



# NORTH EAST LINK PROJECT

## EPBC Referral Attachment E - Commonwealth Land Report

*Revision 0*

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Document prepared by:



## Document Control Page

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### Issue

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# Abbreviations

| Abbreviation | Definition   |
|--------------|--|
| DoEE         | Department of Environment and Energy                                 |
| DELWP        | Department of Environment, Land, Water and Planning                  |
| DEDJTR       | Department of Economic Development, Jobs, Transport and Resources    |
| DEPI         | Department of Environment and Primary Industries (now DELWP)         |
| EES          | Environment Effects Statement  |
| EGK          | Eastern Grey Kangaroo <i>Macropus giganteus</i>                      |
| EPBC Act     | <i>Environment Protection and Biodiversity Conservation Act 1999</i> |
| PMST         | Protected Matters Search Tool  |
| SMP          | Spoil Management Plan  |
| VBA          | Victorian Biodiversity Atlas   |

# Glossary

| Term                            | Definition   |
|---------------------------------|--|
| Biodiversity                    | The variety of all life forms, the different plants, animals and micro-organisms, the genes they contain, and the ecosystems of which they form a part.  |
| Bioregional conservation status | An assessment of the conservation status of the native vegetation type (EVC) in the context of a particular bioregion, taking account of how commonly it originally occurred, the current level of depletion and the level of degradation of condition typical of remaining stands.  |
| Native vegetation               | <p>Native vegetation includes all vegetation that is native to Australia, and its states and territories.</p> <p><i>Note: Under the Victorian Planning Provisions native vegetation is defined as 'plants that are indigenous to Victoria including trees, shrubs, herbs and grasses' (DEPI, 2013). However, for the purposes of this report native vegetation includes all vegetation that is native to Australia.</i></p>  |
| Threatened species              | <p>For the purposes of this report, threatened species refers to species considered threatened in Victoria or Australia. This includes species that are vulnerable or endangered in Victoria as defined by DEPI 2014 or DSE 2014, listed under the <i>Flora and Fauna Guarantee Act 1988</i> (FFG Act) or vulnerable, endangered or critically endangered under the EPBC Act.</p> <p>VROT rare, near-threatened, and poorly known or data deficient species are not considered threatened.</p> |

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# 1. Introduction

## 1.1 Purpose of this report

North East Link ('the project') is a proposed new freeway standard road connection that would complete the missing link in Melbourne's metropolitan ring road, giving the city a fully completed orbital connection for the first time. North East Link would connect the M80 Ring Road (M80) to the Eastern Freeway, and include upgrade works to the Eastern Freeway.

The project is being referred to the Australian Government Environment Minister in accordance with the requirements of the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act).

This report was prepared in order to support the EPBC referral being prepared for the project. It identifies the potential impacts of the project on Commonwealth Land for a decision on whether assessment and approval is required under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

## 1.2 Scope of this report

This report has used the Significant Impact Guidelines 1.2 *Environment Protection and Biodiversity Conservation Act 1999* Commonwealth of Australia 2013, to assist in identifying potential impacts on Commonwealth Land associated with the project.

In evaluating whether the proposed action (the project) is likely to have a significant impact, the following must be considered:

- The environmental context
- Potential impacts likely to be generated by the action, including indirect consequences of the action
- Whether mitigation measures will avoid or reduce these impacts
- Taking into account the above, whether the impacts of the action are likely to be significant.

Section 3 contains an assessment in relation to these four considerations for each discipline specified in the Significant Impact Guidelines 1.2.

---

## 2. Description of Commonwealth Land

### 2.1 Site Description

The Commonwealth Land that is the subject of this assessment comprises Simpson Barracks site. Simpson Barracks is located within an urban area approximately 18 km north east of the Melbourne CBD in the suburb of Yallambie. Surrounding land use is well established residential on all sides. The site is bordered by Greensborough Road to the west and Yallambie Road to the north. The main entry gate is located on Greensborough Road with secondary entry points on Yallambie Road and via Crew Street off Lower Plenty Road to the south. Simpson Barracks is Defence's largest reserve in Melbourne occupying approximately 112 hectares of land and comprising a mixture of developed land and significant natural areas, including large areas of the Victorian listed endangered Plains Grassy Woodland (GHD, 2011).

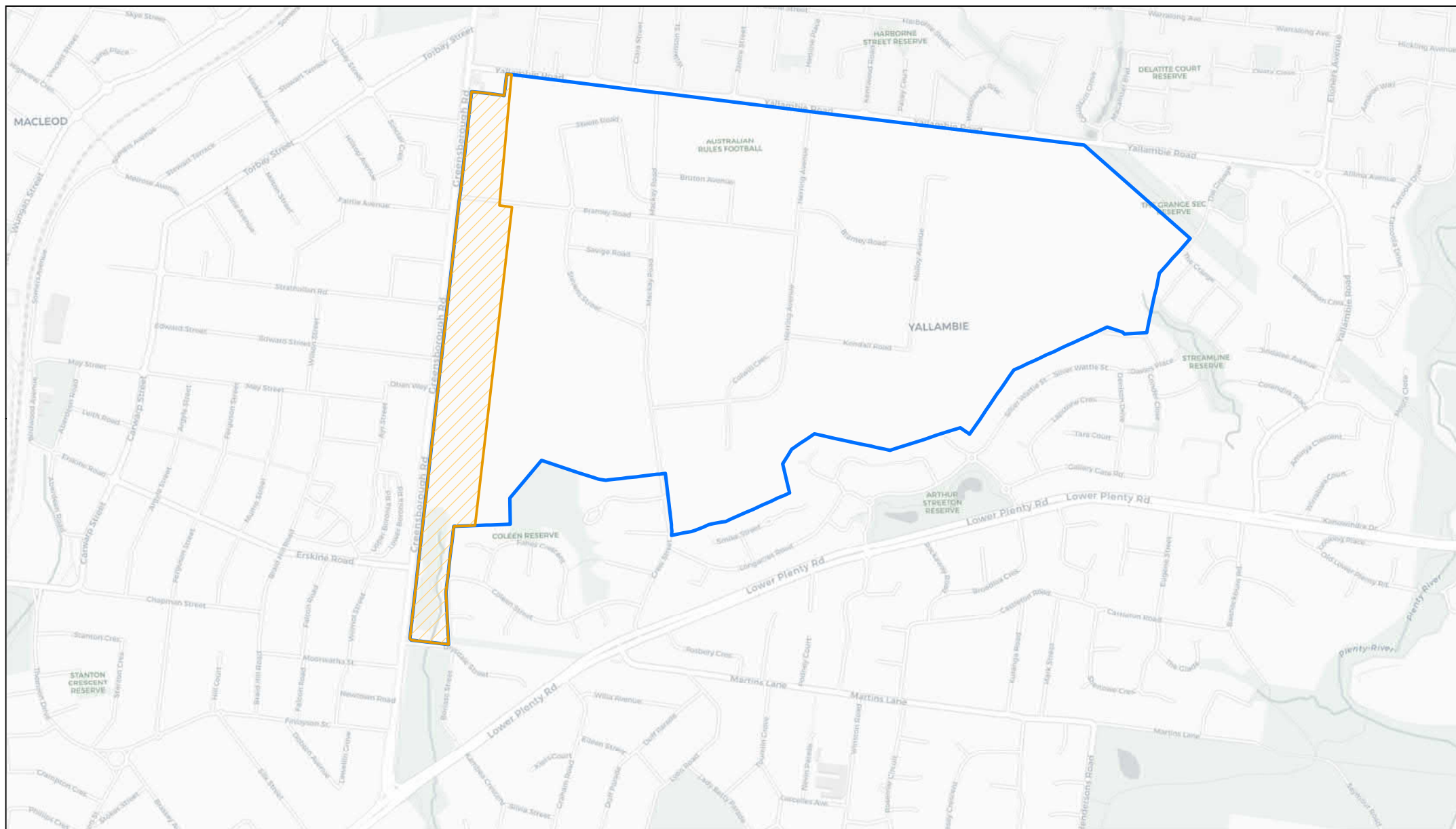
The developed part of Simpson Barracks comprises approximately 55 hectares, and includes residential accommodation facilities, schools, administrative buildings, a workshop, playing fields and service areas and training buildings. The broader site also provides outdoor training areas.

The south western-most portion of Commonwealth Land (between Greensborough Road and Coleen Street) is outside of the fence line defined for Simpson Barracks, and may be accessible by public. This small area is part of the Commonwealth Land parcel assessed through this document.

### 2.2 Description of proposed action

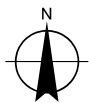
A comprehensive description of the proposed action is included in the covering referral document. On Commonwealth Land, the project is expected to run as a trench through the western portion of the land parcel, adjacent to Greensborough Bypass. Bridges across the trench would retain accessibility to and from the Simpson Barracks. The precise location of the roads and tunnels is subject to further design work, but would be located within the referred project area indicated. The project is expected to affect approximately 11 hectares of the western boundary of the site (of which, approximately 8 hectares is woodland). A tunnel portal (including ventilation structure) would be located to the south west of Simpson Barracks.

The proposed action would occur on Commonwealth Land within the area intersected by the referred project area, as shown in **Figure 1**. The referred project area includes a wider area within which the project footprint would be located (see covering referral document).



Paper Size A4  
0 75 150 300  
Metres

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



#### LEGEND

**Referred project area**  Above ground  Commonwealth Land



North East Link Authority  
North East Link Project

Job Number 31-35006  
Revision 0  
Date 10 Jan 2018

Commonwealth Land Boundary

Figure 1



### 3. **Assessment of impacts to the environment on Commonwealth land**

As the project is proposed to utilise Commonwealth Land, it is necessary to consider the potential for significant impact on the 'Environment'. Section 528 of the EPBC Act defines Environment to include:

- a) Ecosystems and their constituent parts, including people and communities
- b) Natural and physical resources
- c) The qualities and characteristics of locations, places and areas
- d) Heritage values of places
- e) The social, economic and cultural aspects of (a), (b), or (c).

In the following sections, an assessment of potential impacts is presented for the following aspects of the environment:

- Impacts on landscapes and soils
- Impacts on coastal landscapes and processes
- Impacts on ocean forms, ocean processes and ocean life
- Impacts on water resources
- Pollutants, chemicals, and toxic substances
- Impacts on plants
- Impacts on animals
- Impacts on people and communities
- Impacts on heritage

For the purpose of this assessment, the following descriptors have been used to assess the likelihood for significant impacts on Commonwealth Land:

- Unlikely; the project is not expected to impact this aspect of the environment
- Possible: there is a possibility the project could impact this aspect of the environment
- Likely: the project is expected to impact this aspect of the environment

Impacts associated with nationally threatened species and communities and migratory species potentially located on Commonwealth Land have been assessed in Attachment D of this referral, in accordance with the *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance*.

#### **3.1 Impacts on landscapes and soils**

A description of the impacts on landscape and soils in comparison to the EPBC guidelines applicable to Commonwealth Land is provided in Table 1.

**Table 1 Assessment of impacts on landscapes and soils**

| Criterion   | Assessment of nature and extent of impacts   |
|---|--|
| Possibility that the action will substantially alter natural landscape features       | <p><b>Possible</b></p> <p>The landscape within Simpson Barracks that intersects with the referred project area is a naturalised vegetated area comprised largely of Plains Grassy Woodland (EVC 55). Banyule Creek originates in this area before flowing south through a residential area and then to Yarra River. The creek runs parallel to Greensborough Road and further detail on realignment of Banyule Creek is provided in Section 3.4.</p> <p>The project would run parallel to the existing Greensborough Road and dive down into a trench structure within Simpson Barracks. Approximately 8 hectares of woodland / open space would be required to be cleared and converted into a trench structure. This would require significant excavation and change the topography and landscape of the western boundary of this Commonwealth Land site.</p> <p>To maintain connectivity to the local road network, bridges would be provided across the trench at Yallambie Road and Blamey Road, to maintain existing access to Simpson Barracks. The area affected by the project abuts an existing road corridor. The project would be located as close as possible to Greensborough Road, minimising incursion into Commonwealth Land.</p> <p>Given the project structures comprise trenches within Simpson Barracks, and replacement of a similar woodland environment would be required along the new perimeter of the barracks, a long-term visual impact is not likely. Additional long-term impacts to natural landscape features would be mitigated through an appropriate design response.</p>  |
| Possibility that the action will cause subsidence, instability or substantial erosion | <p><b>Unlikely</b></p> <p>In this location, the project alignment located in an area of Salt Creek Terrain, which is characterised by relatively low to moderate topographic relief. The Terrain mainly comprises Melbourne Formation (Sxm) and minor amounts of the Anderson Creek Formation (Sxa) underlain by Silurian sandstone. See Appendix A for geological drawings.</p> <p>Folds, faults, dykes and fractures in the Silurian bedrock may give rise to instability around the trench structure. This would depend on the local intensity and condition of the fractures, groundwater conditions, depth of weathering and the residual stress in the rock mass, and would be managed through testing of geotechnical conditions and implemented suitable engineering solutions. Similarly, the potential for groundwater drawdown would be managed as part of the engineering design to prevent subsidence.</p> <p>Within Simpson Barracks no structures would be expected to be at risk of being affected by instability. Nevertheless assessment will be undertaken as part of the detailed design and for those structures that are identified through further studies as having a moderate risk of instability, appropriate mitigation measures would be developed. These may include, but are not limited to, modifications to the construction process or methods, pre-support of the ground adjacent to the structures, isolation of the structures from the ground movement, re-location of the affected structures, or, structural support of the structures.</p> <p>The potential for erosion would be managed in line with best practice sediment</p> |

|   |  |
|---|--|
|   | and erosion control and monitoring, in accordance with EPA Victoria publications 275 (Construction techniques for sediment pollution control 1991) and 480 (Environmental guidelines for major construction sites 1996). This would mitigate the likelihood of a significant subsidence, instability or erosion impact.  |
| Possibility that the action will involve medium or large-scale excavation of soil or minerals | <p><b>Likely</b></p> <p>To facilitate the construction of the trench structure, large-scale excavation of soil would be required.</p> <p>The project is expected to displace a large volume of soil and rock where trench construction types are proposed. A Spoil Management Plan (SMP) would be prepared to set out the proposed approach to manage and monitor spoil generation, handling, categorisation, storage and disposal. This would mitigate the likelihood of a significant environmental impact occurring.</p> <p>Spoil generated by bulk earthworks during excavations within areas of contaminated land (historic landfill / uncontrolled fill) will also require careful consideration of the nature and extent of contamination to inform the waste classification, which then influences the management options, including re-use or off-site disposal. The project is not expected to intersect with areas of significant contamination during the construction activities.</p> <p>The spoil management plan would set out required actions in case suspected contamination is identified. Any contaminated waste would be required to be classified based on the concentrations of contaminants in the spoil. Waste spoil is divided into three categories (Category A, B and C) of prescribed industrial waste (PIW), other waste and clean fill, which is non-hazardous material. Category A soils are the highest class of hazardous waste and cannot be disposed of to landfill. Category B and C soils and other waste can only be disposed at licensed facilities. Spoil generated within areas historic landfill / uncontrolled fill is likely to be categorised as PIW or other waste.</p> |

### 3.2 Impacts on coastal landscapes and processes

There are no coastal landscapes within the subject Commonwealth Land.

### 3.3 Impacts on ocean forms, ocean processes and ocean life

There are no ocean assets within the subject Commonwealth Land.

### 3.4 Impacts on water resources

A description of the impacts on water resources in comparison to the EPBC guidelines applicable to Commonwealth Land is provided below.

**Table 2 Assessment of impacts on water resources**

| Criterion   | Assessment of nature and extent of impacts   |
|---|--|
| Possibility that the action will measurably reduce the quantity, quality or availability of surface or ground water | <p><b>Unlikely</b></p> <p>Construction works have the potential to impact waterway health and water quality through contamination from pollutants or disturbance of acid sulphate soils as a result of construction activities. This could result in impacts on the water quality in those flow paths and receiving waters. Further information on</p> |

|  |   |
|--|---|
|  | <p>contamination and spills is provided in Section 3.5.</p> <p>Dewatering may be needed to facilitate the construction and operation of the trench. This could reduce water levels in the vicinity and therefore impact the operation of existing groundwater users. There is a very low density of groundwater users near the project corridor and given the depth of bores, the impact to available drawdown in these bores is likely to be manageable.</p> <p>As the majority of the project's study area is located within the same aquifer system, the likelihood of the tunnel or trench acting as a physical barrier to regional groundwater is considered to be low.</p> <p>Banyule Creek would require diversion within Simpson Barracks. Any diversion would be required to meet the requirements of the <i>Water Act 1989</i> and would be subject to approval by Melbourne Water. Water sensitive urban and road design will be adopted to control potential impacts on the downstream water environment from additional runoff volume, alteration of the timing of flows, and contamination from increased pollutants. The drainage strategy for the project will include the specifications for water quality treatment of stormwater runoff in accordance with VicRoads Integrated Water Management Guidelines and the Urban Stormwater Best Practice Environmental Management Guidelines (BPEMG). The BPEMG establish best practice performance objectives for urban stormwater (for urban development). These objectives assist in determining the level of stormwater management necessary to meet the State Environment Protection Policies (SEPP) Waters of Victoria. Therefore impacts on the quantity, quality or availability would not be expected.</p> |
| Possibility that the action will channelise, divert or impound rivers or creeks or substantially alter drainage patterns | <p><b>Likely</b></p> <p>Originating in the southwest portion of Simpson Barracks, Banyule Creek drains southwards towards the Yarra River. This minor waterway is ephemeral and not expected to represent a significant groundwater recharge feature. This creek is located upon the basement aquifer and a potential geological structure. Regional water level mapping suggests water levels between five metres and ten metres below the surface.</p> <p>The proposed alignment includes the construction of a trench over northern parts of Banyule Creek, and this would require modification to the waterway. Modelling would be required to demonstrate that the flow paths are compliant with Melbourne Water criteria to minimise impacts on drainage patterns. Therefore drainage patterns would not be substantially altered beyond the modification of the creek due to the direct project footprint.</p> <p>The project would be designed to mitigate the effects of changes to flow, and to minimise the potential for erosion, sediment plumes and exposure of contaminated material during construction to the satisfaction of Melbourne Water. Waterway flow regimes and existing levels of flood protection would be maintained in accordance with requirements under the <i>Water Act 1989</i>.</p>  |
| Possibility that the action will measurably alter water table levels   | <p><b>Unlikely</b></p> <p>Where the trench structure is located below the groundwater table, then groundwater would need to be depressurised and water levels lowered, to enable safe construction.</p> <p>Between the Hurstbridge Rail Line and Yallambie Road, the trench is estimated to be more than ten metres deep. However, regional groundwater level mapping suggests water levels greater than 20 metres deep. Therefore,</p>   |

existing information suggests that the trench is above the water table and significant changes to regional groundwater levels would not be expected to result from the project.

To minimise the potential for impacts to groundwater levels, a predictive and numerical groundwater model would be developed and updated iteratively to take account of construction techniques and operational design features. This would assess potential drawdown and identify triggers for implementing mitigation measures, in addition to the standard mitigation measures applied as part of a construction environmental management plan.

### 3.5 Pollutants, chemicals, and toxic substances

A description of the impacts associated with pollutants, chemicals and toxic substances in comparison to the EPBC guidelines applicable to Commonwealth Land is provided below.

**Table 3 Assessment of impacts associated with pollutants, chemicals and toxic substances**

| Criterion  | Assessment of nature and extent of impacts   |
|--|--|
| Possibility that the action will generate smoke, fumes, chemicals, nutrients, or other pollutants which will substantially reduce local air quality or water quality | <p><b>Water Quality - Unlikely</b></p> <p>Construction works have the potential to impact waterway health and water quality through spills, wastewater discharges or disturbance of acid sulfate soils as a result of construction activities. Risks of contamination of waterways also exist during project operations, due to the potential for spills from traffic accidents and pollutants in road run-off.</p> <p>To manage and mitigate these impacts, environmental management procedures would be implemented as part of construction works. For the operation of the project, the capacity of the stormwater drainage system would be designed for all new roads and ramps to contain hazardous spills at or prior to stormwater outlets, to the satisfaction of EPA Victoria, and develop procedures to be implemented in response to a hazardous spill.</p> <p>Water sensitive urban design and integrated water management principles would also be adopted in the stormwater treatment design, in accordance with the specifications of the relevant local council as applicable, VicRoads Integrated Water Management Guidelines (2013), the Best Practice Environmental Management Guidelines for Urban Stormwater (2006) and the DELWP Integrated Water Management Framework for Victoria (2017).</p> <p><b>Air Quality – Unlikely</b></p> <p>Ground disturbance and other construction activities may cause emissions of volatile substances (such as fuels and solvents) or ground gases (such as methane, carbon dioxide and hydrogen sulphide) to move towards the surface or other sub-surface structures. The impact of emissions of volatile substances would depend upon where it was encountered with respect to construction techniques and any related structures (e.g. service trench, occupiable structures).</p> <p>Construction-related impacts to local air quality would primarily be dust emissions associated with spoil excavation, handling and removal, and other construction activities.</p> |

|  |  |
|--|--|
|  | <p>The impact of construction dust for the project would be managed by standard mitigation measures applied as part of a construction environmental management plan. This is typical for major construction sites and the measures would apply in all areas where construction works occur.</p> <p>For operation, the placement of road sections within a trench has the potential to inhibit the dispersion of vehicle emissions. However, the consequential impacts are low as the structure is unlikely to result in pollutant levels exceeding air quality standards.</p>  |
| Possibility that the action will result in the release, leakage, spillage, or explosion of flammable, explosive, toxic, radioactive, carcinogenic, or mutagenic substances, through use, storage, transport, or disposal | <p><b>Unlikely</b></p> <p>The action is unlikely to result in the release, leakage, spillage, or explosion of flammable, explosive, toxic, radioactive, carcinogenic, or mutagenic substances, through use, storage, transport, or disposal.</p> <p>To manage and mitigate these impacts environmental management procedures would be implemented as part of construction works, through standard mitigation measures applied as part of a construction environmental management plan.</p>   |
| Possibility that the action will increase atmospheric concentrations of gases which will contribute to the greenhouse effect or ozone damage   | <p><b>Unlikely</b></p> <p>Greenhouse gas emissions would be produced as a result of the action, however these would be insignificant in the context of Australia's overall greenhouse gas emissions and are an unavoidable by-product of the manufacture of the materials used to build the project.</p> <p>The embodied carbon in materials used during construction represents the largest emissions source. However, the consequence of greenhouse gas emissions is considered minor and can be further managed by implementing leading practices in infrastructure sustainability such as the Infrastructure Sustainability Rating Tool that evaluates sustainability initiatives and potential environmental, social and economic impacts of infrastructure projects.</p>   |
| Possibility that the action will substantially disturb contaminated or acid-sulfate soils  | <p><b>Contamination - Unlikely</b></p> <p>Defence information released in March 2013 confirmed that the Simpson Barracks contains several historic landfills, containing waste from Defence operations and potentially asbestos containing materials and bulk storage of fuel and waste oil. Following statutory environmental audits (53X Certificate) in the Simpson Barracks (on the corner of Yallambie Road and Lower Plenty Road), the auditor concluded that the condition of the land at the site is neither detrimental nor potentially detrimental to any beneficial use of the land at the site and issued as a Certificate of Environmental Audit.</p> <p>Management and disposal requirements for asbestos containing materials would be addressed within the Spoil Management Plan (SMP). Spoil with asbestos-containing materials is required to be managed in accordance with WorkSafe OH&amp;S regulations.</p> <p>Pathways for contaminant migration or mobilisation may be introduced where piles or excavations are proposed. The potential for contaminant migration would need to be addressed as part of the SMP.</p> |



### Acid Sulfate Soils – Unlikely

EPA Publication No. 655.1 (2009) notes that potential acid sulfate rocks are found in Cambrian to Middle Devonian sediments (e.g. Humevale Formation), as well as Silurian age siltstones. Such potential acid sulfate rocks underlie the bulk of the referred project area and therefore further investigations are required to better characterise the likelihood of occurrence.

The SMP would include requirements and methods for the management of waste acid sulfate soil material in accordance with EPA Victoria publication IWRG 2009, EPA Victoria Publication 655.1 Acid Sulfate Soil and Rock 2009, Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soil. This will include undertaking an acid sulfate soils risk identification process in accordance with the Victorian Coastal Acid Sulfate Soil Strategy, if soil and rock within the referred project area are suspected to be acid sulfate soil and rock.

## 3.6 Impacts on plants

A description of the impacts on plants in comparison to the EPBC guidelines applicable to Commonwealth Land is provided below.

**Table 4 Assessment of impacts on plants**

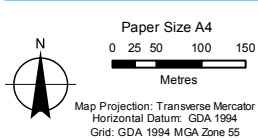
| Criterion  | Assessment of nature and extent of impacts   |
|--|--|
| Possibility that the action will involve medium or large-scale native vegetation clearance | <p><b>Likely</b></p> <p>Simpson Barracks contains a relatively large area of remnant woodland, particularly for this part of otherwise urbanised Melbourne. Approximately 8 hectares of EVC Plains Grassy Woodland in Simpson Barracks could be directly affected by the project (refer to <b>Figure 3</b>). This area largely consists of Eucalypt species (mainly River Red-gum, <i>Eucalyptus camaldulensis</i>). This vegetation has the potential to support Clover Glycine <i>Glycine latrobeana</i> (though none was identified during field surveys) and is known to support a large population of Matted Flax-lily <i>Dianella amoena</i>, which are listed as vulnerable and endangered, respectively, under the EPBC Act (refer to Attachment D of this referral). The potential impacts to both of these species have been assessed through the <i>Significant Impact Guidelines 1.1 – Matters of National Environmental Significance</i> in Attachment D to this referral.</p> <p>Populations of Matted Flax-lily proposed to be impacted would be translocated to a suitable recipient site in accordance with an approved Translocation Plan to minimise impacts (a Draft Translocation Plan is provided at Attachment F to this referral), and offsetting would be undertaken in accordance with requirements under the EPBC Act.</p> <p>During detailed design, the extent of the project footprint would be minimised to minimise adverse impacts on native vegetation. Offsetting would occur for any adverse impact on native vegetation, in accordance with the ‘no net loss’ objective of Victoria’s guidelines. Offsets would counteract the lost vegetation. Offset sites for Plains Grassy Woodland are generally considered to be available across Victoria, and the project would seek to identify one larger offset site in the bioregion, rather than a number of small sites. However, it is noted that the ‘Guidelines for the removal, destruction or lopping of native vegetation’ (DELWP 2017) have recently replaced the ‘Permitted clearing of</p> |

|   |   |
|---|---|
|   | <p>native vegetation- Biodiversity Assessment Guidelines' (DEPI 2013). These revised guidelines include new requirements for the calculation of the biodiversity of native vegetation, which has the potential to change the requirements of a suitable offset site. The selection of a suitable offset site and methodology would be worked through with DELWP and the Commonwealth as part of ongoing assessments associated with the project.</p>  |
| <p>Possibility that the action will involve any clearance of any vegetation containing a listed threatened species which is likely to result in a long-term decline in a population or which threatens the viability of the species</p> | <p><b>Likely (with no mitigation) / Unlikely (with mitigation measures)</b></p> <p>As mentioned above, the project would be expected to impact an area of EVC Plains Grassy Woodland which is endangered under the <i>Flora and Fauna Guarantee Act 1988</i> (FFG Act), and an area of remnant woodland which is known to support listed threatened species.</p> <p>Targeted site surveys for Matted Flax-lily and Clover Glycine were undertaken as these species were identified during a desktop assessment as likely to occur within this area. A large population of Matted Flax-lily was identified at Simpson Barracks, with approximately 84 plants/patches recorded within the referred project area on Commonwealth Land and a further 112 plants/patches recorded at Simpson Barracks outside of the referred project area. The total population at Simpson Barracks is estimated to be at least 300 plants, as areas of suitable habitat outside of the project footprint remain to be surveyed.</p> <p>Other FFG Act-listed and DELWP advisory list species have the potential to occur on site and further investigation into their presence would be undertaken as part of an impact assessment. Based on Victorian Biodiversity Atlas (VBA) data, one threatened flora species was previously recorded at Simpson Barracks – Studley Park Gum <i>Eucalyptus studleyensis</i> (refer to <b>Figure 2</b>).</p> <p>Previous ecological investigations have been undertaken at Simpson Barracks. A study undertaken by HLA (2007) included a literature review of previous studies of Simpson Barracks, which identified the Studley Park Gum and Matted Flax-lily as recorded on the site. Field work conducted as part of the North East Link project confirmed the presence of both species. One other threatened flora species was identified at Simpson Barracks by this study – Arching Flax-lily <i>Dianella longifolia</i> var. <i>grandis</i>, which is listed as vulnerable on the <i>Advisory List of Rare or Threatened Plants in Victoria</i>.</p> <p>Matted Flax-lily is a species that is readily and successfully translocated (Carter 2010). All isolated individuals or patches of Matted Flax-lily are proposed to be translocated to a suitable recipient site (potentially to another site within the Commonwealth Land) minimising the likelihood of a long-term decline in the population.</p> <p>In addition to translocation, offsetting would be undertaken as mitigation to minimise impact to this species. With these measures taken, it is considered unlikely that the action would threaten the viability of the species.</p> |
| <p>Possibility that the action will introduce potentially invasive species</p>  | <p><b>Unlikely</b></p> <p>Measures would be developed and implemented to avoid the introduction of exotic species into the habitat. This could include vehicle and equipment hygiene.</p>   |
| <p>Possibility that the action will involve the use of chemicals which</p>  | <p><b>Unlikely</b></p> <p>Proposed action does not include use of chemicals which would stunt the growth of native vegetation. Chemicals would be managed in accordance with</p>  |



|   |  |
|---|--|
| substantially stunt the growth of native vegetation   | relevant standards and guidelines to minimise risk.                                |
| Possibility that the action will involve large-scale controlled burning or any controlled burning in sensitive areas, including areas which contain listed threatened species | <p><b>Unlikely</b></p> <p>Proposed action does not include controlled burning.</p> |





#### LEGEND

- Commonwealth Land Boundary
- Referred Project Area
- Studley Park Gum
- ★ Swift Parrot
- ◆ White-throated Needletail



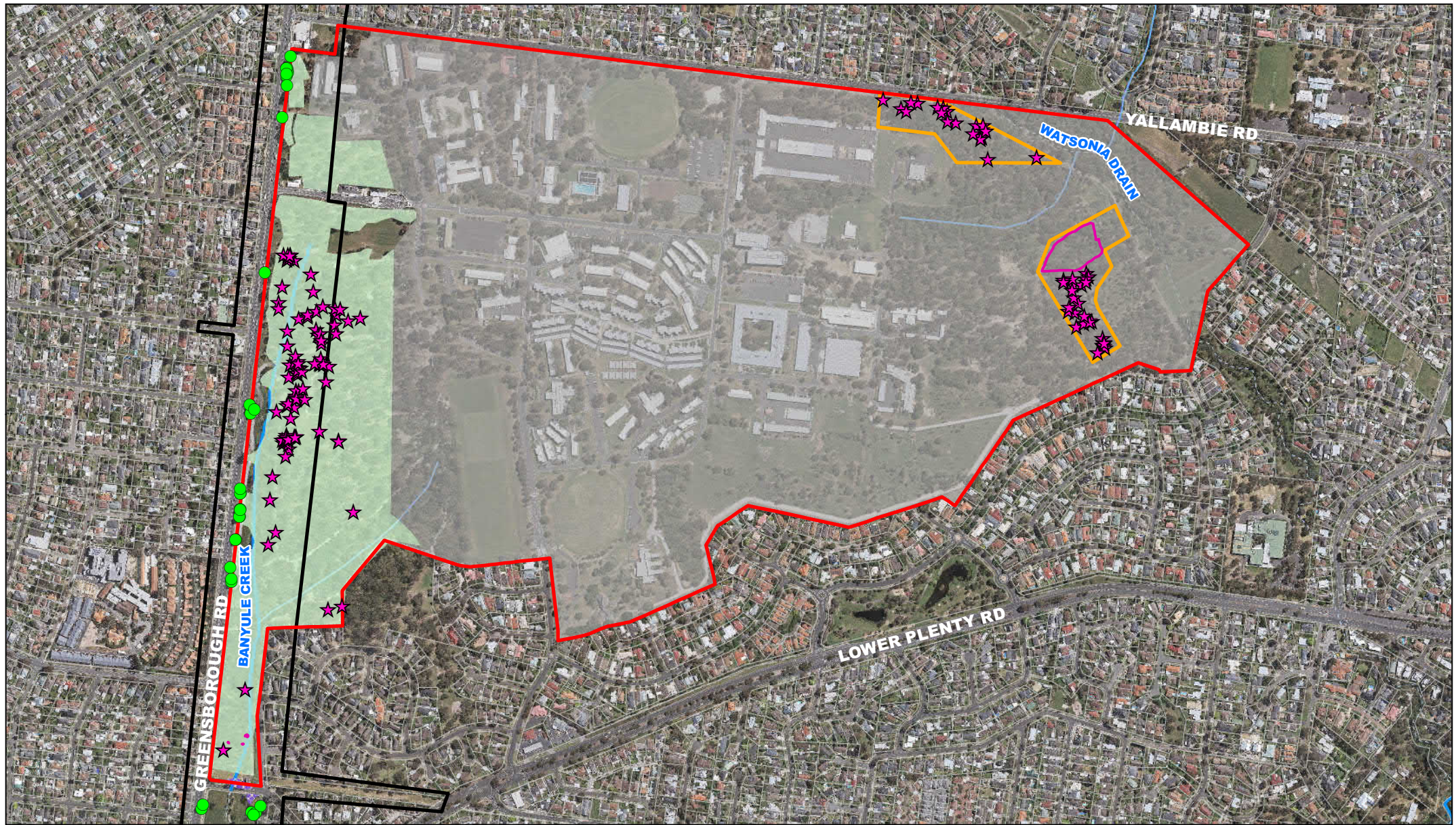
North East Link Authority  
North East Link Project

VBA Threatened Flora and Fauna  
Commonwealth Land

|            |             |
|------------|-------------|
| Job Number | 31-35006    |
| Revision   | A           |
| Date       | 13 Dec 2017 |

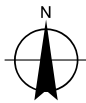
Figure 2





Paper Size A4  
0 50 100 200  
Metres

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



#### LEGEND

- Commonwealth Land Boundary
- EPBC referred project area
- Rentons Ridge (Simpson) - MFL Survey Area

- Scattered Tree
- ★ Matted Flax-lily *Dianella amonea*
- Matted Flax-lily Patch

- Vegetation**
- Plains Grassy Woodland (55)
- Riparian Woodland (641)



North East Link Authority  
North East Link Project

Job Number | 31-35006  
Revision | A  
Date | 11 Jan 2018

Vegetation Assessments  
- Commonwealth Land

Figure 3

G:\31\35006\GIS\Maps\Working\20180111\_VegetationAssess\_SimpsonBarracks\31-35006\_VegetationAssess\_Barracks.mxd

180 Lonsdale Street Melbourne VIC 3000 Australia T 61 3 8687 8000 F 61 3 8687 8111 E melmail@ghd.com W www.ghd.com

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Data source: Vicmap Data, DELWP, 03/2017. Imagery, CIP 2015, DELWP. Created by:trighetti



### 3.7 Impacts on animals

A description of the impacts on animals in comparison to the EPBC guidelines applicable to Commonwealth Land is provided below.

**Table 5 Assessment of impacts on animals**

| Criterion   | Assessment of nature and extent of impacts  |
|---|---|
| Possibility that the action will cause a long-term decrease in, or threaten the viability of, a native animal population or populations, through death, injury or other harm to individuals | <p><b>Unlikely</b></p> <p>Simpson Barracks contains a relatively large area of remnant woodland in an otherwise urbanised area. This habitat is of high value to native fauna, and used by numerous adaptable species that are able to reside in habitat islands of this type, or that can disperse between this and other remnant patches. This project is unlikely to threaten the viability of any of those species. Habitats in Simpson Barracks are also likely to attract or support threatened fauna species occasionally. Threatened and Migratory fauna listed under the EPBC Act, and deemed likely or possible to occur within Simpson Barracks through desktop assessment, include the Growling Grass Frog, Latham's Snipe, Swift Parrot, Grey-headed Flying-fox, Eastern Dwarf Galaxias, Australian Grayling and Macquarie Perch (refer to Attachment D – Ecology report for full search results for the alignment). Through field investigations, it was determined that habitats within the referred project area are unlikely to be critical for the survival of any populations of these species. A targeted survey for Growling Grass Frog found that Banyule Creek within the site was not currently suitable for that species, and that the woodland and grassland/waterway habitats at the western part of the barracks were unsuitable for Swift Parrot and Latham's Snipe respectively.</p> <p>While field assessments have not been undertaken for other threatened species under the FFG Act and the DELWP advisory list, previous investigations undertaken by HLA (2007) found no listed species during site assessments. A literature review was also undertaken by HLA (2007) which identified the Superb Parrot <i>Polytelis swainsonii</i>, the Swift Parrot, the Grey-headed Flying-fox and the Brown Toadlet <i>Pseudophryne bibronii</i> recorded at Simpson Barracks by previous studies. HLA (2007) also identified the Superb Parrot <i>Polytelis swainsonii</i> as being present at the barracks, but this species typically occurs well north of Melbourne, and individuals seen in Melbourne are likely to be aviary escapees.</p> <p>Other threatened fauna listed under the FFG Act or the DELWP advisory list that do or may occur within the Simpson Barracks include Brush-tailed Phascogale (<i>Phascogale tapoatafa</i>), Barking Owl (<i>Ninox connivens connivens</i>), Powerful Owl (<i>Ninox strenua</i>), Glossy Grass Skink (<i>Pseudemoia rawlinsoni</i>), Brown Toadlet (<i>Pseudophryne bibroni</i>), Southern Toadlet (<i>Pseudophryne semimarmorata</i>), and Broad Shelled Turtle (<i>Chelodina expansa</i>).</p> <p>The Brush-tailed Phascogale has potentially suitable habitat present at the Simpson Barracks, but the species is no longer expected to persist in that highly urbanised environment. There are numerous nearby records of the Barking Owl as a result of the site's proximity to Gresswell Forest. This species is expected to forage broadly across the referred project area, including Simpson Barracks. The Powerful Owl is expected to forage broadly across the referred project area, including within the Simpson Barracks occasionally. The Glossy Grass Skink may occur at Simpson Barracks, but no</p> |

Glossy Grass Skinks (or other small reptiles) were seen at the site during the daytime habitat assessment for Growling Grass Frog, which was done in suitable conditions for the grass skink. The two species of toadlet (Brown Toadlet and Southern Toadlet) identified for the site may occur within the upper sections of Banyule Creek in the Simpson Barracks, although no VBA records exist in that site for either species. The literature review undertaken by HLA (2007) reported that the Brown Toadlet had been recorded at Simpson Barracks by previous studies. Toadlets in Victoria are typically detectable in autumn, and a targeted survey will be done at the Barracks at that time of year to determine whether or not the species are present, and if so, whether they occur within the referred project area or more towards the waterway at the east of the Barracks (Watsonia Drain). The Broad Shelled Turtle may occur in Banyule Creek, but is most likely to occur in larger sections of this waterway and into the Yarra River downstream.

Despite the potential presence of some of these species in the Simpson Barracks, the project is considered unlikely to cause a long-term decrease in, or threaten the viability of, populations of any of them, through death, injury or other harm to individuals.

The Simpson Barracks supports a population of Eastern Grey Kangaroos (not listed as a threatened species under commonwealth or state legislation) and management measures would be implemented throughout the construction process to ensure these are not harmed by the works and that disturbance is minimal.

A number of studies have investigated population of Eastern Grey Kangaroos (EGK) *Macropus giganteus* on Simpson Barracks. A study by AECOM (2015) found that there are likely to be kangaroo mobs present in surrounding areas including Yarra Valley Parklands (YVP), Plenty Gorge Parklands, Fitzsimons Lane near Westerfolds Park, Candlebark Park, and in Nillumbik opposite Pound Bend, however it is considered unlikely that these populations interact on a regular basis with the EGK mob at Simpson Barracks. The study estimated that the population consists of 52 EGKs with a density of 1 EGK per hectare of suitable vegetation. Given the health of the population and the availability of resources on site, it was concluded that the population is likely to increase over the next year(s). Wilson (2014) considered that the site is 'closed', that the EGKs could not move in and out of the site, however AECOM (2015) observed an individual moving into a residential area. An inspection of the fence identified a number of locations suitable for EGKs to jump over. As such, it was concluded that there is potential for emigration/ immigration of EGKs across the Simpson Barracks boundary.

A comprehensive vegetation assessment for the entire Simpson Barracks has not been undertaken, however AECOM (2015) (based on a report from 2011) determined that 52.5 hectares of suitable vegetation for EGKs (EVC (55) Plains Grassy Woodland) exists on the site. The project is anticipated to impact approximately 8 ha of this habitat, which would decrease habitat available for EGKs within Simpson Barracks by approximately 15%. This has the potential to cause a long-term decrease in the EGK population size, but is considered unlikely to threaten the viability of the EGK population through death, injury or other harm to individuals. EGK population size is known to vary with changes in environmental conditions (e.g., drought, rainfall, vegetation growth, access to water), and those changes are expected to be more influential on the Simpson Barracks EGK population size than the loss of the Plains Grassy

|   |  |
|---|--|
|   | <p>Woodland along the western strip.</p> <p>Refer to Attachment D – Ecology report of the EPBC referral for full ecological assessment of the proposed alignment in relation to matters of NES.</p>  |
| Possibility that the action will displace or substantially limit the movement or dispersal of native animal populations   | <p><b>Unlikely</b></p> <p>As there is available habitat of a similar or higher quality present in the surrounding parts of Simpson Barracks and in nearby suburbs, the action is not expected to limit the movement or dispersal of any native animal populations.</p>   |
| Possibility that the action will substantially reduce or fragment available habitat for native species  | <p><b>Unlikely</b></p> <p>As there is available habitat of a similar or higher quality present in the surrounding parts of Simpson Barracks and in nearby suburbs, the action would not substantially reduce or fragment any native animal populations.</p>  |
| Possibility that the action will reduce or fragment available habitat for listed threatened species which is likely to displace a population, result in a long-term decline in a population, or threaten the viability of the species | <p><b>Unlikely</b></p> <p>Numerous listed threatened and Migratory species are deemed likely or possible to occur within Simpson Barracks including the Growling Grass Frog, Latham's Snipe, Swift Parrot, Grey-headed Flying-fox, Eastern Dwarf Galaxias, Australian Grayling and Macquarie Perch. Through field investigations it was determined that habitat within the referred project area is unlikely to be critical for the survival of populations of any of those species. Works associated with this project are unlikely to threaten the viability of any of those species.</p> <p>Refer to Attachment D – Ecology report of the EPBC referral for full ecological assessment of the proposed alignment.</p> |
| Possibility that the action will introduce exotic species which will substantially reduce habitat or resources for native species   | <p><b>Unlikely</b></p> <p>A number of exotic fauna species already occur within the site, including Cat, Red Fox, and a number of non-native birds (e.g., Spotted Dove, Common Myna, Common Blackbird). Measures would be developed and implemented to avoid the introduction of new exotic species into the habitat. This could include vehicle and equipment hygiene to minimise the risk of spreading soil- or water-borne organisms.</p>   |
| Possibility that the action will involve large-scale controlled burning or any controlled burning in areas containing listed threatened species   | <p><b>Unlikely</b></p> <p>Proposed action does not include controlled burning.</p>   |

### 3.8 Impacts on people and communities

A description of the impacts on people and communities in comparison to the EPBC guidelines applicable to Commonwealth Land is provided in Table 6.

**Table 6 Assessment of impacts on people and communities**

| Criterion  | Assessment of nature and extent of impacts   |
|--|--|
| Possibility that the action will substantially increase demand for, or reduce the availability of, community services or infrastructure which have direct or indirect impacts on the environment, including water supply, power supply, roads, waste disposal, and housing | <p><b>Unlikely</b></p> <p>The project is not expected to impact water supply, power supply, roads, waste disposal or housing within the Commonwealth Land.</p> <p>Any existing utilities which may be impacted will be replaced throughout the construction and operation of the project.</p>  |
| Possibility that the action will affect the health, safety, welfare or quality of life of the members of a community, through factors such as noise, odours, fumes, smoke, or other pollutants   | <p><b>Unlikely</b></p> <p>As identified in section 3.5, construction-related impacts to local noise and air quality would primarily be dust emissions associated with spoil excavation, handling and removal, and other construction activities. The impact of construction dust for the project would be managed by standard mitigation measures applied as part of a construction environmental management plan. Noise walls would also be installed to manage noise impacts to the residential accommodation facilities within Simpson Barracks, and the surrounding community. This is typical for major construction sites and the measures would apply in all areas where construction works occur.</p> <p>For operation, the placement of road sections within a trench has the potential to inhibit the dispersion of vehicle emissions. However, the consequential impacts are low as the structure is unlikely to result in pollutant levels exceeding air quality standards.</p> <p>The likelihood of these impacts will be further investigated and assessed through the Environment Effects Statement process for the project, to minimise potential impacts.</p> |
| Possibility that the action will cause physical dislocation of individuals or communities  | <p><b>Unlikely</b></p> <p>As the Simpson Barracks are largely private defence sites and closed to the community, the project is unlikely to cause physical dislocation of individuals or communities associated with Commonwealth Land.</p>  |
| Possibility that the action will substantially change or diminish cultural identity, social organisation or community resources  | <p><b>Unlikely</b></p> <p>As the impacted areas are largely private defence sites, the project is unlikely to substantially change or diminish cultural identity, social organisation or community resources.</p>  |

### 3.9 Impacts on heritage

A description of the impacts on heritage in comparison to the EPBC guidelines applicable to Commonwealth Land is provided below.

**Table 7 Assessment of impacts on heritage**

| Criterion  | Assessment of nature and extent of impacts  |
|--|---|
| Possibility that the action will permanently destroy, remove or substantially alter the fabric (physical material including structural elements and other components, fixtures, contents, and objects) of a heritage place | <p><b>Historical Heritage – Unlikely</b></p> <p>A desktop review and site inspection were undertaken to assess the potential for heritage places to be located in the vicinity of the area on Simpson Barracks affected by the project.</p> <p>The Banyule Heritage Review completed for Banyule City Council by Context Pty Ltd in 2012 noted that there may be potential heritage values associated with the site, including Aboriginal, natural and cultural values.</p> <p>Simpson Barracks as a whole has not been included in any national, state or local statutory heritage registers, and is currently unlisted. However, Meares House and Gardens, located within the Barracks, has been identified as demonstrating heritage significance and is managed by a Heritage Management Plan (HMP) as identified in GHD (2011b). This report recommends that Meares House and Gardens be nominated to the Commonwealth Heritage List. The project does not propose to impact Meares House and Gardens. The project would be located more than 400 metres away from this building, and would be buffered by an established residential area.</p> <p>Further work to support an EES would include additional assessment of the existing conditions based on more detailed design information. This includes the preparation of a land use history for the corridor and surrounding area, including any potentially affected Commonwealth land. The history would provide context for existing conditions and impact assessment work and support high-level predictive modelling for historical archaeology. Particularly where surface impacts are proposed, further investigations would also include sourcing and reviewing any site-specific reports, including any relevant heritage assessments and management plans, focussed historical research and site inspections. Further consultation with Simpson Barracks would also be required as a part of the EES process.</p> <p>Heritage values on Defence land are assessed and managed in accordance with current Heritage and Environment Management Plan or equivalent documents.</p> <p><b>Aboriginal Cultural Heritage – Possible</b></p> <p>An initial field assessment has found that the referred project area within Simpson Barracks has low levels of visible ground disturbance, which indicates that there is potential for scatters or artefacts. A detailed assessment has not been undertaken yet, but there has been a number of cultural heritage studies undertaken of the site which found a number of known cultural places.</p> <p>A 2014 study determined that there are twelve registered Aboriginal places (four stone artefact scatters and eight scarred trees) which are located within or in close proximity to Simpson Barracks (GHD 2014). One of the scarred trees may not be cultural (VAHR 7922-0586). The artefact scatters include stone artefact scatters, isolated or low density flaked stone artefacts</p> |



|   |  |
|---|--|
|   | <p>manufactured on quartzite, silcrete, quartz and possibly sandstone (refer to Table 8). The artefact scatters are located on flat land and hill slopes in the Simpson Barracks approximately 1 km west of Plenty River. Given their locations, the project is not anticipated to impact any of these known scarred trees and scatters, however there may be unknown artefacts present.</p> <p>In 2006, SKM undertook an assessment of the School of Signals Development in conjunction with the local Aboriginal community through the Wurundjeri Tribe Land Compensation and Cultural Heritage Council Inc (GHD 2011). This report concluded that there is a moderate likelihood of sub-surface archaeological deposits such as stone artefacts being present within Simpson Barracks.</p> <p>As the project works would involve high impact activities, potentially within areas of cultural heritage sensitivity, a Cultural Heritage Management Plan (CHMP) would be prepared in accordance with the <i>Aboriginal Heritage Act 2006</i>. Although this is not a requirement for Commonwealth Land, the project is proposing to prepare the CHMP for Simpson Barracks as well as the rest of the alignment to align with state best practises.</p> <p>The CHMP would provide a means to assess and manage the likelihood of impacts to identified Aboriginal cultural heritage. It would manage harm to known Aboriginal cultural heritage and any potential harm to Aboriginal cultural heritage identified during construction activities, through detailed management conditions and contingency plans.</p> |
| Possibility that the action will involve extension, renovation, or substantial alteration of a heritage place in a manner which is inconsistent with the heritage values of the place                                 | <p><b>Unlikely</b></p> <p>Extension, renovation, or substantial alteration of a heritage place is not proposed in the Simpson Barracks as part of the project.</p>   |
| Possibility that the action will involve the erection of buildings or other structures adjacent to, or within important sight lines of, a heritage place which are inconsistent with the heritage values of the place | <p><b>Possible</b></p> <p>Within the Simpson Barracks, the project includes construction of trenches (and possibly a small stretch of cut-and-cover tunnels). There are unlikely to affect sight lines to or from heritage places. South west of Simpson Barracks, the northern tunnel portal would be located. The height and built form of the tunnel portal is subject to further design, but may include a tall ventilation structure, which has the potential to be visible from Meares House.</p> <p>Meares House is located over 400 metres from the referred project area, with a residential area between it and the project that would help to break sight lines to the project.</p> <p>Nevertheless, there is the potential that the structure could be visible from the western side of Meares House. This would be further investigated once a detailed design is available (including structure heights) and assessed and mitigated through the EES.</p>   |
| Possibility that the action will substantially  | <p><b>Unlikely</b></p> <p>Substantial impacts on heritage places within Commonwealth Land are not</p>  |

|  |  |
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| diminish the heritage value of a heritage place for a community or group for which it is significant   | expected as part of the Project.   |
| Possibility that the action will substantially alter the setting of a heritage place in a manner which is inconsistent with the heritage values of the place | <b>Unlikely</b><br>The project would be designed to avoid adverse effects to significant historic heritage settings. Where this is not possible, the impacts would need to meet the requirements of the <i>Heritage Act 2017</i> , and obtain the appropriate authorisations from Heritage Victoria in order to avoid substantially diminishing the setting of a heritage place. |
| Possibility that the action will substantially restrict or inhibit the existing use of a heritage place as a cultural or ceremonial site                     | <b>Unlikely</b><br>The Commonwealth Land considered within this referral is not open to the public and not available for use as a cultural or ceremonial site.   |

**Table 8 Search of the Victorian Aboriginal Heritage Register (taken from GHD, 2014)**

| VAHR No.  | Place Type       | Place Contents   | Place Context  |
|-----------|------------------|--|--|
| 7922-0577 | Artefact Scatter | 3 silcrete stone artefacts and two possible quartz artefacts | Side or base of hill 1km west of Plenty River  |
| 7922-0578 | Artefact Scatter | One quartzite flake  | Side or base of hill 1km west of Plenty River  |
| 7922-0579 | Artefact Scatter | One silcrete core frag                                       | Side or base of hill 1.1km west of Plenty River  |
| 7922-0580 | Artefact Scatter | One quartzite flake and one quartzite retouched frag         | Located in a sandy deposit, unlike any other sediment in the area beneath a stringybark tree. Hill location 1.1km west of Plenty River |
| 7922-0581 | Scarred Tree     | A scar is on each of the two main branches of the tree       | Hill slope, 400 m southeast of Banyule Creek   |
| 7922-0582 | Scarred Tree     | Symmetrical scar of a very old box tree                      | Hill slope, 400m southeast of Banyule Creek  |
| 7922-0583 | Scarred Tree     | -  | Hill slope, 400m southeast of Banyule Creek  |

| VAHR No.  | Place Type   | Place Contents                             | Place Context                           |
|-----------|--------------|--|---|
| 7922-0584 | Scarred Tree | Two main trunks, both of which are scarred | Hill slope, 200m north of Banyule Creek |
| 7922-0585 | Scarred Tree | -  | Hill slope, 150 m east of Banyule Creek |
| 7922-0586 | Scarred Tree | Possibly not cultural                      | Hill slope, 100m north of Banyule Creek |
| 7922-0587 | Scarred Tree | -  | Hill slope, 500 m east of Banyule Creek |
| 7922-0588 | Scarred Tree | Possibly not cultural                      | Hill slope, 500 m east of Banyule Creek |

## 4. Conclusions

The project comprises a new road connecting M80 Ring Road to the Eastern Freeway, and widening of the Eastern Freeway.

The project is being referred to the Australian Government Environment Minister in accordance with the requirements of the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act).

This report has used the Significant Impact Guidelines 1.2 *Environment Protection and Biodiversity Conservation Act 1999* Commonwealth of Australia 2013, to assist in identifying potential impacts on Commonwealth Land associated with the project.

This report has been specifically developed to:

- Identify and assess whether the project is likely to have a significant environmental impact
- Identify the environmental controls and mitigations measures to be implemented to avoid or minimise the risk of environmental impacts arising
- Communicate this and work collaboratively with Defence / Simpson Barracks.

The assessment has identified that the project has having the potential to trigger the following changes to the environment on Commonwealth Land (at Simpson Barracks):

- Substantially alter natural landscape features
- Involve medium or large-scale excavation of soil or minerals
- Channelise, divert or impound creeks or substantially alter drainage patterns
- Involve medium or large-scale native vegetation clearance
- Permanently destroy, remove or substantially alter the fabric (physical material including structural elements and other components, fixtures, contents, and objects) of a heritage place (cultural heritage)
- Involve the erection of buildings or other structures adjacent to, or within important sight lines of, a heritage place which are inconsistent with the heritage values of the place

In addition to the above, and as indicated in Attachment D (Ecology Report) to this referral, a population of approximately 84 individuals/patches of Matted Flax-lily on Commonwealth Land have the potential to be impacted by the project.

Accordingly, the potential for significant impact on the environment within Commonwealth Land does exist.

Whilst it is acknowledged that the project has the potential to generate environmental impacts within Simpson Barracks, impacts are expected to be mitigated through a number of standard and additional measures applied to projects of this scale as described throughout this assessment.

The North East Link Authority is committed to ensuring that potential environmental impacts associated with the project have been adequately identified and considered and are being managed responsibly. These potential impacts will be further assessed through the project-wide EES process, as a part of the project approvals.

## 5. References

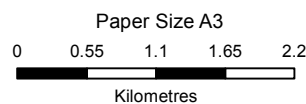
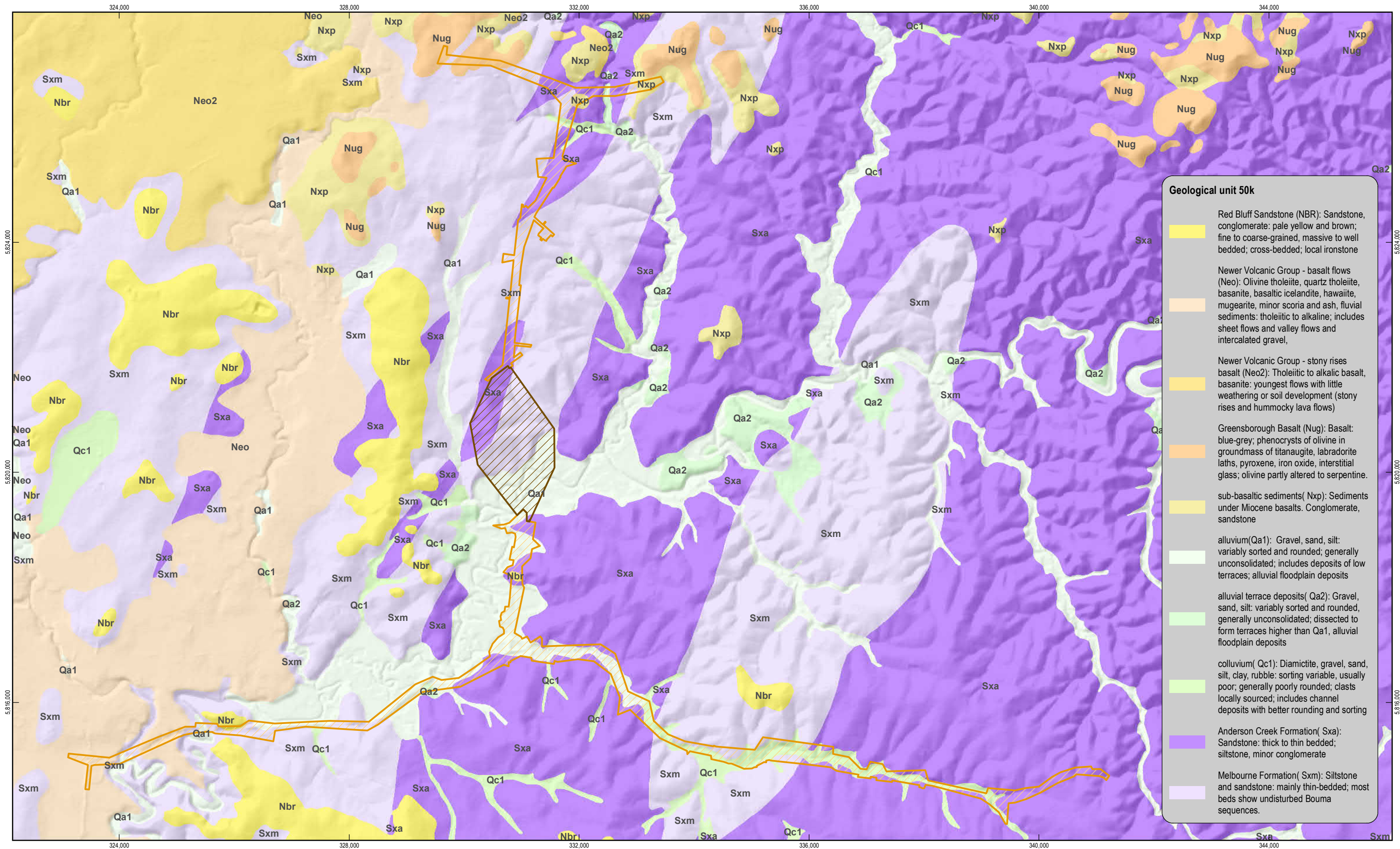
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# Appendices

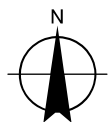
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## Appendix A – Geological Drawings





Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



LEGEND

Referred project area

- Above ground
- Tunnel



North East Link Authority  
North East Link Project

Job Number | 31-35006  
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Geology Map

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