Appendix E

Consideration of clause 228(2) factors and MNES 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? The REF area would have construction impacts through the generation of noise during construction, potential traffic impacts and potential reductions in air quality and visual amenity impacts. These would be managed through safeguards listed in **Chapter 7**. The REF area would be likely to improve traffic conditions and congestion, safety and access throughout the region. The REF area (as part of the overall proposal) would result in improved road safety and accessibility, reduce congestion, improve travel times and improve travel reliability.	Short-term negative Long-term positive
b) Any transformation of a locality? The REF area would include the construction of a new bridge and associated approaches as well as the widening of Maitland Road from four lanes to six lanes. Overall, the REF area would be located in a similar corridor to the existing roadway and therefore is not considered to substantially transform the locality.	Nil
c) Any environmental impact on the ecosystems of the locality? The REF area would require the removal of about 3.82 hectares of native vegetation listed under the EPBC Act and BC Act. These include the following PCTs: • Around 1.53 hectares in the REF area of Swamp Oak swamp forest fringing estuaries, Sydney Basin Bioregion and South East Corner Bioregion (PCT 1234) • Around 1.06 hectares in the REF area of *Phragmites australis* and *Typha orientalis* coastal freshwater wetlands of the Sydney Basin Bioregion (PCT 1071) • Around 0.72 hectares in the REF area of Grey Mangrove low closed forest (PCT 1747) • Around 0.51 hectares in the REF area of Saltmarsh Estuarine Complex (PCT 1746). Fauna injury or death has the greatest potential to occur during the removal and relocation of the Southern Myotis (*Myotis macropus*) (vulnerable BC Act) found roosting within Ironbark Creek Bridge, and during construction when vegetation clearing would occur, and the extent of this impact would be proportionate to the extent of vegetation that is cleared. An Assessment of Significance has been conducted for threatened species that have been positively identified within the study area or that are considered to have a moderate or high likelihood of occurring in the study area due to the presence of suitable habitat. The conclusion of the assessment indicates that a significant impact is considered unlikely on any threatened species or TECs listed under the BC Act.	Long-term negative
d) Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?	

Factor	Impact
Temporary changes to local amenity would mainly occur for occupants of residential and commercial properties, and users of community facilities near to construction works for road widening, new U-turn facilities and intersection upgrades and temporary construction facilities. This may temporarily impact on individuals' use and enjoyment of these properties, particularly within outdoor areas such as at Hexham Bowling Club, front and back yards of residential uses, and gardens and open space areas within Calvary St Joseph's Retirement Community. It is expected that some work would need to be carried out during the evening and at night to minimise potential impacts on regional road networks. Noise and light spill from these works have potential to affect the night-time amenity at residential properties closest to these works. The REF area would require the removal of about 3.82 hectares of native vegetation, this would result in a reduction in visual amenity of the area.	Short-term negative 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 not impact on any known AHIMS sites or Aboriginal objects within the REF area. The proposal will impact on Aboriginal cultural values including the Burraghihnbihng Wetlands, Hunter River and estuary islands, and Water Spirit (Bunyip or Wau-wai, Yaa-hoo or Wowee Wowee).	Long-term negative
f) Any impact on the habitat of protected fauna (within the meaning of the *National Parks and Wildlife Act 1974)?* The REF area would require the removal of about 3.82 hectares of native vegetation listed under the EPBC Act and BC Act. Fauna injury or death has the greatest potential to occur during the removal and relocation of the Southern Myotis (*Myotis macropus*) (vulnerable BC Act) found roosting within Ironbark Creek Bridge, and during construction when vegetation clearing would occur, and the extent of this impact would be proportionate to the extent of vegetation that is cleared. An Assessment of Significance has been conducted for threatened species that have been positively identified within the study area or that are considered to have a moderate or high likelihood of occurring in the study area due to the presence of suitable habitat. The conclusion of the assessment indicates that a significant impact is considered unlikely on any threatened species or TECs listed under the BC Act.	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? The REF area would require the removal of about 3.82 hectares of native vegetation listed under the EPBC Act and BC Act. Fauna injury or death has the greatest potential to occur during the removal and relocation of the Southern Myotis (*Myotis macropus*) (vulnerable BC Act) found roosting within Ironbark Creek Bridge, and during construction when vegetation clearing would occur, and the extent of this impact would be proportionate to the extent of vegetation that is cleared.	Long-term negative

Factor	Impact
An Assessment of Significance has been conducted for threatened species that have been positively identified within the study area or that are considered to have a moderate or high likelihood of occurring in the study area due to the presence of suitable habitat. The conclusion of the assessment indicates that a significant impact is considered unlikely on any threatened species or TECs listed under the BC Act.	
h) Any long-term effects on the environment? The REF area would require the removal of about 3.82 hectares of native vegetation listed under the EPBC Act and BC Act. The REF area would also result in noise, visual and air quality impacts during construction.	Long-term negative
i) Any degradation of the quality of the environment? Landscape and urban design has been considered as part of the development of the design, which would minimise visual degradation of the environment. The REF area has the potential to degrade the quality of the environment via accidental spills and erosion and sedimentation during construction, vegetation removal and during the removal of the existing bridge. The construction area would be rehabilitated as work progresses to minimise impacts. Safeguards and management measures as outlined within **Chapter 7** would be implemented to reduce degradation of the quality of the environment during proposed activities.	Long-term negative
j) Any risk to the safety of the environment? Operation of the proposal would reduce potential safety risks. All chemicals and fuels used during construction and maintenance activities would be stored within bunded areas to ensure that spills are not released into the environment.	Nil
k) Any reduction in the range of beneficial uses of the environment? The REF proposal would improve safety for road users, pedestrians and cyclists.	Long-term positive
l) Any pollution of the environment? There is potential for accidental spills of chemicals during the construction period which could affect surrounding land and waterways. Air quality would be reduced during construction activities. Erosion and sedimentation, if not controlled, would impact water quality. There is expected to be minimal change in air quality and noise during operation of the proposal. Stormwater discharge would deliver an annual average pollutant load that is less than pollutant loads for existing conditions.	Short-term negative Long-term positive
m) Any environmental problems associated with the disposal of waste? Waste would be managed in accordance with the resource management hierarchy principles outlined in the *Waste Avoidance and Resource Recovery Act 2001*. It is not anticipated that there would be issues encountered with the disposal of waste.	Nil
n) Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply? All resources required would not be in short supply and would be readily available.	Nil

Factor	Impact
o) Any cumulative environmental effect with other existing or likely future activities?	
Vegetation clearance would also be required for the EIS area and the cumulative impacts of both the EIS and REF area have been considered and appropriate safeguards developed.	Short-term negative
Cumulative impacts associated with the construction of other projects and developments nearby have been considered and would be generally minor. Potential cumulative impacts would include vegetation removal and minor impacts on travel times for people travelling through multiple project areas.	Short-term negative
p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?	
Based on the coastal processes study undertaken, the REF area would have minor impacts on coastal processes and coastal hazards. Projected climate change conditions were considered both in the design of the REF area and also hydrological and coastal processes studies.	Nil

Matters of National Environmental Significance and Commonwealth land

Under the environmental assessment provisions of the EPBC Act, the following matters of national environmental significance and impacts on the 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 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? There are no World Heritage properties within or near to the REF area. There would be no World Heritage properties impacted by the REF area.	Nil
b) Any impact on a National Heritage place? There are no National Heritage places within or near to the REF area. There would be no negative impacts to a National Heritage Place by the REF area.	Nil
c) Any impact on a wetland of international importance? The Hunter Estuary Wetlands are located close the REF area. These areas are identified as sensitive receiving environments in this assessment as these wetlands have the potential to be impacted by changes in surface water and groundwater hydrology and flooding from the proposal. However, due to distance of the REF area from the Hunter Estuary Wetlands Ramsar site areas, no direct or indirect impacts are anticipated from surface water hydrology changes resulting from changes in drainage infrastructure or flooding changes resulting from changes in road levels and proposal infrastructure.	Nil
d) Any impact on a listed threatened species or communities? The REF area would have an impact on the following EPBC listed ecological communities: • Swamp Oak swamp forest fringing estuaries, Sydney Basin Bioregion and South East Corner Bioregion (PCT 1234) • Saltmarsh Estuarine Complex (PCT 1746). A significance assessment concluded that a significant impact is considered unlikely for any Matter of NES and a referral of the proposal would not be required.	Long-term negative
e) Any impacts on listed migratory species? While some migratory species of bird are likely to use the study area and locality on occasion, the study area is not recognised as an 'important habitat'. The proposal would not substantially modify, destroy or isolate an area of important habitat for a migratory species and it would not seriously disrupt the lifecycle of an ecologically significant proportion of a population of migratory birds.	Nil
f) Any impact on a Commonwealth marine area? There are no Commonwealth marine areas within or near the REF area. There would be no impact to Commonwealth marine areas by the REF proposal.	Nil

Factor	Impact
g) Does the proposal involve a nuclear action (including uranium mining)? The REF area does not involve a nuclear action.	Nil
h) Additionally, any impact (direct or indirect) on the environment of Commonwealth land? The REF area would impact on Crown Land and would require a permit from the DPIE (Crown land).	Short-term negative