

Appendix H

Consideration of clause 228(2) factors and Matters of National Environmental Significance and Commonwealth Land

Clause 228(2) Checklist

In addition to the requirements of the *Is an EIS required?* guideline (DUAP 1995/1996) and the *Roads and Related Facilities EIS Guideline* (DUAP 1996) as detailed in the REF, the following factors, listed in clause 228(2) of the Environmental Planning and Assessment Regulation 2000, have also been considered to assess the likely impacts of the proposal on the natural and built environment.

Factor	Impact
a) Any environmental impact on a community?	
Construction of the proposal would result in environmental impacts, including altered visual amenity and access for some residents, noise and air quality impacts. These impacts would be temporary and managed with the mitigation measures outlined in the REF.	Short-term negative
Aboriginal and non-Aboriginal heritage sites would be impacted by the proposal. The proposal would also result in the removal of 97.92 hectares of native vegetation. The proposal has been designed to reduce impacts to these aspects as far as practical. Measures including salvage of heritage items and offsetting of vegetation clearing.	Long-term negative
Operation of the proposal would improve traffic flow, travel times and safety through Muswellbrook by reduced traffic volumes and improve the movement of heavy freight vehicles.	Long-term positive
The proposal would require total and partial acquisition of land within the construction footprint. Property acquisition would be carried out in accordance with the Land Acquisition Information guide (Roads and Maritime, 2013) and the Land Acquisition (Just Terms Compensation) Act 1991.	Long-term negative
b) Any transformation of a locality?	
During the construction of the proposal there would be amenity impacts including noise and air quality impacts which would temporarily transform the locality.	Short-term negative
The proposal would result in a permanent change in land use from the existing land uses to a road corridor. This would remove the ability of the land to be developed for residential, mining or agricultural purposes in the future.	Long-term negative
At Muscle Creek Road, existing residences with views to large batters where the bypass road connects to the southern connection and a bridge spanning the Main North railway line as well as changes to views as a result of the removal of existing trees, would experience a high visual impact from the proposal.	
At the northern connection, existing residences on the New England Highway would have views to the proposed bridge over Sandy Creek, the Main North railway line and Sandy Creek Road. The proposal would however be viewed by a low number of receptors in this location and as a consequence the visual impact is considered moderate.	
Landscaping and urban design elements have been incorporated into the design to minimise these impacts.	
c) Any environmental impact on the ecosystems of the locality?	
The proposal is located in a highly modified landscape with limited fauna habitat values, however the proposal would result in the removal of 97.92 hectares of vegetation. The mitigation measures provided in the REF including biodiversity	Long-term negative

Factor	Impact
offsets would be implemented to minimise further potential impacts to biodiversity.	
d) Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?	
The proposal would have some temporary impacts during construction associated with visual amenity, access arrangements for some residents and noise and vibration. These impacts would be short-term and minimised through the implementation of the safeguards provided in the REF.	Short-term negative
The route selection and the development of the concept design have sought to avoid and minimize biodiversity and Aboriginal cultural heritage impacts as much as possible. Impacts to EECs as a result of the proposal would be offset as discussed in Section 6.1. Mitigation measures including archival recording and salvage activities would help to conserve the heritage value of some archaeological sites. The proposal would also result in visual impacts for residents at Muscle creek Road and the northern connection of the bypass due to the raised embankments and bridges included in the design.	Long-term negative
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?	
The proposal would impact Aboriginal sites, including the loss of value and removal of some sites. The proposal has been designed to reduce impacts to these aspects as far as practical. A mitigation program comprising archaeological salvage would be undertaken prior to construction where substantial portions of moderately significant Aboriginal archaeological sites would be impacted by the proposal. Mitigative salvage excavation would be required for two sites. The proposal would not impact items of non Aboriginal heritage significance.	Long-term negative
f) Any impact on the habitat of protected fauna (within the meaning of the <i>National Parks and Wildlife Act 1974</i>)?	
The proposal would result in the removal of up to 97.92 hectares of native vegetation. Of this, 75.66 hectares is comprised of DNG and 22.26 hectares consists of remnant vegetation. Vegetation requiring removal provides suitable habitat and habitat features for a range of threatened fauna species listed under the BC Act and/or EPBC Act. As such, direct impacts to habitat for threatened fauna species would occur during construction. This would result in a reduction of habitat, including hollow-bearing trees, for a range of birds and mammals including threatened species, and loss of fauna habitat connectivity. An aerial fauna crossing over the New England Highway would be provided to maintain connectivity. The mitigation measures outlined in the REF including a strategic assessment and biodiversity offsetting would mitigate the impacts to threatened fauna.	Long-term negative
g) Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?	
It is considered likely that the proposed work would impact the Central Hunter Valley eucalypt forest and woodland and White Box – Yellow Box - Blakely's Red	Long-term negative

Factor	Impact
<p>Gum Grassy Woodland and Derived Native Grasslands, both of which are critically endangered under the EPBC Act (as discussed in Section 6.1.2). The significance assessment carried out for the proposal identified that no threatened fauna or flora species, populations or ecological communities known or predicted to occur are likely to be significantly impacted by the proposal.</p>	
<p>h) Any long-term effects on the environment?</p>	
<p>Operation of the proposal would improve traffic flow, travel times and safety through Muswellbrook by reducing traffic volumes in particular heavy vehicles. The reduction in traffic through Muswellbrook would have flow on amenity benefits.</p>	<p>Long-term neutral</p>
<p>i) Any degradation of the quality of the environment?</p>	
<p>The proposal would have some temporary impacts during construction associated with visual amenity, dust and noise. These impacts would be short-term and minimised through the implementation of the safeguards provided in the REF.</p>	<p>Short-term negative</p>
<p>Operation of the proposal is unlikely to result in the ongoing degradation of the environment.</p>	<p>Long-term neutral</p>
<p>j) Any risk to the safety of the environment?</p>	
<p>During construction, an increase in heavy vehicle movements associated with the transportation of equipment and materials may decrease road safety. The increased transportation of dangerous goods and hazardous materials may also impact safety risk. This is considered minor given the current levels of heavy vehicles using the road network in and around Muswellbrook. Nevertheless, traffic management safeguards are provided in the REF to reduce traffic impacts.</p> <p>Potential impacts could occur where some working areas occur within areas subject to inundation during a flood event, leading to changes in flood patterns or redistributing flows. However, flood behaviour within and surrounding the construction footprint is well understood, with adequate advance flood warning available to evacuate equipment and protect the work prior to inundation.</p>	<p>Short-term negative</p>
<p>Operation of the proposal would improve safety for road users, especially through Muswellbrook by reducing traffic volumes and improving traffic flow and travel times. The proposal would also see an increase in safety for pedestrians and access throughout Muswellbrook.</p>	<p>Long-term positive</p>
<p>The proposal has been designed to maintain existing stormwater flow paths by providing appropriately sized drainage structures where required.</p>	<p>Long-term negative</p>
<p>The potential for flood impacts where the bypass traverses Sandy Creek has been minimised through the inclusion of a 375 m long bridge which extends across Sandy Creek and its floodplain. Some minor impacts remain and are primarily due to the embankments associated with the bypass resulting in localised redistributions of flow. These impacts diminish with distance from the bypass. In a 1% AEP flood, 28 out of 33 properties near the zone of impacts showed either no increase in peak flood level, or a very minor increase (less than 0.03 m). Of the remaining five properties, only two showed an increase above 0.1 m and one of these is identified as a bore well.</p>	

Factor	Impact
<p>Where the bypass traverses Muscle Creek, the impacts from the bypass are minimal as the flow in Muscle Creek remains largely in bank for events up to and including the 0.05% AEP.</p>	
<p>k) Any reduction in the range of beneficial uses of the environment?</p>	
<p>The proposal would result in property acquisition and a permanent change in land use from the existing land uses to a road corridor. This would remove the ability of the land to be developed for residential or agricultural purposes in the future.</p>	<p>Long-term negative</p>
<p>l) Any pollution of the environment?</p>	
<p>The proposal would have some temporary impacts during construction associated with visual amenity, dust and noise. The proposal could also result in minor impacts to water quality from erosion and sedimentation impacts and from potential oil or fuel spills from construction machinery. These impacts would be short-term and minimised through the implementation of the safeguards provided in the REF.</p>	<p>Short-term negative</p>
<p>m) Any environmental problems associated with the disposal of waste?</p>	
<p>Construction of the proposal would generate a number of waste streams typical of large construction projects. Transport is committed to ensuring responsible management of unavoidable waste and to promoting the reuse of such waste through appropriate measures in accordance with the resource management hierarchy principles.</p>	<p>Short-term negative</p>
<p>There is potential for asbestos and other hazardous waste to be encountered. Surplus or contaminated material would be classified and disposed of at a licensed waste facility. An unexpected finds procedure and asbestos management plan would be developed as part of the CEMP for the construction area and would be implemented during the construction phase.</p>	
<p>Waste generation during operation of the proposal is likely to be minor consistent with the operation of the existing New England Highway.</p>	<p>Long-term neutral</p>
<p>n) Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply?</p>	
<p>The proposal is unlikely to affect any resources that are or are likely to become in short supply.</p>	<p>Nil</p>
<p>o) Any cumulative environmental effect with other existing or likely future activities?</p>	
<p>There is potential for cumulative impacts to occur as a result of the construction of the proposal occurring simultaneously with other projects, including traffic, noise, air quality and visual impacts. The impacts would be temporary during the construction period and would be minimised with the mitigation measures provided in the REF.</p>	<p>Long-term neutral</p>
<p>The operation of the proposal would have a positive cumulative impact on travel times, road safety and efficiency. The proposal would result in improved safety for Muswellbrook by reducing congestion and heavy vehicle volumes through the town.</p>	<p>Long-term positive</p>

Factor	Impact
p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?	
The proposal is located about 130 kilometres from the coast. The proposal would not impact coastal processes or hazards including those predicted under climate change conditions.	Nil

Matters of National Environmental Significance and Commonwealth land

Under the environmental assessment provisions of the EPBC Act 1999, the following matters of national environmental significance and impacts on Commonwealth land are required to be considered to assist in determining whether the proposal should be referred to the Australian Government Department of Agriculture, Water and the Environment.

A referral is not required for proposed actions that may affect nationally listed threatened species, endangered ecological communities and migratory species. Impacts on these matters are still assessed as part of the REF in accordance with Australian Government significant impact criteria and taking into account relevant guidelines and policies.

Factor	Impact
a) Any impact on a World Heritage property?	Nil
b) Any impact on a National Heritage place?	Nil
<p>Databases searches revealed one national heritage place within 10 kilometres of the study area; being the Muswellbrook Post Office. This national heritage place is not located within the study area and is therefore unlikely to be impacted by the proposal.</p>	
c) Any impact on a wetland of international importance?	Nil
<p>Databases searches revealed one wetland of international importance within proximity to the study area; being The Hunter estuary wetlands. This wetland is located about 50–100 kilometres upstream from the study area.</p> <p>The study area does not contain waterways that are connected to the above wetlands of international importance and therefore is considered unlikely to impact upon these wetlands.</p>	
d) Any impact on a listed threatened species or communities?	Minor
<p>Two EPBC Act listed threatened ecological communities were identified within the study area. These threatened ecological communities included:</p> <ul style="list-style-type: none"> • Central Hunter Valley eucalypt forest and woodland (Critically Endangered under EPBC Act) • White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grasslands (Critically Endangered under EPBC Act). <p>Tests of significance (see Appendix A) indicates that the impacts to threatened biodiversity are unlikely to be significant.</p>	
e) Any impacts on listed migratory species?	Minor
<p>One migratory species listed under the EPBC Act was recorded within the study area and six migratory species are considered to have a moderate likelihood of occurring within the study area.</p> <p>The White-throated Needletail was recorded foraging in airspaces above the study area and it is considered likely that individuals would intermittently hunt in the aerial habitats associated with the locality during seasonal occurrences.</p>	

Factor	Impact
An Assessment of Significance under the EPBC Act was undertaken for these migratory species. The assessment concluded that the proposal is unlikely to substantially impact on this species.	
f) Any impact on a Commonwealth marine area?	Nil
g) Does the proposal involve a nuclear action (including uranium mining)?	Nil
h) Additionally, any impact (direct or indirect) on the environment of Commonwealth land?	Nil
