BELLS LINE OF ROAD CORRIDOR IMPROVEMENT PROGRAM

INFORMATION TO SUPPORT REFERRAL UNDER PART 3 OF *ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999* (EPBC 2014/7346)

Referral of proposed action

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Roads and Maritime Services 15.223
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NSW
GOVERNMENT
Transport
Roads & Maritime
Services

Referral of proposed action

Project title: Bells Line of Road Corridor Improvement Program: Mount Tomah to Kurrajong Heights

1 Summary of proposed action

1.1 **Short description**

The Bells Line of Road links north-western Sydney with central and western NSW. Along with the Great Western Highway, Bells Line of Road is one of two road crossings through the Blue Mountains and is also used as a local access road.

Roads and Maritime Services NSW (Roads and Maritime) propose to undertake safety improvement works along Bells Line of Road between Mount Tomah and Kurrajong Heights. This comprises overtaking lanes and safety works at a total of eight sites.

This referral applies to **five** of these sites: Overtaking Lanes 2, 3, 5, 6 and 7.

Overtaking Lane 1 and Safety Work Sites 9 and 12 are **not** the subject of this referral for the reasons set out below (section 2.1).

The referred action involves widening sections of Bells Line of Road and adding about six kilometres of additional overtaking lane at five separate locations. The works are part of the implementation of the joint NSW-Commonwealth *Bells Line of Road Long Term Strategic Corridor Plan* (Australian and NSW Governments, 2012), which was completed in 2012 following community consultation.

The five sites that are subject of this referral are located in the Hawkesbury and Blue Mountains local government areas, within the Sydney Basin bioregion (former Hawkesbury-Nepean Catchment Management Area in the Wollemi sub-region), and shown in Figure 1-1.

The project is being referred to the Commonwealth Department of the Environment (DoE) under Part 3 of the EPBC Act: specifically with respect to potentially significant impacts on listed threatened species and communities (section 18), as it may result in a cumulative loss of up 2.12 ha of high condition Turpentine-Ironbark Forest in the Sydney-Basin Bioregion (TIF).

This is in addition to 0.47 ha of TIF which was previously removed as part of an earlier project at Bilpin on Bells Line of Road (referred to as Overtaking Lane 4 – OT4), which lies between the scope of the current works at Kurrajong and Mount Tomah (SMEC 2014). OT4 has already been completed following a separate, earlier environmental assessment, and is **not** part of this referral.

1.2 **Latitude and longitude**

The latitude and longitude points along the proposed action are listed in Table 1-1, ordered from east to west. Note that the points are located along the centreline of the overtaking lanes and as such do not cover the whole proposed action's footprint.

Table 1-1 – Latitude and longitude points for the proposed action boundary

	West		East	
Site	**Latitude**	**Longitude**	**Latitude**	**Longitude**
OT 2	-33.515419	150.581982	-33.516241	150.598830
OT 3	-33.502203	150.539021	-33.509274	150.559033
OT 5	-33.497825	150.520976	-33.502259	150.538160
OT 6	-33.507641	150.497406	-33.499320	150.511363
OT 7	-33.536101	150.423960	-33.533374	150.445222

1.3 Locality and property description

As stated, the proposed action is located on the Bells Line of Road between Mount Tomah and Kurrajong Heights and is comprised of five non-contiguous sites. The approximate location of each site is provided below:

- Overtaking Lane 2 (OT2), located 4 km west of Kurrajong Heights
- Overtaking Lane 3 (OT3), located 2.5 km from the east side of the Bilpin Township
- Overtaking Lane 5 (OT5), located 0.8 km east of the Bilpin Township
- Overtaking Lane 6 (OT6), located 1 km west of Bilpin area
- Overtaking Lane 7 (OT7), located on the most western extent of the study area, within Mount Tomah about 9 km west of Bilpin

1.4 Size of the development footprint or work area (hectares)

The proposal area comprises those areas that would be potentially directly impacted during construction, including ancillary facility sites (construction compounds and materials storage).

For the overtaking lane proposals, the extent of the proposal (proposal area) is based on:

- clearing vegetation that is within four metres from the top of embankment cuttings and two metres from the edge of embankment fill for all works
- locating ancillary facilities in areas where there would be no direct or indirect impacts to heritage or biodiversity
- including overhead utility adjustments (11kV powerline cables currently in the road corridor).

Table 1-2 details the size of the proposal area for each overtaking lane and as a combined total.

Table 1-2 Development footprint

Site	**Size (hectares)**
OT 2	3.00
OT 3	2.99
OT 5	2.76
OT 6	1.96
OT 7	2.54
Total	13.19

Details of the total vegetation clearing associated with the proposed action footprint are provided in Table 3-4.

1.5 Street address of the site

Bells Line of Road between Kurrajong Heights and Mount Tomah, NSW.

1.6 **Lot description**

The proposed action is located within the designated road corridor owned by Roads and Maritime. All parcels of land affected by the overtaking land components of the proposed action are listed in Table 1-3, and these are under the ownership of Roads and Maritime.

Table 1-3 Description of lot/DP for directly affected properties

Site	Lot and DP
OT 2	Lot 9 DP751629
OT 3	N/A
OT 5	Lot 2 DP210461
OT 6	Lot 31 DP630942, Lot 32 DP630942, Lot 1 DP1180424
OT 7	N/A

Roads and Maritime may also lease privately held lands for ancillary facilities, such as work compounds. Locations for these will be determined during final project planning, but no additional vegetation clearing will occur.

1.7 **Local Government Area and Council contact (if known)**

Overtaking lane sites OT2, OT3, OT5, OT6 are located within Hawkesbury City local government area. Overtaking lane site OT7 lies within the Blue Mountains City local government area.

The project does not require local government approval.

1.8 **Time frame**

Subject to completion of relevant NSW environmental assessment processes, and budget allocations, the project will be progressively delivered in sections between the last quarter of 2014 and 2016. Each site would take around five months to complete.

1.9	**Alternatives to proposed action** The proposed works are part of the joint NSW-Commonwealth *Bells Line of Road Long Term Strategic Corridor Plan* (Australian and NSW Governments, 2012), which commenced in 2009 and was completed in 2012. That process included consideration of a range of options for delivering the identified corridor objectives, with protection of natural and cultural heritage values afforded high priority. Development of the Plan involved extensive community consultation and involvement. Alternatives have also been assessed during development of the detailed design options for each of the sections of work, aiming first to avoid impacts and then to minimise or mitigate any unavoidable impacts. For example, the original extent of impacts on TIF at OT6 was reduced from 0.55 to 0.16 hectares through design refinement. The option of not taking the action is not considered feasible given the conclusions of the Strategic Corridor Plan with respect to the safe functioning of the road into the future. Further information is provided in section 2.2.	Yes
1.10	**Alternative time frames etc**	No
1.11	**State assessment** Each section of works will be the subject of detailed environmental assessment to meet the requirements of Part 5 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). This will involve completion of a Review of Environmental Factors (REF) for each section, which will include consideration of the full range of potential environment impacts, including on biodiversity, together with identification of relevant mitigation measures and environmental safeguards.	Yes

1.12	**Component of larger action** There are no "larger actions" currently identified which these works are a part of. However, as noted above, the works subject to this referral are part of the joint NSW-Commonwealth *Bells Line of Road Long Term Strategic Corridor Plan*.	No
1.13	**Related actions/proposals** The proposed action forms part of the safety improvement works in the joint NSW-Commonwealth *Bells Line of Road Long Term Strategic Corridor Plan*. This Plan outlined a process to guide the short, medium and long term future development of this important road corridor. As noted above in section 1.1, and discussed in section 2.1: • future works at OT1 are **not** part of this referral • basic safety works at Safety Work Sites 9 and 12 are **not** part of this referral • works at OT4 have already been completed following earlier separate environmental assessment and are **not** part of this referral.	Yes
1.14	**Australian Government funding** Funding to complete the proposed action is being provided though the Infrastructure NSW 'Restart NSW' fund and other State government sources. Australian Government funding does not form part of the budget allocation.	No
1.15	**Great Barrier Reef Marine Park** The proposed action is not inside the Great Barrier Reef Marine Park.	No

2 Detailed description of proposed action

2.1 Description of proposed action

The proposed action, and works that are subject to this referral, includes provision of overtaking lanes at five (5) sites along Bells Line of Road between Mount Tomah and Kurrajong Heights. This would involve widening sections of Bells Line of Road and adding about six kilometres of additional overtaking lane.

The location of the proposed action is shown in Figure 2-1. The five overtaking lanes which comprise the action for the purpose of this referral are described in Table 2-1.

Each overtaking lane would generally provide a two metre shoulder, a 3.3 metre wide overtaking lane and a 3.3 metre wide travel lane. Other features would include:

- road surface overlay to all new and existing lanes
- reinstatement of line marking and road pavement markers
- establishment of gutters and modification to existing table drains
- new road signage specific to the use of the new overtaking lane.

Table 2-1 Proposed overtaking lane works on Bells Line of Road

Name	Description	Length (metres)
OT 2	Overtaking site 2 is located 4 kilometres from west of Kurrajong Heights. OT2 is an eastbound overtaking lane about 1300 metres in length, with new pavement provided on the north and south side of Bells Line of Road.	1300
OT 3	Overtaking site 3 is located 2.5 kilometres from the east side of Bilpin Township. The site is a westbound overtaking lane located on the south side of Bells Line of Road and is about 1520 metres in length, with new pavement provided on the south side of Bells Line of Road.	1520
OT 5	Overtaking site 5 is located 0.8 kilometres east of the Bilpin Township. OT5 is a westbound overtaking lane about 1360 metres in length, with new pavement provided on the north and south side of Bells Line of Road.	1360
OT 6	Overtaking site 6 is located 1 kilometres west of Bilpin area. OT6 is an eastbound overtaking lane about 1000 metres in length, with new pavement provided on the north and south side of Bells Line of Road.	1000
OT 7	Overtaking site 7 is located on the most western extent of the study area, within Mount Tomah about 9 kilometres west of Bilpin. OT7 is a westbound overtaking lane about 1025 metres in length, with new pavement provided on the north and south side of Bells Line of Road.	1025
Total length		**6,205**

As noted in section 1.4, the overtaking lane works involve clearing vegetation that is within four metres from the top of embankment cuttings and two metres from the edge of embankment fill for all works. Overhead power lines would be relocated along the majority of the overtaking lane sites, requiring the removal of tree branches and trimming of vegetation in close proximity to maintain safety clearances.

As also noted in section 1.4, ancillary facilities such as construction compounds would be required, although the same compound area may service multiple work sites. The compounds will be within or adjacent to the road corridor, close to the actual work sites. Additional vegetation clearing will not be required for ancillary facilities.

Works not subject to the referral

- **Overtaking Lane 1**

Roads and Maritime will also be providing an overtaking lane to the east of the above works, referred to as Overtaking Lane 1 (OT1). OT1 is **not** included within the scope of this referral as it has no significant impacts on matters of national environmental significance; specifically there will be no clearance of Turpentine Ironbark Forest.

While there is therefore no necessity or intention to separately refer OT1, consideration has been given to the criteria outlined in the EPBC Act *Policy Statement – Staged Developments – Split referrals: Section 74A of the EPBC Act*. This is included at Attachment A.

- **Overtaking Lane 4**

Roads and Maritime has completed overtaking lane works at OT4. An environmental assessment in the form of a Review of Environmental Factors was undertaken for OT4, which considered EPBC Act matters and concluded there would be no significant impact on matters of national environmental significance (MNES).

OT4 is therefore **not** part of the works included in this referral. However, impacts arising from OT4 will be considered in developing an appropriate offset strategy, as discussed in section 4.

- **Safety works**

Basic safety works are also proposed at two locations, as follows:

- *Safety Work Site 9 (SW9):* located 2.6 km east of Mount Tomah at Berambing just east of OT7. The work includes pavement widening to facilitate one metre wide sealed shoulders and 1.2 metre wide painted central median. High friction road surfacing would also be provided along with trimming of overhanging vegetation
- *Safety Work Site 12 (SW12):* located west of Bilpin in-between OT3 and OT5. The work includes pavement widening at the Bilpin Public School entrance to facilitate a new auxiliary right turn.

SW9 and SW12 are **not** included within the scope of this referral as they have no significant impacts on matters of national environmental significance; specifically there will no clearance of Turpentine Ironbark Forest.

2.2 Alternatives to taking the proposed action

Planning for the proposed action has included an assessment of a number of options, including a 'do nothing' approach.

Strategic level planning
The Bells Line of Road currently performs three distinct transport functions within the road network, as identified in the Bells Line of Road Long Term Strategic Corridor Plan (the Plan). These include:

- *Local access road* – the road provides for a low volume of local road users making short local trips. For this role the road does not need to allow for traffic speed, but instead fluid traffic movements without significant delay.
- *Through route* – the road also provides for motorists travelling through the area to town centres, many of which are slower heavy vehicles. These journeys are often for long distance commercial, residential and recreational travel and ideally require the road to allow consistent traffic speeds with overtaking opportunities.
- *Scenic route* – the road also provides for scenic and recreational journeys where travellers are looking to experience and enjoy the local environment, often stopping along the way. In this role, sufficient roadside space is required and high speeds are not preferred.

The existing Bells Line of Road is unable to adequately support these three transport roles identified above, often resulting in travellers who are wishing to travel at speed being stuck behind slower heavy vehicles or scenic travellers causing delays and frustration. This combination of local, through and scenic road users with a road environment that is sub-standard can lead to higher crash incidences.

The Plan recommended short and medium term measures and priorities to address improvements to road safety and road traffic efficiency. Two key findings from this study were:

1. There are too few overtaking lane opportunities particularly between Kurrajong Heights and Mount Tomah
2. The Bells Line of Road has a poor crash record with a crash rate that is about twice typical rates for rural roads in NSW.

Following announcement of the Plan, a business case was developed based on the need to address these two key findings; culminating in a number of locations identified to receive immediate funding to provide overtaking lanes and improve safety where there are disproportionately high crash occurrences.

The engineering and access analysis for the Strategic Corridor Plan identified a number of potential short and medium term improvements to the existing corridor. These included the provision of:

- overtaking lanes
- crossfall corrections and road pavement shape correction
- wider shoulders and wider clear zones
- improved delineation.

Extensive community consultation was carried out as part of the Plan, with community comments considered in the development of the preliminary options for improvements.

The consideration of alternative options for the proposed action was developed consistent with the Strategic Plan objectives and broad improvement program for Bells Line of Road. The proposed action focuses on overtaking lanes and road safety improvements in the existing corridor to deliver these improvements.

Do nothing

The 'do nothing' option does not address the strategic need for overtaking opportunities for travellers where they currently do not exist and does not satisfy Roads and Maritime's commitment to road safety. The 'do nothing' option would not meet the broad objectives of the Strategic Corridor Plan and was therefore not considered further.

Detailed planning

To progress implementation of the Strategic Corridor Plan a prioritised program of work was developed utilising funds from the Infrastructure NSW (INSW) 'Restart NSW' fund and other state government funding sources.

Roads and Maritime carried out initial reviews and investigations, primarily focused on the:

- identification of improvements required to existing overtaking lanes
- identification of priorities for the implementation of new and improved overtaking lanes
- review of safety overall and the evaluation of potential measures to address issues (including intersections and accesses).

Potential locations for overtaking lanes were identified through the review of crash data and consideration of the preferred number of opportunities for overtaking and distance between existing and proposed overtaking lanes. Roads and Maritime then held a series of safety review workshops to refine the possible locations for improvements. The nominated locations for new overtaking lanes were then documented in more detail; with additional overtaking lane opportunities identified through the extension and enhancement of existing overtaking lanes.

The process used a multi-criteria analysis (MCA) approach to identify and prioritise overtaking lanes in a systematic manner. The MCA criteria were developed to assess the overtaking lanes with a weighted percentage assigned to these criteria based on their importance with respect to meeting the proposed action objectives.

The criteria included:

- *equity along the route* – considering the distribution of overtaking lanes along each section of the road
- *constructability* – that is the ease of which overtaking lanes can be constructed, considering issues such as a good ease of access and the ability to construct with minimal impact to the environment, local community or road users and utilities
- *cost* – the total costs to implement an overtaking lane and the extent that value for money is provided at any one site
- *travel time* – this relates to sites where a new overtaking lane, or a significant extension to an existing overtaking lane, was under consideration, which would bring about improved travel times.

In addition to the above criteria, consideration was also given to whether the overtaking lane could be implemented in conjunction with other priority safety improvements such as at 'crash cluster' sites.

This process culminated in the identification of a possible 13 overtaking lanes and safety improvements works at eight crash cluster sites for the road corridor between Kurrajong Heights and Bell. Subsequently seven overtaking lane proposals and safety improvement works at a number of crash cluster sites were prioritised and put forward within the business case.

In 2014, further investigations were carried out for each site to review performance against proposal objectives, in particular:

- engineering and environmental constraints
- conformity with Roads and Maritime technical road design guidelines
- constructability and traffic disruption
- property impacts.

The planning process at both the strategic and project level has therefore involved iterative methods of investigation, identification, evaluation and refinement of individual safety improvements within the existing Bells Line of Road corridor.

2.3 Alternative locations, time frames or activities that form part of the referred action

There are no alternative locations, timeframes or activities for the proposed action. The overall strategic need for the action and options were considered in the Strategic Corridor Plan.

2.4 Context, planning framework and state/local government requirements

The proposed action is subject to a range of environmental and planning requirements. Table 2-2 below summarises the key statutory matters relevant to the project and how they have been addressed.

Table 2-2: Relevant environmental and planning requirements

NSW legislation and planning instruments	
Environment Planning and Assessment Act (EP&A Act)	The environmental assessment of the project is being undertaken under Part 5 of the EP&A Act. A Review of Environmental Factors (REF) will be prepared for each of the five (5) overtaking lane projects identified in this referral. Each REF will consider the likely environmental impacts from the individual section of works, and will also include relevant mitigation measures and environmental safeguards.
State Environmental Planning Policy No.44 – Koala Habitat Protection	SEPP 44 encourages the conservation and management of vegetation that provides habitat for koalas. While the SEPP does not apply to the Bells Line of Road project (as development consent is not required), consideration has been given to the principles of the SEPP. In addition, the Biodiversity Assessment Report (Jacobs 2014) has undertaken targeted surveys and assessments for this species in accordance with relevant guidelines and policies issued by the NSW and Commonwealth Governments.
Sydney Regional Environmental Plan No.20 (SREP) – Hawkesbury-Nepean	The SREP is intended to protect the environment of the Hawkesbury-Nepean River system by ensuring that the impacts of future land uses are considered in a regional context. SREP applies to the Hawkesbury local government area where the proposed action is located. The requirements of clause 5 and clause 6 of the SREP 20, which relate to specific planning consideration, will be addressed in each REF.
Threatened Species Conservation Act (TSC Act)	The TSC Act identifies threatened species, populations and ecological communities as critically endangered, endangered and vulnerable and lists them under Schedules 1, 1A and 2. Roads and Maritime commissioned a Biodiversity Assessment Report (Jacobs 2014) that determined the likely presence of listed species and communities in the study area. The Biodiversity Assessment Report includes an assessment of significance for each species and community, to meet requirements of section 5A of the EP&A Act. The report concludes that that there would be no significant impacts on species or communities listed under the TSC Act. This information will be incorporated into the REF prepared for each section of works (see above).
Fisheries Management Act (FM Act)	The FM Act identifies threatened fish, populations and ecological communities as critically endangered, endangered and vulnerable and lists them under Schedules 3, 4, 4A and 5. The Biodiversity Assessment Report also considers potential impacts on these species and includes assessments of significance to meet requirements of section 5A of the EP&A Act. The report concludes that that there would be no significant impacts on species or communities listed under the FM Act. This information will also be incorporated into the REF prepared for each section of works (see above).
National Parks and Wildlife Act (NPW Act)	The NPW Act provides for the protection of flora and fauna, including threatened species listed under the TSC Act, Aboriginal objects and the reservation of land for protection under the Act, including national parks and other conservation reserves. The action would not directly impact any lands reserved under the NPW Act. Potential indirect impacts may arise from works in proximity to park boundaries, such as weed or soil

	erosion. However, these are capable of being managed through standard or best practice construction techniques. Mitigation measures have been identified in the Biodiversity Assessment Report (Jacobs 2014) and further detailed safeguards will be identified in each REF to address potential indirect impacts to reserved lands. Potential impacts associated with Aboriginal objects will be considered as part of each REF, in accordance with relevant guidelines and requirements issued by the NSW Office of Environment and Heritage and RMS assessment procedures.
Noxious Weeds Act (NW Act)	The objective of the NW Act is to reduce the negative impact of weeds on the community, economy and environment. The Biodiversity Assessment Report (Jacobs 2014) identified 80 introduced species, nine (9) of which are listed as noxious in the Hawkesbury and Blue Mountains Local Government Areas. Mitigation measures and safeguards dealing with weeds will be addressed in each REF.
Commonwealth Legislation	
Environment Protection and Biodiversity Conservation Act (EPBC Act)	<u>Nationally listed threatened species and communities</u> The Biodiversity Assessment Report (Jacobs 2014) has determined the likely presence of nationally listed threatened species and communities in the study area, and assessed the potential significance of the impacts of the project in accordance with EPBC Act and DoE guideline requirements. At an individual scale, each section of works along Bells Line of Road is considered unlikely to have a significant impact on nationally listed threatened species and communities. However, there is potential for significant impact to critically endangered TIF as a result of the cumulative impact of the action subject to this referral. <u>World Heritage properties</u> Some sections of the action subject to this referral are in proximity to parts of the Greater Blue Mountains World Heritage Area. No direct impacts on the World Heritage Area would occur. Potential indirect impacts are not considered likely to be significant and can be managed through appropriate measures and safeguards (refer Section 3). <u>Strategic assessment under Part 10, EPBC Act</u> In August 2014, a strategic assessment commenced of Roads and Maritime procedures and guidelines for undertaking environmental assessments under Part 5 of the EP&A Act with respect to road and traffic management works. The strategic assessment is being undertaken in accordance with the provisions of Part 10, EPBC Act. Further information on the strategic assessment is available at: http://www.rms.nsw.gov.au/about/environment/planning-assessment/index.html In preparing the referral for the Bells Line of Road project, Roads and Maritime has considered the *Strategic Assessment: Policy Statement for EPBC Act referrals*. In accordance with Principle 2 of the Policy Statement, Roads and Maritime has taken account of the terms of reference for the strategic assessment and the s.146 agreement with the Department of the Environment. Given the timeframes associated with the strategic assessment, the referral of the Bells Line of Road project remains necessary. In developing the project, Roads and Maritime has sought to ensure consistency with the likely environmental outcomes of the strategic assessment. That has included: application of the avoid, minimise, and mitigate approach; consideration of cumulative impacts; application of the precautionary principle; and consideration of relevant recovery plans and impact assessment guidelines.

2.5 Environmental impact assessments under Commonwealth, state or territory legislation

REFs will be prepared for each section of overtaking lane works that are part of the proposed action. Roads and Maritime will be the proponent and the determining authority for each REF under Part 5 of the EP&A Act. Each REF will also assist in determining whether:

- the activity is likely to have a significant impact on the environment for the purposes of the EP&A Act and whether an environmental impact statement (EIS) is required
- the activity is likely to have a significant impact on any threatened species, populations or communities for the purposes of the EP&A Act and whether a species impact statement (SIS) is required.

At this stage RMS does not consider any of the works, either individually or cumulatively, are likely to meet the threshold for preparation of an EIS or SIS under the EP&A Act.

2.6 Public consultation (including with Indigenous stakeholders)

Consultation – strategic level

Extensive community and stakeholder input was obtained between November 2010 and March 2012 to inform the *Bells Line of Road Long Term Strategic Corridor Plan*. That process sought to obtain feedback from the community and all levels of government to identify improvement works and set priorities for the next 20 years and beyond. Input was gained through:

- nine staffed information days and 13 static information displays
- twelve meetings and forums with community members
- briefings to councils
- a dedicated project website with an online forum
- advertisements in 9 local newspapers
- thirty-four thousand community updates distributed in the Bells Line of Road area
- nine thousand postcards to raise awareness distributed
- toll free number and project email
- feedback forms.

Issues raised by the community, including with respect to Aboriginal heritage matters, are discussed in the Community Issues Report. That report, and further information regarding the community consultation process and feedback, is available at: http://www.rms.nsw.gov.au/projects/sydney-west/blue-mountains/bells-line-of-road-corridor-improvement-program/project-documents.html

Consultation – project level

Community consultation for the individual overtaking lanes and safety works has been undertaken and will continue. This includes engagement with:

- local community and businesses, including property owners who live within the study area
- local schools
- government agencies, including the Blue Mountains and Hawkesbury City Council, Office of Environment and Heritage (including National Parks and Wildlife Service)
- public transport operators
- Aboriginal community.

Communication tools used to date have included meetings, newsletters, flyers, emails, Roads and Maritime website, post and a toll free project information line. The wide range of communication tools used has ensured that groups and individuals have access to a method of communication best suited to their needs.

Consultation will continue for the individual overtaking lanes. For each overtaking lane, letters will be distributed to inform the community and stakeholders of upcoming activities, such as any field investigations and noise monitoring.

In addition, a 'Have Your Say' letter will be distributed outlining the concept design and to invite comments. A two week period will be provided for feedback on the proposed works. Stakeholders will be encouraged to contact the project team through the entire concept design process, through a free call 1800 number and project email. In addition, information on the proposed action will be provided on the Roads and Maritime website.

Aboriginal community involvement

Aboriginal community consultation has been conducted in accordance with the Roads and Maritime *Procedure for Aboriginal cultural heritage consultation and investigation* (RMS 2011a). The study area is within the boundary of Deerubbin Local Aboriginal Land Council (DLALC). The Roads and Maritime Aboriginal cultural heritage advisor conducted the consultation with DLALC, which involved the participation of two Aboriginal site officers during site surveys.

Following completion of the Aboriginal survey an archaeological survey report was prepared, which outlined the consultation process and information regarding cultural significance of the study area. The DLALC were provided with an opportunity to comment on the draft of this document. The outcomes of the study and consultation will inform the preparation of REFs for each section of overtaking lane work.

2.7 A staged development or component of a larger project

As noted above, the works are part of the implementation of the joint NSW-Commonwealth *Bells Line of Road Long Term Strategic Corridor Plan*, which was completed in 2012 following community consultation. The works subject to this referral are being considered together; as while the impacts of each individual overtaking lane would not have a significant impact on MNES, cumulatively there may be a significant impact on TIF.

As also noted above (section 2.1 and Attachment A):

- OT1, SW9 and SW12 are **not** within scope of the referral as they would not have a significant impact on MNES
- OT4 has already been completed and is **not** part of this referral.

3 Description of environment & likely impacts

3.1 Matters of national environmental significance

3.1 (a) World Heritage Properties

Description

Parts of the proposed action subject to this referral are in proximity to the Greater Blue Mountains World Heritage Area, which was inscribed on the World Heritage Register in 2000. The Greater Blue Mountains World Heritage Area is listed for:

- Criterion (IX) - outstanding examples of on-going evolution
- Criterion (X) - important habitats for conservation of biological diversity.

The world heritage property boundaries are similar (although not identical) to those of the Blue Mountains National Park (to the south) and Wollemi National Park (to the north) in this location. Refer to Figure 3-1.

The proposed action which is subject to this referral adjoins the park boundaries (and hence the world heritage property) at the following key locations:

- **OT2**: Wollemi National Park is on the north side of the road for about 600 metres
- **OT7**: Wollemi National Park is on the north side of the road for about 800 metres and Blue Mountains National Park to the south of the road for 350 metres.

Nature and extent of likely impact

There would be no direct impacts on the values of the Greater Blue Mountains World Heritage Area. With respect to indirect impacts:

- there is some potential for increased weed invasion in adjacent and down-slope areas of the park which would be managed during construction and on an on-going basis over the long term, consistent with best practice measures set out in the RMS Biodiversity Guidelines (RMS 2011b) and roadside maintenance procedures
- no pests and diseases are currently known from the clearing footprint but could potentially be present. Mitigation measures for confirming the presence and preventing the spread of pathogen and disease causing agents will be incorporated into the construction phase of the project
- there will be no increased fragmentation or isolation of habitat and no expected substantial run-off of surface water from the road surface into the World Heritage Area.

Overall, the project is unlikely to result in the loss of or significant impacts to one or more of the World Heritage values, either directly or indirectly.

3.1 (b) National Heritage Places

Description

The Greater Blue Mountains World Heritage Area was also included on the National Heritage list in 2007.

Nature and extent of likely impact

See above discussion with respect to the Greater Blue Mountains World Heritage Area.

3.1 (c) Wetlands of International Importance (declared Ramsar wetlands)

Description

N/A

Nature and extent of likely impact

The proposed action would not impact (either directly or indirectly) any Wetlands of International Significance.

3.1 (d) Listed threatened species and ecological communities

Description

Overview
A list of nationally listed threatened species, populations and ecological communities with potential to occur within a 10 km radius of the study area was compiled using a range of sources, including the DoE Protected Matters Search Tool, OEH (NSW) Spatial Data Online Access – Bionet and OEH Threatened Species Profile Search, and NSW DPI species, populations and communities records viewer. Detailed vegetation, flora and fauna surveys were also undertaken.

A full description of all sources and survey methods used to determine threatened species and communities with potential to occur in the study area is provided in the Biodiversity Assessment Report (Jacobs 2014) at Attachment B. The methods used are in accordance with relevant NSW and Commonwealth guidelines, including specialist guidelines for assessing Turpentine-Ironbark Forest of the Sydney Basin Bioregion and koalas.

The Biodiversity Assessment Report identifies: three (3) nationally listed ecological communities known from the region and recorded in the study area; 40 nationally listed flora species potentially occurring in the study area; 23 nationally listed fauna species potentially occurring in the study area; and 14 nationally listed migratory species. Figures 3-2 and 3-3 show the threatened flora and fauna records within a 10 kilometre radius of the study area. Note that not all species listed have been mapped due to absence of available data coordinates.

Of these a total of one (1) ecological community, zero (0) flora species and four (4) fauna species were confirmed or assessed as having a moderate to high likelihood of occurring in the study area. A list of these species and communities including their EPBC Act conservation status is provided below:

- Turpentine-Ironbark Forest of the Sydney Basin Bioregion (TIF) (Critically Endangered)
- Koala (Vulnerable)
- Large-eared Pied Bat (Vulnerable)
- Spotted-tailed Quoll (Vulnerable)
- Grey-headed flying fox (Vulnerable)

Migratory species are discussed in section 3.1(e).

Targeted survey
Following a detailed literature review, targeted surveys were conducted in May and June 2014 for threatened species. The investigations included habitat assessments, diurnal bat surveys, spotlight, call back and koala surveys. Details of the survey methodology are included in the Biodiversity Assessment Report at Attachment B (Jacobs, 2014).

Flora
No threatened flora species were identified in the study area despite targeted searches (refer to Biodiversity Assessment Report, section 3.6).

Fauna
Of the 23 threatened species potentially occurring, three were considered to have a moderate to high chance of occurring and the presence of one threatened species (koala) was confirmed. These are detailed below.

Koala (*Phascolarctos cinereus*) - Vulnerable
The Koala is found throughout the Blue Mountains, Wollemi and Yengo National Parks. The results of the Koala survey and habitat assessment (refer to Section 4.14 of the Biodiversity Assessment Report) confirmed Koala activity in the study area and Koala habitat based on the presence of important Koala food tree species known from the region. The assessment concluded that an important Koala population is present in the Bilpin area and that this is likely to be a low-density and widespread population given the large expanses of habitat to the north and south of the study area and associated with the national parks estate. The evidence of Koala presence in the study area was found to be associated with the Blue Mountains

Shale Cap Forest and Turpentine Ironbark Forest, although only where Grey Gum (*E.punctata*) was present and not widespread across these communities. There was no evidence of Koala activity within the Blue Mountain Ridgetop Woodland. Koalas appear to be associated with forests comprising a higher proportions of shale and Basal soil and this may be associated with higher moisture or nutrient content of the leaves.

An adult female Koala was observed in the road reserve at OT5 on the north side of the Bells Line of Road and a mix of old and fresh Koala scats were recorded from eight trees all on the northern side of the Bells Line of Road at OT 5 and two locations at the western end of OT3 in proximity to OT5, although on the southern side of the road. In addition there were 13 historical Koala records from a five kilometre radius of Bilpin, including several sightings along the road and north and south of the Bells Line of Road. The results of the desktop assessment and on-ground surveys suggest the presence of an important Koala population occupying habitat to the north and south of the Bells Line of road.

There are considerably large areas of potential habitat for Koalas in this location that is contiguous with Wollemi and Blue Mountains National Parks. The extent and distribution of the Koala population is not known, although in relation to the proposed action the presence of Koalas along the Bells Line of Road was confirmed between Johnson Road in the east and Mountain Lagoon Road to the west (OT3 and OT5) and associated with the presence of Grey Gum (*E.punctata*) which is patchy in the landscape. There was no evidence of Koalas using other apparent Koala feed tree species Monkey Gum (*E.cypellocarpa*) or Mountain Gum (*E.deanei*) in the study area.

The assessment of impacts on koala habitat applied the assessment tool from the Draft Koala Referral Guidelines (Commonwealth Department of the Environment 2013). This document guides considerations in assessing the impacts of an action on Koala to inform the decision on whether an action requires referral. This includes determining whether the proposed site contains habitat critical to the survival of the koala, whether the proposed action would threaten the viability of such habitat and whether the proposed action is consistent with the interim recovery objectives of the species. The results of the assessment are discussed below.

Large-eared Pied Bat (*Chalinolobus dwyeri*) -Vulnerable
This bat forages over a broad range of open forest and woodland habitats. This species is a cave-roosting bat which favours sandstone escarpment habitats or roosting, in the form of shallow overhangs, crevices and caves.

Spotted-tailed Quoll (*Dasyurus maculatus*) - Critically endangered
The Spotted-tailed Quoll prefers wet and dry sclerophyll forests and rainforests, and adjacent open agricultural areas. It is generally associated with large expansive areas of habitat to sustain territory size and requires hollow-bearing trees, fallen logs, small caves, rock crevices, boulder fields and rocky-cliff faces as den sites.

Grey-headed Flying-fox (*Pteropus poliocephalus*) -Vulnerable
This Grey-headed Flying-fox forages on nectar and pollen in sclerophyll forests and on rainforest fruits and vines, orchards and gardens.

Ecological communities
Vegetation along the Bells Line of Road is highly influenced by the soil depth and level of shale-enrichment. Prevailing vegetation communities are highly transitional occurring on the ecotone between sandstone and shale derived soils, and comprise a mix of native flora species typical from both sandstone and shale soils.

Based on the literature review, field survey and assessment of diagnostic species conducted in May and June 2014, it was concluded that remnant patches of Turpentine-Ironbark Forest in the Sydney Basin Bioregion ("Turpentine-Ironbark Forest") exist that meet specific condition criteria, including patch size and canopy cover (refer to section 2.3.4 of the Biodiversity Assessment Report).

The vegetation associated with the Turpentine-Ironbark Forest represents the western most occurrences of the community associated with outlying shale caps on mountain ridges in the Blue Mountains.

Nature and extent of likely impact

A full description of the potential impacts of the project on listed threatened species and communities including assessments of significance is described in the attached Biodiversity Assessment Report. A brief summary is provided below.

Threatened flora

No threatened flora species were identified during survey and ecological investigations. As such no impacts on threatened flora are envisaged.

Turpentine-Ironbark Forest of the Sydney basin Bioregion (TIF) (Critically Endangered)

A cumulative total of 2.12 ha of high condition TIF will be directly removed by the proposed works that are the subject of this referral at five sites. Detailed design refinements yet to be finalised may mean this figure could alter marginally (by no more than 10%).

Table 3-4 Direct impacts

Site	Overall clearing (ha)	TIF clearing (ha)
OT 2	0.60	0.60
OT 3	1.38	1.14
OT 5	0.60	0.15
OT 6	0.19	0.16
OT 7	0.24	0.07
Total	**3.01**	**2.12**

The majority of TIF present comprises higher condition intact areas of remnant vegetation occurring within larger patches (greater than one hectare).

The combined total clearing for works associated with this current referral of 2.12 ha of TIF is expected to reduce the area of occupancy of the community in the locality by 0.14%.

An additional 0.47 ha of TIF was previously cleared for an earlier project (OT4) at Bilpin, which was subject to a separate environment assessment process. These works have been completed and are **not** part of this referral. However, the proposed offset strategy (section 4) will take the prior impacts of OT4 into account.

Indirect impacts to remaining TIF may result through potential introduction of invasive weeds in edge areas, and to a lesser degree there is potential for run-off impacts although most areas are on low gradients.

Conclusion: Based on the cumulative clearing of 2.12 for the works included in this referral, there may be a significant impact on TIF.

Koala (vulnerable)

Evidence of koala presence was confirmed between OT3 and OT5 and was found to be associated with Blue Mountains Shale Cap Forest and TIF although only where Grey Gum (*E.puncata*) (secondary food tree species) was present, which were patchy in the landscape. In addition to the findings of the survey, there are historical koala records from a five kilometre radius of the township of Bilpin including several sightings north and south of the Bells Line of Road.

The draft EPBC Act referral guidelines (DoE 2013) were used to assess the quality of koala habitat present in the study area. A score of eight (8) was found confirming the presence of habitat critical to survival of koalas although the population is considered to be of a low density (<0.01 koalas/ha) and, as stated above, associated with the presence of Grey Gums. There was no evidence koalas were using other apparent feed trees in the study area.

A cumulative total of approximately 2.9 ha of vegetation considered to be critical to the survival of koalas (using the draft EPBC Act referral guidelines) will be directly removed by the proposed works that are subject of this referral, mostly from OT3 (1.39 ha). Potential loss of koala habitat will also occur at OT2 (0.53 ha), OT5 (0.60 ha), OT6 (0.19 ha), OT7 (0.13 ha) and SW12 (0.06 ha).

Note that this does not include vegetation associated with OT1 and SW6. As discussed above, OT1 is **not** included within this referral. In this location, koala habitat of 0.18 ha exists comprising secondary habitat (class 6) based on the presence of a low density of Mountain Mahogany (a secondary feed tree). No primary feed trees occur at OT1 and the vegetation to be impacted exists as isolated trees and small patches in the road reserve. Comparable koala habitat is extensive to the north and south of Bells Line of Road and well conserved within Wollemi and Blue Mountains National Park.

The widening of the road may contribute to the barrier effect of the existing road. However the clearing would take place at the edge of the existing cleared road corridor in most areas surrounded by fenced residential properties and cleared farmland and would cause minimal fragmentation of habitat beyond the current scenario and minimal risk of increased road kill of impacts of koala movements.

Conclusion: As detailed in the Biodiversity Assessment Report (Jacobs 2014) it is not considered that there will be a significant impact on the koala from the works associated with this referral.

Large-eared Pied Bat (Vulnerable)

A cumulative total of around 2.9 ha of foraging habitat would be directly removed by the proposed action. The area of habitat removed would vary at each site with the largest extent occurring at OT3 (1.38 ha). There will be no loss of roosting and breeding habitat for this species which is typically associated with caves.

Indirect impacts may occur through the potential introduction of invasive weeds into adjoining habitat and altering the structure of the community in edge areas leading to reduced condition. The overall loss of habitat will be small compared to extent of similar and better condition habitat within the locality.

Conclusion: As detailed in the Biodiversity Assessment Report (Jacobs 2014) it is not considered that there will be a significant impact on the Large-eared Pied Bat.

Spotted tailed Quoll (Vulnerable)

A cumulative total of around 2.9 ha of potential habitat would be directly removed by the project. The area of habitat removed would vary at each site, with the largest extent occurring at OT3 (1.38 ha). The proposal may also displace or disturb a small number of individuals, but unlikely to impact local populations.

Indirect impacts may occur through the potential introduction of invasive weeds into adjoining habitat and altering the structure of the community in edge areas leading to reduced condition. The overall loss of habitat will be small compared to extent of similar and better condition habitat within the locality. The proposal is also unlikely to further fragment habitat for the species.

Conclusion: As detailed in the Biodiversity Assessment Report (Jacobs 2014) it is not considered that there will be a significant impact on the Spotted tailed Quoll.

Grey-headed flying fox (Vulnerable)

No roost camps have been identified in the project boundary and the project would not directly impact on any known breeding/maternity site. A cumulative total of 3.01 ha of low-level foraging habitat would be directly removed by the project. The loss of habitat is very small in scale compared to the extent of similar and better condition habitats within the locality.

Conclusion: As detailed in the Biodiversity Assessment Report (Jacobs 2014) it is not considered that there will be a significant impact on the Grey-headed flying fox.

3.1 (e) Listed migratory species

Description

A total of 14 migratory fauna species were identified in the DoE Act Protected Matters Report as having potential to occur in the locality. Of these eight (8) migratory species were assessed to have a moderate likelihood of occurring in the study area (see table below). The Biodiversity Assessment Report (Jacobs 2014) provides a full description of the habitat requirements and an assessment of their likely presence in the study area.

Species	EPBC Act	No. of records and source
Apus pacificus (Fork-Tailed Swift)	Migratory (CAMBA, JAMBA, ROKAMBA)	PMST
Ardea ibis (Cattle Egret)	Marine, Migratory (CAMBA, JAMBA)	11 BioNET, PMST
Hirundapus caudacutus (White-throated Needletail)	Marine, Migratory (CAMBA, JAMBA, ROKAMBA)	7 BioNET, PMST
Merops ornatus (Rainbow Bee-Eater)	Migratory (JAMBA)	6 BioNET, PMST
Monarcha melanopsis (Black-faced Monarch)	Migratory (Bonn)	PMST
Monarcha trivirgatus (Spectacled Monarch)	Marine, Migratory (Bonn)	PMST
Myiagra cyanoleuca (Satin Flycatcher)	Migratory (Bonn)	PMST
Rhipidura rufifrons (Rufus Fantail)	Migratory (Bonn)	PMST

Nature and extent of likely impact

The Biodiversity Assessment Report at Attachment B (Jacobs, 2014) includes an assessment of the significance of potential impacts to listed migratory species in accordance with Commonwealth Guidelines. The report found that there was no evidence to suggest that an ecologically significant proportion of the population of any identified migratory species is present within the proposed action boundary. As such the proposed action is unlikely to significantly impact on migratory birds.

3.1 (f) Commonwealth marine area

Description

N/A

Nature and extent of likely impact

The proposed action will not impact (either directly or indirectly) any Commonwealth Marine Area

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3.1 (g) Commonwealth land

Description

N/A

Nature and extent of likely impact

The proposed action will not impact (either directly or indirectly) any Commonwealth land.

3.1 (h) The Great Barrier Reef Marine Park

Description

N/A

Nature and extent of likely impact

The proposed action will not impact (either directly or indirectly) the Great Barrier Reef Marine Park.

3.1 (i) A water resource, in relation to coal seam gas development and large coal mining development

Description

N/A

Nature and extent of likely impact

N/A

3.2 Nuclear actions, actions taken by the Commonwealth (or Commonwealth agency), actions taken in a Commonwealth marine area, actions taken on Commonwealth land, or actions taken in the Great Barrier Reef Marine Park

3.2 (a)	**Is the proposed action a nuclear action?**	No

If yes, nature & extent of likely impact on the whole environment

N/A

3.2 (b)	**Is the proposed action to be taken by the Commonwealth or a Commonwealth agency?**	No

If yes, nature & extent of likely impact on the whole environment

N/A

3.2 (c)	**Is the proposed action to be taken in a Commonwealth marine area?**	No

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(f))

N/A

3.2 (d)	**Is the proposed action to be taken on Commonwealth land?**	No

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(g))

N/A

3.2 (e)	**Is the proposed action to be taken in the Great Barrier Reef Marine Park?**	No

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(h))

N/A

3.3 Other important features of the environment

A full description of the environment where the project is to occur is provided in the Biodiversity Assessment Report at Attachment B (Jacobs, 2014). A summary is provided below.

3.3 (a) Flora and fauna

Native floral species richness was relatively high within the naturally vegetated portions of the study area. A total of 345 flora species were recorded within the study area. This total comprises 80 exotic species including nine noxious weed species. Overall, there was 265 native flora species recorded in the study area. Exotic and non-indigenous native flora represents about 23% of the floral diversity in the study area. Native floral diversity is likely to be higher in the study area considering the late autumn timing of the survey.

A total of 63 vertebrate fauna species were recorded from this survey across the study area, this includes 50 bird species, 9 mammal species including two introduced species, and 4 frog species. The main fauna habitats present within the study area include remnant dry and moist open forest, aquatic habitats in the form of ephemeral creeks and farm dams and agricultural land. Hollow trees in the study area occurred at moderate abundance, dominated by a range of small to medium-sized hollows and dead trees. A total of 299 habitat trees and tree hollows were recorded within 20m of the forest edge.

The study area is considered to be commensurate with a range of habitats within the Blue Mountains area, in particular within Wollemi National Park and Blue Mountains National Park.

3.3 (b) Hydrology, including water flows

The areas to be cleared lie alongside the edges of the road corridor and mostly on flatter ground with limited surface water runoff expected. The Bells Line of Road does not cross any waterways.

There is the potential for run-off impacts to occur at the western end of OT 7 and OT3 given the steepness of the slope adjoining the road and the opportunity for alteration of surface water drainage.

Once operational, the proposed action would result in some minor changes to the local hydrology. As the road would be widened, a minor increase in the flow and rate of stormwater runoff would be experienced due to the increased impervious area. Existing drainage patterns along the road corridor would generally be improved as part of the proposed action through the construction of gutters and improvements to existing table drains adjacent to the road. Gutters would diffusely drain to the adjacent grassed areas. The existing culverts would be extended beneath the new overtaking lane and outlet at the toe of the batter on the opposite side. In some areas rock mattressing would be installed to arrest the flow of water within the drainage line and ensure no localised erosion occurs. These rock mattress areas would drain into the grassed verge.

The proposed action is not considered sufficient in size to result in more than a minimal change to the local hydrology. There would be minor change to stormwater discharge in receiving drainage lines and no increased flood risk would be expected to the receiving environment on localised erosion or scouring of drainage lines.

Similarly, given the small scale and nature of the proposed work and the proposed actions location along a ridgeline, the proposed action is not expected to be impacted by flooding from nearby waterways.

3.3 (c) Soil and Vegetation characteristics

The study area is located in the Sydney-Basin Bioregion and within the former Hawkesbury-Nepean Catchment Management Area in the Wollemi Sub-region. The majority of the study area occurs on shale-cap sol landscapes, comprising Bilpin Ridges as described by Mitchell (2003). Two other Mitchell Landscape forms in the study area include Lapstone Slopes and Blue Mountains Plateau.

The vegetation in the study area is highly influenced by the soil depth and level of shale-enrichment in the soils. Vegetation communities are highly transitional occurring on the ecotone between sandstone and shale derived soils, comprising a mix of native flora species from sandstone and shale soils. Vegetation community in the study area are Turpentine-ironbark Forest, Blue Mountains Shale Cap Forest (a NSW TSC Act listed ecological community) and Blue Mountains Sandstone Ridgetop Woodland.

Dry open sclerophyll forest dominates the landscape and is present across all sites, particularly surrounding OT1, OT2, OT3 and OT7 and associated with Blue Mountains Sandstone Ridgetop Woodland, while moist forest is associated with gullies and occurs in parts of OT5 and 6 and associated with the shale cap forest and Turpentine Ironbark Forest habitats.

3.3 (d) Outstanding natural features

The Bells Line of Road between Mount Tomah and Kurrajong Heights passes through agricultural land, large and small rural residential properties and some commercial properties which border the road on both sides. Beyond this lies the Blue Mountains National Park to the south and Wollemi National Park to the north. The national parks are part of the Greater Blue Mountains Area World Heritage Property.

The geology of the area mainly comprises sandstones and shales, with some granitic, volcanic and limestone areas. Due to the topographic diversity and complexity the Blue Mountains have maintained a broad range of climatic and other environmental conditions, and the mountains have acted as refuge, enabling the survival of a broad spectrum of vegetation types, and a number of more unusual species groups. The resulting landscape includes a complex and scenically impressive array of geological landscapes and diverse vegetation with a high scenic quality. The Bells Line of Road provides a route through this scenic landscape, but due to the nature of the works, the scenic quality would not be impacted.

3.3 (e) Remnant native vegetation

Remnant native vegetation occurs in the study area and would be impacted by the proposed action. This includes two threatened ecological communities, Blue Mountains Shale Cap Forest (NSW TSC Act) and TIF (EPBC Act). A detailed description of the vegetation and an assessment of potential impacts is described in the Biodiversity Assessment Report (Jacobs 2014).

3.3 (f) Gradient (or depth range if action is to be taken in a marine area)

Areas to be cleared are along existing edges of the road corridor and mostly on a flat gradient with limited surface water runoff expected into adjoining habitats. There will be an edge effect where surface water runs off the road and the extent of the impact is not known but may extend several metres where sloping ground occurs. This is most likely to occur at OT7 and OT3 where the steepness of slope adjoining the road is greatest.

3.3 (g) Current state of the environment

Land adjoining the proposed works includes areas of native vegetation ranging in condition from low to moderate and high condition. Parts of the study area are contiguous with large intact areas of native vegetation present in adjoining national park and/or private property. Eighty introduced weed species were identified (23% of all flora species recorded), nine (9) of which are listed as noxious. The majority of weeds were recorded in roadside areas. Evidence of a wild dog and rabbits were observed in the study area.

Table 3-9 below provides a brief summary of the overtaking lanes and safety works sites in relation to vegetation, and weeds.

Table 3-9 State of the environmental along the Proposed Action

Site	Description of vegetation
OT 2	Comprises larger patches of high condition, federally listed vegetation, on the north and south sides of the road including private land. Wollemi National Park lies along the boundary of this site for about 600 metres. Several infestations of Crofton Weed (*Ageratina adenophora*) (class 4 noxious weed) and Montipellier Broom (*Genista monspessulana*) were recorded in the vicinity of OT 2.
OT 3	Includes fragmented patches of high and moderate condition vegetation. Patches of federally listed vegetation exist in the road reserve and on adjacent private property. Some exotic trees and shrubs exist along the property boundaries in areas along the north side of the road.
OT 5	This site includes areas of high condition patches of federally listed vegetation on the northern and southern sides of the road at the eastern end of the study area. Moderate condition areas comprise isolated trees in the road easement and fragmented patches of the community at the western end.
OT 6	There is limited native vegetation in the road reserve and there are disturbed strips of vegetation which are connected to larger patches of vegetation in the surrounding area. There are also areas of exotic trees and shrubs and several dams on the surrounding private properties.
OT 7	The Blue Mountains National Park lies along the northern side of the road for about 800 metres and to the south side for about 350 metres. Exotic trees and shrubs exist in the private properties on either side of the road.

3.3 (h) Commonwealth Heritage Places or other places recognised as having heritage values

As stated in section 3.1(a) above, sections of the proposed action are in proximity to the Greater Blue Mountains World Heritage Area.

3.3 (i) Indigenous heritage values

The project falls within a region known to have significant Aboriginal cultural heritage values, including both physical objects (such as archaeological remains) and spiritual connections. Blue Mountains and Wollemi National Parks, and the Greater Blue Mountains World Heritage Area, are particularly known to be of cultural significance to Aboriginal communities.

An Aboriginal archaeological survey and assessment has been undertaken in consultation with Deerubbin Local Aboriginal Land Council. The report concluded that overall the study area features high levels of ground disturbance, no cultural material was identified and no areas were identified as having archaeological potential.

The potential impacts on Aboriginal heritage will be further considered, and community consultation undertaken during preparation of the REFs for each stage of works, in accordance with RMS procedures for Aboriginal heritage assessments.

3.3 (j) Other important or unique values of the environment

As stated, parts of the proposed actions are adjacent to or in proximity of Wollemi National Park and Blue Mountains National Park.

3.3 (k) Tenure of the action area (eg freehold, leasehold)

The tenure in the area is mostly freehold with the majority of owners along the route being private owners. The action would be undertaken within the road corridor which is owned by Roads and Maritime. Properties potentially impacted by the proposed action are identified in section 1.6.

3.3 (l) Existing land/marine uses of area

The current land uses include road reserve, with rural residential, agricultural and some commercial properties along the Bells Line of Road. National parks also border the road reserve at specific locations as described in Table 3-9.

3.3 (m) Any proposed land/marine uses of area

Future development in the area has been considered during development of the overtaking lane proposal. Community consultation, provided an opportunity for stakeholders to provide input in relation to private development in the locality. There are no future land or marine uses that would be significantly impacted directly or indirectly by the proposed action.

4 Measures to avoid or reduce impacts

Environmental considerations have been integrated into decision-making processes throughout the planning and design of the proposed action, including application of the principles of avoiding, minimising and mitigating impacts.

The necessity of undertaking the proposed action, including consideration of options, alternatives and constraints, was considered during preparation of the Strategic Corridor Plan. That Plan recognised the environmental sensitivities of the area.

The alignment of the existing road and surrounding topographical and land use constraints, such as national parks and the Greater Blue Mountains World Heritage Area, present particular challenges in delivering the corridor improvement program. The nature of works, particularly the overtaking lanes, means that it would not be feasible to avoid all impacts, especially with respect to vegetation clearance.

Steps have been taken during the design of road sections along Bells Line of Road to minimise potential impacts, including modifications to limit impacts on biodiversity values. For example, the original extent of clearing of TIF at Overtaking Lane 6 has been reduced from 0.55 to 0.16 hectares.

Management measures will be implemented during construction in accordance with RMS' *Biodiversity Guidelines*, including:

- pre-clearing surveys
- exclusion zones
- staged habitat removal
- management of unexpected species finds
- management of invasive species, pests and diseases.

These and any additional site specific measures, such as road signage for fauna, will be considered during the REF process

Offsetting

Roads and Maritime has an adopted guideline for biodiversity offsets, which would apply for this proposed action.

To compensate for the cumulative impacts of the full programme of works on native vegetation, RMS intends to develop an offset package inclusive of both the works subject to this referral and the already completed works at Bilpin (OT4).

The offset package will examine a range of options to secure the protection of land with similar ecological values to that affected by the proposal, for the purpose of environmental conservation. This will be undertaken in consultation with the NSW Office of Environment and Heritage, and initial discussions have commenced.

5 Conclusion on the likelihood of significant impacts

5.1 Do you THINK your proposed action is a controlled action?

	No, complete section 5.2
Yes	Yes, complete section 5.3

5.2 Proposed action IS NOT a controlled action.

N/A

5.3 Proposed action IS a controlled action

	Matters likely to be impacted
	World Heritage values (sections 12 and 15A)
	National Heritage places (sections 15B and 15C)
	Wetlands of international importance (sections 16 and 17B)
X	Listed threatened species and communities (sections 18 and 18A)
	Listed migratory species (sections 20 and 20A)
	Protection of the environment from nuclear actions (sections 21 and 22A)
	Commonwealth marine environment (sections 23 and 24A)
	Great Barrier Reef Marine Park (sections 24B and 24C)
	A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E)
	Protection of the environment from actions involving Commonwealth land (sections 26 and 27A)
	Protection of the environment from Commonwealth actions (section 28)
	Commonwealth Heritage places overseas (sections 27B and 27C)

This referral and supporting information provides a comprehensive assessment of the environmental values within the area potentially affected by the proposed action and the potential impacts on MNES.

Substantial effort has been placed on avoiding impacts to biodiversity and the World Heritage property, through design modifications following receipt of information from the ecological surveys. Where biodiversity impacts cannot be avoided, the area of vegetation to be removed has been minimised where possible.

Overall, the cumulative impact of the proposed action is considered to potentially have a significant adverse impact on one MNES – the critically endangered ecological community *Turpentine Ironbark Forest of the Sydney Basin Bioregion* (TIF). A breakdown of the area of TIF removed at each site is provided below.

Threatened Ecological Community	**Status**	**OT2**	**OT3**	**OT5**	**OT6**	**OT7**	**Total**
Turpentine Ironbark Forest of the Sydney Basin Bioregion	Critically Endangered, EPBC Act	0.60	1.14	0.15	0.16	0.07	**2.12 ha**

A total cumulative impact of 2.12 ha of high condition TIF would be removed by the proposed works that are subject to this current referral (noting that final design refinements may adjust this figure, but by no more than 10%). This represents approximately 0.13% of the estimated 1,878 ha of the community within a ten kilometre radius of the proposal.

This is in addition to 0.47 ha of TIF which was previously cleared for an earlier project at Bilpin (which was subject to a separate environment assessment process), which has been completed and which is not part of the current referral.

Further, there may be potential indirect impacts to TIF through possible weed and edge effects, which may alter the structure of the community along the road corridor leading to reduced condition (floristic and structural).

After taking into account the conservation status of TIF, its local distribution and extent, key known threats, Commonwealth Assessment of Significance Guidelines and Commonwealth Conservation Advice (DoE 2014b) for this community, the Biodiversity Assessment Report (Jacobs 2014) concluded that the cumulative impacts associated with this project may be significant. Individual impacts to TIF at each of the proposed overtaking lanes sites were not considered to be significant.

The assessment of significance for TIF is provided in Appendix B.2 of the Biodiversity Assessment Report at Attachment B (Jacobs, 2014).

All other Commonwealth and NSW listed threatened species or ecological community were considered but none were found to be significantly impacted by the proposal.

6 Environmental record of the responsible party

		Yes	No
6.1	**Does the party taking the action have a satisfactory record of responsible environmental management?** **Provide details** Roads and Maritime is a major infrastructure agency with responsibility for the delivery of a substantial road and bridge development and maintenance program. Within this context the RMS has a good environmental record, with few infringements over the last decade. This is due largely to the commitment of the RMS and its staff to environmental outcomes and the systems it has put in place. There have, however, been occasions where successful proceedings have been brought against the Roads and Maritime and where penalty infringement notices have been issued. In such instances, the Roads and Maritime has instituted measures to ensure that appropriate lessons are communicated to its staff and/or contractors and that any necessary changes are made to management systems and operating procedures. Further detail is provided below. Roads and Maritime engaged appropriately qualified and experienced ecologists to undertake environmental assessments for the Bells Line of Road Upgrade to ensure that impacts to the environment are comprehensively considered and impacts avoided and minimised wherever possible.	X	

6.2 **Has either (a) the party proposing to take the action, or (b) if a permit has been applied for in relation to the action, the person making the application - ever been subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources?**

X

If yes, provide details

Roads and Maritime works closely with key NSW regulatory agencies such as the EPA and OEH to ensure compliance with statutory requirements, but has occasionally been subject to legal proceedings with respect to environmental matters.

Date of penalty	Circumstance
2 February 1998	The NSW Land and Environment Court found that RTA grit blasting operations on the Wallaby Rock Bridge over the Turon River near Bathurst resulted in material containing paint, limestone and copper slag grit entering the river.
3 June 1998	Penalty Notice (P8669550) for inadequate sediment controls at an RTA site on the corner of Stoney Creek Road and King Georges, Beverly Hills.
21 February 2000	Penalty Notice (Z0578326) for the inappropriate cleaning of a bitumen sprayer at a roadside stockpile site near Bowenfels. The infringement was for cleaning the sprayer at a location which created the potential to pollute an onsite drain and possibly other waters.
18 January 2002	Penalty Notice (N7899706) for contravention of a condition of environment protection licence number 10008 for the Pacific Highway Upgrade at Mullumbimby. Sub contractor employed an incorrect sediment basin pump out procedure.
28 October 2002	Penalty Notice (B5102543) issued to the Mona Vale Road upgrade project for pollution of waters. Sediment laden water escaped the site into stormwater drains during the works.
7 August 2006	Penalty Notices (7616962760 & 7616962751) for failing to supply Dangerous Goods Shipping documents to two drivers of asphalt trucks near Nyngan, western NSW.
8 November 2007	Penalty Notice (7616957069) for unauthorised discharge of water from a construction site to an adjacent water course at Pambula.
11 December 2008	Penalty Notice (7616963164) for clearing of native vegetation (Myall Woodland) adjacent to Mitchell Highway west of Trangie.
29 April 2008	Penalty Notice (7633250250) for pollution of waters as a result of inadequate sediment control measures, Great Western Highway, Marangaroo.
28 September 2010	Penalty Notice (7601508934) for a breach of environment protection licence 13204 for failure to maintain pollution control equipment leading to the discharge of material from the Oxley Highway Upgrade construction works at Port Macquarie.
22 October 2010	Penalty Notice (7601508961) for pollution of waters arising from discharges from the Central Coast Highway Upgrade project.
31 March 2011	3 Penalty Notices (3013382406, 3013382415 & 3013382424) for breaches of Dangerous Goods transport legislation for RFS vehicle on New England Highway.
17 November 2011	Penalty Notice (3068038537) for pollution of waters of Byarong and America Creeks, Wollongong for failure to fully implement the sediment and erosion control measures outlined in the REF for the project.
15 June 2012	Penalty Notice (3085764202) for a breach of environment protection licence 13135 relating to a sediment basin discharge from the Central Coast Highway Upgrade project.

6.3	**If the party taking the action is a corporation, will the action be taken in accordance with the corporation's environmental policy and planning framework?** **If yes, provide details of environmental policy and planning framework** Roads and Maritime has set the environmental direction for the organisation in its Corporate Framework, which seeks to minimise impacts on the natural, cultural and built environment from road use and RMS activities. Roads and Maritime commitment to meeting this priority is demonstrated in its environmental policy and the environmental considerations incorporated into its activities. Roads and Maritime has detailed procedures and guidelines for undertaking environmental assessment of its activities, including specific requirements for biodiversity assessment, managing biodiversity impacts during construction, and offsetting unavoidable impacts.	X	
6.4	**Has the party taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?** **Provide name of proposal and EPBC reference number (if known)** Roads and Maritime has referred a number of road projects under the EPBC Act. Examples include: • Pacific Highway Upgrade – Between Sapphire, Woolgoolga and Arrawarra – 2007/3910. • Pacific Highway Upgrade – Banora Point Pacific Highway Upgrade – 2008/4047. • Central Coast Highway Upgrade – Ocean View Drive to Matcham Road – 2009/4815. • Hume Highway Upgrade – 9.5km dual carriageway bypass of Holbrook – 2009/5064. • Hume Highway Upgrade – proposed 7km upgrade Tarcutta bypass – 2009/5062. • Hume Highway Upgrade – proposed 9km upgrade Woomargama bypass – 2009/5061. • Pacific Highway Upgrade – Franklins Road to Eight Mile Lane, Glenugie, NSW – 2009/5002. • Pacific Highway Upgrade – Tintenbar to Ewingsdale – 2009/5103. • Pacific Highway Upgrade – Iluka Road to Woodburn Devils Pulpit upgrade – 2010/5586 • M5 West Widening – 2010/5665 • Princes Highway Upgrade, South Nowra, NSW – 2012/6233 • Pacific Highway upgrade, Oxley Highway to Kempsey 2012/6518. • Pacific Highway upgrade, Woolgoolga to Ballina 2012/6394 • Federal Highway near Thornford Road, NSW – Safety Barrier Treatments –2013/6855 • Olympic Highway realignment Kapooka 2013	X	

7 Information sources and attachments

7.1 References

Australian and NSW Governments (2012). Bells Line of Road Long Term Strategic Corridor Plan. Available from: http://www.rms.nsw.gov.au/projects/sydney-west/bells-line-of-road-corridor-improvement-program/project-documents.html

Department of the Environment (DoE) (2013). Draft EPBC Act Referral Guidelines for the Vulnerable Koala (combined populations of Queensland, NSW and the Australian Capital Territory). Department of the Environment, Canberra. Available from: http://www.environment.gov.au/system/files/resources/660be80e-01f5-407d-bd1a-3f40f6d6a5a9/files/draft-koala-referral-guidelines.pdf.

Department of the Environment (DoE) (2014a). Turpentine-Ironbark Forest in the Sydney Basin Bioregion in Community and Species Profile and Threats Database, Department of the Environment, Canberra. Available from: http://www.environment.gov.au/sprat.

Department of the Environment (DoE) (2014b). Approved Conservation Advice for Turpentine-Ironbark Forest in the Sydney Basin Bioregion. Department of the Environment, Canberra. Available from: http://www.environment.gov.au/biodiversity/threatened/communities/pubs/38-conservation-advice.pdf. April 2014.

Roads and Maritime (2011a). Roads and Maritime Services procedures for Aboriginal cultural heritage consultation and investigation. http://www.rms.nsw.gov.au/about/environment/protecting-heritage/managing-development.html

Roads and Maritime (2011b). Biodiversity Guidelines. http://www.rms.nsw.gov.au/about/environment/protecting-biodiversity/index.html

Jacobs (2014). Bells Line of Road Corridor Improvement Program, Mount Tomah to Kurrajong Heights. Biodiversity Assessment. Final report prepared for Roads and Maritime, 2014.

SMEC (2014). Bells Line of Road overtaking lanes, Kurrajong Heights. Addendum review of environmental factors. Prepared for Roads and Maritime Services, 2014.

7.2 Reliability and date of information

The Biodiversity Assessment Report provides full details of the information used to prepare this referral. In summary that included: database searches; literature reviews; and targeted on-ground surveys.

7.3 Attachments

		✓ attached	Title of attachment(s)
You must attach	figures, maps or aerial photographs showing the project locality (section 1)	Yes	Figure 1-1
	GIS file delineating the boundary of the referral area (section 1)	Yes	RMS_BLOR_shapefile.zip
	figures, maps or aerial photographs showing the location of the project in respect to any matters of national environmental significance or important features of the environments (section 3)	Yes	Figure 2-1 Figure 3-1 Figure 3-2 Figure 3-3
If relevant, attach	copies of any state or local government approvals and consent conditions (section 2.5)	N/A	
	copies of any completed assessments to meet state or local government approvals	N/A	

	and outcomes of public consultations, if available (section 2.6)		
	copies of any flora and fauna investigations and surveys (section 3)	Yes	Attachment B Jacobs (2014). Bells Line of Road Corridor Improvement Program – Mount Tomah to Kurrajong Heights. Biodiversity Assessment. September 2014.
	technical reports relevant to the assessment of impacts on protected matters that support the arguments and conclusions in the referral (section 3 and 4)	Yes	As above
	report(s) on any public consultations undertaken, including with Indigenous stakeholders (section 3)	No	at: http://www.rms.nsw.gov.au/projects/sydney-west/blue-mountains/bells-line-of-road-corridor-improvement-program/project-documents.htm
Other relevant information	Consideration of criteria in EPBC Act *Policy Statement – Staged Developments – Split referrals: Section 74A of the EPBC Act*.		Attachment A

8 Contacts, signatures and declarations

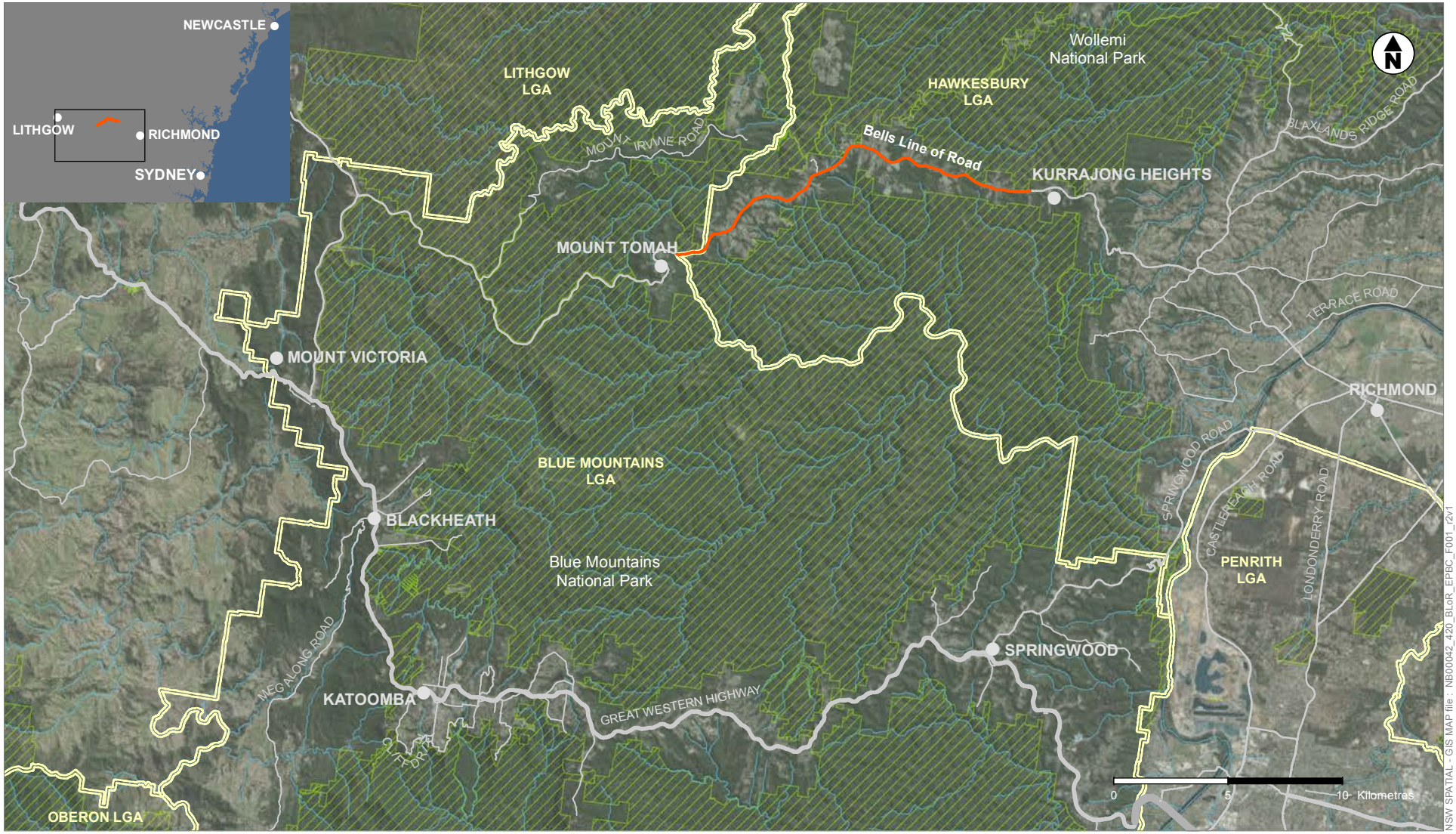
Project title:

8.1 Person proposing to take action

Name	Steve Cowdery
Title	General Manager, Contract Management Office
Organisation	NSW Roads and Maritime Services
ACN / ABN (if applicable)	ABN 76 236 371 088
Postal address	101 Miller Street North Sydney NSW 2060 (Locked Bag 928 North Sydney NSW 2059)
Telephone	(02) 8588 5310 / 0409 940 702
Email	Steve.COWDERY@rms.nsw.gov.au
Declaration	I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct. I understand that giving false or misleading information is a serious offence. I agree to be the proponent for this action. I acknowledge that I may be liable for fees related to my proposed action following the introduction of cost recovery under the EPBC Act.
Signature	 Date 26 SEPT. '14

8.2 Person preparing the referral information (if different from 8.1)

Name	
Title	
Organisation	
ACN / ABN (if applicable)	
Postal address	
Telephone	
Email	
Declaration	I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct. I understand that giving false or misleading information is a serious offence.
Signature	Date

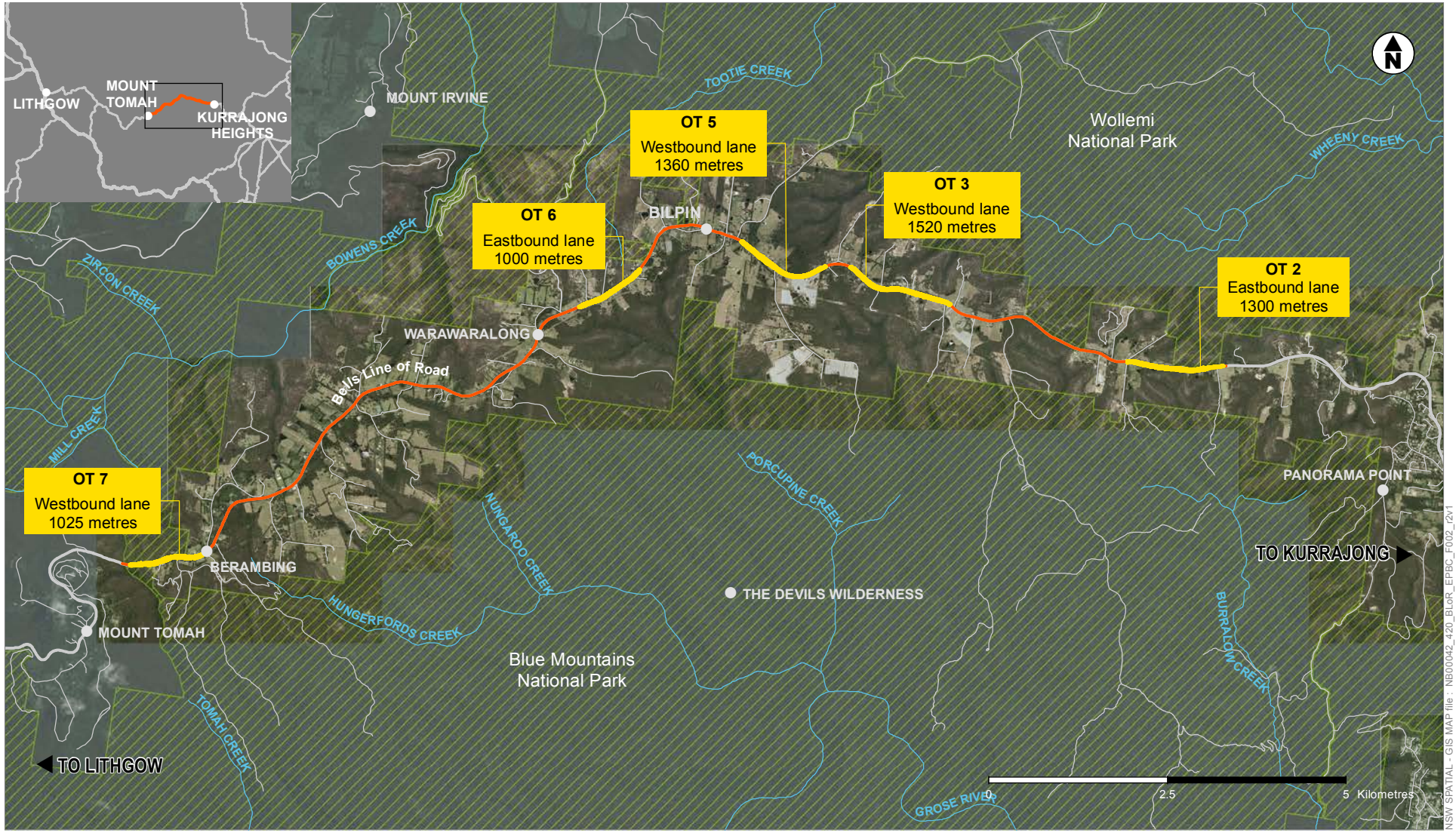


Length of Bells Line of Road relevant to the proposed action

Local Government

National Park

Figure 1-1 Location of proposed action

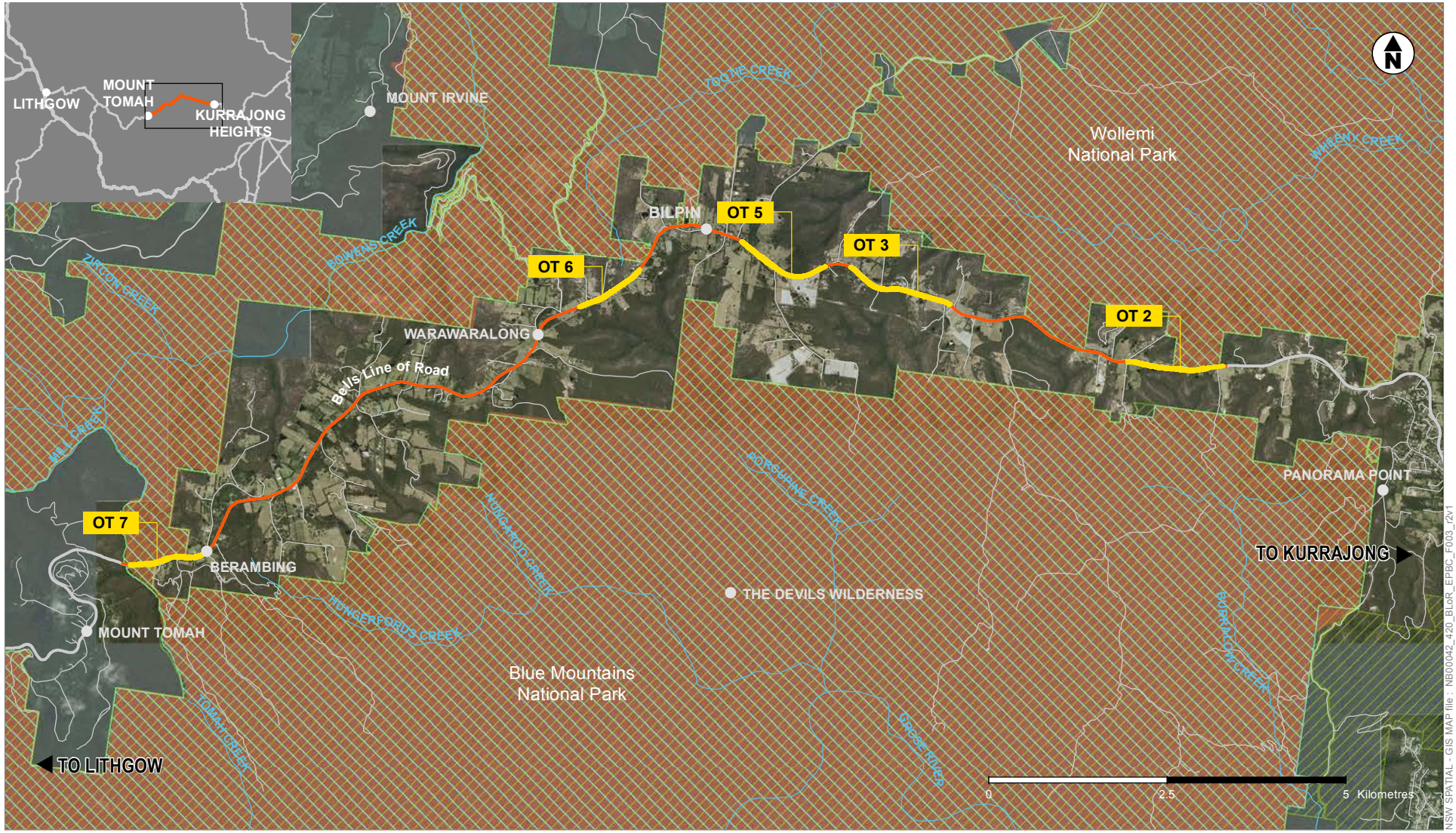


The proposed action (overtaking lanes 2,3,5,6,7)

Length of Bells Line of Road relevant to the proposed action

National Park

Figure 2-1 The proposed action



The proposed action (overtaking lanes 2,3,5,6,7)

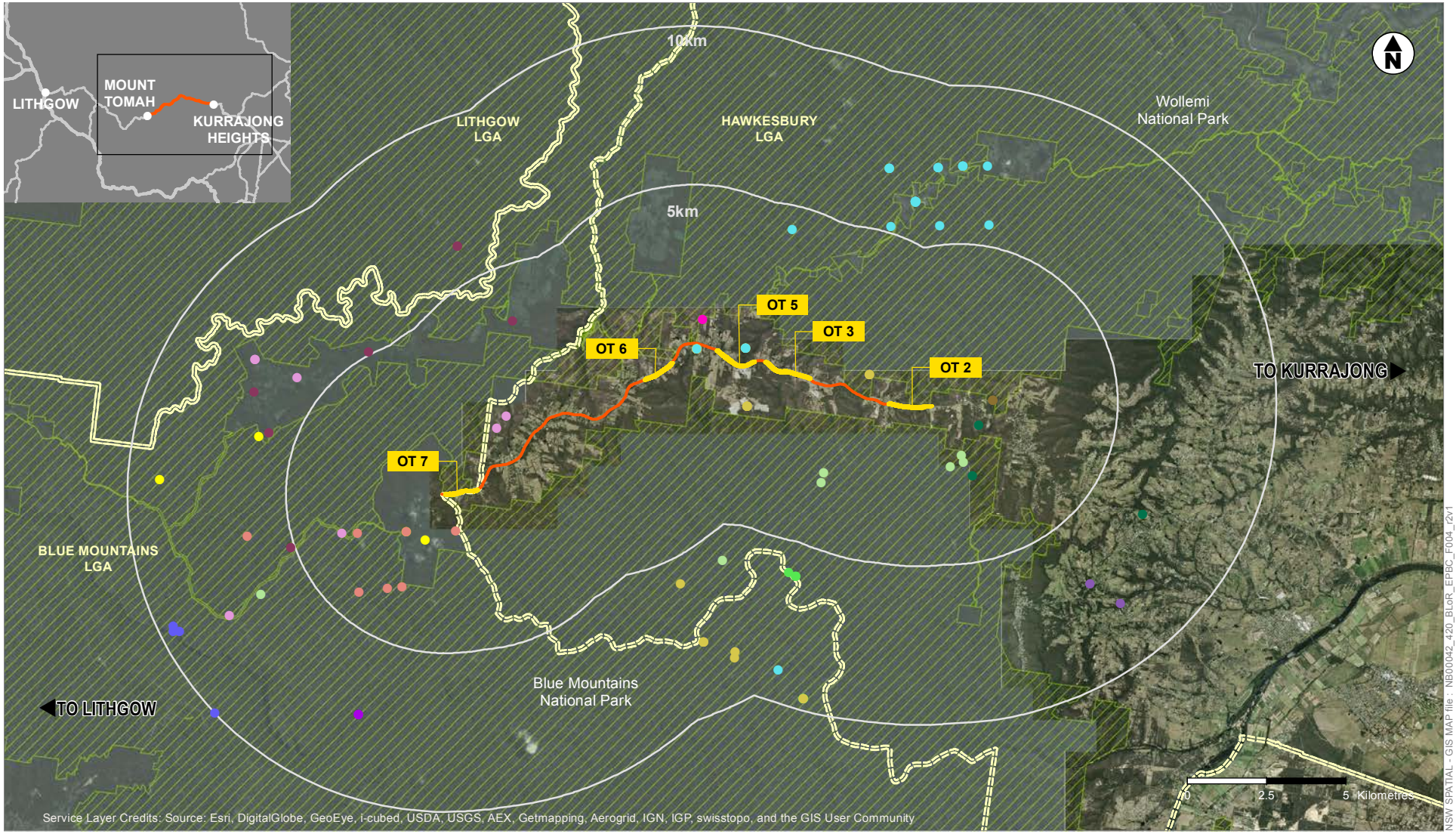
Length of Bells Line of Road relevant to the proposed action

World heritage place
The Greater Blue Mountains Area

National heritage place
The Greater Blue Mountains Area

National Park

Figure 3-1 Matters of natural environmental significance



The proposed action (overtaking lanes 2,3,5,6,7)

Length of Bells Line of Road relevant to the proposed action

Local Government Area

National Park

Threatened flora

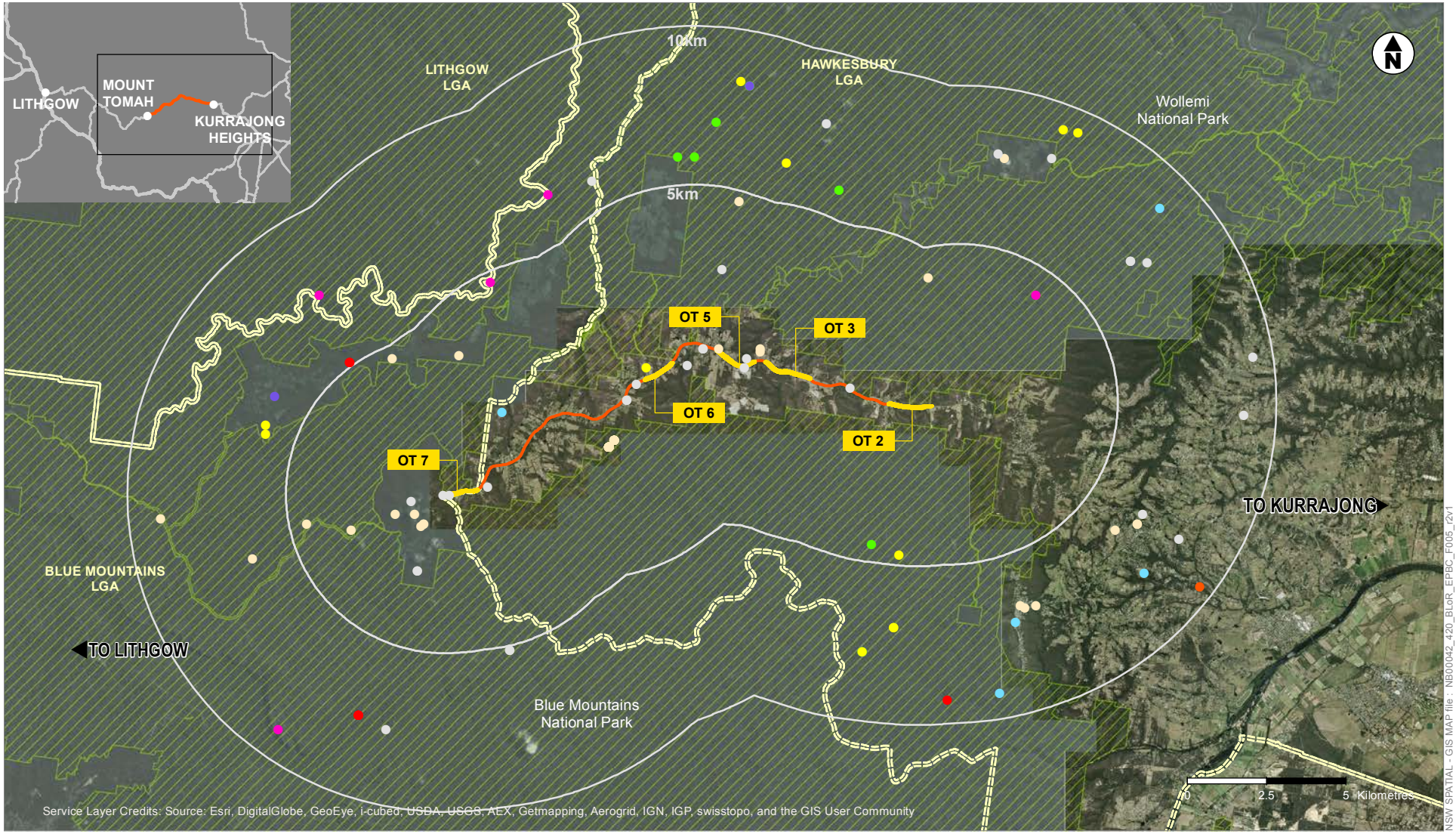
- Acacia bynoeana
- Acacia gordonii
- Acacia pubescens
- Acrophyllum australe
- Cynanchum elegans
- Epacris sparsa
- Isopogon fletcheri
- Persoonia acerosa
- Persoonia hirsuta
- Prasophyllum fuscum
- Pultenaea glabra
- Syzygium paniculatum
- Zieria involucrata
- Zieria murphyi

Not all species listed under the EPBC Act have been mapped.
Only selected species covered by the following provisions of the EPBC Act have been mapped:
- migratory and marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:
- Threatened species listed as extinct or considered as vagrants
- Some species and ecological communities that have only recently been listed
- Some terrestrial species that are very widespread, vagrant, or only occur in small numbers

Data sources: OEH (Environment & Heritage), NSW Goverment 18/09/2014

Figure 3-2 Threatened flora records within a 10 km radius



The proposed action (overtaking lanes 2,3,5,6,7)

Length of Bells Line of Road relevant to the proposed action

Local Government Area

National Park

Threatened fauna

- Broad-headed Snake
- Brush-tailed Rock-wallaby
- Giant Burrowing Frog
- Grey-headed Flying-fox
- Koala
- Large-eared Pied Bat
- Littlejohn's Tree Frog
- Regent Honeyeater
- Spotted-tailed Quoll

Not all species listed under the EPBC Act have been mapped.
Only selected species covered by the following provisions of the EPBC Act have been mapped:
- migratory and marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:
- Threatened species listed as extinct or considered as vagrants
- Some species and ecological communities that have only recently been listed
- Some terrestrial species that are very widespread, vagrant, or only occur in small numbers

Data sources: OEH (Environment & Heritage), NSW Goverment 18/09/2014

Figure 3-3 Threatened fauna records within a 10 km radius

Attachment A – Bells Line of Road Corridor Improvement Program

Consideration of referral against criteria in EPBC Act: *Policy Statement for Staged Developments and Split Referrals* – with reference to Overtaking Lane 1 (OT1) (**not** included in the referred action)

Criteria	***Response***
Is there a larger action? If so, what is it?	Yes. OT1 is part of planned program of safety improvement works along Bells Line of Road
Can the referred action stand alone?	Yes. The work planned at OT1 has no direct bearing on the other planned works that are subject of the referred action.
Are the referred action and related actions co-dependent?	No. None of the planned works, either at OT1 or within the referred action, are dependent on the undertaking of other stages. All works can be independently undertaken and individually will deliver improved safety outcomes at each location.
What is the timeframe between the referred action and the related action?	Works at OT1 are planned to commence in October 2014. Other works, subject to the referral, will be undertaken progressively to 2016 as NSW environmental assessments and approvals are obtained and subject to funding availability.
What is the geographical relationship between the referred action and the related action?	OT1 is to the east of the referred action, adjacent to Overtaking Lane 2 (OT2).
Is there an overall plan of vision for the larger action and does that plan encompass the referred action?	Yes. *The Bells Line of Road Long Term Strategic Corridor Plan* was jointly undertaken by the Commonwealth and NSW Governments and completed in 2012, following community consultation. The Plan recognised the poor performance of the road from a design and safety perspective, with crash rates at twice the typical rate of comparable rural roads. It also acknowledged the significant environmental constraints along the corridor. The current proposed works fall within scope of the short and medium term safety improvements identified in the Plan.
Are the actions authorised by a single permit, licence or other authorisation?	No. A Review of Environmental Factors (REF) will be prepared for each section of overtaking lane works to meet requirements of the NSW *Environmental Planning and Assessment Act 1979*. This will enable each section to be assessed in detail and in line with project timing and budget allocations.
Will the action be financed from a single funding source?	Yes. However, the timing of funding is spread over a number of years and subject to final confirmation of budget allocations.
Does splitting of the project reduce the ability to achieve the objects of the EPBC Act?	No. OT1 has no impacts on Turpentine-Ironbark Forest and only 0.18 hectares impact on koala habitat, with only a low density of secondary feed trees identified.
Can the impacts on EPBC Act matters only be assessed through consideration of a larger action?	No. Impacts for the full program of works have been considered individually and cumulatively.
Will the referral of a series of single actions result in the large action being effectively taken without the need for an approval?	No. There will not be a series of referrals. All proposed works, with the exception of OT1 and minor safety works, are included in the referred action.
Is it preferable to assess and approve the larger action as a whole?	The referred action includes those works assessed as having the potential to significantly impact on matters of national environmental significance.