sediment laden runoff will exit the site through appropriately designed, installed and maintained controls. • Water quality control measures are to be used to prevent any materials (eg concrete, fill sediment and spoils) entering any waterways. • Structures placed down slope of the works will need to be monitored during times of heavy rain and flood, in the event that they become dislodged. • Refuelling areas are to be managed to prevent any spills leaving the refuelling area. • A spill containment kit, including equipment to address any spills, would be available at all times. All personnel would be made aware of the location of the kit and trained in its effective deployment. • If a spill occurs, the Roads and Maritime Environmental Incident Classification and Management Procedure is to be followed and the Roads and Maritime Project Manager notified as soon as practicable. • Required fuels and other liquids would be stored in self-safe chemical storage containers. Unnecessary storage of these materials would be avoided. • All equipment must be cleaned before being brought to the site. • Washing down machinery would occur either within a designated wash down area located at least 50 metres from any waterways or flood prone land, or appropriate off-site location (after excess debris is removed using hand tools before transporting). • If used, the wash-down bay would be placed so that water filtered through the geofabric water bay does not flow directly into any watercourses or adjacent native vegetation, but is captured within vegetation and allowed to soak into the ground. • Water used for cleaning tools would be minimised and obtained from a licensed location or town water supply. • All equipment would be maintained in good working order and operated according to manufacturer's specifications. 	Contractor	Pre-construction, construction, and post construction.

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing
11	Construction noise impacts on sensitive receivers.	<ul style="list-style-type: none"> Works are to be carried out during normal work hours (ie 7 am to 6 pm Monday to Friday; 8 am to 1 pm Saturdays. No work on Sunday and Public Holidays). Noise impacts are to be minimised in accordance with Practice Note 7 in the RTA's <i>Environmental Noise Management Manual</i> and RTA's <i>Environmental fact sheet No. 2 - Noise management and Night Works</i>. 	Contractor	Construction
12	Operational noise impacts on sensitive receivers.	<ul style="list-style-type: none"> Installation of a noise barrier along the eastern side of the road at koala grid location 6 to reduce the potential for noise impacts. The barrier would be approximately a minimum of 1.5 m above the road if it is placed at the road's edge or 2 m if it is constructed further away from the road on top of the small embankment that exists immediately to the east. The impact force of vehicles transferring from the road surface onto the grid should be minimised by having the grid no higher than the road level. If possible the grid should be constructed very slightly below the road surface to produce the least amount of impact noise. 	Roads and Maritime	Operation
13	Dispersal of dust and pollutants associated with construction activities.	<ul style="list-style-type: none"> Vehicles transporting waste or other materials that may produce odours or dust are to cover their load during transportation. Areas that may generate dust are to be managed to suppress dust emissions in accordance with the RTA's <i>Stockpile Site Management Guideline</i>(2011). Works (including the spraying of paint and other materials) are not to be carried out during strong winds or in weather conditions where high levels of dust or air borne particulates are likely. Machinery and vehicles not in use would be turned off and not left to unnecessarily run idle. 	Contractor	Construction

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing
14	Unexpected impacts to non-aboriginal heritage items.	<ul style="list-style-type: none"> If unexpected archaeological remains are uncovered during the works, all works must cease in the vicinity of the material/find and the steps in the Roads and Maritime <i>Standard Management Procedure: Unexpected Archaeological Finds</i> must be followed. The Roads and Maritime Senior Regional Environmental Officer must be contacted immediately. If any items defined as relics under the NSW Heritage Act 1977 are uncovered during the works, all works must cease in the vicinity of the find and the Roads and Maritime Environmental Manager contacted immediately. 	Contractor	Construction
15	Unexpected impacts to Aboriginal heritage items.	<ul style="list-style-type: none"> If Aboriginal heritage items are uncovered during the works, all works in the vicinity of the find must cease and the Roads and Maritime Aboriginal cultural heritage advisor and the Environmental Manager contacted immediately. Steps in the Roads and Maritime <i>Standard Management Procedure: Unexpected Archaeological Finds</i> must be followed. 	Contractor	Construction
16	Short term impacts to traffic flow.	<ul style="list-style-type: none"> Where possible, current traffic movements are to be maintained during the works. Any disturbance is to be minimised to prevent unnecessary traffic delays. Traffic management would occur under and Roads and Maritime approved Traffic Control Plan (TCP). In the event that both southbound or northbound lanes of the Pacific Highway need to be closed (other than inconsequential closures <5 minutes during movement of plant or tree felling) standard Roads and Maritime procedures would be followed to adequately advertise the closure to traffic users, particularly freight and transport companies. Disruptions to any driveways or access would be minimised and suitable safe provisions would be incorporated into the TCP. 	Contractor	Pre-construction and construction
17	Pedestrian and cyclist obstruction.	<ul style="list-style-type: none"> Self-closing gates will be installed on adjacent footpaths to ensure safe passage for pedestrian or cyclist movements. Advisory signage will also be installed to assist cyclists and pedestrians. 	Contractor	Construction

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing
18	Injury to construction staff and visitors.	<ul style="list-style-type: none"> In accordance with the <i>Work Health and Safety Act 2011</i>, workers would be provided with appropriate safety clothing and equipment. Supervisory staff and any visitors to the work area would also be required to wear protective clothing. Maintenance personnel would be provided with, or expected to have, protective equipment and appropriate training. 	Contractor	Construction
19	Minimise impacts to visual amenity during construction.	<ul style="list-style-type: none"> General construction disturbances (particularly to vegetation and soils) would be minimised where possible. Works to be carried out in accordance with EIA-N04 Guidelines for visual impact assessment and landscape character assessment. 	Contractor	Pre-construction and construction
20	Inappropriate waste management.	<ul style="list-style-type: none"> Resource management hierarchy principles are to be followed: <ul style="list-style-type: none"> Avoid unnecessary resource consumption as a priority. Avoidance is followed by resource recovery (including reuse of materials, reprocessing, recycling and energy recovery). Disposal is undertaken as a last resort (In accordance with the <i>Waste Avoidance & Resource Recovery Act 2001</i>). Working areas are to be maintained, kept free of rubbish and cleaned up at the end of each working day. 	Contractor	Construction

3.3 Licensing and approvals

No additional licensing or approvals are required for the Proposal.

4 References

Biolink, 2014. *A review of koala road-kill data and issues relating to underpass use by koalas: Pacific Highway upgrades from Clothier's Creek to Ewingsdale, NSW*. Uki NSW.

Appendix A

Submissions summary table



rms.nsw.gov.au



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Customer feedback
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