



# Council Roadside Reserves Project

REF Template – Major Works

## South Bowenfels Link Road

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## About this document

This document is based on the REF template developed by EMAP Consulting for local councils in NSW as part of the Local Government NSW (LGNSW) Council Roadside Reserves Project. This Project, funded by the NSW Environmental Trust, worked to build the capacity of councils to improve the management of their roadside environments.

## Guide to this template

The intention is that land managers will work directly into a copy of this template. Instructions and prompts are in grey text boxes. These should be deleted as you work through the template. The text in **red** is for guidance purposes only.

Standard writing examples are provided in one of two Excel Workbooks (prompts in green text boxes) that accompany this projects resource kit, which can be amended based on the needs of the project.

This template is for proposed activities identified as 'Major Works'. The amount of assessment required is dependent on the nature of the proposed activity and the environmental values of the site, each REF should be prepared with this in mind.

The guidance in this REF template is for guidance purposes only and the author should undertake his/her own review of legislative changes and assessment of best practice.

## Document Tracking

Version No.	Document Author	Reviewed By	Approved By	Last Saved on
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Cover: Roadside Works in Griffith LGA (Photo: LGNSW)



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# 1. Introduction

The subject site is located at 10 Col Drewe Drive Bowenfels and is legally described as Lot 1 DP 1268778. The proposed development is described as a link road that will traverse the site.

The proposed road is permitted without consent in zone R1 General Residential under the applicable local environmental planning instrument, the Lithgow Local Environmental Plan (LEP) 2014 and can therefore be carried out by Lithgow City Council under the provisions of the Environmental Planning and Assessment Act (EP&A) 1979.

Lithgow City Council is the proponent and the determining authority under Part 5 of the EP&A Act. The environmental assessment of the proposed activity and associated environmental impacts has been undertaken in the context of Clause 17 of the Environmental Planning and Assessment Regulation 2021.

## 1.1. Project Description and Background

The proposed activity will be located at 10 Col Drewe Drive Bowenfels (Figure 1). The works require the construction of a new road to link a new residential subdivision to Col Drewe Drive.

The works will include:

- The size of the proposed activity footprint is approx. 2 Ha
  - Establishment of work zone and material storage of work equipment
  - Surveying of the Road placement
  - Establishment of environment measures like erosion and sediment control, and tree protection
  - Construction of a stormwater settlement pond
  - Removal of existing vegetation and topsoil
  - Cut and fill surface to preliminary road levels
  - Provide erosion control and topsoil to cut/fill surface
  - Construction of sub-soil drainage and stormwater drains
  - Stabilisation of sub-grade as required
  - Placement and consolidation of Sub-base and Base material
  - Construction of concrete kerb and drainage with connection to stormwater system
  - Sealing of road surface
  - Line marking and installation of signage
  - Cleanup, inspection and hand over.



The machinery required to complete the works are:

- Excavators
- HR tipper trucks
- Bobcats
- Graders
- Rollers
- Water truck
- Spreader truck
- Stabiliser mixer

The duration of the project and working hours are outlined in the Table 1:

*Table 1: Project Timeframes*

<b>Commencement Date</b>	Commencement Date 25/9/23 and Completion Date 19/1/24
<b>Work Duration</b>	The total timeframe of the proposed works is 18 weeks.
<b>Work Hours</b>	7am to 5pm Monday to Friday. 7am to 12pm Saturday The proposed hours are in accordance with the <a href="#">Interim Construction Noise Guideline</a> or council working hours?

## 1.2. Project Location and Context

The road is proposed within the R1 zone pursuant to the Lithgow Local Environmental Plan (LEP) 2014. The road will service the future subdivision arrangement at 10 Col Drewe Drive along with other future subdivision arrangements proposed on adjoining lands.

The subject site is under the ownership and care of Lithgow City Council.

The wider locality is characterized by rural agricultural lands, residential accommodation and subdivision arrangements, assisted living facilities and a hospital.

The site generally consists of grasses and four (4) established trees. The topography of the site is varying in inclination and the elevation ranges from 936m to 962m.

## 1.3. Project Justification and Consideration

- The link road is required to ensure future subdivision arrangements are accessible.
- The location of the link road was carefully considered and determined to be the most appropriate location given the site topography and geography.
- The location of the link road will connect to Col Drewe Drive, providing a clear and accessible link for future subdivisions within this locality.





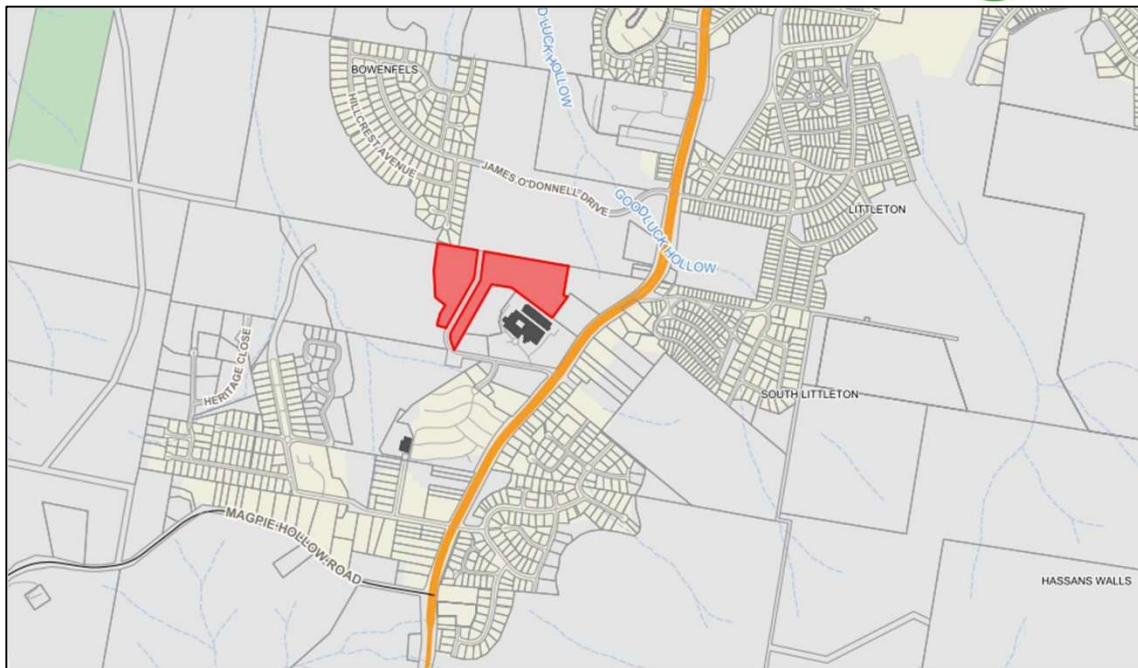


Figure 1 - Site Location



Figure 2 - Project Road Location



## 2. Statutory and Planning Context

### 2.1. Environmental Planning and Assessment Act 1979

Section 5.5(1) states that, for the purpose of attaining the objects of the EP&A Act relating to the protection and enhancement of the environment, a determining authority in its consideration of an activity shall, notwithstanding any other provision of the Act or the provisions of any other Act or of any instrument made under the EP&A Act or any other Act, examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity.

The proposed road is permitted without consent in zone R1 General Residential under the applicable local environmental planning instrument, the Lithgow Local Environmental Plan (LEP) 2014 and can therefore be carried out by Lithgow City Council under the provisions of the Environmental Planning and Assessment Act (EP&A) 1979.

Lithgow City Council is the proponent and the determining authority under Part 5 of the EP&A Act. The environmental assessment of the proposed activity and associated environmental impacts has been undertaken in the context of Clause 171 of the Environmental Planning and Assessment Regulation 2021.

### 2.2. Other Environmental Legislation

Table 2 outlines how the project has been considered under other relevant Commonwealth and State environmental legislation.



Table 2 - Environmental Legislation

Legislation	Relevance to the Proposed Activity
<b>COMMONWEALTH LEGISLATION</b>	
<b><i>Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i></b>	<p>The EPBC Act protects matters of <a href="#">National Environmental Significance</a> (NES), such as threatened species and ecological communities, migratory species (protected under international agreements), and National Heritage places (among others).</p> <p>Matters of NES have been identified on and near the site. An assessment of the activity has been undertaken in accordance with Significant Impact Criteria in the Significant Impact Guidelines 1.1 (Commonwealth of Australia 2013). A significant impact is not likely to result and therefore a referral to the Commonwealth Department of Environment is not required.</p> <p>See Section 3.4.</p>
<b>STATE LEGISLATION</b>	
<b><i>Biodiversity Conservation Act 2016 (BC Act)</i></b>	<p>Part 7 of the BC Act provides the environmental assessment requirements for activities being assessed under Part 5 of the EP&amp;A Act 1979. If a significant impact is likely, a Species Impact Statement is required. A biodiversity development assessment report may also be required if the proponent elects for this. Section 7.2(1)(a) and 7.3 describe the assessment requirements and thresholds for what is considered a significant impact.</p> <p>Threatened species and communities listed under this Act were identified as potentially being impacted by the works. Assessments of Significance were undertaken for these matters and concluded that a significant impact is not likely to result and therefore a Species Impact Statement or Biodiversity Development Assessment Report is not required.</p> <p>See Section 3.4.</p>
<b><i>Local Land Services Act 2013 (LLS Act)</i></b>	<p>The objects of the LLS Act include 'to ensure the proper management of natural resources in the social, economic, and environmental interests of the State, consistently with the principles of ecologically sustainable development. The Act regulates the clearing of native vegetation; however, section 60(O)(b)(ii) excludes the need for consent under the LLS Act where the clearing is an activity carried out by a determining authority within the meaning of Part 5 of the EP&amp;A Act 1979.</p>
<b><i>Fisheries Management Act 1995 (FM Act)</i></b>	<p>FM Act provides for the protection, conservation, and recovery of threatened species, populations and ecological communities of fish and marine vegetation and fish habitats, as well as promoting the development and sharing of fishery resources in NSW.</p> <p>The activity does not involve harm to mangroves or other protected marine vegetation, dredging or reclamation, blocking of fish passage and does not involve impact to a Key Fish Habitat waterway. Therefore, the works will not require a permit issued by the Minister in accordance with Part 7 of the FM Act.</p>
<b><i>National Parks and Wildlife Act 1974 (NPW Act)</i></b>	<p>The NPW Act regulates the control and management of all national parks, historic sites, nature reserves, and Aboriginal areas.</p> <p>The main aim of the Act is to conserve the natural and cultural heritage of NSW. Where works will disturb Aboriginal objects, an Aboriginal Heritage Impact Permit (AHIP) is required.</p> <p>The proposed activity is unlikely to harm Aboriginal objects and therefore a permit under the NP&amp;W Act is not required.</p>





Legislation	Relevance to the Proposed Activity
<b><i>Heritage Act 1977</i></b>	The proposed activity does not involve an item or place listed on the NSW State Heritage Register or the subject of an interim heritage order or listing and is therefore not a controlled activity. Approval of works on the site is therefore not under Part 4 of the Heritage Act.
<b><i>Protection of the Environment Operations Act 1997 (POEO Act)</i></b>	<p>The POEO Act is the key environmental protection and pollution statute. The POEO Act is administered by the EPA and establishes a licensing regime for waste, air, water and pollution. Relevant sections of the Act are listed below:</p> <ul style="list-style-type: none"> <li>• Part 5.3 Water Pollution</li> <li>• Part 5.4 Air Pollution</li> <li>• Part 5.5 Noise Pollution</li> <li>• Part 5.6 Land Pollution and Waste</li> </ul> <p>Any work potentially resulting in pollution must comply with the POEO Act. Relevant licences must be obtained if required.</p> <p>No licences have been identified as being required including an Environmental Protection Licence (EPL).</p>
<b><i>Water Management Act 2000 (WM Act)</i></b>	<p>The WM Act's main objective is to manage NSW water in a sustainable and integrated manner that will benefit today's generations without compromising future generations' ability to meet their needs. Section 91E of the Act establishes an approval regime for controlled activities within waterfront land. However clause 41 of the Water Management (General) Regulation 2018 provides an exemption for public authorities in relation to all controlled activities on waterfront land.</p> <p>Note: Although formal approval under the WM Act is not required, if the proposed activity is within 40m of a waterway, an attempt should be made to comply with the requirements of controlled activities in order to reduce risks to waterways. During works, appropriate and considered measures will be undertaken to ensure sediment and erosion control is managed to minimize any potential risk or harm of waterways.</p>
<b><i>Roads Act 1993</i></b>	Section 88 of the <i>Roads Act</i> states that a roads authority may, despite any other Act or law to the contrary, remove or lop any tree or other vegetation that is on or overhanging a public road if, in its opinion it is necessary to do so for the purposes of carrying out road work or removing a traffic hazard. However, the environmental safeguards outlined in this REF still apply.
<b><i>Biosecurity Act 2015</i></b>	<p>The <i>Biosecurity Act 2015</i> and regulations provide requirements for state level priority weeds. The Act regulates all plants, with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Section 4 considers the likelihood of encountering weeds and appropriate mitigation measures to reduce the risk of spreading.</p> <p>It is unlikely that weeds which pose a biosecurity risk will be encountered. If they are encountered, then works shall be stopped and appropriate measures taken.</p>
<b><i>State Environmental Planning Policy (Biodiversity and Conversation) 2021</i></b>	Conservation has been given to the relevant chapters within the Biodiversity and Conservation SEPP including Chapter 4, Koala Habitat. The link road does not propose to remove or damage any existing established trees. Appropriate measures shall be put in place to ensure that the existing established trees are maintained throughout the during of works.



## 3. Existing Environment and Impact Assessment

### 3.1. Landform, Geology and Soils

#### 3.1.1. Existing Environment

Soil and topography characteristics of the site are as follows:

- The topography of the site is from slight to steep slopes varying in inclination.
- Elevation ranges from 936 m to 962 m.
- The landscape comprises rolling hills and narrow crests on Carboniferous granites.
- There is no salinity risk present.
- Erosion is present.

#### 3.1.2. Impact Assessment

The main potential for environmental impact is sedimentation and erosion. A sediment pond is to be constructed and sediment control measures are to be implemented to mitigate erosion and sedimentation during construction. This is to be monitored and managed for the duration of works.

### 3.2. Contaminated Land and Acid Sulphate Soils

#### 3.2.1. Existing Environment

A search of NSW EPA Public Register - Contaminated Land, SEED showed no risk from potential acid sulphate soils or contamination.

#### 3.2.2. Impact Assessment

If contaminated areas are encountered during construction, appropriate control measures will be implemented to manage the immediate risks of contamination. All other works that may impact on the contaminated area will cease until the nature and extent of the contamination has been confirmed and any necessary site-specific controls or further actions identified in consultation with relevant government agencies.

### 3.3. Water Quality and Hydrology

#### 3.3.1. Existing Environment

- Three Tree Drive drains to an unnamed creek which flows to Farmers Creek and then to Cox's River.
- The site is within Cox's River catchment.
- The works are unlikely to intercept a groundwater aquifer.



### 3.3.2. Impact Assessment

The works will have no impact on the water flow of the creek as appropriate mitigation measures are to be employed on site including adequate sediment and erosion controls.

## 3.4. Biodiversity

### 3.4.1. Existing Environment

The site is situated within an area of farmland where the biodiversity of the area immediate to the construction zone has been modified considerably, due to traditional farming practices. The surface of the site is heavily grazed grasses. There are three (3) trees located on the crest of the hill on which the site sits. The site includes additional established trees which are proposed to be retained and maintained during the construction of the road.

### 3.4.2. Impact Assessment

The construction zone requires minimal vegetation clearing due to cattle grazing in the area. Exotic species will be removed and native species left to recover after the rehabilitation of the construction site. Tree removal is not proposed or required to facilitate the construction of the road.

There is a low likelihood of occurrence of threatened species in the immediate area. This is derived from the desktop study of the site as well as site visits by the author. The site visit was undertaken on 21/6/2023 and 60 mins was spent reviewing the construction zone and surrounding area.

Consideration was given to the potential impact of the proposed activity on each species assessed as potentially occurring in the REF Study Area.

See **Appendix B** for the full likelihood of occurrence assessment and consideration of potential impacts for each flora and fauna species identified in the 10km search of the NSW Bionet Atlas and EPBC Protected Matters Search Tool. The species that were considered to potentially occur or use habitats in the REF Study Area and have the potential to be impacted by the proposed activity, are listed in Table 4. An Assessment of Significance as per s7.3 of the *Biodiversity Conservation Act 2016* was undertaken for each of these species. Note that if an Assessment of Significance determines that an impact is likely, a Species Impact Statement is required.



Table 4: Threatened Species with potential to occur within the REF study area, and with potential to be impacted.

Table 3: Threatened Species

Threatened Species	Assessment of Significance Conclusions
<b>FLORA</b>	
Bynoe's Wattle, Tiny Wattle <i>Acacia bynoeana</i> Black Gum <i>Euclyptus aggregate</i> Scrub Turpentine <i>Rhodamnia rubescens</i> Needle Geebung <i>Persoonia acerosa</i> Deane's Boronia <i>Boronia Deanei</i> Leafless Tongue-orchid <i>Cryptostylis hunteriana</i> <b>Silver-leaved Mountain Gum, Silverleaved</b> <i>Eucalyptus pulverulenta</i> <i>Euphrasia arguta</i> Hoary Sunray, Grassland Paper-daisy <i>Leucochrysum albicans subsp. tricolor</i> Cotoneaster Pomaderris <i>Pomaderris cotoneaster</i> Smooth Bush-pea, Swamp Bush-pea <i>Pultenaea glabra</i> Eastern Underground Orchid <i>Rhizanthella slateri</i> Austral Toadflax, Toadflax <i>Thesium austral</i> Swamp Everlasting, Swamp Paper <i>Xerochrysum palustre</i>	An Assessment of Significance conducted for these species concluded that there is unlikely to be a significant impact based on the following: <ul style="list-style-type: none"> <li>• These species are reported on the outskirts of the study area ie. greater than 3.5 km from the construction site.</li> <li>• Construction is unlikely to impact species.</li> </ul>
<b>BIRDS – Canopy/ Aerial</b>	An Assessment of Significance conducted for these species concluded that there is unlikely to be a significant impact based on the following: <ul style="list-style-type: none"> <li>• Similar or higher-quality habitat is widespread in the region;</li> <li>• Breeding resources will be retained and similar habitats are widespread in the locality;</li> <li>• These species are highly mobile and will forage over large areas, therefore would not be restricted to the habitats in the proposal area.</li> <li>• The species is reported on the boundary of the study area ie. 6.8 km from the construction site.</li> </ul>
Regent Honeyeater <i>Anthochaera Phrygia</i> Southern Whiteface <i>Aphelocephala leucopsis</i> Australasian Bittern <i>Botaurus poiciloptilus</i> Curlew Sandpiper <i>Calidris ferruginea</i> Gang-gang Cockatoo	



<p><b><i>Callocephalon fimbriatum</i></b> Brown Treecreeper <i>Climacteris picumnus victoriae</i> Grey Falcon <i>Falco hypoleucos</i> Painted Honeyeater <i>Grantiella picta</i> White-throated Needletail <i>Hirundapus caudacutus</i> Swift Parrot <i>Lathamus discolor</i> South-eastern Hooded Robin, <i>Melanodryas cucullata cucullata</i> Blue-winged Parrot <i>Neophema chrysostoma</i> Eastern Curlew, Far Eastern Curlew <i>Numenius madagascariensis</i> Superb Parrot <i>Polytelis swainsonii</i> Pilotbird <b><i>Pycnoptilus floccosus</i></b> Australian Painted Snipe <i>Rostratula australis</i> Diamond Firetail <i>Stagonopleura guttata</i> New Holland Mouse, Pookila, <i>Pseudomys novaehollandiae</i></p>	
<p><b>MAMMALS – Ground dwelling</b> <b>Koala, <i>Phascolarctos cinereus</i></b>  Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population), <i>Dasyurus</i> <i>maculatus maculatus</i>  Southern Greater Glider, <i>Petauroides Volans</i>  Yellow-bellied Glider, <i>Petaurus</i> <i>australis australis</i>  New Holland Mouse, Pookila, <i>Pseudomys novaehollandiae</i></p>	<p>An Assessment of Significance conducted for these species concluded that there is unlikely to be a significant impact based on the following:</p> <ul style="list-style-type: none"> <li>• Breeding resources such as logs and burrows were not located within the construction zone and similar habitats are widespread in the locality;</li> <li>• An area of foraging resources was not located within the construction zone and similar resources are widespread in the locality.</li> </ul>





Threatened Species	Assessment of Significance Conclusions
<b>BATS</b>	<p>An Assessment of Significance conducted for these species concluded that there is unlikely to be a significant impact based on the following:</p> <ul style="list-style-type: none"> <li>An area of foraging resources was not located within the construction zone and similar resources are widespread in the locality.</li> </ul>
<p>Large-eared Pied Bat <i>Chalinolobus dwyeri</i></p> <p>Grey-headed Flying-fox <i>Pteropus poliocephalus</i> Large</p>	
<b>AMPHIBIANS</b>	<p>An Assessment of Significance conducted for these species concluded that there is unlikely to be a significant impact based on the following:</p> <ul style="list-style-type: none"> <li>Breeding resources such as logs and burrows were not located within the construction zone and similar habitats are widespread in the locality</li> </ul>
<p>Booroolong Frog <i>Litoria booroolongensis</i></p>	
<b>INSECTS</b>	<p>An Assessment of Significance conducted for these species concluded that there is unlikely to be a significant impact based on the following:</p> <ul style="list-style-type: none"> <li>Breeding resources were not located within the construction zone and similar habitats are widespread in the locality</li> </ul>
<p>Bathurst Purple Cooper Butterfly <i>Paralucia spinifera</i></p>	

### 3.5. Aboriginal Heritage

#### 3.5.1. Existing Environment

Results of the AHIMS search showed no Aboriginal sites are recorded near the project location and no Aboriginal places have been declared in or near the project location.

#### 3.5.2. Impact Assessment

The proposed activity is unlikely to result in any impacts to Aboriginal objects or items. If Aboriginal heritage items are uncovered during the works, all works in the vicinity of the find must cease and the Project Manager contacted immediately, and the Standard Management Procedure - Unexpected Heritage Items (RMS, 2015) will be followed.

### 3.6. Non-Aboriginal Heritage

#### 3.5.3. Existing Environment

Searches of the State Heritage Register, the National Heritage Register and the Lithgow Council LEP have returned the following heritage items:

- Sweet Briars 400m from the site.

#### 3.5.4. Impact Assessment

The proposed road is unlikely to impact the above heritage items due to the distance from the construction location.

### 3.6. Noise and Vibration

#### 3.6.1. Existing Environment



The site is located within the R1 zone and is situated on a site that has been historically used for agricultural purposes. The site is adjacent to the Three Tree Lodge and Lithgow Hospital. The site will be home to a future residential subdivision arrangement which will utilize the link road along with adjoining subdivision arrangements. General traffic noise and noise from farming equipment is not uncommon within the area of the proposed activity.

#### 3.6.2. Impact Assessment

Earth moving equipment will be used during construction. This will have a similar impact as farming equipment and passing trucks. The impact on the proposed site will be minimal. The expected duration of the works will be 12 weeks.

Works to be carried out during normal work hours (i.e. 7am to 6pm Monday to Friday; 8am to 1pm Saturdays). Any work that is performed outside normal work hours or on Sundays or public holidays may not be permitted and, if permitted, works are to minimise noise impacts.

### 3.7. Air Quality

#### 3.7.1. Existing Environment

The air quality in the existing environment is affected by passing traffic from Great Western Highway, and occasional odours from farming activities.

#### 3.7.2. Impact Assessment

Dust may be generated by vehicles and plant during dry weather. Open ground and dirt roads in the construction zone shall be wetted to reduce dust generation.

### 3.8. Waste and Chemical Management

The only expected waste material will be waste construction materials.

All surplus material, off cuts, and other debris resulting from the work shall be removed from site and disposed of by a licensed contractor to a licensed waste management facility. All waste to be covered during transportation.

### 3.9. Traffic

The proposed activity will have no impact on traffic.

The proposed works will be taking place at the end of an existing cul-de-sac, and the road construction site is to be closed during construction.

### 3.10. Visual Amenity / Landscape

The proposed works will provide access to a new estate which will add to the visual amenity of the location. Revegetation of disturbed areas will occur once the road works are completed.

### 3.11. Socio-Economic Conditions

The project is required to ensure improved access to regional housing by allowing the subdivision of the site surrounds to provide additional housing for the Lithgow area.

### 3.12. Cumulative Impacts

Subdivision of the area will result in an increase of activity, particularly traffic..



## 4. Section 171 of the EP&A Regulation

Section 171(2) of the Environmental Planning and Assessment Regulation 2021 lists the factors to be taken into account when consideration is being given to the likely impacts of an activity on the environment under Part 5 of the EP&A Act. These matters are addressed below.

Table 4 - Section 171(2) Matters of Consideration

Relevant Clause	Impact Assessment (Positive/Negative/Neutral)	Reason
(a) Any environmental impact on a community?	Positive	The new road will support improved vehicular access to future subdivisions within the locality.
(b) Any transformation of a locality?	Neutral	No impact.
(c) Any environmental impact on the ecosystem of the locality?	Neutral	No impact
(d) Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?	Neutral	No impact
(e) Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations?	Neutral	No impact
(f) Any impact on the habitat of protected animals (within the meaning of the <i>Biodiversity Conservation Act 2016</i> )?	Neutral	No impact
(g) Any endangering of any species of animal, plant or other form of life whether living on land in water or in the air?	Neutral	No impact
(h) Any long-term effects on the environment?	Neutral	No impact
(i) Any degradation of the quality of the environment?	Neutral	No impact
(j) Any risk to the safety of the environment?	Neutral	No impact
(k) Any reduction in the range of beneficial uses of the environment?	Positive	Improved access for environmental works.
(l) Any pollution of the environment?	Neutral	No impact
(m) Any environmental problems associated with the disposal of waste?	Neutral	No impact



Relevant Clause	Impact Assessment (Positive/Negative/Neutral)	Reason
(n) Any increased demand on resources (natural or otherwise) which are, or are likely to become, in short supply?	Neutral	No impact
(o) Any cumulative environmental effect with other existing or likely future activities?	Neutral	No impact
(p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?	Neutral	No impact



## 5. Environmental Safeguards and Mitigation Measures

*Table 5: Environmental Safeguards and Mitigation Measures*

Impact Type	Description of Potential Impact	Mitigation Measures	Responsibility for Implementation
<b>Soils- Erosion</b>	Some erosion/sedimentation from construction of the road.	Construct temporary drainage structures in accordance with the 'Technical Guideline - Temporary Stormwater Drainage for Road Construction' (RMS 2011)	Construction Contractor
<b>Contaminated Land/ Acid Sulphate Soils</b>	None reported.	If contaminated areas are encountered during construction, appropriate control measures will be implemented to manage the immediate risks of contamination. All other works that may impact on the contaminated area will cease until the nature and extent of the contamination has been confirmed and any necessary site-specific controls or further actions identified in consultation with relevant government agencies.	Construction Contractor
<b>Water Quality/ Hydrology</b>	Some sedimentation during construction of the road.	<p>Visual monitoring of local water quality (ie turbidity, hydrocarbon spills/slicks) is to be undertaken on a regular basis to identify any potential spills or deficient erosion and sediment controls.</p> <p>Water quality control measures are to be used to prevent any materials (eg. concrete, grout, sediment, etc) entering drain inlets or waterways.</p> <p>Wash down should use potable water and excess debris removed using hand tools. Wash down waste must be filtered before release, and away from all waterways.</p>	Construction Contractor





Impact Type	Description of Potential Impact	Mitigation Measures	Responsibility for Implementation
		<p>No dirty water may be released into drainage lines and/or waterways.</p> <p>Prevent sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets</p> <p>Reduce water velocity and capture sediment on site</p> <p>Divert clean water around the site.</p>	
<b>Biodiversity</b>	Threatened species have been reported in the area however the distance to the reported sighting and the farmland/road corridor of the construction site will pose minimal risk to threatened species.	<p>Should unexpected threatened fauna or flora be located at any time during construction, cease work immediately in the area to prevent further harm. Contact Council's Environmental Officer and a suitably qualified ecologist to determine if further assessment or management plans are required.</p> <p>The rehabilitation of disturbed areas will be carried out progressively as construction stages are completed, and in accordance with:</p> <ul style="list-style-type: none"> <li>* Landcom's "Blue Book" (4th Edition) on sediment and erosion control;</li> <li>* RMS Landscape design guideline;</li> <li>* RMS's Guideline for Batter Surface Stabilisation using vegetation</li> </ul>	Construction Contractor
<b>Aboriginal Heritage</b>	No Aboriginal sites or places reported.	If Aboriginal heritage items are uncovered during the works, all works in the vicinity of the find must cease and the Project Manager contacted immediately, and the Standard Management Procedure - Unexpected Heritage Items (RMS, 2015) will be followed.	Construction contractor



Impact Type	Description of Potential Impact	Mitigation Measures	Responsibility for Implementation
<b>Historic Heritage</b>	Heritage items within the vicinity of the site are greater than 400 m from the site.	All personnel working on site will receive training to ensure awareness of location of existing site within the immediate surrounds, and relevant statutory responsibilities.	Construction contractor
<b>Noise and Vibration</b>	Minimal impact from excavation equipment.	Works to be carried out during normal work hours (i.e. 7am to 6pm Monday to Friday; 8am to 1pm Saturdays). Any work that is performed outside normal work hours or on Sundays or public holidays may not be permitted and, if permitted, works are to minimise noise impacts.	Construction contractor
<b>Air Quality</b>	Minimal impact from dust generated by excavation and transport equipment.	Measures to minimise or prevent air pollution or dust are to be used including watering or covering exposed areas.	Construction Contractor
<b>Waste/ Chemical Management</b>	No impact expected from waste/ chemical waste,	All surplus material, off cuts, and other debris resulting from the work shall be removed from site and disposed of by a licensed contractor to a licensed waste management facility. All waste to be covered during transportation.	Construction contractor
<b>Traffic</b>	No impact on traffic.	Vehicles to take care while entering and leaving the site.	Construction contractor
<b>Visual Amenity/ Landscape</b>	No impact on visual amenity.	Restore work sites to as close to their original condition as possible	Construction contractor
<b>Socio-Economic Factors</b>	Improved access proposed subdivisions.	Locate services on DBYD search and peg out no-go areas to avoid service-disruption.  All personnel will exercise courtesy in dealing with the community.	Construction contractor



## 6. Consultation

### 6.1. Transport and Infrastructure SEPP 2021

#### Section 2.10 – Development with impacts on Council-related infrastructure of services.

The proposed activity would be undertaken on Council owned land and become council-related infrastructure. This REF was prepared by Council's Infrastructure Services Team who manage and control council's road infrastructure.

#### Section 2.11 - Development with impacts on local heritage

The proposed activity is unlikely to significantly impact on local heritage.

#### Section 2.15 - Consultation with public authorities other than council

In consideration of the consultation requirements specified under Section 2.15 of the Infrastructure SEPP, the proposed activity:

- Would not be undertaken on or adjacent to land reserved under the National Parks and Wildlife Act 1974 or in zone E1 or equivalent.
- Would not comprise a fixed or floating structure(s)
- Would not increase the amount of artificial light in the night.

#### Section 2.16 – Consideration of Planning for Bush Fire Protection

The proposed activity is not a type applicable to this clause i.e. health services facilities, correctional centres and residential accommodation. As such, consideration to Planning for Bush Fire Protection is not required.

## 7. Conclusion

This Review of Environmental Factors has assessed the likely environmental impact, in the context of Part 5 of the Environmental Planning and Assessment Act 1979, of a proposed activity by Lithgow City Council for the construction of a road at 10 Col Drewe Drive, Bowenfels.

In consideration of the proposed activity as described in this REF, in accordance with any design plans referred to in this report, and assuming the implementation of proposed mitigation measures, it is determined that:

- It is unlikely that there will be any significant environmental impact as a result of the proposed activity and an Environmental Impact Statement is not required.
- The proposed activity will not be carried out in a declared area of outstanding biodiversity value and is not likely to significantly affect threatened species, populations or ecological communities, or their habitat.
- No statutory approvals, licenses, permits or further external government consultations is required.
- The proposed activity may proceed.

## 8. REF Determination

Given the above review of environmental factors, it is recommended that Lithgow City Council proceed with the proposed activity subject to the implementation of the mitigation measures outlined in this REF.

Review and endorsement statement:

*I certify that I have reviewed and endorsed the contents of this REF document and, to the best of my knowledge, it is in accordance with the EP&A Act, the EP&A Regulation and the Guidelines approved under clause 170 of the EP&A Regulation, and the information it contains is neither false nor misleading.*

### REF Author

Name: Jim McGee

Title: Engineering Officer

Date: 3/11/2023

Signature: 

### Authorising Manager's approval

Name: Paul Creelman

Title: Transport Manager

Date: 8/11/2023

Signature:



### Reviewed and approved by:

Name: Johnathon Edgecombe

Title: Director of Infrastructure and Economy

Date: 8/11/2023

Signature:





# Appendix A

## Threatened Species Tables

Table B-1: Evaluation of the likelihood and impact on Threatened Flora within 10km of subject site

Status: CE = Critically Endangered; E = Endangered; V = Vulnerable; M = Migratory (CAMBA, JAMBA or ROKAMBA)

Common Name	Scientific Name	NSW Status	Likelihood of Occurrence	Potential Impacts
Bynoe's Wattle, Tiny Wattle	<i>Acacia bynoeana</i>	V	Low	Low
Black Gum	<i>Euclyptus aggregate</i>	V	Low	Low
Scrub Turpentine	<i>Rhodamnia rubescens</i>	V	Low	Low
Needle Geebung	<i>Persoonia acerosa</i>	V	Low	Low
Deane's Boronia	<i>Boronia Deanei</i>	V	Low	Low
Leafless Tongue- orchid	<i>Cryptostylis hunteriana</i>	V	Low	Low
Silver-leaved Mountain Gum, Silverleaved	<i>Eucalyptus pulverulenta</i>	V	Low	Low
	<i>Euphrasia arguta</i>	CE	Low	Low
Hoary Sunray, Grassland Paper- daisy	<i>Leucochrysum albicans</i> subsp. <i>tricolor</i>	E	Low	Low
Cotoneaster Pomaderris	<i>Pomaderris cotoneaster</i>	E	Low	Low
Smooth Bush-pea, Swamp Bush-pea	<i>Pultenaea glabra</i>	V	Low	Low
Eastern Underground Orchid	<i>Rhizanthella slateri</i>	E	Low	Low
Austral Toadflax, Toadflax	<i>Thesium austral</i>	V	Low	Low

<b>Swamp Everlasting, Swamp Paper</b>	<b>Xerochrysum palustre</b>	V	Low	Low
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Table B-2: Evaluation of the Likelihood and Impact on Threatened Fauna within 10km of Subject Site

Status: CE = Critically Endangered; E = Endangered; V = Vulnerable; M = Migratory (CAMBA, JAMBA or ROKAMBA)

Common Name	Scientific Name	Status	Likelihood of Occurrence	Potential Impacts
<b>BIRDS</b>				
Regent Honeyeater	<a href="#">Anthochaera phrygia</a>	V	Low	Low
Southern Whiteface	<a href="#">Aphelocephala leucopsis</a>	V	Low	Low
Australasian Bittern	<a href="#">Botaurus poiciloptilus</a>	E	Low	Low
Curlew Sandpiper	<a href="#">Calidris ferruginea</a>	CE	Low	Low
Gang-gang Cockatoo	<a href="#">Callocephalon fimbriatum</a>	E	Low	Low
South-eastern Glossy Black-Cockatoo	<a href="#">Calyptorhynchus lathami lathami</a>	V	Low	Low
Brown Treecreeper (south-eastern)	<a href="#">Climacteris picumnus victoriae</a>	V	Low	Low
Grey Falcon	<a href="#">Falco hypoleucos</a>	V	Low	Low
Painted Honeyeater	<a href="#">Grantiella picta</a>	V	Low	Low
White-throated Needletail	<a href="#">Hirundapus caudacutus</a>	V	Low	Low
Swift Parrot	<a href="#">Lathamus discolor</a>	CE	Low	Low
South-eastern Hooded Robin, Hooded Robin (south-eastern)	<a href="#">Melanodryas cucullata cucullata</a>	E	Low	Low
Blue-winged Parrot	<a href="#">Neophema chrysostoma</a>	V	Low	Low
Eastern Curlew, Far Eastern Curlew	<a href="#">Numenius madagascariensis</a>	CE	Low	Low
Superb Parrot	<a href="#">Polytelis swainsonii</a>	V	Low	Low
Pilotbird	<a href="#">Pycnophilus floccosus</a>	V	Low	Low
Australian Painted Snipe	<a href="#">Rostratula australis</a>	E	Low	Low
Diamond Firetail	<a href="#">Stagonopleura guttata</a>	V	Low	Low
<b>MAMMALS</b>				
<b>Koala</b>	<a href="#">Phascolarctos cinereus</a>	E1,P	Low	Low



<b>Spotted-tailed Quoll (SE Mainland Population)</b>	<i>Dasyurus maculatus maculatus</i>	E	Low	Low
<b>Southern Greater Glider</b>	<i>Petauroides volans</i>	E1,P	Low	Low
<b>Large-eared Pied Bat</b>	<i>Chalinolobus dwyeri</i>	V,P	Low	Low
<b>Yellow Bellied Glider (south-eastern)</b>	<i>Petaurus australis australis</i>	V	Low	Low
<b>New Holland Mouse</b>	<i>Pseudomys novaehollandae</i>	E	Low	Low
<b>Grey-headed Flying-fox</b>	<i>Pteropus poliocephalus</i>	V	Low	Low
<b>FROGS</b>				
<b>Booroolong Frog</b>	<i>Litoria booroolongensis</i>	V	Low	Low
<b>FISH</b>				
<b>Macquarie Perch</b>	<i>Macquaria australasica</i>	E	Low	Low
<b>Australian Grayling</b>	<i>Prototroctes maraena</i>	V	Low	Low
<b>INSECT</b>				
<b>Bathurst Copper Butterfly, Purple Copper Butterfly</b>	<i>Paralucia spinifera</i>	V	Low	Low



Table B-3: Evaluation of the likelihood and impact on Threatened Ecological Communities within 10km of subject site

Status: CE = Critically Endangered; E = Endangered; V = Vulnerable; M = Migratory (CAMBA, JAMBA or ROKAMBA)

Community Name	Status	Likelihood of Occurrence	Potential Impacts
Natural Temperate grassland of the South Eastern Highlands	CE	Low	Low
Upland Basal Eucalypt Forests of the Sydney Basin Bioregion	E	Low	Low
White Box, Yellow Box, Blakey's Red Gum grassy Woodland and Derived Native Grassland	CE	Low	Low

## Appendix B

### Assessments of Significance

BC Act s7.3 Test of Significance (5 Part Test)
The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
(a) in the case of a <b>threatened species</b> , whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,
(b) in the case of an <b>endangered ecological community</b> or <b>critically endangered ecological community</b> , whether the proposed development or activity: <ul style="list-style-type: none"> <li>(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or</li> <li>(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,</li> </ul>
(c) in relation to the <b>habitat</b> of a threatened species or ecological community: <ul style="list-style-type: none"> <li>(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and</li> <li>(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and</li> <li>(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,</li> </ul>
(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),
(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.





## Appendix C



### AHIMS Web Services (AWS) Search Result

Your Ref/PO Number : Three Tree Drive

Client Service ID : 804186

Lithgow City Council

Date: 27 July 2023

180 Mort Street

Lithgow New South Wales 2790

Attention: James McGee

Email: jim.mcgee@lithgow.nsw.gov.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat. Long From : -33.5065, 150.1109 - Lat. Long To : -33.4886, 150.1418, conducted by James McGee on 27 July 2023.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

2	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

