

# **Airport East Precinct**

## Addendum review of environmental factors

**April 2016**

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# **Airport East Precinct project**

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**April 2016**

Prepared by Aurecon Australasia Pty Ltd

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# Executive summary

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## Background

Roads and Maritime Services (Roads and Maritime) proposes to undertake the Airport East Precinct project (the project), which would improve traffic flow and access to Sydney Airport and Port Botany. It would also allow for the future duplication of the Port Botany Freight Rail Line.

Sydney's Kingsford Smith Airport (Sydney Airport) and Port Botany are two of Australia's most important international gateways, however, the road network around these sites is becoming increasingly congested due to rising numbers of passenger, freight and commuter vehicles.

As shown on Figure 1-1, the project is located in the suburb of Mascot, NSW. The area that would be directly impacted by construction and operation of the project is referred to as the project area. The project area encompasses the road, rail, batters, cuts and embankments. It also includes the construction footprint, compound sites, stockpile sites and any other areas that would be temporarily disturbed (such as construction basins, access tracks and pedestrian footpaths).

A Review of Environmental Factors (REF) (herein referred to as the Project REF) was prepared for the project by Jacobs on behalf of Roads and Maritime in February 2015 (Jacobs, 2015a). The Project REF was subsequently determined under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). After consideration of submissions from the community, Roads and Maritime determined that the project could proceed to a detailed design phase.

The approved activity described in the Project REF was assessed on the basis of a concept design that would:

- Separate the road network from the Port Botany Freight Rail Line
- Provide a bridge over the stormwater channel running parallel to General Holmes Drive
- Provide a new intersection at General Holmes Drive and Wentworth Avenue
- Upgrade or adjust the intersections at:
  - Wentworth Avenue and Botany Road
  - General Holmes Drive and Mill Pond Road
  - Botany Road and Mill Pond Road
  - General Holmes Drive, Joyce Drive and Ross Smith Avenue
  - General Holmes Drive and Botany Road
- Widen Joyce Drive and a section of General Holmes Drive to three lanes in each direction
- Provide new facilities and relocate existing facilities for pedestrians, cyclists and public transport, including:
  - A new shared-use path linking to the existing cycleway at Todd Reserve on Wentworth Avenue
  - A new shared path on Botany Road from the Botany Road and Wentworth Avenue intersection to Baxter Road
  - Removing the pedestrian path on the northern side of Joyce Drive, which would be replaced with a new shared path along Baxter Road as part of a separate project.

Figure 1-1 shows the location of the project area and Figure 1-2 shows an overview of the project as determined the Project REF.

## The revised proposal

After the Project REF was determined, designs for the proposal were further developed and detailed construction planning was undertaken. Some of these refinements were not considered or assessed in the Project REF. These proposed design amendments have been incorporated into the 'revised proposal' which is the subject of this Addendum REF and include:

- Changes to lane configuration and lane marking to retain the two left turn lanes from Mill Pond Road to Botany Road and enable vehicles turning right onto Mill Pond Road from General Holmes Drive to turn left onto Botany Road
- Relocation of an illuminated digital advertising sign and installation of a new variable message sign (VMS) on General Holmes Drive
- Cut batter and utilities relocations at the intersection of General Holmes Drive and Joyce Drive to support a property access slip lane
- Use of an existing building between General Holmes Drive and Botany Road as a compound/office site during construction
- Relocation of existing Telstra utility infrastructure and construction of two communication pits within the existing pedestrian footpath at the southern end of Hardie Street
- Open trenching adjacent to Botany Road to allow for a minor realignment of existing sewer main infrastructure.

This Addendum REF describes the proposed design amendments and assesses any potential additional environmental impacts from those assessed in the Project REF. Figure 2-1 shows the revised proposal, which generally fits within the project area, although some activities fall outside the project area and these are discussed further in Section 2.

## Need for the proposal

Sydney Airport and Port Botany are two of Australia's most important international gateways. However, roads around Sydney Airport and Port Botany are becoming increasingly congested due to rising numbers of passenger, freight, and commuter vehicles.

Traffic modelling predicts that congestion will worsen by 2018, with a substantial number of locations within the project area operating at or above capacity. Road improvements are required to address traffic congestions and support proposed Sydney Airport roadwork to the west of the proposal.

The rail level crossing at General Holmes Drive is a primary contributor to the traffic congestion on General Holmes Drive, Joyce Drive and Botany Road. The removal of the rail level crossing would remove the interaction between road and rail and would improve safety and provide for the future duplication of the Port Botany Freight Rail Line.

The revised proposal through changes to the Mill Pond Road lane configuration would further assist in addressing road congestion.

## Statutory and planning framework

The State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) aims to facilitate the effective delivery of infrastructure across NSW. Clause 94 of the ISEPP permits development on any land for the purpose of a road or road infrastructure facilities to be carried out by or on behalf of a public authority without consent. The project was assessed under Part 5 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The revised proposal would not change the approval pathway and can therefore still be assessed under Part 5. Development consent from Botany Bay City Council or approval from the Minister of Planning and the Environment is not required.

As part of the Project REF, additional permits and approvals were required in addition to the Part 5 determination. The Project REF identified the need for an Aquifer Interference Licence to be sought for the project under the *Water Management Act 2000*, however, further consultation with the NSW Office of Water has confirmed that a licence is not required. The revised proposal assessed in this Addendum REF will require a Commonwealth building permit in accordance with Section 2.02 of the Airports (Building Control) Regulations 1996 – the activity being defined as earthworks or engineering works.

This Addendum REF fulfils the requirements of Section 111 of the EP&A Act and has been prepared in accordance with Clause 228 of the Environmental Planning and Assessment Regulation 2000, matters of national environmental significance and the *Airports Act 1996*.

## Environmental impacts

Most of the potential environmental impacts that could result from the revised proposal are unchanged from those assessed in the Project REF. This Addendum REF will identify where additional potential impacts or differences in impacts may occur and provided further assessment.

## Justification and conclusion

The Addendum REF found that the environmental impacts of the revised proposal are not likely to be significant and would generally be restricted to temporary visual impacts during the construction period. The removal of small areas of planted, roadside vegetation would be required, although this was not predicted to result in impacts to any threatened species or communities, or loss of significant habitat for any fauna species.

The installation of two large roadside signs was not found to have the potential to create visual impacts as these signs are purposefully meant to have high visibility, would not be out of character with the surrounding environment, and the VMS would provide beneficial messages to road users.

The revised proposal will meet the objectives of the project and is anticipated to result in only minor additional environmental impacts from the project.

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# 1 Introduction

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## 1.1 Proposal identification

Roads and Maritime Services (Roads and Maritime) proposes to undertake the Airport East Precinct project (the project), which would improve traffic flow and access to Sydney Airport, Port Botany. It would also allow for the future duplication of the Port Botany Freight Rail Line.

Sydney's Kingsford Smith Airport (Sydney Airport) and Port Botany are two of Australia's most important international gateways, however, the road network around these sites is becoming increasingly congested due to rising numbers of passenger, freight and commuter vehicles.

As shown on Figure 1-1, the proposal is located in the suburb of Mascot, NSW. The area that would be directly impacted by construction and operation of the proposal is referred to as the project area. The project area encompasses the road, rail, batters, cuts and embankments. It also includes the construction footprint, compound sites, stockpile sites and any other areas that would be temporarily disturbed (such as construction basins, access tracks and pedestrian footpaths).

## 1.2 Background

A Review of Environmental Factors (REF) (herein referred to as the Project REF) was prepared for the project by Jacobs on behalf of Roads and Maritime in February 2015 (Jacobs, 2015a). The Project REF was subsequently determined under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). After consideration of submissions from the community, Roads and Maritime determined that the proposal could proceed to a detailed design phase.

The approved activity described in the Project REF was assessed on the basis of a concept design that would:

- Separate the road network from the Port Botany Freight Rail Line
- Provide a bridge over the stormwater channel running parallel to General Holmes Drive
- Provide a new intersection at General Holmes Drive and Wentworth Avenue
- Upgrade or adjust the intersections at:
  - Wentworth Avenue and Botany Road
  - General Holmes Drive and Mill Pond Road
  - Botany Road and Mill Pond Road
  - General Holmes Drive, Joyce Drive and Ross Smith Avenue
  - General Holmes Drive and Botany Road
- Widen Joyce Drive and a section of General Holmes Drive to three lanes in each direction
- Provide new facilities and relocate existing facilities for pedestrians, cyclists and public transport, including:
  - A new shared-use path linking to the existing cycleway at Todd Reserve on Wentworth Avenue
  - A new shared path on Botany Road from the Botany Road and Wentworth Avenue intersection to Baxter Road
  - Removing the pedestrian path on the northern side of Joyce Drive, which would be replaced with a new shared path along Baxter Road as part of a separate project.

After the Project REF was determined, designs for the proposal were further developed and detailed construction planning was undertaken. Some of these refinements were not considered or assessed in the Project REF. These proposed design amendments have been incorporated into the 'revised proposal' which is the subject of this Addendum REF and include:

- Changes to lane configuration and lane marking to retain the two left turn lanes from Mill Pond Road to Botany Road and enable vehicles turning right onto Mill Pond Road from General Holmes Drive to turn left onto Botany Road

- Relocation of an existing illuminated digital advertising sign
- Installation of a new VMS on General Holmes Drive for northbound traffic
- Cut batter and utilities relocations at the intersection of General Holmes and Joyce Drive to support a property access slip lane on the southbound lane turning left into the General Holmes Drive cul-de-sac
- Use of an existing building located on land between General Holmes Drive and the Port Botany Freight Rail Line as a compound/office site during construction
- Relocation of existing Telstra utility infrastructure and construction of two communication pits within the existing pedestrian footpath at the southern end of Hardie Street
- Open trenching adjacent to Botany Road to allow for a minor realignment of existing sewer main infrastructure.

Figure 1-1 shows the location of the project area and Figure 1-2 shows an overview of the proposal as determined the Project REF. Figure 2-1 shows the revised proposal, which generally fits within the project area, although some activities fall outside the project area and these are discussed further in Section 2.

### 1.3 Purpose of the addendum REF

This Addendum REF has been prepared by Aurecon on behalf of Roads and Maritime, Sydney Region. For the purposes of these works, Roads and Maritime is the proponent and the determining authority under Part 5 of the EP&A Act.

The purpose of the Addendum REF is to describe the revised proposal, to document the likely impacts of these of proposed design changes on the environment, and to detail any additional safeguards and management measures to be implemented.

The majority of the potential environmental impacts as a result of the revised proposal would remain unchanged from those identified in the Project REF, therefore, this Addendum REF should be read in conjunction with the determined Project REF.

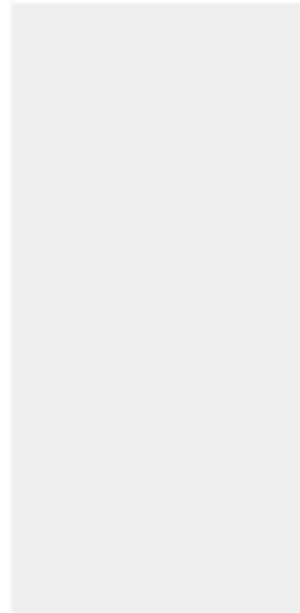
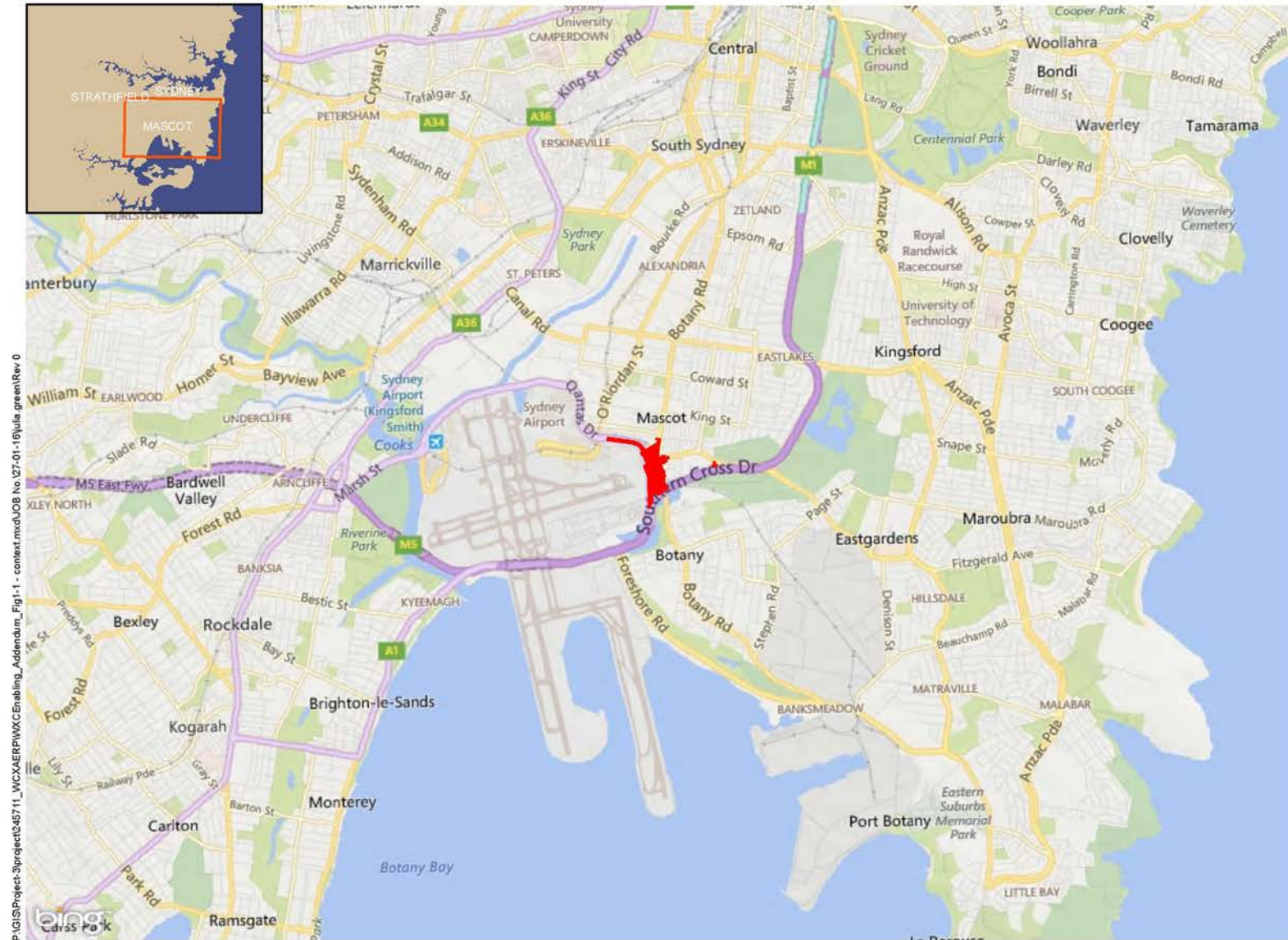
The description of the proposed design amendments and associated environmental impacts referred to in this report have been undertaken in context of clause 228 of the *Environmental Planning and Assessment Regulation 2000*, the *Threatened Species Conservation Act 1995* (TSC Act), the *Fisheries Management Act 1994* (FM Act), the Airports Act and the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). In doing so, the Addendum REF helps to fulfil the requirements of:

- Section 111 of the EP&A Act that Roads and Maritime examine and take into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of the activity.
- The strategic assessment approval granted by the Federal Government under the EPBC Act in September 2015, with respect to the impacts of Roads and Maritime activities on nationally listed threatened species, ecological communities and migratory species.

The findings of the Addendum REF would be considered when assessing:

- Whether the revised proposal is likely to have a significant impact on the environment and therefore the necessity for an environmental impact statement to be prepared and approval to be sought from the Minister for Planning under Part 5.1 of the EP&A Act.
- The significance of any impact on threatened species as defined by the TSC Act and/or FM Act, in section 5A of the EP&A Act and therefore the requirement for a Species Impact Statement.
- The significance of any impact on nationally listed biodiversity matters under the EPBC Act, including whether there is a real possibility that the activity may threaten long term survival of these matters, and whether offsets are required and able to be secured.
- The potential for the revised proposal to significantly impact other matters of national environmental significance or Commonwealth land.

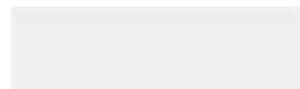
- Whether there is a need under the EPBC Act to make a referral to the Australian Government Department of the Environment for a decision by the Commonwealth Minister for the Environment.



Legend

- Determined project area boundary

Source: Bing Maps, Aurecon, RMS, LPI



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Projection: GDA 1994 MGA Zone 56



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Source: Jacobs (2015) WestConnex Enabling Works - Airport East Precinct Review of Environmental Factors pg 4.  
Projection: GDA 1994 MGA Zone 56

WestConnex Enabling Works

FIGURE 1-2: The project

## 2 Description of the proposal

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### 2.1 The proposal

The proposal is described in full in Section 3 of the Project REF. The key features of the proposal include:

- Separating the road network from the Port Botany Freight Rail Line by:
  - Extending Wentworth Avenue beneath the Port Botany Freight Rail Line to link with General Holmes Drive. The Wentworth Avenue underpass would have nine lanes, with five lanes eastbound and four lanes westbound, and a minimum 4.7 metres clearance
  - Removing the General Holmes Drive rail level crossing of the Port Botany Freight Rail Line, improving safety and enabling increased speed for freight trains
- Adjusting and locally relocating utilities
- Providing a bridge over the stormwater channel running parallel to General Holmes Drive and installing a protection slab over sewer and gas utilities on the extension of Wentworth Avenue
- Providing a new intersection at General Holmes Drive and Wentworth Avenue
- Upgrading or adjusting the intersections at:
  - Wentworth Avenue and Botany Road
  - General Holmes Drive and Mill Pond Road
  - Botany Road and Mill Pond Road
  - General Holmes Drive, Joyce Drive and Ross Smith Avenue
  - General Holmes Drive and Botany Road
- Widening Joyce Drive and General Holmes Drive between about 100 metres east of O'Riordan Street and 175 metres south of Mill Pond Road to three lanes in each direction
- Adjusting and locally relocating drainage infrastructure including:
  - Replacing the grassed swale at Joyce Drive with a pipe and pit system
  - Installing a permanent pump at the low point of the Wentworth Avenue underpass
- Landscaping and replanting road verges and the vacant area between General Holmes Drive and the Port Botany Freight Rail Line
- Providing new facilities and relocating existing facilities for pedestrians, cyclists and public transport, including:
  - A new shared-use path linking to the existing cycleway at Todd Reserve on Wentworth Avenue
  - A new shared path on Botany Road from the Botany Road and Wentworth Avenue intersection to Baxter Road
  - Removing the pedestrian path on the northern side of Joyce Drive, which would be replaced with a new shared path along Baxter Road as part of a separate project
  - Relocating the northbound bus stop on Botany Road about 70 metres to the south of its current location.
- Providing temporary construction ancillary facilities, including construction compounds, stockpile sites and erosion and sedimentation control measures.

The proposal is located in the Botany Bay Local Government Area (LGA) and in the Roads and Maritime Greater Sydney Region. Sydney Airport is located to the west of the proposal. The proposal is located at the interface between the airport and the urban and residential areas of Mascot and Botany, to the east. Immediately to the south of the proposal lies wetland areas associated with Mill Pond.

### 2.2 The revised proposal

The revised proposal generally includes minor changes to the proposal. The key features of the proposal described in Section 2.1 continue to be included within the revised proposal. The revised proposal achieves the project objectives and is justified as described in the Project REF.

During detailed design development and detailed construction planning, several refinements and modifications were made to improve safety, overcome engineering constraints and to more effectively achieve the project objectives. These were not specifically assessed and considered in the Project REF and are the subject of this Addendum REF. The proposed design amendments are summarised in Table 2-1 and shown on Figure 2-1 to Figure 2-6. Section 2.2.1 provides further details of the proposed design amendments.

Table 2-1: Proposal design amendments considered in this Addendum REF

Item	Location of change	Activity assessed in the Project REF	Proposed design amendment
1	Intersection of Mill Pond Road, General Holmes Drive and Botany Road	Provision of one right turn lane from General Holmes Drive northbound onto Mill Pond Road. One left turn lane onto Botany Road from Mill Pond Road only for General Holmes Drive traffic turning left into Mill Pond Road.	Provision of two right turn lanes from General Holmes Drive northbound onto Mill Pond Road. Retention of two left turn lanes onto Botany Road from Mill Pond Road. Can be used by General Holmes Drive traffic turning left or right onto Mill Pond Road.
2	Adjacent to General Holmes Drive, south of Mill Pond Road	This component was not assessed in the Project REF.	Installation of a new variable message sign (VMS) for northbound traffic on General Holmes Drive outside of the project area. Telecommunication and electricity services required to support the VMS are partially located outside the project area
3	Adjacent to General Holmes Drive southbound lanes and to the east	This component was not assessed in the Project REF.	Relocation of an existing illuminated digital advertising sign 120 metres north of its current location on General Holmes Drive. This sign was constructed after the Project REF had been prepared.
4	Located between General Holmes Drive and the Port Botany Freight Rail Line	This component was not assessed in the Project REF.	Use of an existing unoccupied building located between General Holmes Drive and the Port Botany Freight Rail Line as a temporary compound site/office during the construction phase.
5	Intersection of Joyce Drive and General Holmes Drive	This component was not assessed in the Project REF. This component is partially located outside the approved project area.	Extension of a section of a cut batter and utility relocation located on the northern side of the intersection of Joyce Drive and General Holmes Drive to support a property access slip lane from the southbound traffic lanes on Joyce Drive.
6	Intersection of Wentworth Avenue and Hardie Street	This component was not assessed in the Project REF. This component is located outside the approved project area.	Relocation of existing communications infrastructure and the construction of two communication pits outside the approved project area adjacent to the intersection of Hardie Street and Wentworth Avenue, within an existing pedestrian footpath.



Item	Location of change	Activity assessed in the Project REF	Proposed design amendment
7	Adjacent to Botany Road southbound lane and to the east	The Project REF allowed for the adjustment of existing utility infrastructure such as sewer mains to allow for roadworks, however, the revised proposal requires open trenching works for sewer main infrastructure which would occur outside the approved project area.	Open trenching for a minor realignment of an existing sewer main adjacent to Botany Road southbound lane. This activity would occur outside the approved project area and would encroach on land owned by Roads and Maritime Services. The realignment would impact a small portion of a property containing a locally listed non-Aboriginal heritage item (Botany Bay LEP Item No. I52 Beckenham Memorial Church). This is not expected to create any additional impacts to the heritage item (refer to Section 5.4).

## 2.2.1 Overview of the revised proposal

### Changes to access onto Mill Pond Road and Botany Road

At the intersection of General Holmes Drive and Mill Pond Road, the revised proposal would involve changes to the lane layout to provide two right turn lanes from General Holmes Drive (northbound) onto Mill Pond Road (refer to Figure 2-2). This differs from the proposal, which only provided for one right-hand turn lane.

The revised proposal would retain the existing (i.e. current) two left turn lanes on Mill Pond Road to Botany Road. The raised concrete median that stopped traffic from General Holmes Drive turning left into Botany Road has been removed. This would allow access to Botany Road for oversized vehicles which cannot travel under the Wentworth Avenue underpass.

### Installation of a new VMS

A new VMS would be installed on General Holmes Drive as shown on Figure 2-3. The installation of the new VMS is outside of the project area and was not assessed in the Project REF. As shown on Figure 2-3, services required for the VMS are located partially outside the determined project area. The VMS would provide northbound traffic on General Holmes Drive with real-time travel information to facilitate safe and efficient movement of traffic travelling north toward the airport.

The installation of this sign will require the clearing of additional vegetation in the median area of General Holmes Drive beyond that considered in the Project REF. Vegetation clearing is discussed further in Section 5.5.

### Relocation of existing Illuminated digital advertising sign

The revised proposal will relocate an existing illuminated digital advertising sign located on General Holmes Drive (northbound) that was not considered in the Project REF. This advertising sign requires removal as it is located on the site of the new Wentworth Avenue extension to General Holmes Drive. The illuminated digital advertising sign would be relocated about 120 metres north as shown on Figure 2-4, and would continue to service northbound traffic on General Holmes Drive.

The proposed location of the illuminated digital advertising sign is within the approved project boundary, however, clearing of a small area of roadside vegetation on General Holmes Drive would be required. This was not assessed in the Project REF. Vegetation clearing is discussed further in Section 5.5.

### **Cut batter and utility relocation on northern side of General Holmes Drive/ Joyce Drive intersection**

The Project REF included a left-in/ left-out arrangement to access property west of the rail level crossing (to be closed). The revised proposal would provide a separate slip lane from Joyce Drive (southbound) into General Holmes Drive (still retaining the left-in / left out arrangement). To build this slip lane, a cut batter and utility relocations being required outside of the project area (refer to Figure 2-5).

The refinement of the proposal design during the detailed design process identified the need for this batter to be extended to provide an adequate base for the slip lane and a safe batter slope for ongoing maintenance activities such as mowing.

### **Additional compound site/office**

An existing unoccupied industrial site located on General Holmes Drive (refer to Figure 2-6) would be used as a compound site/office during the construction phase of the proposal.

The site contains a number of facilities and areas that would be used for during construction, such as equipment storage and stockpile areas, offices and washrooms. This site is within the determined proposal boundary and bounded to the south by a large area that was included in the Project REF as an ancillary site.

### **Relocation and construction of existing Telstra / Vocus utility infrastructure**

The revised proposal would require the relocation of existing communications infrastructure involving open trenching and the construction of two communication pits. This activity would result in the clearing of a small grassed verge area containing several non-endemic and exotic planted street trees. This would occur outside the approved project area within an existing pedestrian footpath adjacent to Hardie Street (refer to Figure 2-7).

This activity was not assessed in the Project REF. Vegetation clearing is discussed further in Section 5.5.

### **Minor realignment of existing sewer main infrastructure**

The revised proposal would involve open trenching adjacent to the Botany Road southbound lane for sewer design (refer to Figure 2-8). The Project REF allowed for the adjustment and relocation of existing sewer infrastructure located within the project disturbance footprint, however, the works associated with the revised proposal would be located outside the approved project area and were therefore not assessed in the Project REF.

The works will require the clearing of a small grassed verge area containing several exotic planted street trees. This activity was not assessed in the Project REF. Vegetation clearing is discussed further in Section 5.5.

## **2.2.2 Property ownership**

The revised proposal is located on land owned by NSW Roads and Maritime Services, Botany Bay City Council and Commonwealth of Australia land currently leased to SACL, as shown on Figure 2-9.

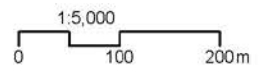


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Legend

- Determined project area boundary
- Proposed modifications
- Design
- Waterway
- Water body
- Railway

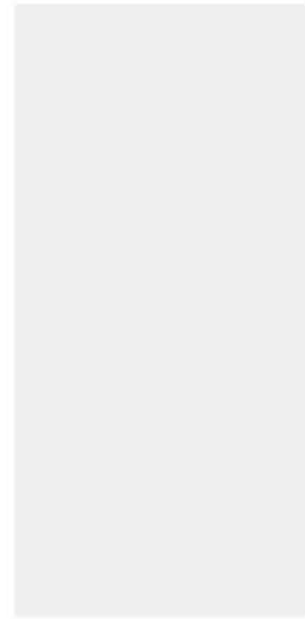
Source: Nearmap, Aurecon, RMS, LPI



Projection: GDA 1994 MGA Zone 56



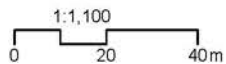
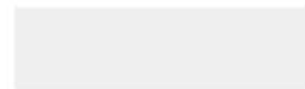
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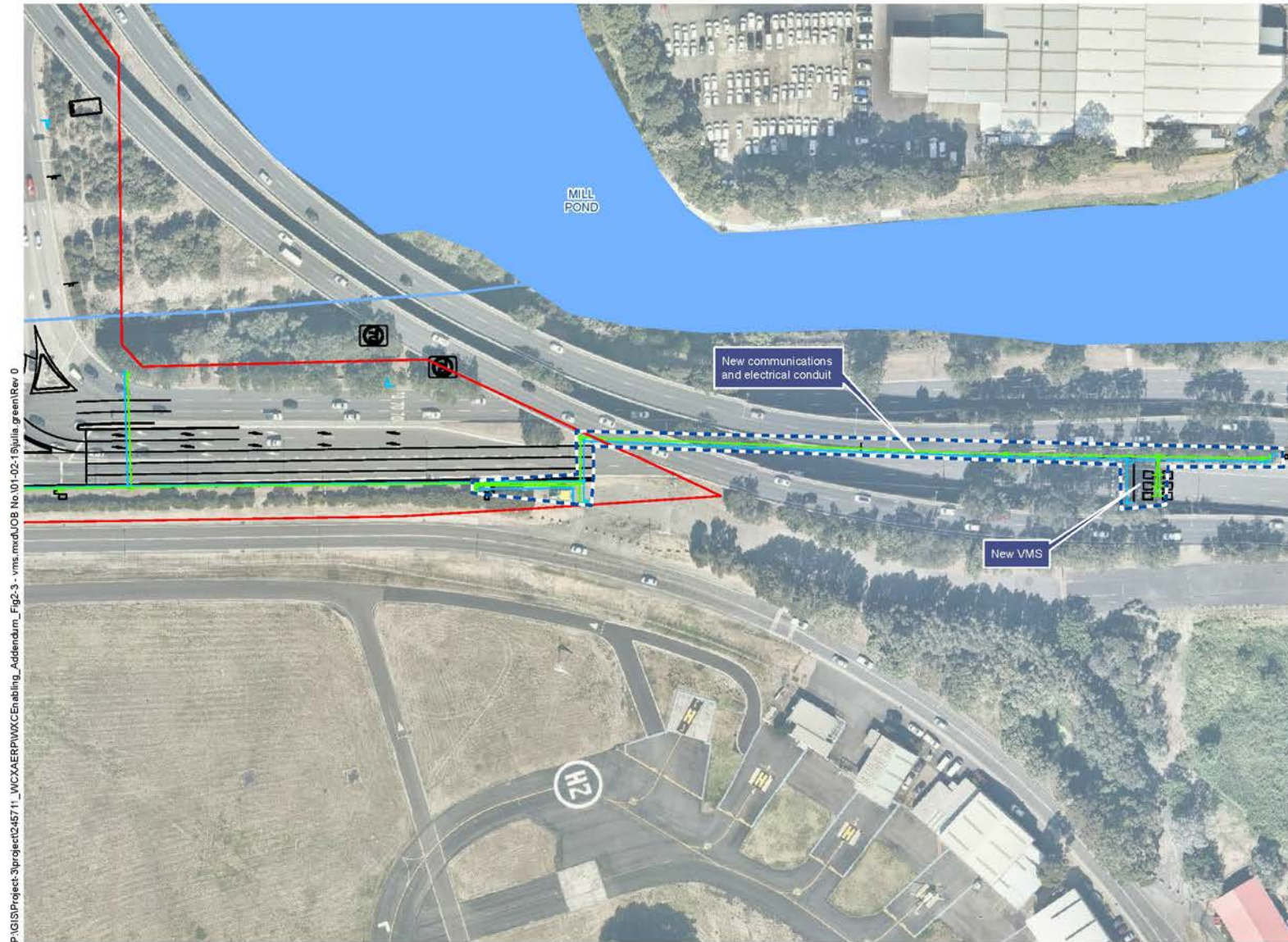
Legend

- Determined project area boundary
- Proposed modifications
- Design
- Waterway
- Water body
- Railway

Source: Nearmap, Aurecon, RMS, LPI



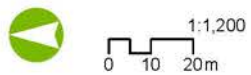
Projection: GDA 1994 MGA Zone 56



Legend

- Determined project area boundary
- Proposed modifications
- Communications Conduit
- Electrical Conduit
- Design
- Waterway
- Water body
- Railway

Source: Nearmap, Aurecon, RMS, LPI



Projection: GDA 1994 MGA Zone 56

WestConnex **Enabling Works**

FIGURE 2-3: Variable Message Sign



Legend

- Project area boundary
- Proposed modifications
- Design
- Waterway
- Water body
- Railway

Source: Nearmap, Aurecon, RMS, LPI

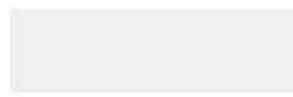
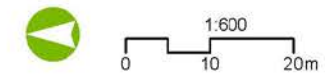
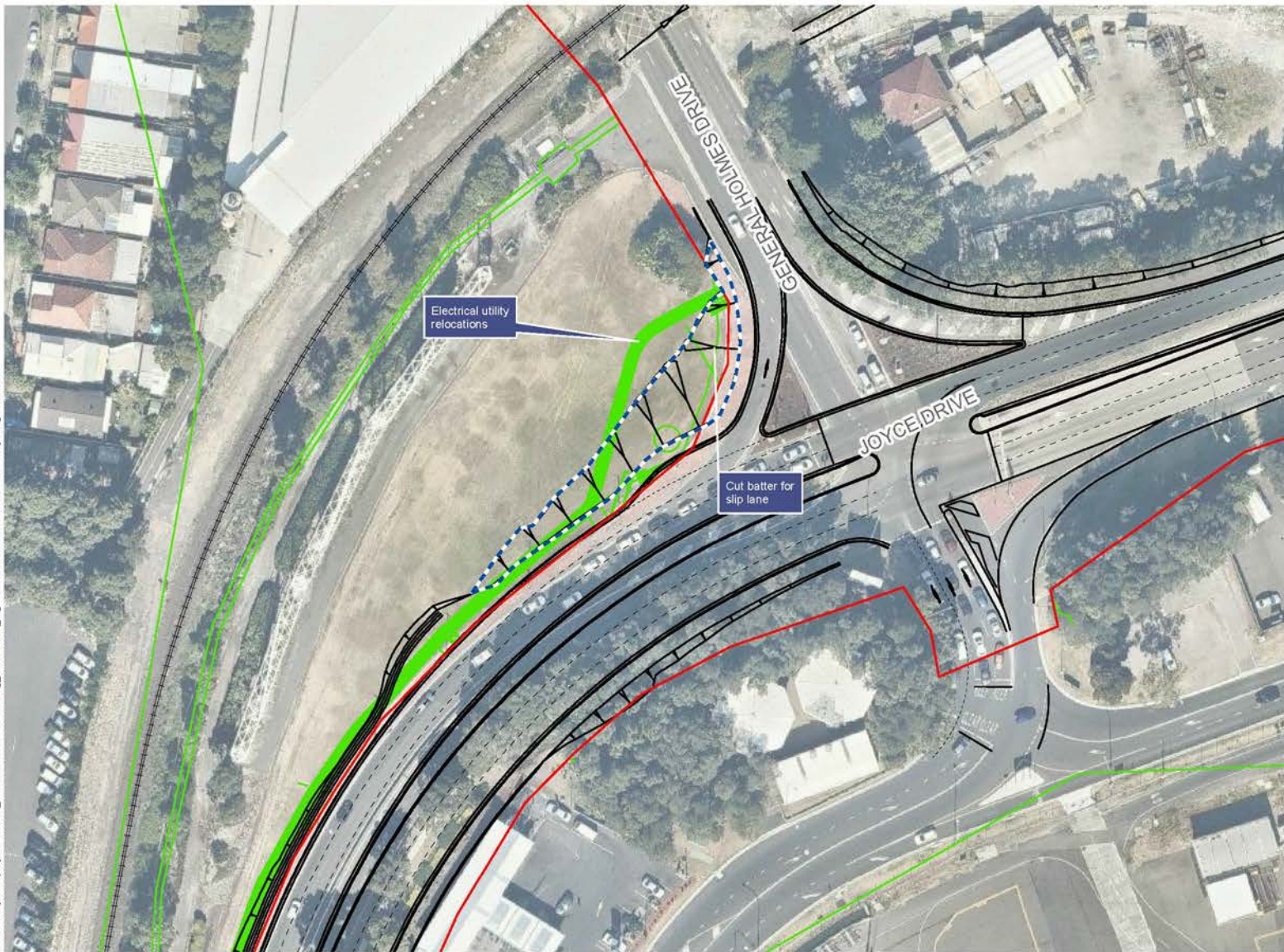


FIGURE 2-4: Illuminated digital advertising sign



Projection: GDA 1994 MGA Zone 56

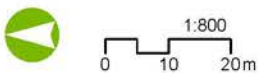
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Legend

- Proposed modifications
- Determined project area boundary
- Design
- AusGrid Services
- Waterway
- Water body
- Railway

Source: Nearmap, Aurecon, RMS, LPI

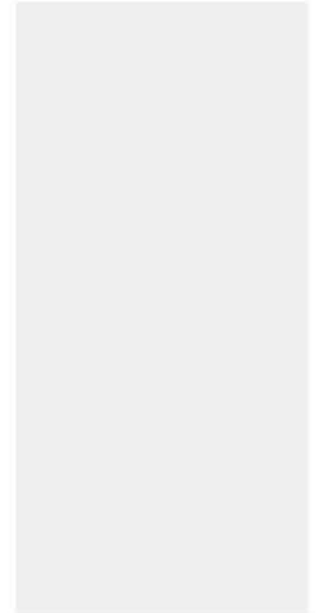


Projection: GDA 1994 MGA Zone 56

FIGURE 2-5: Extension of cut batter outside project boundary



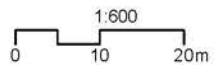
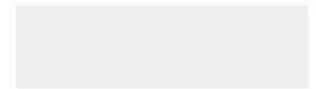
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Legend

- Determined project area boundary
- Proposed modifications
- Design
- Waterway
- Water body
- Railway

Source: Nearmap, Aurecon, RMS, LPI



Projection: GDA 1994 MGA Zone 56

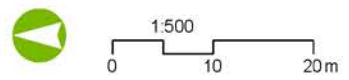




- Legend**
- Determined project area boundary
  - Proposed modifications
  - Design
  - Waterway
  - Water body
  - Railway

Source: Nearmap, Aurecon, RMS, LPI

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Projection: GDA 1994 MGA Zone 56

**FIGURE 2-7:** Relocation and construction of Telstra utility infrastructure outside project boundary



Legend

- Determined project area boundary
- Proposed modifications
- Design
- Waterway
- Water body
- Railway

Source: Nearmap, Aurecon, RMS, LPI

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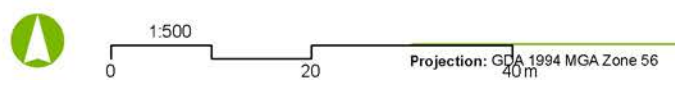
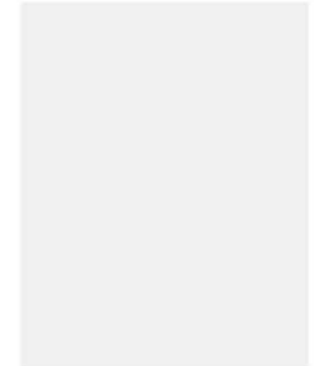


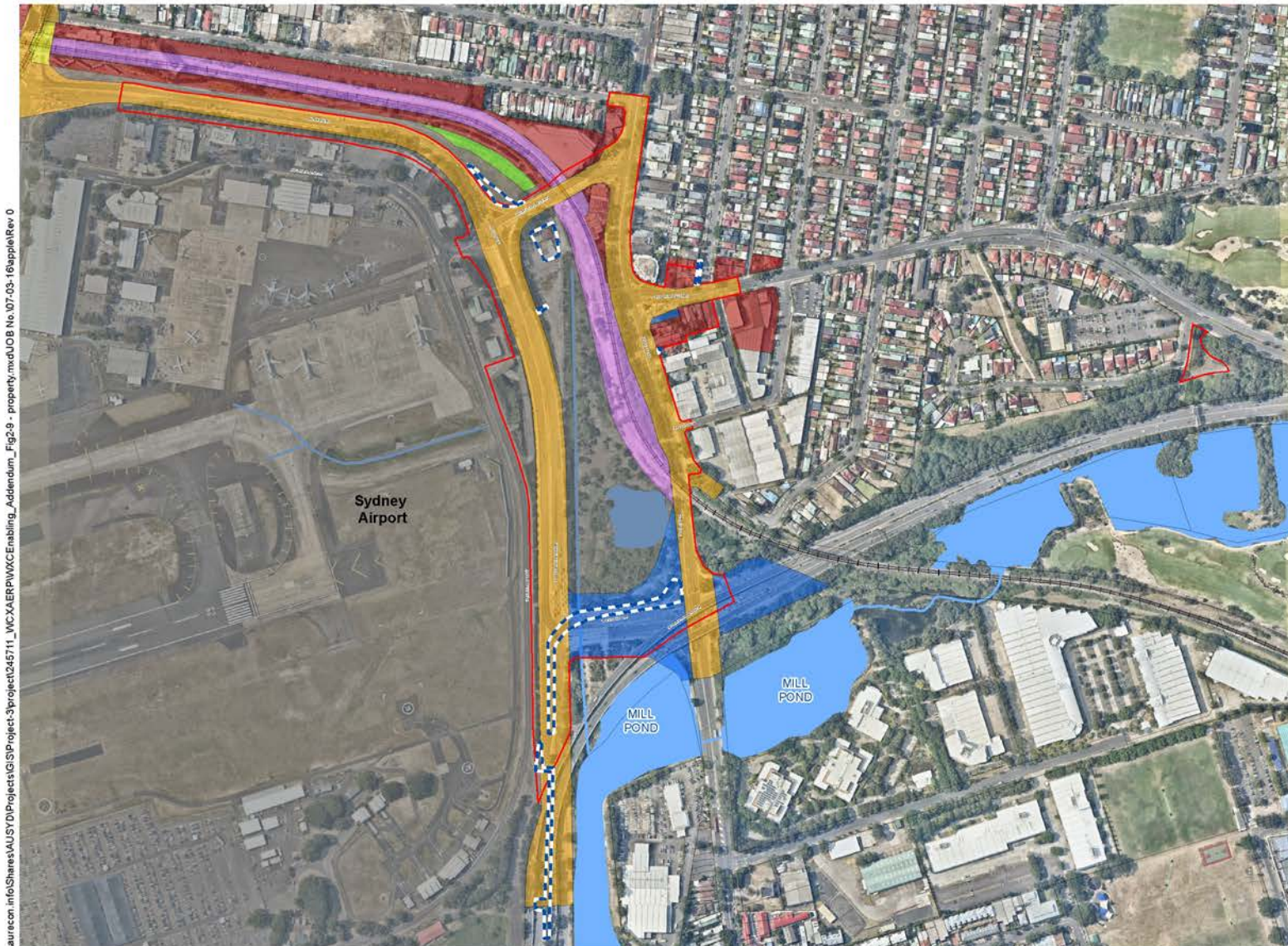
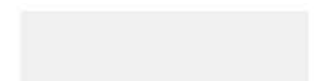
FIGURE 2-8: Minor realignment of existing sewer main infrastructure outside project boundary



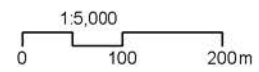
Legend

- Determined project area boundary
- Proposed modifications
- Roads and Maritime Services NSW
- Commonwealth of Australia - leased to Sydney Airport Corporation Limited
- Rail Corporation NSW
- State Rail Authority of NSW
- Sydney Water Corporation
- Botany Bay City Council
- Private
- Cadastre
- Waterway
- Water body
- Railway

Source: Nearmap, Aurecon, RMS, LPI



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Projection: GDA 1994 MGA Zone 56

WestConnex **Enabling Works**

FIGURE 2-9: Property Ownership

## 3 Statutory and planning framework

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Chapter 5 of the Project REF provided the statutory and planning framework for the proposal and considered provisions of the relevant State Environmental Planning Policies (SEPPs), Local Environmental Plans (LEPs), other NSW legislation and Commonwealth legislation.

### 3.1 Relevant legislation

A review of the relevant State and Commonwealth legislation assessed in the Project REF has been undertaken in consideration of the revised proposal. The revised proposal would not result in any changes to the existing approval pathway or requirement identified in the Project REF. No additional or modified Commonwealth, state or local government legislation, environmental planning instruments or provisions are relevant to the revised proposal.

In regard to NSW approvals, Roads and Maritime is both the proponent and the determining authority for the revised proposal. Clause 94 of the State Environmental Planning Policy Infrastructure 2007 (ISEPP) provides that the proposal may be carried out without development consent and therefore is subject to assessment under Part 5 of the EP&A Act. The revised proposal would not change this assessment pathway and can also be assessed under Part 5.

Additional permits and approvals are required for this revised proposal in addition to the Part 5 determination and these are detailed in Section 8.3 of the Project REF. These include an Environmental Protection Licence (EPL) for activities listed under Schedule 1 of the *Protection of the Environment Operations Act 1997*. For the proposal, potential triggers under Schedule 1 were extractive activities, crushing, grinding or separating, waste processing or storage. During detailed design, the potential triggers were not met and as such an EPL for these triggers are not required. However, works on the rail corridor would require an EPL. Roads and Maritime (through the construction contractor) would have to apply for an EPL for the works or use the ARTC EPL.

### 3.2 Airports Act 1996

The proposal is subject to:

- Sydney Airport's Development Application and Consent Application processes to satisfy the requirements of the Airports Act 1996 (the Airports Act)
- Application for a Building Permit to the Airport Building Controller (ABC) in accordance with the Airports (Building Control) Regulations 1996. The Sydney Airport Consent Application must comply with the conditions of the Development Approval
- Airspace approval in accordance with the Airports (Protection of Airspace) Regulations 1996C
- Compliance with the Airport (Environmental Protection) Regulations 1997.

Proposals under the Airport Act require one of the following approvals:

- Major development plan: This applies to any major airport development (as defined by Section 89(1) of the Airports Act)
- Building permit or works permit. This applies to any proposal for building or engineering works, as defined by Sections 2.02 and 2.03 of the Airports (Building Control) Regulations 1996.

#### 3.2.1 Major development plan

Sections of the revised proposal would be located on Commonwealth owned land prescribed in the Airports Act. Sydney Airport is leased to SACL and development is managed in accordance with the Sydney Airport Master Plan.

Section 89(1) of the Airports Act specifies development on Sydney Airport land that constitutes a 'major airport development'. Sydney Airport major airport development includes construction and modification of runways and taxiways, airport terminal buildings and other airport support facilities.

An assessment of whether the revised proposal is a 'major airport development' under Section 89(1) of the Act was carried out and is provided in full in Appendix A. The assessment confirmed that the revised proposal would not meet the criteria under Section 89(1)(h), (j) and (k). Cost of construction of the project would exceed \$20 million, however the revised proposal is unlikely to cost this much if it were undertaken separately.

The proposal has been designed to address existing and future traffic congestion and access issues, rather than to significantly increase the capacity of the airport to handle movements of passengers, freight or aircraft.

Section 89(1) of the Airports Act also includes environmental, community and sensitive development triggers for 'major airport developments' as follows:

*(m) a development of a kind that is likely to have significant environmental or ecological impact; or*

*(n) a development which affects an area identified as environmentally significant in the environmental strategy; or*

*(na) a development of a kind that is likely to have a significant impact on the local or regional community; or*

*(nb) a development in relation to which the Minister has given an approval under Section 89A.*

The assessment confirmed that the revised proposal would not meet the criteria associated with Section 89(1)(m), (n), (na), (nb) and (o) (refer to Appendix B). The revised proposal is therefore not considered to be a major airport development and a major development plan is not required.

### **3.2.2 Building permit**

Section 2.02 of the Airports (Building Control) Regulations 1996 (the Airports Regulation) states that building or works approval applications are required for the following activities:

- Construction or alternation of a building (Clause 2(a))
- Construction or alternation of works (Clause 2(b))
- Demolition, destruction, dismantling or removal of a building, or works (Clause 2(c)).

The revised proposal involves installation of roadside signs and associated services, construction of a batter, changes to lane marking and use of an existing building as an ancillary site during construction. These works are considered to be 'building activities' under Section 98(1)(a), (c) and (d) of the Airports Act.

A development application for work on Commonwealth land would therefore be submitted to SACL under Section 2.03, Clause 1 of the regulations. Should this application be successful, SACL consent would be provided to Roads and Maritime with any relevant approval conditions for the revised proposal.

Roads and Maritime would then seek building activity approval from Sydney Airport's airport building controller, who is independently employed by the Commonwealth Department of Infrastructure and Regional Development.

Section 2.05 of the Airports (Building Control) Regulations 1996 lists the information that is required within an application. These requirements are considered in Table 3-1.

Table 3-1: Requirements for building activity approval application

Information about proposed building activity		Response and relevant section in this REF
(a)	A description of the proposed building activity, and its location on the airport site	The revised proposal is described in Section 2.2 and shown on Figure 2-1. The project is described in Section 2.1. A more comprehensive description of the project is provided Chapter 2 of the Project REF.
(b)	If there is a final master plan for the airport — a statement describing how the proposed building activity is consistent with the plan	The revised proposal is consistent with the Sydney Airport Master Plan 2033 and the objectives of the zones it affects, as discussed in Section 3.2.4.
(c)	If the proposed building activity is, or comprises part of, a major airport development (within the meaning of section 89 of the Act) — a statement describing how the proposed building activity is consistent with:	The revised proposal does not comprise part of a major airport development, as discussed in Section 3.2.1 and Appendix B.
(i)	The approved major development plan for the airport	
(ii)	Any exemption declared under paragraph 90 (1) (d) of the Airport Act 1996.	
(ca)	If the proposed building activity is not, or does not comprise part of, a major airport development — a statement to that effect	The revised proposal is not, and does not comprise part of a major airport development, as discussed in Section 3.2.1.
(cb)	If the proposed building activity is, or comprises part of, a draft major development plan — a statement to that effect	The revised proposal is not, and does not comprise part of a draft major airport development, as discussed in Section 3.2.1.
(d)	If there is a final environment strategy for the airport — a statement describing how the proposed building activity is consistent with the strategy	The revised proposal is consistent with the Sydney Airport Environmental Strategy, as discussed in Section 3.2.5.
(e)	2 copies of the site plan for the proposed building activity, including a depiction of the proposed development resulting from the building activity	Figure 2-1 provides a site plan for the revised proposal.
(f)	A copy of any other information about the proposed building activity required by a regulatory authority, or other body having a regulatory function, in relation to the resulting building, works or demolition.	The Addendum REF includes information to meet Roads and Maritime obligations under: Part 5 of the EP&A Act, with regards to environmental assessment. The <i>Threatened Species Conservation Act 1995</i> (TSC Act), with regards to impact on threatened species and ecological communities.

### 3.2.3 Protection of airspace approval

Section 182 of the Airports Act defines any activity that intrudes into prescribed airspace as being a controlled activity. The Airports (Protection of Airspace) Regulations 1996 requires that the Commonwealth Department of Infrastructure and Regional Development (DIRD) or Sydney Airport

operator to approve long and short term applications to carry out controlled activities and to impose conditions on an approval.

As discussed in Section 5.2.1 of the Project REF, equipment used for construction of other aspects of the proposal would penetrate the Obstacle Limitation Surface (OLS) covering the airports east-west runway. Section 7.2.3 of the Project REF discusses how construction works that would impact on the OLS would be managed, with the main measure to mitigate these impacts being the partial closure of the east-west runway for two periods of one to two weeks. This would restrict aircraft operations on the east-west runway, with the exception to departures on runway 25 where aircraft would continue to be able to take off to the west.

The relocation of the illuminated digital advertising sign may result in a temporary breach of the OLS during the installation and removal of the signs. This work would be undertaken during the runway closure discussed above.

As the proposal involves the erection of a structure that is not intended to remain in place for longer than three months, it is considered to be a short-term controlled activity under the Airports (Protection of Airspace) Regulations 1996. The proposal would therefore require approval under Section 183 of the Airports Act. In the first instance, the application would be reviewed by SACL, after consultation with the Civil Aviation Safety Authority (CASA) and Airservices, or may be referred by the airport to DIRD for a decision.

Roads and Maritime is continuing to consult with SACL in relation to the interaction of the proposal with Sydney Airport's airspace and necessary approvals. Further details of Sydney Airport's protected airspace are provided in the Project REF.

### **3.2.4 Sydney Airport Master Plan 2033**

The Sydney Airport Master Plan 2033 has been prepared in accordance with the Airports Act and Part 5 of the Airports Regulations 1997, with regards to land use and related planning, zoning or development. It was approved by the Australian Government on 17 February 2014.

The Master Plan outlines Sydney Airport's plan for operation and development for a twenty-year period to 2033. It covers new major developments in Sydney Airport terminal and the upgrade of existing infrastructure. The plan also includes the improvement of ground transport infrastructure, including surrounding roads and intersections, while encouraging increased access by public transport, bicycles and pedestrians.

The Master Plan references the recommendations in the State Infrastructure Strategy for building WestConnex, fixing road pinch points in the Sydney Airport and Port Botany precinct, reducing rail fares to Sydney Airport, adding new bus routes to Sydney Airport and enhancing the capacity of freight rail lines. The revised proposal is therefore consistent with the master plan as it would improve road network efficiency and reduce congestion within the project area, thereby facilitating improved access to Sydney Airport.

Table 3-2 lists the objectives of the Sydney Airport Master Plan zones which overlap with the project area, a summary of their objectives and how the revised proposal is consistent with these objectives.

Table 3-2: Sydney Airport Master Plan zones affected by the revised proposal

Zone	Objective	Consistency of the revised proposal with the objectives
AD1 – Aviation Activity and Aviation Support Facilities	<ul style="list-style-type: none"> <li>• Provide for aviation activities and aviation support facilities</li> <li>• Facilitate compatible and ancillary functions within the zone provided that development does not render the land unfit for aviation activities</li> <li>• Protect the long-term viability and operational efficiency of Sydney Airport for its primary function</li> <li>• To ensure heritage items are appropriately considered and managed</li> <li>• Coordinate the orderly and economic use and development of land until such time as it is required for aviation activities or aviation support facilities.</li> </ul>	<p>The primary use of the revised proposal is for roads, and is therefore permissible.</p> <p>The revised proposal is consistent with the second objective in that it would facilitate improved road conditions within the site, which is a compatible function with airport operations.</p>
BD1 – Business Development	<ul style="list-style-type: none"> <li>• To enable a mix of business, retail and industrial uses in locations that are close to and that support the functioning of the airport</li> <li>• To integrate suitable and compatible land uses in accessible locations so as to maximise public transport patronage and encourage cycling</li> <li>• To encourage employment opportunities and promote businesses along main roads</li> <li>• Enable a limited range of other land uses that will provide facilities and services to meet the day-to-day needs of local workforce</li> <li>• To ensure heritage items are appropriately considered and managed</li> <li>• To maximise, where possible, the use of existing access and egress points.</li> </ul>	<p>The primary use of the revised proposal is for roads, and is therefore permissible.</p> <p>The revised proposal is consistent with the second objective in that it would improve pedestrian and cyclist facilities in the area surrounding the airport. By improving traffic flow and reducing congestion, it would also maximise the existing access from Sydney Airport via Ross Smith Drive, and therefore be consistent with the sixth objective.</p> <p>The revised proposal would require the temporary closure of two footpaths and temporary access restrictions to several residences (refer to Section 5.2). This would be a minor additional impact as the overall proposal would require a number of footpath closures and access restrictions during construction. The proposal would remain consistent with the objectives of this zoning.</p>
EC1 – Environmental Conservation	<ul style="list-style-type: none"> <li>• Protect the ecological and scenic values of the waterways in this area</li> <li>• Maintain the health and natural water flows of the waterway</li> <li>• Enable maintenance dredging of the Mill Stream and related activities to maintain water depths and to ensure sedimentation accumulation is managed and controlled</li> <li>• To ensure heritage items are appropriately considered and managed.</li> </ul>	<p>The primary use of the revised proposal is for roads, and is therefore permissible.</p> <p>The revised proposal is not expected to increase the risks to the environment associated with the proposal. The proposal would maintain and in some cases improve the health and functioning of adjacent waterways and therefore the revised proposal is considered to be consistent with this objective.</p>
BD2 – Enviro-Business Park	<ul style="list-style-type: none"> <li>• Provide for a limited range of sustainable development, particularly for business purposes, that will not</li> </ul>	<p>The revised proposal is not considered likely to compromise the ecological, cultural or scientific value of any land</p>



Zone	Objective	Consistency of the revised proposal with the objectives
	<p>compromise the ecological, cultural or scientific value of this land or adjacent land including the Mill and Engine Ponds and the Mill Stream</p> <ul style="list-style-type: none"> <li>• Ensure buildings achieve design excellence having particular regard to the surrounding natural and built environment and the associated sensitivities</li> <li>• Encourage appropriate employment opportunities in accessible locations</li> <li>• Enable a limited range of other land uses that will provide facilities and services to meet the day-to-day needs of the local workforce</li> <li>• Incorporate appropriate environmental management principles and controls into development proposals</li> <li>• To ensure heritage items are appropriately considered and managed.</li> </ul>	<p>and is therefore consistent with the first objective. The revised proposal is consistent with the fourth objective in that it would provide improved pedestrian and cyclist facilities in the project area. It is also consistent with the fifth objective in that it incorporates appropriate management principles and controls that were identified in the Project REF and modified in the subsequent Submissions Report, and would continue to do so in any subsequent environmental assessment documentation.</p>

### 3.2.5 Sydney Airport Environment Strategy 2013-2018

The revised proposal is consistent with the Sydney Airport Environment Strategy 2013-2018 which forms part of the Master Plan.

With regards to Section 89(1)(m) of the Airports Act, the revised proposal is assessed as not being a development of a kind that is likely to have a significant environmental or ecological impact. With regards to Section 89(1)(n), the revised proposal is assessed as not being a development which affects an area identified as environmentally significant in the Sydney Airport Environment Strategy 2013-2018. While the revised proposal is upstream of the Mill Ponds/ Sydney Airport Wetlands which is an environmentally significant area, the revised proposal is not expected to cause any impacts on the heritage and environmental values of these areas.

### 3.2.6 National Airports Safeguarding Framework

The National Airports Safeguarding Framework aims to improve community amenity by minimising aircraft noise-sensitive development near airports, and to improve safety outcomes by ensuring aviation safety requirements are recognised in land use planning decisions. The revised proposal is not considered likely to affect any matters associated with aviation safety that were not considered in the Project REF. The revised proposal is therefore considered to be consistent with the National Airports Safeguarding Framework as the proposal has recognised and addressed aviation safety requirements associated with design and construction of the proposal (refer to Section 4 of the Project REF). The Project REF also considers the impacts of the proposal on aircraft noise, particularly during construction (refer to Section 7.7 of the Project REF).

## 3.3 Confirmation of statutory position

All relevant statutory planning instruments have been examined for the revised proposal. It is concluded that the ISEPP continues to override the development consent requirements, thereby permitting assessment of the revised proposal under Part 5 of the EP&A Act.

## 4 Stakeholder and community consultation

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### 4.1 Consultation undertaken for the determined proposal

Roads and Maritime has been consulting with the community and affected stakeholders associated with the proposal on an ongoing basis since September 2013. The purpose of this consultation has been to:

- Involve key government agencies and stakeholders in the evaluation of options for the proposal
- Seek community feedback on the proposal
- Receive comments from those affected by the proposal
- Seek community ideas to be considered in the concept design
- Advise directly affected stakeholders of the proposal and potential impacts
- Advise the community how they can obtain further information or communicate concerns, complaints or suggestions.

The Project REF was displayed for community comment in February and March 2015. Feedback was received from 11 people and organisations, with the main comments relating to:

- The impact of the proposal on traffic volumes, local traffic and access
- Suggestions to alternative proposals and changes to the design
- Noise impacts on private property and land leased to SACL
- Suggestions and queries regarding cyclist facilities.

Further details of the consultation undertaken prior to determination of the proposal are provided in Section 6 of the Project REF.

### 4.2 Consultation undertaken for the revised proposal

Ongoing consultation with the community and stakeholders has been undertaken for the proposal since determination of the Project REF. This has been directed by a Stakeholder and Community Participation Plan that was prepared for the proposal by Aurecon in March 2015. The aims of this plan are to:

- Identify stakeholders, potential issues and recommended communication activities
- Provide opportunities for key stakeholder to be involved in the detailed design as necessary
- Keep key stakeholders, businesses and residents informed of the progress of the detailed design and seek to engage them throughout the process
- Provide a general level of awareness for those in the broader community.

### 4.3 Aboriginal community involvement

A search of the Aboriginal Heritage Information Management System (AHIMS) was undertaken as part of the Project REF on 22 August 2014 which did not identify any known Aboriginal heritage objects or places within the study area.

Updated searches of the AHIMS were carried out on 22 January 2016 and 3 March 2016, in accordance with the Roads and Maritime *Procedure for Aboriginal Cultural Heritage Consultation and Investigation* (PACHCI) Stage 1 which confirmed the absence of recorded Aboriginal heritage objects or places in the project area.

As there were no registered Aboriginal heritage sites near the proposal, no consultation with the Aboriginal community was required during preparation of the Project REF. Given that the design refinements being assessed do not substantially change the study area being assessed, and given that no additional heritage records were identified on the AHIMS register, no consultation was undertaken with the Aboriginal community for this Addendum REF.

## 4.4 ISEPP consultation

Sections 13 to 16 of the ISEPP include consultation requirements and matters that need to be taken into consideration for works undertaken under Part 5 of the EP&A Act. As required under these Clauses 13 to 15, Roads and Maritime notified Botany Bay City Council on 1 August 2014 because the proposal was predicted to have an impact on the following:

- Council managed infrastructure and services (i.e. roads, footpaths, public transport facilities)
- Two local heritage items that would be demolished for the proposal (these are described further in Section 7.3 of the Project REF)
- Drainage and flood behaviour in the project area.

Botany Bay City Council did not raise any formal objections to the proposal in response to the ISEPP notification. Further ISEPP consultation with Council was not formally undertaken in relation to the revised proposal however Roads and Maritime has been consulting regularly with Botany Bay City Council about the proposal on an ongoing basis.

The revised proposal did not trigger the need for consultation with other authorities under Clause 16 of the ISEPP.

## 4.5 Ongoing or future consultation

Roads and Maritime would continue to consult with the community and stakeholders during construction of the proposal. Consultation activities during construction would include, but not be limited to:

- Webpage updates (<http://www.rms.nsw.gov.au/projects/sydney-south/sydney-airport/airport-east-precinct.html>)
- Letterbox drops
- Media releases
- Door knocking
- Temporary variable message signs
- Community updates.

The audience of ongoing consultation would include local residences, businesses, wider community, road users, State and Federal members of Parliament, Council and other government agencies.

## 5 Environmental assessment

This section of the Addendum REF provides a detailed description of the potential environmental impacts associated with the construction and operation of the revised proposal, where this is different from the assessed outcomes in the determined Project REF.

Site-specific safeguards are provided to ameliorate the identified potential impacts where these are additional to those identified in the Project REF.

### 5.1 Issue identification

The existing environment described in the Project REF is consistent with the existing environment potentially impacted and assessed by the revised proposal. As such, the existing environment information throughout this section has not been duplicated within the Addendum REF.

A large number of the potential environmental impacts identified and assessed in the Project REF are unchanged by the revised proposal. Table 5-1 provides a summary of the differences in impact between the proposal described in the Project REF and the revised proposal described in Section 2.1. Where additional potential impacts or differences in impacts as a result of the refined activity are identified, further assessment is provided.

The safeguards and management measures developed in the Project REF were subsequently modified by the Airport East Precinct – WestConnex Enabling Works Submissions Report (Jacobs, 2015b) (the Submissions Report). The implementation of these measures was considered in the context of the revised proposal and where required, additional safeguards and measures were developed.

Table 5-1: Identification of issues for further assessment

Aspect	Further assessment required?	Reasoning
Land transport and access	Yes	<p>The revised proposal would result in alterations to traffic flow and lane changes during operation. These impacts are due to the changes on Mill Pond Road and the additional construction compound site (Refer to Section 5.2).</p> <p>Access to two pedestrian footpaths and several residences (located on Hardie Street and Botany Road) would be temporarily restricted during utility relocation works. This is discussed further in Section 5.2. The relocation and construction of Telstra utility infrastructure adjacent to Hardie Street would require the closure of the existing footpath, as would the footpath located adjacent to the Botany Road southbound lane for works associated with the minor realignment of existing sewer infrastructure.</p> <p>These footpath closures would be temporary and for the duration of the works only, and would be reinstated following their completion. Mitigation measures identified in Table 6.1 of the Submissions Report would be implemented to reduce the impact of the revised proposal on pedestrian connectivity.</p>

Aspect	Further assessment required?	Reasoning
Airport Operations	No	The revised proposal would not result in any changes to airport operations in addition to those described in the Project REF. The revised proposal would involve the temporary intrusion of construction equipment into prescribed air space associated with Sydney Airport. This is not expected to result in any additional impacts above those described in the Project REF, as the additional activities would be undertaken at the same time as other works that would also result in this impact. This is discussed further in Section 3.2.3.
Noise and vibration	Yes	The revised proposal would involve minor construction works in areas outside the project area assessed for the Project REF (refer to Section 5.3).
Non-Aboriginal heritage	Yes	<p>The revised proposal would result in no additional impacts to any heritage items beyond those assessed in the Project REF. The revised proposal area would slightly encroach on the curtilage of a listed heritage item (being located on the same property), although no additional heritage impacts would occur (refer to Section 5.4).</p> <p>No additional non-Aboriginal heritage items are located in areas subject to additional disturbance associated with the revised proposal.</p>
Biodiversity	Yes	The revised proposal would require clearing of road-side verge and median area vegetation in small areas outside the area assessed for the Project REF. Vegetation clearing would be required for the installation of the VMS, the illuminated digital advertising sign, the relocation and installation of existing communications infrastructure and minor realignment works required to the existing sewer main (refer to Section 5.5).
Hydrology	No	The revised proposal would not increase the potential hydrology or flooding impacts of the proposal provided the mitigation measures described in Table 6.1 of the Submissions Report are implemented.
Landscape character and visual amenity	Yes	The revised proposal would result in minor, localised visual impacts during construction through the use of an additional compound/office site. During operation, the installation of the VMS, relocation of the advertising sign, relocation and construction of existing communications infrastructure and minor realignment works required to the existing sewer main would create additional visual impacts, although these signs are required to be visually prominent and would not be out of character being part of a major roadway network (refer to Section 5.6).
Topography, geology, soils and water quality	No	The revised proposal would require minor additional soil disturbance compared to the Project REF. This could result in minor additional erosion and sedimentation impacts during construction, although these would be adequately managed through implementation of the soil and water management plan that would be prepared by the Construction Contractor (refer to Section 7.8 of the Project REF).

Aspect	Further assessment required?	Reasoning
Contamination	No	<p>The revised proposal would require minor additional soil disturbance in roadside locations. The Project REF identifies the General Holmes Drive road corridor as high risk for containing PAH's above guideline levels. The Project REF states however, that contamination represents a minor risk to human and environmental health and can be effectively managed through standard safeguards and management measures. In addition, separate to this Addendum REF, further contamination testing is being undertaken.</p> <p>The mitigation measures developed for the Project REF would be implemented for the revised proposal and therefore the revised proposal is not likely to increase the risk of impacts associated with contamination.</p>
Air quality	No	The revised proposal would not increase the impact of the proposal on air quality during construction or operation.
Aboriginal heritage	No	The Project REF determined the potential for impacts on Aboriginal heritage is low. The majority of the revised project area is consistent with the area assessed within the Project REF, however as part of the revised proposal is located outside the project area assessed in the Project REF, an updated AHIMS search was undertaken on 22 January 2016 and 3 March 2016. This search found no new recordings of Aboriginal heritage within additional disturbance areas associated with the revised REF. As such, there are no further impacts to Aboriginal heritage anticipated for the revised proposal.
Land use and property	No	The revised proposal would not result in any additional land use impacts, restrictions to property access or require any property acquisition above that described in Section 7.12 of the Project REF.
Socio-economic	No	The revised proposal involves minor overall changes that would not increase the potential socio-economic impacts and benefits of the proposal, as described in the Project REF.
Greenhouse gas and climate change	No	The revised proposal would not increase the greenhouse gas emissions or climate change risks during construction or operation of the proposal.
Waste and resource management	No	The revised proposal would result in a marginal increase in the impact of the proposal on waste and resource management. This would occur through the general of small amounts of green waste from vegetation clearing and minor earthworks.
Cumulative impacts	No	The revised proposal would not increase the cumulative impact of the approved activity.

## 5.2 Traffic and access

The extent and magnitude of potential impacts of the proposal on the road network and road users were assessed in the Traffic and Transport Working Paper (Jacobs, 2014), which was included in the Project REF.

A technical note was then prepared by Jacobs in August 2015 (*WestConnex Enabling Works Airport East Precinct – Operational and Construction Traffic Modelling Assessment*) (Jacobs,

2015c) to outline additional traffic modelling of further scenarios for the proposal. This included the changes proposed to Mill Pond Road. Results of this modelling are discussed further below.

The other aspects of the revised proposal are not expected to result in any additional traffic or access impacts as they are minor amendments to a large construction program and would not generate any additional traffic movements.

### **5.2.1 Existing environment**

The Project REF considered the proposal in relation to traffic volumes, congestion, crash history, pedestrian and cyclist access, property access, parking, bus routes and heavy vehicles.

Section 2.3 of the Project REF provides a comprehensive overview of the existing road network surrounding the proposal and Section 7.1 of the Project REF provides an assessment of traffic and access impacts.

Compared to the project, the revised proposal would result in changes to traffic flows around the intersections of Mill Pond Road, Botany Road and General Holmes Drive due to the rearrangement of traffic lanes for vehicles turning right from General Holmes Drive into Mill Pond Road. These roads carry high volumes of traffic, with General Holmes Drive between Mill Pond Road and Southern Cross Drive carrying 19,239 vehicles northbound and 22,208 vehicles southbound on weekdays in counts undertaken in August 2013.

Traffic at the section of General Holmes Drive between Joyce Drive and Botany Road was found to be substantially lower than traffic volumes at other locations due to a rail level crossing, which requires the road to be closed periodically during the day.

### **5.2.2 Potential impacts**

#### **Construction impacts**

The use of the new site compound/office area is not expected to cause any changes to construction traffic movements as the area surrounding it was planned to be used as an ancillary site in the Project REF, and the site would be accessed through the same access point.

#### *Pedestrian provisions*

Small sections of several existing pedestrian footpaths would be temporarily closed during utility relocation works associated with the revised proposal (refer to Section 2.2.1). Specific footpaths that would be affected by these works would be those located adjacent to Botany Road and Hardie Street. Access restrictions would typically be of short duration and would enable safe construction of the utility relocation works. When access to these footpaths is restricted, pedestrian access would be maintained during the works and alternative paths and walking routes would be provided which would mitigate the impact of these works on pedestrian access and connectivity and would allow for safe movement of pedestrians. Appropriate signage communicating diversion routes to pedestrians would be displayed during the works and advance notification would be provided of any construction works that affect pedestrians. These safeguards have been identified in the Project REF (mitigation measure ID TR-6).

#### **Operational impacts**

The traffic modelling undertaken for the proposal modelled the base (existing) and revised proposal scenarios (double right-turn from General Holmes Drive northbound into Mill Pond Road, double left turn slip lane onto Botany Road from Mill Pond Road).

The traffic model assessed intersection performance against criteria specified in Roads and Maritime's *Guide to Traffic Generating Developments* (Version 2.2) (RTA, 2002), which is outlined in Table 5-2.

Table 5-2: Level of service descriptions

Level of Service	Average delay per vehicle (seconds/vehicle)	Description
A	<14	Good operation
B	15 to 28	Good with acceptable delays and spare capacity
C	29 to 42	Satisfactory
D	43 to 56	Operating near capacity
E	57 to 70	At capacity, at signals incidents will cause delays
F	>70	Extra capacity required

Intersection performance was modelled for key intersections near the General Holmes Drive / Mill Pond Road intersection for 2013 (traffic counts) and projected 2018 traffic volumes for the existing (no-build), the proposal and revised proposal scenario. Table 5-3 and Table 5-4 provide modelling results for the AM peak (6.00 am to 9.00 am) and PM peak (3.00 pm to 6.00 pm) for these intersections.

Table 5-3: AM intersection results for the revised proposal

Intersection	Base 2013		No build 2018		Proposal 2018		Revised proposal 2018	
	Avg delay (secs)	LOS	Avg delay (secs)	LOS	Avg delay (secs)	LOS	Avg delay (secs)	LOS
General Holmes Drive / Mill Pond Road	32.4	C	72.8	F	27.4	B	33.6	C
Botany Road / Mill Pond Road	44.4	D	64.9	E	46.4	D	54.9	D
Botany Road / Wentworth Avenue	48.8	D	26.0	B	34.6	C	48.0	D
General Holmes Drive / Wentworth Avenue	-	-	-	-	31.4	C	39.3	C

Table 5-4: PM intersection results for the revised proposal

Intersection	Base 2013		No build 2018		Proposal 2018		Revised proposal 2018	
	Avg delay (secs)	LOS	Avg delay (secs)	LOS	Avg delay (secs)	LOS	Avg delay (secs)	LOS
General Holmes Drive / Mill Pond Road	29.1	C	48.6	D	31.2	C	34.2	C
Botany Road / Mill Pond Road	48.4	D	36.5	C	46.9	D	48.2	D



Intersection	Base 2013		No build 2018		Proposal 2018		Revised proposal 2018	
	Avg delay (secs)	LOS	Avg delay (secs)	LOS	Avg delay (secs)	LOS	Avg delay (secs)	LOS
Botany Road / Wentworth Avenue	111	F	39	C	68.5	E	68.3	E
General Holmes Drive / Wentworth Avenue	-	-	-	-	50.8	D	35	C

Table 5-3 shows that without the proposal, significant delays will occur during the AM peak at the intersections of General Holmes Drive / Mill Pond Road, Botany Road / Mill Pond Road and Botany Road / Wentworth Avenue. While the revised proposal will have a negligible impact on the AM peak performance.

Table 5-4 shows that during the PM peak, the proposal will improve the performance of all intersections, although the Botany Road / Wentworth Avenue intersection will operate at LOS E (an improvement from LOS F). There is a marked improvement of the intersection performance at General Holmes Drive / Wentworth Avenue during the PM peak – with a reduction in average delays by 15.8 seconds.

When compared to the traffic modelling undertaken for the Project REF, the revised proposal is generally consistent and most intersections either show a similar or improved LOS.

### 5.2.3 Safeguards and management measures

The safeguards and management measures identified in Table 5-5 have been based on those provided in the Submissions Report. No additional safeguards and management measures are required for traffic and access as a result of the proposal.

Table 5-5: Traffic and access safeguards and management measures

ID	Impact	Environmental safeguards	Responsibility	Timing
TR-1	General traffic impacts	<p>A Traffic Management Plan (TMP) will be prepared as part of the CEMP. The TMP will be prepared in accordance with Roads and Maritime's Traffic Control at Work Sites (RTA, 2010), Australian Standard AS1742 and the worksite manual Roads and Maritime Specification G10. The TMP will outline:</p> <ul style="list-style-type: none"> <li>• Traffic controls to regulate traffic movements and minimising traffic switching</li> <li>• Coordination of: <ul style="list-style-type: none"> <li>– General traffic flows at major construction work areas, such as the tie-ins for the Wentworth Avenue extension</li> <li>– Delivery of construction materials and movement of construction plant and equipment to and from the site to limit traffic delays</li> <li>– Other Roads and Maritime roadwork and any work by other agencies that affect traffic flow</li> <li>– Schedules, abnormal loads and other</li> </ul> </li> </ul>	Construction contractor	<p>Detailed design</p> <p>Pre-construction</p> <p>Pre-construction</p>

ID	Impact	Environmental safeguards	Responsibility	Timing
		<p>specific aspects of transport with transport operators</p> <ul style="list-style-type: none"> <li>– Consultation with local councils to identify, evaluate and document alternative routes</li> <li>– Incident response with emergency services.</li> </ul> <ul style="list-style-type: none"> <li>• Maintenance of continuous, safe and efficient movement of traffic for both the public and construction crew</li> <li>• Haulage routes and access arrangements to minimise impacts on local routes</li> <li>• Construction traffic zones around work areas</li> <li>• Access provisions for local roads and properties</li> <li>• Maintenance of pedestrian access</li> <li>• Provision for appropriate warning and signposting</li> <li>• Requirements and methods to consult with and inform the local community of impacts on the local road network and traffic, as well as impacts on individual property access.</li> </ul> <p>A Vehicle Movement Plan will be prepared as part of the overall TMP. The Vehicle Movement Plan will assess construction-related heavy vehicle movements per shift into and out of the construction sites, and provide guidelines for limiting impacts on traffic using the road network.</p>		
TR-2	Impact to traffic from construction site access	<p>All access points to the construction site and site roads will:</p> <ul style="list-style-type: none"> <li>• Have safe intersection sight distance</li> <li>• Accommodate the turning movements of the largest heavy vehicles</li> <li>• Provide painted median treatments for vehicle delineation</li> <li>• Provide suitable intersection layouts.</li> </ul>	Construction contractor	Construction
TR-3	Impact on access to bus stops during construction	<ul style="list-style-type: none"> <li>• Local bus operators will be consulted during detailed design regarding location and provision of access to bus stops during construction.</li> </ul>	Roads and Maritime	Detailed design
TR-4	Building rail bridges during scheduled rail possession	<ul style="list-style-type: none"> <li>• Roads and Maritime will consult with Port Botany and Australian Rail Track Corporation (ARTC) during detailed design to confirm that the proposal will avoid disturbance and impact on operations during construction where practicable.</li> </ul>	Roads and Maritime	Detailed design
TR-5	Impact on access for emergency services	<ul style="list-style-type: none"> <li>• Consultation with emergency service authorities will be carried out during development of the detailed design including with NSW Fire Rescue.</li> </ul>	Roads and Maritime	Detailed design

ID	Impact	Environmental safeguards	Responsibility	Timing
TR-6	Impact on pedestrian and cyclist access during construction	<ul style="list-style-type: none"> <li>• Pedestrian and cyclist access will be maintained throughout construction.</li> <li>• Appropriate signage communicating diversion routes to pedestrians and cyclists will be displayed during construction.</li> <li>• Advance notification will be provided of any construction works that affect pedestrians and cyclists.</li> </ul>	Construction contractor	Construction
TR-7	Impact on property access	<ul style="list-style-type: none"> <li>• Vehicular property access will be maintained including at places of worship and to all commercial premises. Should property access be affected by the proposal, residents will be consulted before any work begins.</li> </ul>	Construction contractor	Construction
TR-8	Impact on access to bus stops	<ul style="list-style-type: none"> <li>• The community will be provided with ongoing updates on locations and access to bus stops during the construction period to ensure that disruption is minimised.</li> </ul>	Construction contractor / Roads and Maritime	Construction
TR-9	Alternate linemarking strategies	<ul style="list-style-type: none"> <li>• Roads and Maritime will consider alternate linemarking strategies on the Southern Cross Road off-ramp (westbound).</li> </ul>	Roads and Maritime	Detailed design
TR-10	Dedicated left turn lane from Southern Cross Drive onto Botany Road	<ul style="list-style-type: none"> <li>• Roads and Maritime will confirm the viability of upgrading the left turn slip lane on Southern Cross Drive to a dedicated left turn lane at the intersection with Botany Road (southbound).</li> </ul>	Roads and Maritime	Detailed design
TR-11	Optimisation of the cycleway	<ul style="list-style-type: none"> <li>• Roads and Maritime will continue to investigate optimising the cycleway within the proposal area, including reducing crossings where feasible.</li> </ul>	Roads and Maritime	Detailed design
TR-12	Access to Port Botany Freight Line easement from the General Holmes Drive cul-de-sac	<ul style="list-style-type: none"> <li>• Roads and Maritime will continue to consult with ARTC regarding the provision of access to the Port Botany Freight Line easement from the General Holmes Drive cul-de-sac.</li> </ul>	Roads and Maritime	Detailed design
TR-13	Austrroads Guide to Road Design (2009)	<ul style="list-style-type: none"> <li>• Cyclist facilities for the proposal will be designed with reference to the Austrroads Guide to Road Design (2009)</li> </ul>	Roads and Maritime	Detailed design

### 5.3 Noise and vibration

A detailed construction and road noise study was undertaken for the Project REF (Wilkinson Murray 2015). This study found that the majority of construction for the proposal would occur at night and exceedances of noise management levels would occur during all stages. Four receivers near the intersection of Botany Road and Wentworth Avenue were predicted to experience noise in the 'highly noise affected' range (greater than 75 dB (A)). All sensitive receivers identified in the assessment would be potentially affected by sleep disturbance during construction of the proposal. Thirty-eight receivers were identified as being 'potentially acutely affected' by the operation of the proposal and are being considered for noise mitigation as part of detailed design.

### 5.3.1 Existing environment

Sensitive receivers occurring near the proposal are located in the suburb of Mascot and the Lakes Business Park, located to the east of Botany Road. The Project REF found that the noise environment in these areas can be described as an urban-industrial interface which is dominated by noise from local road traffic, rail traffic and aircraft movements.

The nearest sensitive receivers to any activities to be undertaken for the revised proposal are located on Botany Road, where several residences are located adjacent to the existing sewer main adjustment works, and on Hardie Street adjacent to the communications infrastructure relocation and construction works. This is also the location of a noise monitor identified in the Project REF (ID R38) established to monitor noise levels for the project. Other sensitive receivers are located at the intersection of General Holmes Drive and Botany Road, about 150 metres from the cut batter.

### 5.3.2 Potential impacts

Assessment criteria for noise and vibration impacts associated with the proposal are described in Section 7.3.3 of the Project REF.

The overall project would involve a major program of road works occurring over a period of at least two years. The activities that would be undertaken for the revised proposal would not require the use of additional plant and equipment, extend the construction period or result in a noticeable intensification of construction activities at any stage.

Due to the relatively small scale and short timeframes of additional construction activities that would be undertaken for the revised proposal compared with the overall construction program assessed in the Project REF, the potential for additional construction noise and vibration impacts is considered to be minimal.

Open trenching required for utility relocation works associated with the revised proposal would occur adjacent to residential dwellings and buildings located on Hardie Street and Botany Road. These works have potential to result in additional noise and vibration impacts to nearby sensitive receivers. However, these works would occur over a short timeframe (under one week at any one location) and key noise generating activities such as the use of concrete saws would occur intermittently during this time. Residents and users of adjacent properties would be notified specifically of these works prior to commencement and the measures specified in the Project REF to mitigate noise impacts would be implemented. The potential for additional noise impacts from these works is therefore considered to be minimal.

The Project REF identified that ground vibration would be generated by the proposal during construction and that there was the potential for vibration-generating activities to indirectly impact nearby heritage items. The Project REF did not assess indirect impacts to Beckenham Memorial Church. There is potential for the Church to be indirectly impacted by vibration-generating activities associated with open trenching works for utility relocation, however, open trenching works would not be expected to generate high levels of vibration and therefore significant vibration impacts to the Church are considered to be unlikely. Open trenching works may also expose unexpected subsurface remains and other potential heritage items which have the potential to be impacted by vibration-generating activities during the utility relocation works.

Appropriate safeguards and management measures identified in the Submissions Report and additional measures identified below would be implemented to reduce potential vibration impacts to the nearby heritage listed Beckenham Memorial Church.

The use of an additional site compound/office area as described in Section 2.2 has the potential to create additional noise impacts to sensitive receivers located on Botany Road, as the use of this site could result in a minor intensification of noise generated from the proposal at this location. As these receivers would be subject to a number of other noise sources from the proposal, including immediately adjacent roadworks on Botany Road and the area surrounding the new site compound

would already be used as an ancillary site, the potential for additional impacts to these receivers from use of this site is expected to be low.

### 5.3.3 Safeguards and management measures

The safeguards and management measures identified in Table 5-6 have been based on those provided in the Submissions Report. Taking into account additional management measures and safeguards required for the revised proposal, any new measures are indicated in **bold**.

Table 5-6: Noise and vibration safeguards and management measures

ID	Impact	Environmental safeguards	Responsibility	Timing
NV-1	Noise and vibration impacts on sensitive receivers	During the detailed design stage of the proposal, further investigations of potential noise impacts and all feasible and reasonable mitigation options will be carried out for affected receivers in accordance with the Road Noise Policy (DECCW 2011) and Roads and Maritime's Environmental Noise Management Manual Practice Note 4 (RTA, 2001).	Roads and Maritime	Detailed design
NV-2	Noise and vibration impacts on sensitive receivers during construction	A Construction Noise and Vibration Management Plan (CNVMP) will be prepared as part of the CEMP. The CNVMP will include (as a minimum): <ul style="list-style-type: none"> <li>• A map indicating the locations of sensitive receivers</li> <li>• A quantitative noise assessment in accordance with the EPA Interim Construction Noise Guidelines (DECC, 2009)</li> <li>• Management measures to minimise potential noise impacts</li> <li>• A risk assessment to determine construction activities likely to affect sensitive receivers</li> <li>• Mitigation measures to avoid noise and vibration impacts during construction activities</li> <li>• A process for assessing the performance of mitigation measures</li> <li>• A process for documenting and resolving issues and complaints</li> <li>• A construction staging program incorporating noise and vibration monitoring for sensitive receivers</li> <li>• Identification in toolbox talks where noise and vibration management is required.</li> </ul>	Construction contractor	Pre-construction
NV-3	General vibration during construction	Building condition surveys will be carried out for buildings identified in the CNVMP. A copy of the report will be sent to the landholder.	Construction contractor	Pre-construction
NV-4	General vibration during construction	A vibration assessment will be prepared and included in the NVMP. The vibration assessment will include (as a minimum): <ul style="list-style-type: none"> <li>• Identification of potentially affected properties/receivers</li> <li>• A risk assessment to determine the potential for discrete work activities to affect receivers</li> <li>• A map indicating the locations considered likely to be impacted and those requiring building condition surveys</li> <li>• A monitoring program</li> </ul>	Construction contractor	Pre-construction

ID	Impact	Environmental safeguards	Responsibility	Timing
		<ul style="list-style-type: none"> <li>• A process for assessing mitigation measures</li> <li>• A process for resolving issues and conflicts, including additional noise and vibration monitoring where required.</li> </ul>		
NV-5	Noise impacts on sensitive receivers from operation of stockpile and compound sites	Construction compound layout will be arranged so that primary noise sources are at a maximum distance from sensitive receivers (primarily residential receivers), with solid structures (sheds and containers) placed between sensitive receivers and noise sources (and as close to the noise sources as is practical).	Construction contractor	Pre-construction
NV-6	Noise impacts from construction machinery	Compressors, generators, pumps and any other fixed plant will not be located near residences where possible	Construction contractor	Pre-construction
NV-7	Noise and vibration induction	An environmental induction program will be developed to include specific noise and vibration awareness training.	Construction contractor	Pre-construction
NV-8	Construction noise impacts on Airport buildings	Detailed design will further investigate construction noise impacts, including impacts on sensitive receivers, Airport buildings, and current hotel sites. Reasonable and feasible mitigation measures will be identified.	Roads and Maritime	Detailed design
NV-9	Noise mitigation	Roads and Maritime will consider noise mitigation at the church on Botany Road and a residence of Hardie Street, during detailed design. In addition, receivers in the proposal area which currently experience exceedances of the NSW Road Noise Policy (RNP) (DECCW, 2011) will be considered for noise mitigation in accordance with the provisions of the Noise Mitigation Guidelines (Roads and Maritime, 2015a). Properties which qualify for noise mitigation treatment will be contacted by Roads and Maritime during detailed design.	Roads and Maritime	Detailed design
NV-10	<b>General vibration during construction</b>	<b>Where construction work near the Breckenham Memorial Church is within the minimum safe working distances (structural damage) for vibration intensive plant, vibration testing of equipment on site would be carried out prior to their commencement of site operation to determine acceptable buffer distances to the building. If this buffer distance cannot be complied with, measures such as as using smaller equipment or (if required) time restrictions for the most excessive vibration activities</b>	<b>Construction contractor</b>	<b>Pre-construction</b>

## 5.4 Non-Aboriginal heritage

### 5.4.1 Existing environment

Site surveys of the study area were carried out in March and May 2014, and a Statement of Heritage Impact was prepared by Stedinger Associates in 2014 for the Project REF. The site surveys identified six listed heritage items and three unlisted heritage items located within or partially within the proposal area, including:

- House (1289 Botany Road)
- House (1291 Botany Road)
- Beckenham Church School Hall (1293 Botany Road)
- Beckenham Memorial Church (1295 Botany Road)
- Mascot (Botany Road) Underbridge
- Sydney Kingsford Smith Airport Group
- Sandstone kerb and alignment pin between Bronte Avenue and Mascot (Botany Road) Underbridge
- Sandstone kerb near Wentworth Avenue
- Botany Road tram track.

Eight registered heritage items near the proposal area were also considered and are discussed further in the Project REF.

The revised proposal is located on the Beckenham Church School Hall and the Beckenham Memorial Church, which were assessed in the Project REF. The Project REF proposed full property acquisition of the Beckenham Church School Hall by Roads and Maritime and that this heritage item would be demolished to allow for construction of the proposal. Acquisition and demolition of the school hall and church has occurred.

Partial property acquisition of the Beckenham Memorial Church by Roads and Maritime was also proposed as part of the Project REF, this has since been fully acquired by Roads and Maritime. The Project REF confirmed that this heritage item would be retained and would not be physically impacted by the proposal, with only the front property boundary being adjusted to accommodate the proposal area. At the south-east corner, the proposed boundary would be set between 0.5 metres and one metre into the front yard. At the south-west corner, it would be set about three metres into the fronting brick fence.

### 5.4.2 Potential impacts

Consistent with the Project REF, the revised proposal is not expected to physically impact any non-Aboriginal heritage buildings, however, the revised proposal would encroach on a small area of the property where Beckenham Memorial Church is located, which would impact on the heritage curtilage of this building. The front boundary of the property would be adjusted using open trenching methods to allow for a minor realignment of an existing sewer main infrastructure.

The revised proposal also has the potential to result in indirect impacts to the Beckenham Memorial Church from vibration-generating activities associated with the open trenching works, and exposure of unexpected subsurface remains and other potential heritage items.

Measures were recommended in the Project REF to mitigate any potential impacts to non-Aboriginal heritage items, including the Beckenham Memorial Church (refer to Table 7-28 of the Project REF). It was also found that heritage items and associated curtilages near the proposal area were not anticipated to be negatively impacted during operation, provided that all relevant safeguards and management measures were addressed and implemented. The revised proposal does not change these findings.

### 5.4.3 Safeguards and management measures

The safeguards and management measures identified in Table 5-7 have been based on those provided in the Submissions Report. Additional safeguards and management measures are required to address potential indirect vibration impacts to the Breckenham Memorial Church as a result of the revised proposal. This is identified in section 5.2.3.

Table 5-7: Non-Aboriginal heritage safeguards and management measures

ID	Impact	Environmental safeguards	Responsibility	Timing
NA-1	Landscaping to improve visual amenity of Beckenham Memorial Church	Landscaping surrounding the Beckenham Memorial Church will be investigated during detailed design in consultation with church owners and heritage officers from Botany Bay City Council.	Roads and Maritime	Detailed design
NA-2	Removal of heritage relics	An exception under Section 139 of the Heritage Act will be obtained for impacts to identified relics within the proposal area, if required.	Roads and Maritime	Pre-construction
NA-3	Impact to heritage items	A condition survey will be carried out before the start of work by a qualified contractor and a building condition report prepared for nearby heritage items which may experience indirect impact from construction, including Beckenham Memorial Church.	Roads and Maritime	Pre-construction
NA-4	General impact to heritage	A Non-Aboriginal Heritage Management Plan will be prepared and included in the CEMP. The plan will include but not limited to: <ul style="list-style-type: none"> <li>• A map identifying locations of heritage items (including curtilages) which are to be protected and those which are to be destroyed</li> <li>• Identification of potential impacts to heritage items due to construction</li> <li>• Implementation of mitigation measures to protect identified heritage items</li> <li>• A stop works procedure in the event of actual or suspected potential harm to a heritage item</li> <li>• Requirement to comply with Roads and Maritime Standard Management Procedure: Unexpected Archaeological Finds (2012).</li> </ul>	Roads and Maritime	Pre-construction
NA-5	Disturbance, removal or demolition of non-Aboriginal heritage items	A photographic archival recording will be made of the following items before any disturbance or demolition, in accordance with OEH guidelines: <ul style="list-style-type: none"> <li>• House (house and allotment), 1289 Botany Road</li> <li>• House (house and allotment), 1291 Botany Road</li> <li>• Beckenham Memorial Church School Hall (hall and allotment), 1293 Botany Road</li> <li>• Beckenham Memorial Church (church frontage only), 1295 Botany Road</li> <li>• Mascot (Botany Road) Underpass (bridge and its approaches)</li> <li>• Sandstone kerb along Botany Road near Wentworth Avenue</li> </ul>	Roads and Maritime	Pre-construction



ID	Impact	Environmental safeguards	Responsibility	Timing
		<ul style="list-style-type: none"> <li>Botany Road tram tracks.</li> </ul>		
NA-6	Non-Aboriginal heritage awareness training	Non-Aboriginal heritage awareness training will be provided for all contractors and personnel before the start of construction to make aware of retained heritage items within the vicinity of the works and required management measures and to ensure understanding of the procedure required to be carried out in the event of discovery of non-Aboriginal heritage materials, features or deposits, or the discovery of human remains.	Construction contractor	Pre-construction
NA-7	Protection of non-Aboriginal heritage items from inadvertent damage	<p>The following items will be temporarily fenced and appropriate signage displayed and/or noted on a plan as a heritage item to avoid indirect impacts or encroachment, where necessary:</p> <ul style="list-style-type: none"> <li>Mascot (Botany Road) Underbridge</li> <li>Sandstone kerb and alignment pin at Botany Road, near McBurney Avenue</li> <li>Botany Water Reserve</li> <li>Mascot (O’Riordan Street) Underbridge</li> <li>Electricity Substation 163, at 42 Wentworth Avenue</li> <li>Commercial Building Group, 1209–1223 Botany Road</li> <li>Single Storey Terrace Group, 1239–1245 Botany Road</li> <li>House, 71 Frogmore Street</li> <li>House, 87 Hardie Street</li> <li>House, 90 Johnson Street.</li> </ul>	Roads and Maritime Construction contractor	Pre-construction Construction
NA-8	Discovery of non-Aboriginal heritage features or deposits	If at any time during construction of the project, non-Aboriginal heritage materials, features and/or deposits are found and are not covered by an issued approval (generally s139 excavation permit, exception or s60 approval or exemption) then the Roads and Maritime Standard Management Procedure: Unexpected Heritage Items (Roads and Maritime, 2015b) will be followed.	Construction contractor	Construction
NA-9	Discovery of tram tracks and additional road fabric	A photographic archival recording will be made of additional road fabric or other unanticipated finds if found during construction. This will be carried out in accordance with Roads and Maritime’s Standard Management Procedure: Unexpected	Construction contractor	Construction

ID	Impact	Environmental safeguards	Responsibility	Timing
		Heritage Items (Roads and Maritime, 2015b).		
NA-10	Rebuilding of Beckenham Memorial Church fence	The front boundary wall of Beckenham Memorial Church will be rebuilt in the same style and with similar materials as the existing wall, in consultation with church owners and heritage officers from Botany Bay City Council.	Construction contractor	Construction

## 5.5 Biodiversity

### 5.5.1 Existing environment

A Biodiversity Assessment prepared for the Project REF (SMEC, 2014) identified the presence of one Endangered Ecological Community (EEC) within the project area, being: Freshwater Wetlands on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions. Another EEC (Floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions) and seven threatened and migratory flora and four fauna species were found to have potential to occur in the study area.

The majority of the vegetation occurring in the project area was found to be:

- Weeds and exotics, with the majority of the study area dominated by weeds. Weed-dominated areas cover about five hectares on disturbed and landscaped sites such as the disturbed areas between General Holmes Drive and Botany Road, where the proposed additional site compound/office area is located.
- Urban native and exotic cover, including linear roadside plantings of native and exotic species.
- Street plantings, including roadside trees and shrubs in the pavement.

The Project REF found that habitat within the project area was highly modified and provided a low capacity to support threatened and migratory fauna. No habitat trees were identified in the area. The proposal is within the expected range of the Green and Golden Bell Frog (*Litoria aurea*) and about 0.45 hectares of suitable habitat for this species was found within the Coastal Freshwater Wetland vegetation community. This species was not recorded during field surveys and is not expected to occur within the project area.

The Project REF found that construction of the proposal would require the removal of 3.3 hectares of native vegetation, comprising weeds and exotic species, urban planted native vegetation and exotic cover and street plantings. The proposal was not predicted to remove any good quality native vegetation and areas of low-quality vegetation in the project area was not mapped.

The revised proposal includes areas of vegetation that would be removed that are outside the project area assessed in the Project REF. These areas are:

- The median area on General Holmes Drive where services for the new VMS sign would be installed (refer to Figure 2-3). This area consists of a narrow strip of planted native and exotic street trees and shrubs, which are generally in poor condition
- The batter required for the slip lane at the intersection of General Holmes Drive and Joyce Drive (refer to Figure 2-5). This area generally consists of turf, but may encroach on a small garden bed containing exotic, planted vegetation
- The roadside verge on the western side of Hardie Street, near its intersection with Wentworth Avenue, where existing communication infrastructure would be either relocated or constructed. This would involve open trenching works to remove existing utility cables, and the construction of two new communication pits (refer to Figure 2-7). This area generally consists of a narrow

strip of turf with a small number of planted street trees including species such as the London Plane Tree (*Plantanus xhispancia*) and Broad-leaved Paperbark (*Melaleuca quinqenervia*).

- Open trenching works required for sewer main adjustment adjacent to the Botany Road southbound lane would be located within the existing pedestrian footpath area, which consists of a narrow strip of turf and several London Plane Trees (*Plantanus xhispancia*).

### 5.5.2 Potential impacts

The revised proposal will require the removal of small areas of roadside vegetation located adjacent to General Holmes Drive for installation of the advertising sign, VMS and its associated services. This vegetation consists of narrow strips of planted native and exotic street plantings, which is generally in poor condition.

The batter required for the slip lane at the intersection of General Holmes Drive and Joyce Drive would require the removal of turf and a small section of a garden bed containing exotic, planted vegetation.

The relocation of existing communications infrastructure and construction of two communication pits in Hardie Street, and the realignment of the existing sewer main adjacent to Botany Road, would require the removal of turf and a small number of planted street trees.

It is estimated that the revised proposal would result in clearing of less than an additional 0.1 hectares of planted, roadside vegetation. This is not expected to alter the findings of the Project REF, which predicted that the proposal would result in the loss of 3.3 hectares of vegetation.

The Project REF concluded that vegetation clearing from the proposal would reduce available habitat in the area through removal of foraging habitat for species such as the Grey-headed Flying Fox and indirect impacts such as erosion and sediment impacts to adjacent wetland areas. Measures were recommended in the Project REF to mitigate these impacts, such as erosion and sediment controls and replanting of cleared vegetation. The Project REF found that the proposal was not expected to cause any significant biodiversity impacts due to the minor amounts of overall habitat to be cleared. The revised proposal does not change these findings.

### 5.5.3 Safeguards and management measures

The safeguards and management measures identified in Table 5-8 have been based on those provided in the Submissions Report. No additional safeguards and management measures are required for biodiversity as a result of the revised proposal.

Table 5-8: Biodiversity safeguards and management measures

ID	Impact	Environmental safeguards	Responsibility	Timing
BI-1	Potential impact to Coastal Freshwater Wetland TEC during construction	<ul style="list-style-type: none"> <li>• A buffer zone of 5 m will be established around the wetland to avoid physical impact</li> <li>• The area within the wetland buffer area will be rehabilitated as part of the proposal area, including weed control, landscaping and site rehabilitation works with locally indigenous species</li> <li>• Relocate woody debris recovered from the construction footprint to the wetland buffer to provide shelter sites for the Green and Golden Bell Frog.</li> </ul>	Construction contractor	Pre-construction

ID	Impact	Environmental safeguards	Responsibility	Timing
BI-2	Vegetation and habitat removal	<p>Pre-clearance surveys will be carried out by an experienced ecologist to:</p> <ul style="list-style-type: none"> <li>• Identify and mark fauna habitat features and roosting sites (if any exist) to be protected during construction</li> <li>• Confirm the presence of the Green and Golden Bell Frog and the level of management commitment required during construction</li> <li>• Identify nearby habitats within the proposal area that are suitable for the release of fauna that may be encountered during the pre-clearing process or habitat removal</li> <li>• Select appropriate locations for construction access tracks, ancillary facilities and construction areas in previously cleared and disturbed areas, wherever possible.</li> </ul>	Construction contractor	Pre-construction
BI-3	Vegetation and habitat removal	<p>A Biodiversity Management Plan (BMP) will be included in the Construction Environmental Management Plan (CEMP). It will include:</p> <ul style="list-style-type: none"> <li>• Procedures for a site walk with appropriate site personnel including Roads and Maritime representatives to confirm clearing boundaries and sensitive locations before work begins</li> <li>• The exclusion zones to be installed before clearing, to avoid damage to native vegetation and fauna habitats and prevent the distribution of pests, weeds and disease. Temporary fencing, flagging tape or other appropriate method will be installed to indicate the limits of the exclusion fencing. The location of exclusion fencing will be identified on plans in the CEMP and the function and importance of the exclusion zones communicated to construction personnel</li> <li>• Maps showing vegetation clearing boundaries, identifying drainage areas that run towards the Coastal Freshwater Wetland TEC</li> <li>• A procedure to manage stormwater in the proposal to ensure that hydrology of the Coastal Freshwater Wetland TEC is maintained, including periodic drying to prevent colonisation by <i>Gambusia (Gambusia holbrooki)</i></li> <li>• The establishment of a 5 metre buffer area/ exclusion zone around the Freshwater Wetland TEC to avoid construction impacts on the TEC, as discussed in BI-1</li> <li>• A detailed clearing process in accordance with the Roads and Maritime Biodiversity Guidelines (RTA, 2011) including requirements of Guide 1, 2 4 and 9</li> <li>• An unexpected threatened species finds procedure, as outlined in the Biodiversity Guidelines (RTA, 2011)</li> <li>• Specific details for the re-establishment and rehabilitation of native vegetation on cut faces, batters, the wetland buffer and other areas disturbed during construction</li> </ul>	Construction contractor	Pre-construction,

ID	Impact	Environmental safeguards	Responsibility	Timing
		<ul style="list-style-type: none"> <li>Guidance for the relocation of woody debris from the construction footprint to the wetland buffer to provide shelter for the Green and Golden Bell Frog, if required.</li> </ul>		
BI-4	Spread of weeds	<p>A weed management plan will be developed as part of the BMP and incorporated into the CEMP. The plan will detail:</p> <ul style="list-style-type: none"> <li>Weed management priorities and objectives</li> <li>Identification of weeds on the construction site</li> <li>Sensitive environmental areas within and next to the proposal area, such as the wetland to the south of the Wentworth Avenue underpass</li> <li>Location of weed infested areas</li> <li>Mechanical weed control methods such as slashing or mowing, as well as a range of herbicides to avoid the development of herbicide resistance</li> <li>Procedures to control the use of pesticides, particularly near waterways and immediately before or during wet weather</li> <li>Measures to prevent the spread of weeds</li> <li>Procedures for the appropriate disposal of weed-infested materials and soils</li> <li>Monitoring program to measure the success of weed management</li> <li>Communication protocol with Botany Bay City Council noxious weed representative.</li> </ul>	Construction contractor	Pre-construction
BI-5	Introduction or spread of pests and disease	<p>Measures to confirm the presence of pathogens and disease-causing agents will be carried out before construction. Should pathogens or disease-causing agents be found, measures will be implemented to prevent their introduction and/or spread to the proposal area. These measures are provided in the Biodiversity Guidelines and will include, where appropriate:</p> <ul style="list-style-type: none"> <li>The provision of vehicle and boot wash-down facilities to ensure vehicles and footwear are free of soil before entering or exiting the site</li> <li>Procedures to ensure that the risk of spreading pathogens and the mitigation measures required on site are regularly communicated to staff and contractors during inductions and toolbox talks</li> <li>The programming of construction activities so they move from uninfected areas to any known infected areas</li> <li>The restriction of vehicles to designated roadsides and parking areas</li> <li>Specific measures for treating <i>Phytophthora</i></li> </ul>	Construction contractor	Pre-construction, construction

ID	Impact	Environmental safeguards	Responsibility	Timing
		<i>cinnamomi</i> and <i>chytrid fungus</i> .		

## 5.6 Landscape character and visual amenity



### 5.6.1 Existing environment





A Landscape Character and Visual Amenity Assessment was prepared by Corkery Consulting and Studio Colin Polwarth (2014) in accordance with Roads and Maritime's Environmental Impact Assessment Practice Note EIA-N04-Guidelines for Landscape Character and Visual Impact Assessment (2013).

The assessment found that the area around the proposal is visually dominated by Sydney Airport and located between the interface of Sydney Airport and the suburb of Mascot. Urban areas are separated from the airport by the road network and railway line to Port Botany. Open spaces, parklands and golf courses near the proposal are of significant scenic value.

The assessment divided the area surrounding the proposal into six landscape character zones, as outlined in Table 5-9.

Table 5-9: Landscape character zones

#	Landscape Character Zone	Description	Relevant to the revised proposal
1	General Holmes Drive/Joyce Drive Streetscape 	<ul style="list-style-type: none"> <li>Visually enclosed road corridor connecting Sydney Airport and the Port Botany Freight Rail Line</li> <li>Mature trees are located along the Sydney Airport side of Joyce Drive and a variety of commercial buildings and structures visible to motorists.</li> <li>Includes streetside plantings, billboards and grassed areas.</li> </ul>	The extended batter is located in this zone.
2	General Holmes Drive Corridor 	<ul style="list-style-type: none"> <li>Northern portion is visually enclosed by roadside trees.</li> <li>Views from the southern portion are more open and extend across the flat landform of Sydney Airport.</li> <li>A billboard and hedge obstruct long-distance views from this zone across Sydney Airport's runways.</li> </ul>	The VMS and relocated advertising sign are located in this zone.

3	<p>Landscape area east of General Holmes Drive</p> 	<ul style="list-style-type: none"> <li>• Highly disturbed landform, characterised by weed species and a concrete lined stormwater channel.</li> <li>• Visually enclosed by planted shrubs along the roadside and invasive weeds and shrubs.</li> <li>• Includes an area of wetland, a light industrial facility, residential buildings and an advertising structure.</li> </ul>	<p>The proposed compound area/office is located in this zone.</p>
4	<p>Coastal Sydney Freshwater Wetlands</p> 	<ul style="list-style-type: none"> <li>• A series of ponds including areas of open water surrounded by macrophyte plants.</li> <li>• In many places the wetlands are bordered by stands of native trees.</li> </ul>	<p>None</p>
5	<p>Urban development of Mascot and Botany</p> 	<ul style="list-style-type: none"> <li>• Botany Road is visually dominated by commercial and industrial buildings.</li> <li>• Between Botany Road and O’Riordan Street, urban development is mainly residential.</li> </ul>	<p>The relocation and construction of communications infrastructure. The realignment of an existing sewer main is located adjacent to Botany Road.</p>
6	<p>Sydney Airport</p> 	<ul style="list-style-type: none"> <li>• The northern portion of the airport is dominated by large-scale buildings and structures, with extensive paved areas for aircraft use.</li> <li>• The southern portion is open and flat due to extensive runway areas with grassed aprons.</li> <li>• A key component of the visual character of this area is the movement of large aircraft on the ground and in the air.</li> </ul>	<p>None</p>

### 5.6.2 Potential impacts

Compared to the determined proposal, the revised proposal would slightly alter the potential landscape and visual impacts of the proposal.

The utility relocation works within the existing pedestrian footpaths along Hardie Street and Botany Road would result in minor visual impacts through clearing of vegetation and open trenching earthworks. The utility services would be installed underground and the construction sites would be reinstated to as close as possible to their original state following the completion of construction. During construction, visual impacts would generally only be visible to users and residences of Hardie Street and Botany Road. The safeguards and management measures identified in Table 6-1 of the Submissions Report relating to the management of visual impacts and reinstatement of construction areas would be implemented.

The installation of the new VMS is to be located in the median of General Holmes Drive. The location is visible only by passing vehicles on General Holmes Drive and Southern Cross Drive.

The area is characterised by road infrastructure, with retaining walls used to elevate the ramps of Southern Cross Drive. The VMS will be placed in this location and would only be visible by vehicles northbound on General Holmes Drive.

The relocation of the advertising sign will also be along General Holmes Drive, where the environment is dominated by road and airport infrastructure. The sign would be visible to traffic southbound on General Holmes Drive. The closest sensitive receivers are located on Botany Road. Due to the intervening topography and vegetation, this sign would not be visible from those receivers.

Table 5-10 provides consideration of the relocation of the illuminated digital advertising sign against criteria listed under Schedule 1 of State Environmental Planning Policy No. 64 – Advertising and Signage (SEPP 64) for consideration by approval authorities when assessing development applications for advertising signs. SEPP 64 is discussed further in Section 3.3. It should be noted that the relocation of the advertising sign meets the definition of an exempt activity under Clause 33 of SEPP 64.

Table 5-10: SEPP 64 visual assessment criteria

SEPP 64 Schedule 1 assessment criteria	Response
<p><b>1. Character of the area</b></p> <ul style="list-style-type: none"> <li>Is the proposal compatible with the existing or desired future character of the area or locality in which it is proposed to be located?</li> <li>Is the proposal consistent with a particular theme for outdoor advertising in the area or locality?</li> </ul>	<ul style="list-style-type: none"> <li>The revised proposal will involve the relocation of an existing advertising sign in a major transport corridor adjacent to Sydney Airport. This environment contains a number of similar advertising signs and the revised proposal will not result in an additional sign being established. The revised proposal is therefore considered to be compatible with the existing and future character of the area.</li> </ul>
<p><b>2. Special areas</b></p> <ul style="list-style-type: none"> <li>Does the proposal detract from the amenity or visual quality of any environmentally sensitive areas, heritage areas, natural or other conservation areas, open space areas, waterways, rural landscapes or residential areas?</li> </ul>	<ul style="list-style-type: none"> <li>The relocated advertising sign would not be out of context with its surrounding environment, which consists of a busy transport corridor bounded by Sydney Airport to the west and the disturbed landscape to the east. A number of other advertising signs are located in this area and the relocated sign will not add to the existing number of these, or cause visual impacts to any visually sensitive areas.</li> </ul>
<p><b>3. Views and vistas</b></p> <ul style="list-style-type: none"> <li>Does the proposal obscure or compromise important views?</li> <li>Does the proposal dominate the skyline and reduce the quality of vistas?</li> <li>Does the proposal respect the viewing rights of other advertisers?</li> </ul>	<ul style="list-style-type: none"> <li>The relocated advertising sign is located on the eastern side of General Holmes Drive, adjacent to an unused disturbed area (refer to Landscape 3 in Table 5-9). The sign will not block views of this areas available to motorists using General Holmes Drive, or block any other advertising signs.</li> </ul>
<p><b>4. Streetscape, setting or landscape</b></p> <ul style="list-style-type: none"> <li>Is the scale, proportion and form of the proposal appropriate for the streetscape, setting or landscape?</li> <li>Does the proposal contribute to the visual interest of the streetscape, setting or landscape?</li> <li>Does the proposal reduce clutter by rationalising and simplifying existing advertising?</li> </ul>	<ul style="list-style-type: none"> <li>The street sign is of an appropriate scale for viewing by motorists travelling at speed on General Holmes Drive. It is positioned so that motorists will be able to see it for an extended period on a straight stretch of road without having to divert attention from the road in front of them.</li> <li>The relocated sign is not located close to any other advertising signs or other road signs and will not result in visual clutter in the area.</li> </ul>



SEPP 64 Schedule 1 assessment criteria	Response
<ul style="list-style-type: none"> <li>Does the proposal screen unsightliness?</li> <li>Does the proposal protrude above buildings, structures or tree canopies in the area or locality?</li> <li>Does the proposal require ongoing vegetation management?</li> </ul>	<ul style="list-style-type: none"> <li>The relocated sign will fit with the visual context of General Holmes Drive and will not require ongoing vegetation maintenance to be remain visible.</li> <li>The relocated sign will be higher than surrounding vegetation, but this will not be out of character as a number of other structures in the area already do this and surrounding vegetation does not form a consistent canopy.</li> </ul>
<p><b>5. Site and building</b></p> <ul style="list-style-type: none"> <li>Is the proposal compatible with the scale, proportion and other characteristics of the site or building, or both, on which the proposed signage is to be located?</li> <li>Does the proposal respect important features of the site or building, or both?</li> <li>Does the proposal show innovation and imagination in its relationship to the site or building, or both?</li> </ul>	<ul style="list-style-type: none"> <li>The relocated sign is compatible with the scale of other structures in adjacent areas, which are generally limited to major roadways and other signs.</li> <li>The relocated sign shows innovation in the form of technology as being a digital sign it can change images, allowing it to be updated and change according to future needs.</li> </ul>
<p><b>6. Associated devices and logos with advertisements and advertising structures</b></p> <ul style="list-style-type: none"> <li>Have any safety devices, platforms, lighting devices or logos been designed as an integral part of the signage or structure on which it is to be displayed?</li> </ul>	<ul style="list-style-type: none"> <li>The relocated sign will be illuminated, ensuring it remains visible at all hours.</li> </ul>
<p><b>7. Illumination</b></p> <ul style="list-style-type: none"> <li>Would illumination result in unacceptable glare?</li> <li>Would illumination affect safety for pedestrians, vehicles or aircraft?</li> <li>Would illumination detract from the amenity of any residence or other form of accommodation?</li> <li>Can the intensity of the illumination be adjusted, if necessary?</li> <li>Is the illumination subject to a curfew?</li> </ul>	<ul style="list-style-type: none"> <li>The sign would be illuminated to ensure its visibility to cars travelling south on General Holmes Drive. The sign is unlikely to be visible to any residences, as the nearest residences are located over 500 metres to the east and are blocked by intervening structures and topography.</li> <li>The illumination of the sign would be unlikely to be visible to planes using Sydney Airport as the sign faces north and aircraft using that part of the site travel in an east-west direction.</li> </ul>
<p><b>8. Safety</b></p> <ul style="list-style-type: none"> <li>Would the proposal reduce the safety for any public road?</li> <li>Would the proposal reduce the safety for pedestrians or bicyclists?</li> <li>Would the proposal reduce the safety for pedestrians, particularly children, by obscuring sightlines from public areas?</li> </ul>	<ul style="list-style-type: none"> <li>The relocated sign would be installed in a roadside verge area, outside the road pavement. There are no footpaths or other structures located near the sign and the area it will stand in is not used.</li> <li>The sign is therefore considered unlikely to result in any safety risks.</li> </ul>

Installation of a new VMS will result in a visually significant structure being established on General Holmes Drive, although the VMS would not be out of character within the area, in which a number of similar signs are also located. The installation of the VMS will benefit users of General Holmes Drive (northbound) and therefore, is not considered to pose a visual impact.

No serious or irreversible environmental damage is predicted to occur as a result of the revised proposal with the implementation of environmental safeguards and management measures.

### 5.6.3 Safeguards and management measures

The safeguards and management measures identified in Table 5-11 have been based on those provided in the Submissions Report. No additional safeguards and management measures are required for landscape character and visual amenity as a result of the revised proposal.

Table 5-11: Landscape character and visual amenity safeguards and management measures

ID	Impact	Environmental safeguards	Responsibility	Timing
LC-1	General	The detailed design will incorporate the landscape and urban design strategy and objectives described in Section 3 of the Landscape Character and Visual Impact Assessment (Corkery Consulting + Studio Colin Polwarth, 2014). The landscape and urban design strategy for detailed design will be prepared in consultation with SACL. Roads and Maritime will also liaise with Botany Bay City Council and owners of the Beckenham Memorial Church regarding landscaping on their property.	Roads and Maritime	Detailed design
LC-2	Landscape design	During detailed design, the landscape design principles and streetscape (planting) will be reviewed to ensure that they are consistent with the outcomes of the biodiversity assessment. This will be done in consultation with Roads and Maritime environment and urban design staff.	Roads and Maritime	Detailed design
LC-3	Visual impacts of construction activities	To reduce the potential visual impact of construction activities: <ul style="list-style-type: none"> <li>• Work sites will be left tidy at the end of each work day</li> <li>• Where appropriate, fencing with material attached (eg shade cloth) will be provided around the construction compound to screen views from adjoining properties</li> <li>• Lighting for night-time work will comply with relevant Australian Standards, including AS4282-1997 (Control of the obtrusive effects of outdoor lighting).</li> </ul>	Construction contractor	Construction
LC-4	Visual impacts of compound, stockpile and storage areas	Following construction, temporary compound, stockpile and storage areas will be removed, cleared of all rubbish and materials, and rehabilitated.	Construction contractor	Post-construction
LC-5	Landscape and urban design strategy	A detailed urban design and landscape strategy will be prepared as part of the detailed design of the proposal and will consider: <ul style="list-style-type: none"> <li>• The impact of removing existing landscaping and its current amenity and value</li> <li>• Airport operational issues in the selection of replacement vegetation, roadside furniture and other urban design elements.</li> </ul> The landscape and urban design strategy will be made available to SACL for comment when it is complete. Roads and Maritime will continue to consult with SACL regarding landscaping in the area between General Holmes Drive and the Port Botany Freight Rail Line.	Roads and Maritime	Detailed design

## 6 Environmental management

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This chapter describes how the proposal will be managed to reduce potential environmental impacts throughout detailed design, construction and operation. A framework for managing the potential impacts is provided with reference to environmental management plans and relevant Roads and Maritime QA specifications. A summary of site-specific environmental safeguards is provided as detailed in Chapter 8 of the Project REF and the licence and/or approval requirements required prior to construction are also listed.

### 6.1 Environmental management plans (or system)

As part of the determined REF, a number of safeguards and management measures were detailed to manage the identified environmental issues that would as a result of the WestConnex Enabling Works – Airport East Precinct REF. These safeguards and management measures formed a framework for managing the identified potential impacts with reference to environmental management plans and relevant Roads and Maritime QA specifications.

The environmental safeguards and management measures for the Airport East Precinct project are presented in Table 6-1 of the Submissions Report.

The Project Environmental Management Plan (PEMP) and the Contractors Environmental Management Plan (CEMP) will be prepared to describe safeguards and management measures identified in both the determined REF and this REF addendum. These plans will provide a framework for establishing how these measures will be implemented and who would be responsible for their implementation.

The plans will be prepared prior to construction of the revised proposal and must be reviewed and certified by the Roads and Maritime Environmental Officer, Greater Sydney Region, before commencement of any on-site works. The CEMP will be a working document, subject to ongoing change and updated as necessary to respond to specific requirements.

### 6.2 Summary of safeguards and management measures

The existing environmental safeguards and management measures presented in the submissions report are considered appropriate for minimising any potential adverse impacts arising from the revised proposal and would continue to apply.

However, this Addendum REF has found a number of additional measures, or changes to existing measures are required (refer to Table 6-1). The existing submissions report safeguards (refer to Table 6-1 of the submissions report) and the additional safeguards identified below are considered appropriate for minimising any potential adverse impacts arising from the revised proposal. New measures are indicated in **bold**.

Table 6-1: Summary of site specific environmental safeguards and management measures including any additional safeguards

ID	Impact	Environmental safeguards	Responsibility	Timing
<b>General</b>				
1	General	All environmental safeguards will be incorporated in the following documents: <ul style="list-style-type: none"> <li>• Project Environmental Management Plan</li> <li>• Detailed design</li> <li>• Contract specifications for the proposal</li> <li>• Contractor's Environmental Management Plan.</li> </ul>	Project manager	Pre-construction
2	General	A risk assessment will be carried out in accordance with the Roads and Maritime Audit Pack and Operations and Services Directorate (OSD) risk assessment procedures to determine an audit and inspection program for the project. The recommendations of the risk assessment will be implemented. A review of the risk assessment will be carried out after the initial audit or inspection to evaluate if the level of risk chosen for the project is appropriate. Any work for the proposal and covered by this REF may be subject to environmental audit(s) and/or inspection(s) at any time during their duration.	Project manager and regional environmental staff	Pre-construction  After first audit
3	General	The environmental contract specification G36 – Environmental Protection (Management System) will be forwarded to the Roads and Maritime Senior Environmental Officer for review at least 10 working days before the tender stage. A contractual hold point will be maintained until the CEMP is reviewed by the Roads and Maritime Senior Environmental Officer.	Project manager	Pre-construction
4	General	The Roads and Maritime Services Project Manager will notify the Roads and Maritime Services Environmental Officer, Sydney Region, at least 5 days before work begins.	Project manager	Pre-construction
5	General	All businesses and residences likely to be affected by the proposal will be notified at least 5 working days before the proposed activities begin.	Project manager	Pre-construction
6	General	The contractor will provide environmental awareness training to all field personnel and subcontractors.	Contractor	Pre-construction and during construction as required.

ID	Impact	Environmental safeguards	Responsibility	Timing
<b>Transport</b>				
TR-1	General traffic impacts	<p>A Traffic Management Plan (TMP) will be prepared as part of the CEMP. The TMP will be prepared in accordance with Roads and Maritime's Traffic Control at Work Sites (RTA, 2010), Australian Standard AS1742 and the worksite manual Roads and Maritime Specification G10. The TMP will outline:</p> <ul style="list-style-type: none"> <li>• Traffic controls to regulate traffic movements and minimising traffic switching</li> <li>• Coordination of: <ul style="list-style-type: none"> <li>• General traffic flows at major construction work areas, such as the tie-ins for the Wentworth Avenue extension</li> <li>• Delivery of construction materials and movement of construction plant and equipment to and from the site to limit traffic delays</li> <li>• Other Roads and Maritime roadwork and any work by other agencies that affect traffic flow</li> <li>• Schedules, abnormal loads and other specific aspects of transport with transport operators</li> <li>• Consultation with local councils to identify, evaluate and document alternative routes</li> <li>• Incident response with emergency services.</li> </ul> </li> <li>• Maintenance of continuous, safe and efficient movement of traffic for both the public and construction crew</li> <li>• Haulage routes and access arrangements to minimise impacts on local routes</li> <li>• Construction traffic zones around work areas</li> <li>• Access provisions for local roads and properties</li> <li>• Maintenance of pedestrian access</li> <li>• Provision for appropriate warning and signposting</li> <li>• Requirements and methods to consult with and inform the local community of impacts on the local road network and traffic, as well as impacts on individual property access.</li> <li>• A Vehicle Movement Plan will be prepared as part of the overall TMP. The Vehicle Movement Plan will assess construction-related heavy vehicle movements per shift into and out of the construction sites, and provide guidelines for limiting impacts on traffic using the road network.</li> </ul>	Construction contractor	<p>Detailed design</p> <p>Pre-construction</p> <p>Pre-construction</p>

ID	Impact	Environmental safeguards	Responsibility	Timing
TR-2	Impact to traffic from construction site access	All access points to the construction site and site roads will: <ul style="list-style-type: none"> <li>• Have safe intersection sight distance</li> <li>• Accommodate the turning movements of the largest heavy vehicles</li> <li>• Provide painted median treatments for vehicle delineation</li> <li>• Provide suitable intersection layouts.</li> </ul>	Construction contractor	Construction
TR-3	Impact on access to bus stops during construction	Local bus operators will be consulted during detailed design regarding location and provision of access to bus stops during construction.	Roads and Maritime	Detailed design
TR-4	Building rail bridges during scheduled rail possession	Roads and Maritime will consult with Port Botany and Australian Rail Track Corporation (ARTC) during detailed design to confirm that the proposal will avoid disturbance and impact on operations during construction where practicable.	Roads and Maritime	Detailed design
TR-5	Impact on access for emergency services	Consultation with emergency service authorities will be carried out during development of the detailed design including with NSW Fire Rescue.	Roads and Maritime	Detailed design
TR-6	Impact on pedestrian and cyclist access during construction	<ul style="list-style-type: none"> <li>• Pedestrian and cyclist access will be maintained throughout construction.</li> <li>• Appropriate signage communicating diversion routes to pedestrians and cyclists will be displayed during construction.</li> <li>• Advance notification will be provided of any construction works that affect pedestrians and cyclists.</li> </ul>	Construction contractor	Construction
TR-7	Impact on property access	Vehicular property access will be maintained including at places of worship and to all commercial premises. Should property access be affected by the proposal, residents will be consulted before any work begins.	Construction contractor	Construction
TR-8	Impact on access to bus stops	The community will be provided with ongoing updates on locations and access to bus stops during the construction period to ensure that disruption is minimised.	Construction contractor / Roads and Maritime	Construction

ID	Impact	Environmental safeguards	Responsibility	Timing
TR-9	Alternate linemarking strategies	Roads and Maritime will consider alternate linemarking strategies on the Southern Cross Road off-ramp (westbound).	Roads and Maritime	Detailed design
TR-10	Dedicated left turn lane from Southern Cross Drive onto Botany Road	Roads and Maritime will confirm the viability of upgrading the left turn slip lane on Southern Cross Drive to a dedicated left turn lane at the intersection with Botany Road (southbound).	Roads and Maritime	Detailed design
TR-11	Optimisation of the cycleway	Roads and Maritime will continue to investigate optimising the cycleway within the proposal area, including reducing crossings where feasible.	Roads and Maritime	Detailed design
TR-12	Access to Port Botany Freight Line easement from the General Holmes Drive cul-de-sac	Roads and Maritime will continue to consult with ARTC regarding the provision of access to the Port Botany Freight Line easement from the General Holmes Drive cul-de-sac.	Roads and Maritime	Detailed design
TR-13	Austrroads Guide to Road Design (2009)	Cyclist facilities for the proposal will be designed with reference to the Austrroads Guide to Road Design (2009)	Roads and Maritime	Detailed design
<b>Airport operations</b>				
AO-1	General impacts on airport operations	Roads and Maritime will continue to consult with SACL and Air Services Australia before and during construction of the project regarding any potential impacts on airport operations.	Roads and Maritime	Detailed design
AO-2	Construction impacts on airport operations	The CEMP will include an Airport Operations Management Plan to ensure that airport operations are not affected by construction of the proposal. This plan will include (as a minimum): <ul style="list-style-type: none"> <li>• Maps indicating areas of permitted disturbance within Sydney Airport land</li> <li>• Communication protocol with Sydney Airport and representatives, outlining frequency and content of updates</li> </ul>	Roads and Maritime/ Construction contractor	Pre-construction

ID	Impact	Environmental safeguards	Responsibility	Timing
		<ul style="list-style-type: none"> <li>Complaints procedure.</li> </ul>		
AO-3	Integration of the proposal with other projects	Roads and Maritime will consider the integration of the proposal with the T2/T3 Ground Access Solution and Hotel Major Development Plan and the Airport North precinct project (formerly the Airport North Precinct– WestConnex enabling works project). Roads and Maritime will continue to consult with SACL to ensure the transition between the Airport North precinct and the T2/T3 Ground Access Solution and Hotel Major Development Plan is appropriate.	Roads and Maritime	Detailed design
<b>Noise and vibration</b>				
NV-1	Noise and vibration impacts on sensitive receivers	During the detailed design stage of the proposal, further investigations of potential noise impacts and all feasible and reasonable mitigation options will be carried out for affected receivers in accordance with the Road Noise Policy (DECCW 2011) and Roads and Maritime's Environmental Noise Management Manual Practice Note 4 (RTA, 2001).	Roads and Maritime	Detailed design
NV-2	Noise and vibration impacts on sensitive receivers during construction	<p>A Construction Noise and Vibration Management Plan (CNVMP) will be prepared as part of the CEMP. The CNVMP will include (as a minimum):</p> <ul style="list-style-type: none"> <li>A map indicating the locations of sensitive receivers</li> <li>A quantitative noise assessment in accordance with the EPA Interim Construction Noise Guidelines (DECC, 2009)</li> <li>Management measures to minimise potential noise impacts</li> <li>A risk assessment to determine construction activities likely to affect sensitive receivers</li> <li>Mitigation measures to avoid noise and vibration impacts during construction activities</li> <li>A process for assessing the performance of mitigation measures</li> <li>A process for documenting and resolving issues and complaints</li> <li>A construction staging program incorporating noise and vibration monitoring for sensitive receivers</li> <li>Identification in toolbox talks where noise and vibration management is required.</li> </ul>	Construction contractor	Pre-construction
NV-3	General vibration during construction	Building condition surveys will be carried out for buildings identified in the CNVMP. A copy of the report will be sent to the landholder.	Construction contractor	Pre-construction



ID	Impact	Environmental safeguards	Responsibility	Timing
NV-4	General vibration during construction	<p>A vibration assessment will be prepared and included in the NVMP. The vibration assessment will include (as a minimum):</p> <ul style="list-style-type: none"> <li>• Identification of potentially affected properties/receivers</li> <li>• A risk assessment to determine the potential for discrete work activities to affect receivers</li> <li>• A map indicating the locations considered likely to be impacted and those requiring building condition surveys</li> <li>• A monitoring program</li> <li>• A process for assessing mitigation measures</li> <li>• A process for resolving issues and conflicts, including additional noise and vibration monitoring where required.</li> </ul>	Construction contractor	Pre-construction
NV-5	Noise impacts on sensitive receivers from operation of stockpile and compound sites	Construction compound layout will be arranged so that primary noise sources are at a maximum distance from sensitive receivers (primarily residential receivers), with solid structures (sheds and containers) placed between sensitive receivers and noise sources (and as close to the noise sources as is practical).	Construction contractor	Pre-construction
NV-6	Noise impacts from construction machinery	Compressors, generators, pumps and any other fixed plant will not be located near residences where possible	Construction contractor	Pre-construction
NV-7	Noise and vibration induction	An environmental induction program will be developed to include specific noise and vibration awareness training.	Construction contractor	Pre-construction
NV-8	Construction noise impacts on Airport buildings	Detailed design will further investigate construction noise impacts, including impacts on sensitive receivers, Airport buildings, and current hotel sites. Reasonable and feasible mitigation measures will be identified.	Roads and Maritime	Detailed design
NV-9	Noise mitigation	<p>Roads and Maritime will consider noise mitigation at the church on Botany Road and a residence of Hardie Street, during detailed design.</p> <p>In addition, receivers in the proposal area which currently experience exceedances of the NSW Road Noise Policy (RNP) (DECCW, 2011) will be considered for noise mitigation in</p>	Roads and Maritime	Detailed design

ID	Impact	Environmental safeguards	Responsibility	Timing
		accordance with the provisions of the Noise Mitigation Guidelines (Roads and Maritime, 2015a). Properties which qualify for noise mitigation treatment will be contacted by Roads and Maritime during detailed design.		
NV-10	General vibration during construction	Where construction work near the Breckenham Memorial Church is within the minimum safe working distances (structural damage) for vibration intensive plant, vibration testing of equipment on site would be carried out prior to their commencement of site operation to determine acceptable buffer distances to the building. If this buffer distance cannot be complied with, measures such as using smaller equipment or (if required) time restrictions for the most excessive vibration activities	Construction contractor	Pre-construction
<b>Non-Aboriginal heritage</b>				
NA-1	Landscaping to improve visual amenity of Beckenham Memorial Church	Landscaping surrounding the Beckenham Memorial Church will be investigated during detailed design in consultation with church owners and heritage officers from Botany Bay City Council.	Roads and Maritime	Detailed design
NA-2	Removal of heritage relics	An exception under Section 139 of the Heritage Act will be obtained for impacts to identified relics within the proposal area, if required.	Roads and Maritime	Pre-construction
NA-3	Impact to heritage items	A condition survey will be carried out before the start of work by a qualified contractor and a building condition report prepared for nearby heritage items which may experience indirect impact from construction, including Beckenham Memorial Church.	Roads and Maritime	Pre-construction
NA-4	General impact to heritage	A Non-Aboriginal Heritage Management Plan will be prepared and included in the CEMP. The plan will include but not limited to: <ul style="list-style-type: none"> <li>• A map identifying locations of heritage items (including curtilages) which are to be protected and those which are to be destroyed</li> <li>• Identification of potential impacts to heritage items due to construction</li> <li>• Implementation of mitigation measures to protect identified heritage items</li> <li>• A stop works procedure in the event of actual or suspected potential harm to a heritage item</li> <li>• Requirement to comply with Roads and Maritime Standard Management Procedure:</li> </ul>	Roads and Maritime	Pre-construction

ID	Impact	Environmental safeguards	Responsibility	Timing
		Unexpected Archaeological Finds (2012).		
NA-5	Disturbance, removal or demolition of non-Aboriginal heritage items	<p>A photographic archival recording will be made of the following items before any disturbance or demolition, in accordance with OEH guidelines:</p> <ul style="list-style-type: none"> <li>• House (house and allotment), 1289 Botany Road</li> <li>• House (house and allotment), 1291 Botany Road</li> <li>• Beckenham Memorial Church School Hall (hall and allotment), 1293 Botany Road</li> <li>• Beckenham Memorial Church (church frontage only), 1295 Botany Road</li> <li>• Mascot (Botany Road) Underpass (bridge and its approaches)</li> <li>• Sandstone kerb along Botany Road near Wentworth Avenue</li> <li>• Botany Road tram tracks.</li> </ul>	Roads and Maritime	Pre-construction
NA-6	Non-Aboriginal heritage awareness training	Non-Aboriginal heritage awareness training will be provided for all contractors and personnel before the start of construction to make aware of retained heritage items within the vicinity of the works and required management measures and to ensure understanding of the procedure required to be carried out in the event of discovery of non-Aboriginal heritage materials, features or deposits, or the discovery of human remains.	Construction contractor	Pre-construction
NA-7	Protection of non-Aboriginal heritage items from inadvertent damage	<p>The following items will be temporarily fenced and appropriate signage displayed and/or noted on a plan as a heritage item to avoid indirect impacts or encroachment, where necessary:</p> <ul style="list-style-type: none"> <li>• Mascot (Botany Road) Underbridge</li> <li>• Sandstone kerb and alignment pin at Botany Road, near McBurney Avenue</li> <li>• Botany Water Reserve</li> <li>• Mascot (O’Riordan Street) Underbridge</li> <li>• Electricity Substation 163, at 42 Wentworth Avenue</li> <li>• Commercial Building Group, 1209–1223 Botany Road</li> <li>• Single Storey Terrace Group, 1239–1245 Botany Road</li> <li>• House, 71 Frogmore Street</li> <li>• House, 87 Hardie Street</li> <li>• House, 90 Johnson Street.</li> </ul>	Roads and Maritime Construction contractor	Pre-construction Construction
NA-8	Discovery of non-Aboriginal heritage features or	If at any time during construction of the project, non-Aboriginal heritage materials, features and/or deposits are found and are not covered by an issued approval (generally s139 excavation permit, exception or s60 approval or exemption) then the Roads and Maritime Standard Management Procedure: Unexpected Heritage Items (Roads and Maritime,	Construction contractor	Construction

ID	Impact	Environmental safeguards	Responsibility	Timing
	deposits	2015b) will be followed.		
NA-9	Discovery of tram tracks and additional road fabric	A photographic archival recording will be made of additional road fabric or other unanticipated finds if found during construction. This will be carried out in accordance with Roads and Maritime's Standard Management Procedure: Unexpected Heritage Items (Roads and Maritime, 2015b).	Construction contractor	Construction
NA-10	Rebuilding of Beckenham Memorial Church fence	The front boundary wall of Beckenham Memorial Church will be rebuilt in the same style and with similar materials as the existing wall, in consultation with church owners and heritage officers from Botany Bay City Council.	Construction contractor	Construction
<b>Biodiversity</b>				
BI-1	Potential impact to Coastal Freshwater Wetland TEC during construction	<ul style="list-style-type: none"> <li>A buffer zone of 5 metres will be established around the wetland to avoid physical impact</li> <li>The area within the wetland buffer area will be rehabilitated as part of the proposal area, including weed control, landscaping and site rehabilitation works with locally indigenous species</li> <li>Relocate woody debris recovered from the construction footprint to the wetland buffer to provide shelter sites for the Green and Golden Bell Frog.</li> </ul>	Construction contractor	Pre-construction
BI-2	Vegetation and habitat removal	<p>Pre-clearance surveys will be carried out by an experienced ecologist to:</p> <ul style="list-style-type: none"> <li>Identify and mark fauna habitat features and roosting sites (if any exist) to be protected during construction</li> <li>Confirm the presence of the Green and Golden Bell Frog and the level of management commitment required during construction</li> <li>Identify nearby habitats within the proposal area that are suitable for the release of fauna that may be encountered during the pre-clearing process or habitat removal</li> <li>Select appropriate locations for construction access tracks, ancillary facilities and construction areas in previously cleared and disturbed areas, wherever possible.</li> </ul>	Construction contractor	Pre-construction
BI-3	Vegetation and habitat removal	<p>A Biodiversity Management Plan (BMP) will be included in the Construction Environmental Management Plan (CEMP). It will include:</p> <ul style="list-style-type: none"> <li>Procedures for a site walk with appropriate site personnel including Roads and Maritime representatives to confirm clearing boundaries and sensitive locations before work</li> </ul>	Construction contractor	Pre-construction

ID	Impact	Environmental safeguards	Responsibility	Timing
		<p>begins</p> <ul style="list-style-type: none"> <li>• The exclusion zones to be installed before clearing, to avoid damage to native vegetation and fauna habitats and prevent the distribution of pests, weeds and disease. Temporary fencing, flagging tape or other appropriate method will be installed to indicate the limits of the exclusion fencing. The location of exclusion fencing will be identified on plans in the CEMP and the function and importance of the exclusion zones communicated to construction personnel</li> <li>• Maps showing vegetation clearing boundaries, identifying drainage areas that run towards the Coastal Freshwater Wetland TEC</li> <li>• A procedure to manage stormwater in the proposal to ensure that hydrology of the Coastal Freshwater Wetland TEC is maintained, including periodic drying to prevent colonisation by <i>Gambusia</i> (<i>Gambusia holbrooki</i>)</li> <li>• The establishment of a 5 metre buffer area/ exclusion zone around the Freshwater Wetland TEC to avoid construction impacts on the TEC, as discussed in BI-1</li> <li>• A detailed clearing process in accordance with the Roads and Maritime Biodiversity Guidelines (RTA, 2011) including requirements of Guide 1, 2 4 and 9</li> <li>• An unexpected threatened species finds procedure, as outlined in the Biodiversity Guidelines (RTA, 2011)</li> <li>• Specific details for the re-establishment and rehabilitation of native vegetation on cut faces, batters, the wetland buffer and other areas disturbed during construction</li> <li>• Guidance for the relocation of woody debris from the construction footprint to the wetland buffer to provide shelter for the Green and Golden Bell Frog, if required.</li> </ul>		
BI-4	Spread of weeds	<p>A weed management plan will be developed as part of the BMP and incorporated into the CEMP. The plan will detail:</p> <ul style="list-style-type: none"> <li>• Weed management priorities and objectives</li> <li>• Identification of weeds on the construction site</li> <li>• Sensitive environmental areas within and next to the proposal area, such as the wetland to the south of the Wentworth Avenue underpass</li> <li>• Location of weed infested areas</li> <li>• Mechanical weed control methods such as slashing or mowing, as well as a range of herbicides to avoid the development of herbicide resistance</li> <li>• Procedures to control the use of pesticides, particularly near waterways and immediately before or during wet weather</li> <li>• Measures to prevent the spread of weeds</li> <li>• Procedures for the appropriate disposal of weed-infested materials and soils</li> </ul>	Construction contractor	Pre-construction

ID	Impact	Environmental safeguards	Responsibility	Timing
		<ul style="list-style-type: none"> <li>Monitoring program to measure the success of weed management</li> <li>Communication protocol with Botany Bay City Council noxious weed representative.</li> </ul>		
BI-5	Introduction or spread of pests and disease	<p>Measures to confirm the presence of pathogens and disease-causing agents will be carried out before construction. Should pathogens or disease-causing agents be found, measures will be implemented to prevent their introduction and/or spread to the proposal area. These measures are provided in the Biodiversity Guidelines and will include, where appropriate:</p> <ul style="list-style-type: none"> <li>The provision of vehicle and boot wash-down facilities to ensure vehicles and footwear are free of soil before entering or exiting the site</li> <li>Procedures to ensure that the risk of spreading pathogens and the mitigation measures required on site are regularly communicated to staff and contractors during inductions and toolbox talks</li> <li>The programming of construction activities so they move from uninfected areas to any known infected areas</li> <li>The restriction of vehicles to designated roadsides and parking areas</li> <li>Specific measures for treating <i>Phytophthora cinnamomi</i> and <i>chytrid fungus</i>.</li> </ul>	Construction contractor	Pre-construction, construction
<b>Hydrology</b>				
HY-1	Flood impacts on adjacent properties due to altered flood behaviour	Further flood modelling, including a detailed afflux assessment, will be carried out during detailed design to confirm impacts on surrounding land uses.	Roads and Maritime/ Detailed design contractor	Detailed design
HY-2	Licensing for dewatering	The NSW Office of Water will be consulted during detailed design to confirm licensing requirements for the various stages of the proposal.	Roads and Maritime	Detailed design
HY-3	Impact to groundwater levels	Roads and Maritime, in consultation with NSW Office of Water, will carry out a bore census to confirm the status of the groundwater works identified as part of the groundwater assessment.	Roads and Maritime	Detailed design
HY-4	Dewatering	A procedure will be prepared for any dewatering activities to be included as part of the SWMP. The dewatering procedure is to comply with Roads and Maritime Technical Guideline – Environmental Management of Construction Site Dewatering. The procedure will include at a minimum:	Roads and Maritime	Pre-construction

ID	Impact	Environmental safeguards	Responsibility	Timing
		<ul style="list-style-type: none"> <li>• A map showing areas of the proposal that will require dewatering</li> <li>• Detailed description and justification of all selected dewatering methods</li> <li>• Description of onsite water reuse requirements</li> <li>• A map showing proposed discharge locations for any offsite discharge</li> <li>• Design requirements for each offsite discharge location to prevent erosion at the discharge location or in the receiving environment</li> <li>• Water quality objectives relevant to the type of dewatering activity</li> <li>• Description of the water quality treatment techniques to be used</li> <li>• Water sampling and testing regime to validate water quality prior to and (if required) during dewatering, including to establish appropriate waste disposal methods</li> <li>• Description of the method for dewatering</li> <li>• Requirements to manage encounters with groundwater or contaminated water.</li> </ul>		
HY-5	Flooding of construction site	<p>A contingency plan will be prepared to manage a potential flood event during construction and will outline:</p> <ul style="list-style-type: none"> <li>• Procedure for communication and notification associated with contingency plan</li> <li>• Procedures to reduce risk including removal of all plant/equipment, stabilising exposed areas and maintaining existing flood flow paths through the site</li> </ul>	Roads and Maritime	Pre-construction
HY-6	Impact to groundwater levels and quality	<p>A Groundwater Monitoring and Management Plan will be prepared to accompany the Soil and Water Management Plan for the proposal. It will include:</p> <ul style="list-style-type: none"> <li>• Measures to manage groundwater during construction</li> <li>• Location of piezometers</li> <li>• Monitoring and sampling frequency for groundwater levels and groundwater quality</li> <li>• Evaluate any drawdown during construction</li> <li>• Reporting frequency</li> <li>• Timing of activities associated with monitoring. For instance, monitoring of flow, level and quality will continue for 12 months after the project is complete.</li> </ul>	Construction contractor	Construction
HY-7	Higher than expected inflow volumes	<p>The NSW Office of Water will be advised if the expected inflow volume is observed, or deemed likely to exceed 3 ML/y. Measures to rectify drawdown may include installation of a second, outer containment structure, or reinjection, down-gradient on the other side of containment.</p>	Construction contractor/ Roads and Maritime	Construction
HY-8	Operational impact on	<p>The capacity of the Sydney Airport detention basin will be further investigated in detailed design.</p>	Roads and Maritime	Detailed design

ID	Impact	Environmental safeguards	Responsibility	Timing
	capacity of Sydney Airport detention basin			
HY-9	Impacts on groundwater	<p>An assessment will be carried out to confirm the potential groundwater impacts due to the proposed option/s chosen to manage groundwater for the new underpass. The following will be considered for the assessment:</p> <ul style="list-style-type: none"> <li>• The potential impacts due to the proposal on the groundwater level.</li> <li>• The potential impacts due to the proposal on Mill Ponds</li> <li>• Management methods of groundwater during construction</li> <li>• Management methods of groundwater during operation.</li> </ul>	Roads and Maritime	Detailed design
HY-10	Groundwater Management and Monitoring Plan	The Groundwater Management and Monitoring Plan will be made available to SACL. Detailed design will investigate groundwater management and groundwater monitoring for the proposal area and any indirectly affected areas. The groundwater monitoring strategy will also provide detail about monitoring before and after construction within the vicinity of the Wentworth Avenue underpass.	Roads and Maritime	Detailed design
HY-11	Hydrology	Roads and Maritime will carry out further hydrology investigations as part of the detailed design. These investigations will consider in more detail surface water flows within the proposal area, as well as drainage conditions upstream of the Ascot Drain.	Roads and Maritime	Detailed design
<b>Landscape character and visual amenity</b>				
LC-1	General	The detailed design will incorporate the landscape and urban design strategy and objectives described in Section 3 of the Landscape Character and Visual Impact Assessment (Corkery Consulting + Studio Colin Polwarth, 2014). The landscape and urban design strategy for detailed design will be prepared in consultation with SACL. Roads and Maritime will also liaise with Botany Bay City Council and owners of the Beckenham Memorial Church regarding landscaping on their property.	Roads and Maritime	Detailed design
LC-2	Landscape design	During detailed design, the landscape design principles and streetscape (planting) will be reviewed to ensure that they are consistent with the outcomes of the biodiversity assessment. This will be done in consultation with Roads and Maritime environment and urban design staff.	Roads and Maritime	Detailed design
LC-3	Visual impacts	To reduce the potential visual impact of construction activities:	Construction	Construction



ID	Impact	Environmental safeguards	Responsibility	Timing
	of construction activities	<ul style="list-style-type: none"> <li>Work sites will be left tidy at the end of each work day</li> <li>Where appropriate, fencing with material attached (eg shade cloth) will be provided around the construction compound to screen views from adjoining properties</li> <li>Lighting for night-time work will comply with relevant Australian Standards, including AS4282-1997 (Control of the obtrusive effects of outdoor lighting).</li> </ul>	contractor	
LC-4	Visual impacts of compound, stockpile and storage areas	Following construction, temporary compound, stockpile and storage areas will be removed, cleared of all rubbish and materials, and rehabilitated.	Construction contractor	Post-construction
LC-5	Landscape and urban design strategy	<p>A detailed urban design and landscape strategy will be prepared as part of the detailed design of the proposal and will consider:</p> <ul style="list-style-type: none"> <li>The impact of removing existing landscaping and its current amenity and value</li> <li>Airport operational issues in the selection of replacement vegetation, roadside furniture and other urban design elements.</li> <li>The landscape and urban design strategy will be made available to SACL for comment when it is complete. Roads and Maritime will continue to consult with SACL regarding landscaping in the area between General Holmes Drive and the Port Botany Freight Rail Line.</li> </ul>	Roads and Maritime	Detailed design
<b>Topography, geology, soils and water quality</b>				
SWQ- 1	Pollution as a result of sediment entering waterways during construction and operation	<p>Water management controls and an associated maintenance and inspection program will be investigated during detailed design in accordance with the water quality control strategy for the proposal, with specific focus on the Wentworth Avenue underpass. During detailed design, the following will be confirmed:</p> <ul style="list-style-type: none"> <li>Requirement for water quality measures</li> <li>Location and size of water quality measures</li> <li>Capacity for spills in the sediment basin design volume.</li> </ul>	Design contractor	Detailed design
SWQ- 2	Acid sulphate soils	<p>During detailed design, an Acid Sulfate Soil Management Plan will be prepared. The plan will include as a minimum:</p> <ul style="list-style-type: none"> <li>A summary of the available ASS information relevant to the proposal area</li> <li>Confirm the process for identification of ASS/PASS throughout construction</li> </ul>	Design contractor	Detailed design

ID	Impact	Environmental safeguards	Responsibility	Timing
		<ul style="list-style-type: none"> <li>• Identify areas where ASS/PASS are expected during project activities</li> <li>• Indicate the management measures to be implemented if ASS/PASS is encountered during dewatering</li> <li>• Indicate the management measures to be implemented if ASS/PASS is excavated during piling activities</li> <li>• Outline the monitoring requirements for ASS/PASS to confirm the surrounding area is being protected</li> <li>• Confirm the treatment and disposal requirements for any ASS/PASS encountered</li> <li>• Detail the reporting requirements.</li> </ul>		
SWQ- 3	Soil and water quality	<p>A Soil and Water Management Plan (SWMP) will be prepared as part of the CEMP in accordance with the requirements of RMS contract specification G38 prior to the commencement of construction. The SWMP will also address the following:</p> <ul style="list-style-type: none"> <li>• Roads and Maritime Code of Practice for Water Management, the Roads and Maritime Erosion and Sedimentation Procedure</li> <li>• The NSW Soils and Construction – Managing Urban Stormwater Volume 1 “the Blue Book” (Landcom, 2004) and Volume 2 (DECC, 2008)</li> <li>• Roads and Maritime Technical Guideline: Temporary Stormwater Drainage for Road Construction, 2011</li> <li>• Roads and Maritime Technical Guideline: Environmental Management of Construction Site Dewatering, 2011.</li> </ul>	Roads and Maritime	Pre-construction
SWQ- 4	Soil and water quality	<p>The SWMP will detail the following as a minimum:</p> <ul style="list-style-type: none"> <li>• Identification of catchment and sub-catchment areas, high risk areas and sensitive areas</li> <li>• Sizing of each of the above areas and catchment</li> <li>• The likely volume of run-off from each road sub-catchment</li> <li>• Direction of flow of on-site and off-site water</li> <li>• Separation of on-site and off-site water</li> <li>• The direction of run-off and drainage points during each stage of construction</li> <li>• The locations and sizing of sediment traps such as sump or basin as well as associated drainage</li> <li>• Dewatering plan which includes process for monitoring, flocculating and dewatering water from site (ie sediment basin and sumps)</li> <li>• Identification of areas of PASS that may be encountered during the dewatering work and mitigation measures required if encountered</li> </ul>	Roads and Maritime	Pre-construction

ID	Impact	Environmental safeguards	Responsibility	Timing
		<ul style="list-style-type: none"> <li>The staging plans, location, sizing and details of creek alignment and realignment controls for scour protection and bank and bed stabilisation including those used during construction and long term.</li> <li>A mapped plan identifying the above</li> <li>Include progressive site specific Erosion and Sedimentation Control Plans (ESCPs). These plans are to be updated at least fortnightly</li> <li>A process to routinely monitor the BOM weather forecast</li> <li>Contingency for any acid sulphate soils or salinity found during construction</li> <li>Preparation of a wet weather (rain event) plan which includes a process for monitoring potential wet weather and identification of controls to be implemented in the event of wet weather. These controls are to be shown on the ESCPs</li> <li>Provision of an inspection and maintenance schedule for ongoing maintenance of temporary and permanent erosion and sedimentation controls.</li> </ul>		
SWQ- 5	Contaminants entering receiving environments during construction	<p>The following measures relating to the storage and management of plant, equipment, chemicals fuels and liquids will be implemented to minimise the risk of contaminants entering receiving environments (including soil, water and air):</p> <ul style="list-style-type: none"> <li>Designated exclusion zones will be identified for the storage and use of construction plant and equipment. These zones will delineate traffic areas and restrict entry and exit points to construction sites</li> <li>All fuels, chemicals and liquids will be stored and disposed of in accordance with Storing and Handling Liquids: Environmental Protection Participants Manual (DECC, 2007)</li> <li>Refuelling of plant and equipment will occur in bunded areas located a minimum of 40 m from drainage lines or waterways</li> <li>Plant, equipment and vehicle washdown will occur in a designated bunded area away from waterways and drainage lines</li> <li>All concrete washouts will occur into a sealed receptacle or bunded concrete washout area with an impermeable liner. The concrete washout area will be sized to be 120% of the estimated volume of the waste that will be received into the washout area at any one time</li> <li>Any material transported onto pavement surfaces will be swept and removed at the end of each working day.</li> </ul>	Construction contractor	Construction
SWQ- 6	Management of stockpile and	Management measures for stockpile and compound sites will be incorporated in the SWMP and ESCPs and will include the following measures:	Construction contractor	Construction

ID	Impact	Environmental safeguards	Responsibility	Timing
	compound sites	<ul style="list-style-type: none"> <li>• Stockpile and compound sites will be located away from overland flow paths and areas of high topography with minimal upstream catchment</li> <li>• Stockpile and compound sites will be maintained in accordance with Roads and Maritime's Stockpile Site Management Procedures (Roads and Maritime, 2001)</li> <li>• The number and size of stockpile and compound sites will be minimised throughout the proposal</li> <li>• Runoff from stockpile and compound sites will be treated with a stockpile- specific sediment basin, which will be monitored</li> <li>• The base of stockpile and compound sites will be lined if they are to be located over a shallow water table, and will be covered with plastic sheets, where required</li> <li>• Identify areas where ASS or PASS will be encountered during excavation activities</li> <li>• Indicate the stockpile management measures to be implemented if ASS or PASS are excavated during piling activities</li> <li>• Vehicle movements will be restricted to designated pathways, where feasible.</li> </ul>		
SWQ- 7	Accidental spills during construction, resulting in the release of contaminants into waterways and the soil	<p>A site-specific Emergency Spill Plan will be developed as part of the SWMP. It will include spill management measures in accordance with the Code of Practice for Water Management and Bunding and Liquid Chemical Storage, Handling and Spill Management (DEC, 2005) and Roads and Maritime's Environmental Incident Classification and Reporting Procedures (Roads and Maritime, 2014)</p> <p>Should a spill occur during construction, the Emergency Spill Plan will be implemented. Emergency spill kits will be kept at areas identified as having the highest spill risk at all times.</p>	Construction contractor	Construction
<b>Contamination</b>				
CL-1	Identification and management of contaminated land	<p>A Contamination Management Plan (CMP) will be prepared in accordance with the <i>Contaminated Land Act 1997</i> and relevant EPA Guidelines. This plan will form part of the CEMP and will include at a minimum:</p> <ul style="list-style-type: none"> <li>• Contaminated land legislation and guidelines including any relevant licences and approvals to be obtained</li> <li>• Identification of rehabilitation requirements, classification, transport and disposal requirements of any contaminated land within the construction footprint</li> <li>• Contamination management measures including waste classification and reuse procedures and unexpected finds procedures</li> <li>• Monitoring and sampling procedure for landfill seepage (leachate)</li> </ul>	Construction contractor	Pre-construction

ID	Impact	Environmental safeguards	Responsibility	Timing
		<ul style="list-style-type: none"> <li>• A procedure for dewatering and disposal of potentially contaminated liquid waste</li> <li>• In the event that indications of contamination are encountered (known and unexpected, including odorous or visual indicators), work in the area will immediately cease until a contamination assessment can be prepared to advise on the need for remediation or other action, as deemed appropriate</li> <li>• A process for reviewing and updating the plan.</li> </ul>		
CL-2	Remedial Action Plan for contaminated areas	<p>A Remedial Action Plan (RAP) will be prepared and implemented in accordance with relevant regulatory requirements. The RAP will include:</p> <ul style="list-style-type: none"> <li>• Relevant procedures to manage health and safety of construction staff during remediation</li> <li>• Validation of residual soils in any resulting excavations to demonstrate suitability of remaining materials to remain on site</li> <li>• Further assessment of the wetland area including an assessment of the stockpiled material within the wetland area and waste classification under the Waste Classification Guidelines (DECCW, 2009) for off-site removal.</li> <li>• The RAP and Validation Report will be provided to ARTC for review and comment.</li> </ul>	Construction contractor	Pre-construction
CL-3	Management of asbestos	<p>An asbestos management plan will be prepared as part of the CEMP and will be in accordance with NSW EPA guidelines (including waste guidelines) and relevant industry codes of practice. The asbestos management plan will include but not be limited to:</p> <ul style="list-style-type: none"> <li>• Identification of potential asbestos on site</li> <li>• Procedures to manage and handle asbestos and avoid cross contamination</li> <li>• Outline the mitigation measures for encountering asbestos</li> <li>• Procedures for disposal of asbestos in accordance with NSW EPA guidelines (including the waste guidelines) and relevant industry codes of practice.</li> </ul>	Construction contractor	Pre-construction
CL-4	Classification and disposal of potential contaminants	<p>All potentially contaminated wastes generated during construction will be classified according to the Waste Classification Guidelines: Parts 1 and 2 (DECC, 2008). Wastes will be disposed to a licensed disposal facility or re-used in construction, as appropriate.</p>	Construction contractor	Construction
CL-5	Management of contamination on ARTC land	<p>Contaminated material located at the stockpile site on the southern side of the proposed Wentworth Avenue underpass (refer to Figure 7-15) will be legally disposed from ARTC land at an appropriately licensed facility. Fill material permanently located on ARTC land will be certified clean.</p>	Construction contractor	Construction

ID	Impact	Environmental safeguards	Responsibility	Timing
CL-6	Remediation of SACL land	Details on the remediation of land will be agreed with SACL during lease negotiations.	Roads and Maritime	Detailed design
<b>Air quality</b>				
AQ-1	Air quality impact during construction	<p>An Air Quality Management Plan (AQMP) will be prepared as part of the CEMP. The plan will include but not be limited to:</p> <ul style="list-style-type: none"> <li>• A map identifying locations of sensitive receivers</li> <li>• Identification of potential risks/impacts due to the work/activities as dust generation activities</li> <li>• Management measures to minimise risk including a progressive stabilisation plan</li> <li>• A process for monitoring dust on site and weather conditions</li> <li>• A process for altering management measures as required.</li> <li>• The management measures within the AQMP will include as a minimum:</li> <li>• Vehicles transporting waste or other materials that have a potential to produce odours or dust are to be covered during transportation</li> <li>• Dust will be suppressed on stockpiles and unsealed or exposed areas using methods such as water trucks, temporary stabilisation methods, soil binders or other appropriate practices</li> <li>• Disturbed areas will be minimised in extent and rehabilitated progressively</li> <li>• Speed limits will be imposed on unsealed surfaces</li> <li>• Stockpiles will be located as far away as feasible from residences and other sensitive receivers</li> <li>• Works (including the spraying of paint and other materials) will not be carried out during strong winds or in weather conditions where high levels of dust or air borne particulates are likely</li> <li>• Plant, vehicles and equipment will be maintained in a proper and efficient manner and in accordance with manufacturer's specifications</li> <li>• Wind conditions will be monitored and activities scheduled where possible to avoid winds with a high potential (ie strong winds from the west or southwest) to avoid adverse impacts at nearest sensitive receivers.</li> </ul>	Roads and Maritime	Pre-construction Construction
<b>Aboriginal heritage</b>				
AH-1	Unexpected find of Aboriginal	<p>In the event of an unexpected find of an Aboriginal heritage item (or suspected item):</p> <ul style="list-style-type: none"> <li>• Work will cease in the affected area</li> </ul>	Construction contractor	Construction

ID	Impact	Environmental safeguards	Responsibility	Timing
	heritage artefacts	<ul style="list-style-type: none"> <li>The Roads and Maritime's Environmental Officer, Sydney Region will be contacted for advice on how to proceed</li> <li>The Unexpected Archaeological Finds Procedure (Roads and Maritime, 2012) will be followed.</li> </ul>		
<b>Land use and property</b>				
LU-1	Property acquisition	Roads and Maritime will consult with property owners impacted by the proposal. Property acquisition will be managed in accordance with the provisions of Roads and Maritime's Land Acquisition Policy (Roads and Maritime, 2012b) and the Land Acquisition (Just Terms Compensation) Act 1991.	Roads and Maritime	Detailed design
LU-2	Memorandum of Understanding (MOU)	Roads and Maritime will continue to consult with SACL to agree on an MOU for the proposal.	Roads and Maritime	Detailed design
LU-3	Use of land leased to SACL	The use of leased land and any conditions associated with the use of that land will be agreed between SACL and Roads and Maritime during preparation of the lease agreement. Details on stockpiling will be agreed with SACL during lease negotiations.	Roads and Maritime	Detailed design
LU-4	Impacts on SACL land and assets	Roads and Maritime will continue to investigate opportunities to reduce the impact of the proposal in SACL land and assets.	Roads and Maritime	Detailed design
<b>Socio-economic</b>				
SE-1	Community consultation	<p>A Communication Plan will be prepared and included in the CEMP. The Communication Plan will include (as a minimum):</p> <ul style="list-style-type: none"> <li>Requirements to provide details and timing of proposed activities to affected residents</li> <li>Contact name and number for complaints</li> <li>Procedure to notify adjacent land users for changed conditions during the construction period such as traffic, pedestrian or driveway access.</li> </ul> <p>The communications plan will be prepared in accordance with G36 requirements and Roads and Maritime's Community Engagement and Communications Manual (2012).</p>	Construction contractor	Pre-construction Construction
SE-2	Local goods and	Goods and services will be sourced locally during construction wherever possible to	Construction	Construction

ID	Impact	Environmental safeguards	Responsibility	Timing
	services	support the local economy.	contractor	
SE-3	Proposal feedback	Roads and Maritime will continue to consider proposal feedback during subsequent stages of proposal development.	Roads and Maritime	Detailed design
SE-4	Airport infrastructure and assets	Any airport infrastructure and assets affected by the proposal will be restored and/or relocated by Roads and Maritime.	Roads and Maritime	Construction
SE-5	Impact of the proposal on SACL signage	Roads and Maritime will investigate locations for the relocated advertising structure at Ascot Lodge. A new site for the structure will be selected by Roads and Maritime in consultation with SACL.	Roads and Maritime	Detailed design
SE-6	Adjustment, relocation and protection of utility services	Further detail regarding adjustment, relocation or protection of utility services will be made available to SACL.	Roads and Maritime	Detailed design
<b>Greenhouse gas and climate change</b>				
GG-1	Impacts on climate change from construction activities	<p>During construction, the following measures will be considered and implemented where possible:</p> <ul style="list-style-type: none"> <li>• Plant and equipment will be switched off when not in use</li> <li>• Vehicles, plant and construction equipment will be appropriately sized for the task and properly maintained so as to achieve optimum fuel efficiency</li> <li>• Materials will be delivered with full loads and will come from local suppliers, where possible</li> <li>• Energy efficiency and related carbon emissions will be considered when selecting vehicles and equipment</li> <li>• Vegetation clearing will be reduced as much as feasible, and re-established in suitable areas when construction is completed</li> <li>• Waste will be reduced and recycled as a preference before disposing to landfill.</li> </ul>	Construction contractor	Construction
GG-2	Climate change risks to construction	Environmental safeguards and management measures in the CEMP will be designed to accommodate and respond to the increased frequency and severity of rainfall events.	Construction contractor	Pre-construction



ID	Impact	Environmental safeguards	Responsibility	Timing
<b>Waste and resource management</b>				
WR-1	Generation of construction waste	<p>The following resource management hierarchy principles will be followed through the project life cycle:</p> <ul style="list-style-type: none"> <li>• Unnecessary resource consumption will be avoided as a priority</li> <li>• Where avoidance is not possible, waste will be processed for resource recovery (including reuse of materials, reprocessing, recycling and energy recovery)</li> <li>• Where resource recovery is not possible, waste will be disposed as a last resort at an appropriately licensed waste facility – in accordance with the <i>Waste Avoidance and Resource Recovery Act 2001</i> and the EPA waste classification guidelines</li> <li>• Procurement will endeavour to use materials and products with a recycled content, provided that material or product is cost-effective and performance-effective.</li> </ul>	Construction contractor	Detailed design, pre- construction, construction
WR-2	Generation of construction waste	<p>A Resource and Waste Management Plan (RWMP) will be prepared and include the following (as a minimum):</p> <ul style="list-style-type: none"> <li>• The type, classification and volume of all materials to be generated and used on site including identification of recyclable and non-recyclable waste in accordance with EPA Waste Classification Guidelines</li> <li>• Quantity and classification of excavated material generated as a result of the proposal (refer to Roads and Maritime's Waste Management Fact sheets 1-6, 2012)</li> <li>• Interface strategies for cut and fill on site to ensure re-use where possible</li> <li>• Strategies to 'avoid', 'reduce', 'reuse' and 'recycle' materials.</li> <li>• Classification and disposal strategies for each type of material</li> <li>• Destinations for each resource/waste type either for on-site reuse or recycling, offsite reuse or recycling, or disposal at a licensed waste facility</li> <li>• Details of how material will be stored and treated on-site.</li> <li>• Identification of available recycling facilities on and off site</li> <li>• Identification of suitable methods and routes to transport waste.</li> <li>• Procedures and disposal arrangements for unsuitable excavated material or contaminated material</li> <li>• Site clean-up for each construction stage.</li> </ul>	Construction contractor	Construction
<b>Cumulative environmental impacts</b>				
CE-1	Cumulative traffic and noise	The CEMP will be updated as required to incorporate potential cumulative impacts from surrounding development activities as they become known.	Construction contractor	Detailed design Pre-construction

ID	Impact	Environmental safeguards	Responsibility	Timing
	impacts from construction of multiple projects	This will include close liaison with the authorities carrying out the other projects, and a process to review and update mitigation measures as new work begins or if complaints are received.		Construction
CE-2	Cumulative construction impacts	A working group will be formed to manage cumulative construction impacts associated with the proposal and other Sydney Airport and Roads and Maritime projects. This group will also coordinate between the projects and the proposal.	Roads and Maritime	Detailed design
CE-3	Consultation with SACL regarding cumulative noise impacts	Roads and Maritime will continue to consult with SACL regarding the potential for cumulative noise impacts due to concurrent construction of Roads and Maritime and SACL developments.	Roads and Maritime	Detailed design Pre-construction Construction

## 7 Conclusion

This chapter provides the justification for the proposal taking into account its biophysical, social and economic impacts, the suitability of the site and whether or not the proposal is in the public interest. The proposal is also considered in the context of the objectives of the EP&A Act, including the principles of ecologically sustainable development as defined in Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*.

### 7.1 Justification

The WestConnex Enabling Works – Airport East Precinct REF was determined in February 2015 under Part 5A of the EP&A Act. During detailed design several changes to the proposal were developed to improve its functioning and efficiency during the detail design process (refer to Section 1).

This Addendum REF has been prepared to assess the potential environmental impacts associated with the revised proposal. The revised proposal is not considered to result in any material or specific impacts to the environment in addition to those caused by the determined proposal. Therefore no additional environmental safeguards or measures are therefore considered to be required for the revised proposal.

No additional stakeholder or community consultation has been undertaken during the development of the revised proposal, however, Roads and Maritime would continue to consult with the community and relevant Government agencies during delivery of the works.

Roads and Maritime is the proponent and determining authority for the revised proposal. By adopting the requirements of the ISEPP, the revised proposal may be carried out without development consent, and is therefore subject to assessment under Part 5 of the EP&A Act. Consent from Botany Bay Council is not required.

### 7.2 Objects of the EP&A Act

Table 7-1 identified the objectives of the EP&A Act and their relevance to the revised proposal.

Table 7-1: Objectives of the EP&A Act 1979 and relevance to the revised proposal

Object	Comment
5(a)(i) To encourage the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment.	<ul style="list-style-type: none"><li>• The revised proposal detailed in this Addendum REF allows would not interfere with the management, development and conservation of natural and artificial resources.</li><li>• The main objective of the project is to improve the road network around Sydney Airport and Port Botany and this will promote the social and economic welfare of local and regional communities using these roads, and visitors to Sydney.</li><li>• Where possible, throughout the detailed design of the revised proposal, management and conservation of natural resources would be incorporated into construction specifications and project designs.</li></ul>

Object	Comment
5(a)(ii) To encourage the promotion and co-ordination of the orderly economic use and development of land.	<ul style="list-style-type: none"> <li>The revised proposal would form an important element in the WestConnex motorway project.</li> <li>The overall upgrade would assist in the coordination of the orderly economic use and development of land for the region and along this significant transport corridor.</li> <li>The revised proposal would assist with achieving the project, resulting in greater access and connectivity throughout the wider Sydney Metropolitan region for motorists, public transport travellers, pedestrians and cyclists.</li> </ul>
5(a)(iii) To encourage the protection, provision and co-ordination of communication and utility services.	<ul style="list-style-type: none"> <li>Utilities affected by the revised proposal would be relocated, protected and maintained where required.</li> </ul>
5(a)(iv) To encourage the provision of land for public purposes.	<ul style="list-style-type: none"> <li>The revised proposal is intended to be used for a public purpose.</li> </ul>
5(a)(v) To encourage the provision and co-ordination of community services and facilities.	<ul style="list-style-type: none"> <li>The revised proposal would improve access and connectivity in both the local community and the wider Sydney Metropolitan region.</li> </ul>
5(a)(vi) To encourage the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats.	<ul style="list-style-type: none"> <li>The revised proposal has been designed to minimise impacts on the environment and is not expected to create impacts to threatened species and populations, and ecological communities and their habitats.</li> </ul>
5(a)(vii) To encourage ecologically sustainable development.	<ul style="list-style-type: none"> <li>Ecologically sustainable development is considered in Sections 7.2.1– 7.2.4 below.</li> </ul>
5(a)(viii) To encourage the provision and maintenance of affordable housing.	<ul style="list-style-type: none"> <li>Not relevant to the project.</li> </ul>
5(b) To promote the sharing of the responsibility for environmental planning between different levels of government in the State.	<ul style="list-style-type: none"> <li>Not relevant to the project.</li> </ul>
5(c) To provide increased opportunity for public involvement and participation in environmental planning and assessment.	<ul style="list-style-type: none"> <li>Stakeholders and community members were consulted during the planning process for the project (refer to Chapter 6 of the Project REF). The Project REF was placed on public display for community comment and feedback, and this feedback was considered during the detailed design process and prior to this Addendum REF.</li> <li>Consultation would continue during the construction and operation phases of the overall project.</li> </ul>

### 7.2.1 The precautionary principle

The precautionary principle deals with uncertainty in decision-making. It provides that if there is a threat of serious or irreversible environmental damage, a lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

As with the project, the revised proposal would not threaten serious or irreversible environmental damage that would result in impacts of a permanent nature. All measures considered to be necessary to safeguard environmental values have been identified and included in preparation of

this assessment. No serious or irreversible environmental damage is predicted to occur with the implementation of the identified environmental safeguards.

## **7.2.2 Intergenerational equity**

Intergenerational equity provides that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

The project would benefit future generations by improving access and connectivity for the wider Sydney Metropolitan region by reducing traffic congestion, reducing travelling times, improving road safety. It would also provide for greater access, connectivity and safety for pedestrians and cyclists. Should the proposal not proceed, travelling times and traffic volumes would be expected to increase over time.

The revised proposal would create minor, temporary impacts during construction and require the removal of roadside vegetation that would be replanted. These impacts are not considered to be of a nature or extent that would disadvantage future generations.

Implementation of the safeguards outlined in this Addendum REF would ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

## **7.2.3 Conservation of biological diversity and ecological integrity**

The conservation of biological diversity and ecological integrity was a fundamental consideration during the development of both the determined REF and this REF addendum for the revised proposal. Conservation of biological diversity and ecological integrity has been considered at all stages of the proposed works and would be further considered during the construction phase of the project. Where possible, impacts to biological diversity and ecological integrity have been avoided and mitigated as outlined in this Addendum REF and the Project REF.

## **7.2.4 Improved valuation, pricing and incentive mechanisms**

The principle of improved valuation and pricing of environmental resources requires consideration of all environmental resources which may be affected by a proposal, including air, water, land and living things. While it is often difficult to place a reliable monetary value on the residual, environmental and social effects of the alternative bridge design, environmental and social issues were considered in the planning and establishment of the need for this activity. The value placed on environmental resources is evident in the extent of the planning, environmental investigations and design of management measures.

Environmental and social issues were considered in the strategic planning and establishment of the need for the revised proposal, and in consideration of various proposal options. The value placed on environmental resources is evident in the extent of the planning and environmental investigations, and in the design of the proposed mitigation measures and safeguards. Implementation of these mitigation measures and safeguards would result in an economic cost to Roads and Maritime, which would be included in both the capital and operating cost of the proposal.

## **7.3 Conclusion**

The revised proposal is subject to assessment under Part 5 of the EP&A Act. This Addendum REF has examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the revised proposed activity. This has included consideration of conservation agreements and plans of management under the NPW Act, joint management and biobanking agreements under the TSC Act, wilderness areas, critical habitat, impacts on threatened species, populations and ecological communities and their habitats and other protected

fauna and native plants. It has also considered potential impacts to matters of national environmental significance listed under the Federal EPBC Act.

Due to its partial location on Sydney Airport land, the revised proposal is subject to:

- Sydney Airport's Development Application and Consent Application process to satisfy the requirements of the Airports Act
- Application for a Building Permit to the Airport Building Controller in accordance with the Airports (Building Control) Regulations 1996. The Sydney Airport Consent Application must comply with the conditions of the Development Approval
- Airspace approval in accordance with the Airports (Protection of Airspace) Regulations 1996
- Compliance with the Airport (Environmental Protection) Regulations 1997.

The environmental impacts of the revised proposal are not likely to be significant and therefore it is not necessary for an environmental impact statement to be prepared and approval to be sought for the proposal from the Minister for Planning and Infrastructure under Part 5.1 of the EP&A Act. The revised proposal is unlikely to affect threatened species, populations or ecological communities or their habitats within the meaning of the TSC Act or *Fisheries Management Act 1994* and therefore a Species Impact Statement is not required. The revised proposal would not affect Commonwealth land or have an impact on any matters of national environmental significance.

The revised proposal as described in this Addendum REF is expected to result in minor impacts during the construction period, such as removal of roadside vegetation and temporary visual impacts. Mitigation measures as detailed in the Project REF would ameliorate or minimise these expected impacts. The proposal would enable the effective and efficient implementation of the overall project. On balance the revised proposal is considered justified and the following conclusions are made:

1. Significant impact to the environment

The environmental impacts of the revised proposal are not likely to be significant and therefore it is not necessary for an environmental impact statement to be prepared and approval to be sought for the proposal from the Minister for Planning under Part 5.1 of the EP&A Act.

2. Significant impact to NSW listed biodiversity matters

The revised proposal is not likely to significantly affect threatened species, populations or ecological communities or their habitats, within the meaning of the *Threatened Species Conservation Act 1995* or *Fisheries Management Act 1994* and therefore a Species Impact Statement is not required.

3. Significant impact to nationally listed biodiversity matters

The revised proposal is not likely to significantly affect threatened species, ecological communities or migratory species, within the meaning of the *Environment Protection and Biodiversity Conservation Act 1999*

4. Commonwealth land and other matters of national environmental significance

The revised proposal does not significantly affect Commonwealth land within the meaning of the *Environment Protection and Biodiversity Conservation Act 1999* and a referral to the Federal Department of the Environment is not required.

The revised proposal is not likely to significantly affect other matters of national environmental significance, within the meaning of the *Environment Protection and Biodiversity Conservation Act 1999* and a referral to the Federal Department of the Environment is not required.

Roads and Maritime has considered the potential need for the design refinements as part of the Airport East Precinct project against its potential benefits and impacts, and has determined that the beneficial outcomes outweigh the potential adverse outcomes, provided adequate mitigation is implemented.

## 8 Certification

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This addendum review of environmental factors provides a true and fair review of the revised proposal in relation to its potential effects on the environment. It addresses to the fullest extent possible all matters affecting or likely to affect the environment as a result of the revised proposal.



Steve Crick  
Environmental Approvals Lead  
Aurecon  
Date:

I have examined this addendum review of environmental factors and the certification by Steve Crick from Aurecon and accept the addendum review of environmental factors on behalf of Roads and Maritime.

Insert name  
Position title, eg Project Manager  
Insert relevant Roads and Maritime region/area  
Date:

## 9 References

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## Terms and acronyms used in this REF

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ABC	Airport Building Controller
AHIMS	Aboriginal Heritage Information Management System
Airports Act	<i>Airports Act 1996</i>
ARTC	Australian Rail Track Corporation
BMP	Biodiversity Management Plan
CASA	Civil Aviation Safety Authority
CEMP	Construction Environmental Management Plan
CNVMP	Construction Noise and Vibration Management Plan
DECCW	Department of Environment, Climate Change and Water
DIRD	Commonwealth Department of Infrastructure and Regional Development
EEC	Endangered Ecological Community
EIA	Environmental impact assessment
EPA	Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979 (NSW)</i> . Provides the legislative framework for land use planning and development assessment in NSW
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)</i> . Provides for the protection of the environment, especially matters of national environmental significance, and provides a national assessment and approvals process.
EPL	Environmental Protection Licence
ESD	Ecologically sustainable development. Development which uses, conserves and enhances the resources of the community so that ecological processes on which life depends, are maintained and the total quality of life, now and in the future, can be increased
FM Act	<i>Fisheries Management Act 1994 (NSW)</i>
ISEPP	State Environmental Planning Policy (Infrastructure) 2007
LEP	Local Environmental Plan. A type of planning instrument made under Part 3 of the EP&A Act.
LGA	Local Government Area
LOS	Level of Service

NES	Matters of national environmental significance under the Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i> .
NPW Act	<i>National Parks and Wildlife Act 1974 (NSW)</i>
NVMP	Noise and Vibration Management Plan
OEH	Office of Environment and Heritage
OLS	Obstacle Limitation Surface
PACHCI	Procedure for Aboriginal Cultural Heritage Consultation and Investigation
PEMP	Project Environmental Management Plan
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
QA Specifications	Specifications developed by Roads and Maritime Services for use with roadworks and bridgeworks contracts let by Roads and Maritime Services
REF	Review of Environmental Factors
RESA	Runway End Safety Area
RNP	Road Noise Policy
RTA	NSW Roads and Traffic Authority
SACL	Sydney Airport Corporation Limited
SEPP	State Environmental Planning Policy. A type of planning instrument made under Part 3 of the EP&A Act.
SEPP 64	State Environmental Planning Policy No 64—Advertising and Signage
Sydney Airport	Sydney's Kingsford Smith Airport
TEC	Threatened Ecological Community
The revised proposal	Airport East Precinct project Addendum
TMP	Traffic Management Plan
TSC Act	<i>Threatened Species Conservation Act 1995 (NSW)</i>
VMS	Variable Message Sign

# Appendix A

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Consideration of clause 228(2) factors and matters of national environmental significance

## Clause 228(2) Checklist

In addition to the requirements of the *Is an EIS required?* guideline 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
<p><i>a. Any environmental impact on a community?</i></p> <p>The revised proposal may result in temporary visual, traffic and access, noise and vibration impacts during construction, but is not expected to create noticeable overall impacts to nearby residents or users of the road network when compared to the impacts identified in the Project REF.</p> <p>Potential impacts would be minimised with the implementation of the safeguards detailed in Table 6-1 of the Submissions Report.</p>	<p>Short-term, minor, negative</p>
<p><i>b. Any transformation of a locality?</i></p> <p>The revised proposal may result in temporary visual impacts during construction, but is not expected to create noticeable overall impacts to nearby residents or users of the road network when compared to the impacts identified in the Project REF.</p> <p>The revised proposal is not expected to create any long-term visual impacts or changes to the area above those identified in the Project REF. The VMS and advertising sign would result in changes to the visual environment of the General Holmes Drive, however these changes are considered to be in keeping with the existing visual environment of this area. The installation of the VMS will provide benefits for users of this transport corridor. The utility relocation works would also create visual impacts however these would be temporary and short-term, as the utility services would be located underground.</p>	<p>Short-term, minor, negative</p>
<p><i>c. Any environmental impact on the ecosystems of the locality?</i></p> <p>The revised proposal would require the additional removal of small areas of planted roadside and median vegetation. Vegetation clearing for the revised proposal would not have any significant impact on the ecosystems of the locality, as the revised proposal would not impact habitat or viability of any species, including any threatened flora or fauna species. Biodiversity impacts and proposed safeguard and management measures to be implemented are described further in Section 7.5.4 of the Project REF and Table 6-1 of the Submissions Report.</p>	<p>Long-term, minor, negative</p>
<p><i>d. Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?</i></p> <p>During construction, the revised proposal would result in temporary visual impacts to users of the road network. The majority of visual impacts during construction would be caused by construction machinery, compound areas, temporary fencing, signage, light spill and the generation of wastes. These impacts would have already occurred at a greater scale as part of the larger construction works associated with the proposal.</p> <p>Notwithstanding the above visual impact of the revised proposal, some enhancements would improve the visual amenity for the area in the long term, such as landscaping undertaken in roadside areas following completion of construction.</p>	<p>Short-term, minor, negative</p> <p>Long-term, minor, positive</p>

Factor	Impact
<p><i>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?</i></p> <p>The revised proposal would not impact on any know heritage items, cultural heritage values places or buildings with an aesthetic, anthropological, archaeological, scientific or socially significant value. However, the revised proposal would slightly encroach on the curtilage of a listed heritage item (being located on the same property), although no additional heritage impacts would occur (refer to Section 5.4). Sites in the vicinity of the revised proposal would be protected through the implementation of a range of safeguards outlined in the Project REF.</p>	Nil
<p><i>f. Any impact on the habitat of protected fauna (within the meaning of the National Parks and Wildlife Act 1974)?</i></p> <p>The revised proposal would not remove any good quality native vegetation, threatened ecological communities or threatened species. The removal of modified and exotic vegetation for the revised proposal would not result in a significant impact on the habitat of protected fauna. Measures proposed to minimise the revised proposal's biodiversity impact are outlined in Table 6-1 of the Submissions Report.</p>	Long-term, minor, negative
<p><i>g. Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?</i></p> <p>The prevised proposal would not result in impacts to any threatened or endangered species of animal, plant or other form of life, whether living on land, in water or in the air. The removal of modified and exotic vegetation for the revised proposal would not result in a significant impact on the habitat or foraging area for protected fauna.</p> <p>Potential impacts would be minimised with the implementation of the safeguards detailed in Table 6-1 of the Submissions Report.</p>	Nil
<p><i>h. Any long-term effects on the environment?</i></p> <p>The revised proposal is not expected to result in any long-term effects on the environment beyond those identified in the Project REF.</p>	Nil
<p><i>i. Any degradation of the quality of the environment?</i></p> <p>The revised proposal is not expected to increase the risk of degradation of the quality of the environment beyond that identified in the Project REF. The project has the potential to degrade the quality of the environment through accidental spills and erosion and sediment during construction. A Soil and Water Management Plan (SWMP) would be prepared and implemented prior to construction to mitigate these impacts (refer to Section 7.8.4 of the Project REF and Table 6-1 of the Submissions Report).</p>	Short-term, minor, negative

Factor	Impact
<p><i>j. Any risk to the safety of the environment?</i></p> <p>The revised proposal is not expected to increase the risk of safety to the environment beyond that identified in the Project REF.</p> <p>Construction of the revised proposal has the potential to temporarily decrease safety for other road users and pedestrians due to carrying out construction work adjacent to operating traffic lanes, the movement of construction vehicles to and from the site, and construction works restricting access to pedestrian footpaths. This would be managed through the implementation of the Traffic Control Plan (TCP) prepared for the Project REF (discussed further in Section 7.1.4 of the Project REF).</p> <p>During installation of the VMS and relocation of the illuminated digital advertising sign, construction equipment would intrude into the Sydney Airport OLS. This activity would occur during other works that would be undertaken for the proposal, during a shut-down of the airports east-west runway, and therefore would not result in any additional safety risk.</p>	<p>Short-term, minor, negative</p>
<p><i>k. Any reduction in the range of beneficial uses of the environment?</i></p> <p>The revised proposal would not result in any reduction in the range of beneficial uses of the environment.</p>	<p>Nil</p>
<p><i>l. Any pollution of the environment?</i></p> <p>The revised proposal is not expected to increase the risk of accidental spills during construction beyond that identified in the Project REF.</p> <p>There is the potential for accidental spills of chemicals during construction which could affect the surrounding land, surface water and groundwater.</p> <p>There is the potential for air quality and noise amenity to be reduced during construction activities.</p> <p>The revised proposal is unlikely to cause any significant pollution of the environment if the safeguards detailed in <b>Error! Reference source not found.</b> of the Project REF are implemented and maintained.</p>	<p>Short-term, minor, negative</p>
<p><i>m. Any environmental problems associated with the disposal of waste</i></p> <p>No environmental problems are anticipated for the disposal of waste as a result of the revised proposal. Potential impacts would be minimised with the implementation of the safeguards detailed in the determined REF.</p>	<p>Short-term, minor, negative</p>
<p><i>n. Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply?</i></p> <p>The revised proposal would not increase demands on resources, which are, or are likely to become, in short supply. The revised proposal would require a negligible increase in construction materials above that required for the project.</p>	<p>Nil</p>
<p><i>o. Any cumulative environmental effect with other existing or likely future activities?</i></p> <p>The revised proposal is not expected to increase the timeframe of the project or result in a substantial intensification of activities that could enhance cumulative effects with other projects being undertaken at the same time in the surrounding area. Cumulative impacts associated with the project are discussed in Section 7.16 of the Project REF.</p>	<p>Nil</p>

Factor	Impact
<p><i>p. Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?</i></p> <p>The revised proposal would not occur in a coastal area and therefore is not expected to result in any impacts on coastal processes and coastal hazards. Issues associated with projected climate change conditions that may affect the revised proposal were considered in the Project REF and these are not expected to affect the revised proposal provided the mitigation measures recommended are implemented.</p>	<p>Nil</p>



## Matters of National Environmental Significance

Under the environmental assessment provisions of the *Environment Protection and Biodiversity Conservation 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 the Environment.

The REF identifies that there would not be a significant impact on matters of national significance. As such, a referral is **not** required for proposed actions. Impacts on these matters are assessed as part of the REF in accordance with Australian Government significant impact criteria and taking into account relevant guidelines and policies.

Factor
<p>a. <i>Any impact on a World Heritage property?</i></p> <p>The revised proposal would not impact on a World Heritage property.</p>
<p>b. <i>Any impact on a National Heritage place?</i></p> <p>The Sydney Kingsford Smith Airport Group is an indicative place on the Commonwealth Australian Heritage Database, and is located to the west of the revised proposal.</p> <p>The revised proposal includes installation of a VMS and services on the southern side of General Holmes Drive, within the heritage curtilage of the Sydney Kingsford Smith Airport Group. This would not require an extension of the part of the curtilage identified to be reduced in the Project REF. The revised proposal is therefore not expected to result in an impact to the Sydney Kingsford Smith Airport Group.</p>
<p>c. <i>Any impact on a wetland of international importance?</i></p> <p>The revised proposal would not directly impact on a wetland of international importance or increase the potential for the project to cause such impacts. The proposal is located in close proximity to Mill Ponds, which are part of the Botany Wetlands complex that forms a corridor downstream from Gardeners Road, including adjacent remnant vegetation in Eastlake and The Lakes Golf Courses; Sir Joseph Banks Park; around the Botany foreshore and vegetation backing onto the boundary of Sydney Airport to the east side of Penrhyn Bay (DECC, 2008).</p> <p>Sedimentation and erosion control measures to avoid indirect impact on the Mill Ponds and Botany Wetlands complex would be applied during construction (refer to Section 7.8.4 of the Project REF and Table 6-1 of the Submissions Report).</p>
<p>d. <i>Any impact on a listed threatened species or communities?</i></p> <p>The revised proposal would require the removal of small areas of planted roadside and median vegetation. Vegetation clearing for the revised proposal would not have any significant impact on the ecosystems of the locality, as the revised proposal would not impact habitat or viability of any species, including any threatened flora or fauna species. Biodiversity impacts and proposed safeguard and management measures to be implemented are described further in Section 7.5.4 of the Project REF and Table 6-1 of the Submissions Report.</p>
<p>e. <i>Any impacts on listed migratory species?</i></p> <p>The revised proposal would require the removal of small areas of planted roadside and median vegetation. Vegetation clearing for the revised proposal would not have any significant impact on the ecosystems of the locality, as the revised proposal would not impact habitat or viability of any species, including migratory species. Biodiversity impacts and proposed safeguard and management measures to be implemented are described further in Section 7.5.4 of the Project REF and Table 6-1 of the Submissions Report.</p>

Factor
<p><i>f. Any impact on a Commonwealth marine area?</i></p> <p>The revised proposal would not impact on a Commonwealth marine area.</p>
<p><i>g. Does the proposal involve a nuclear action (including uranium mining)?</i></p> <p>The revised proposal does not involve a nuclear action.</p>
<p><i>h. Water resource, in relation to coal seam gas development and large coal mining development?</i></p> <p>The revised proposal would not impact any water resource and does not involve a coal seam gas development or large coal mining development.</p>
<p><i>i. Additional, any impact (direct or indirect) on Commonwealth land?</i></p> <p>Sections of the revised proposal would be located on Commonwealth land prescribed under the <i>Airports Act 1996</i>. Sydney Airport is leased to SACL and approval for components of the revised proposal that would occur on Commonwealth land would be obtained from SACL (refer to Section 3.1).</p>

# Appendix B

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**Assessment on whether the proposal is a 'major airport development'**

**Appendix B1: Assessment on whether the proposal is a ‘major airport development’**

	Development type	Y/N/NR	Reason
<p>Airports Act s.89(1) Meaning of major airport development                      For the purposes of this Act, a <i>major airport development</i> is a development that is carried out at an airport site and that consists of:</p>			
(a)	constructing a new runway	No	The revised proposal does not involve constructing a new runway.
(b)	extending the length of a runway; or	No	The revised proposal would not extend the length of a runway.
(ba)	altering a runway (other than in the course of maintenance works) in any way that significantly changes: <ul style="list-style-type: none"> <li>• flight paths; or</li> <li>• the patterns or levels of aircraft noise; or</li> </ul>	No	The project would require two one-week restrictions of the east-west runway, about six months apart. This would temporarily affect flight paths and patterns of aircraft noise for the areas. The noise sharing assessment concluded that the additional noise impacts associated with redistributed flights as a result of the restrictions of the east-west runway is minor (refer to Section 7.2 of the Project REF). The assessment found that the noise impacts and the changes to flight paths would not be significant. The revised proposal would not change these requirements by the project.
(c)	constructing a new building wholly or principally for use as a passenger terminal, where the building’s gross floor space is greater than 500 square metres; or	No	The revised proposal does not involve construction of any buildings for use as a passenger terminal.
(d)	extending a building that is wholly or principally for use as a passenger terminal, where the extension increases the building’s gross floor space by more than 10%; or	No	The revised proposal does not involve extension of any passenger terminals.
(e)	constructing a new building, where: <ol style="list-style-type: none"> <li>(i) the building is not wholly or principally for use as a passenger terminal; and</li> <li>(ii) the cost of construction exceeds \$20 million or such higher amount as is prescribed; or</li> </ol>	No	No new buildings would be constructed as part of the revised proposal.
(f)	constructing a new taxiway, where: <ol style="list-style-type: none"> <li>(i) the construction significantly increases the capacity of the airport to handle movements of passengers, freight or aircraft; and</li> <li>(ii) the cost of construction exceeds \$20 million or such higher amount as is prescribed; or</li> </ol>	No	The revised proposal does not involve constructing a new taxiway.

	Development type	Y/N/NR	Reason
(g)	extending a taxiway, where: (i) the extension significantly increases the capacity of the airport to handle movements of passengers, freight or aircraft; and (ii) the cost of construction exceeds \$20 million or such higher amount as is prescribed; or	No	The revised proposal does not involve extending a taxiway.
(h)	constructing a new road or new vehicular access facility, where: (i) the construction significantly increases the capacity of the airport to handle movements of passengers, freight or aircraft; and (ii) the cost of construction exceeds \$20 million or such higher amount as is prescribed; or	No	The project involves extending the Wentworth Avenue access road to form a new intersection with General Holmes Drive. The total cost of construction for this would exceed \$20 million. However, the construction of this road would not significantly increase the capacity of the airport to handle movements of passengers, freight or aircraft; rather this would only increase the capacity of the road network to meet predicted traffic volumes for 2018 (refer to Section 5.2.1 of the Project REF). The revised proposal would not change this.
(j)	extending a road or vehicular access facility, where: (i) the extension significantly increases the capacity of the airport to handle movements of passengers, freight or aircraft; and (ii) the cost of construction exceeds \$20 million or such higher amount as is prescribed; or	No	The project would involve widening General Holmes Drive and Joyce Drive. The total cost of construction would exceed \$20 million. However, this construction would not significantly increase the capacity of the airport to handle movements of passengers, freight or aircraft. The project has been designed to cater for the increase in general traffic to improve the level of service on these roads. The revised proposal would not change this.
(k)	constructing a new railway or new rail handling facility, where: (i) the construction significantly increases the capacity of the airport to handle movements of passengers, freight or aircraft; and (ii) the cost of construction exceeds \$20 million or such higher amount as is prescribed	No	The revised proposal does not involve the construction of a new railway or new rail handling facility.
(l)	extending a railway or rail handling facility, where: (i) the extension significantly increases the capacity of the airport to handle movements of passengers, freight or aircraft; and (ii) the cost of construction exceeds \$20 million or such higher amount as is prescribed	No	The revised proposal does not involve extending a railway or a rail handling facility.

	Development type	Y/N/NR	Reason
(m)	a development of a kind that is likely to have significant environmental or ecological impact; or	No	The environmental assessment carried out in this Addendum REF has confirmed that the revised proposal would not have a significant environmental or ecological impact during construction or operation (refer to Section 7).
(n)	a development which affects an area identified as environmentally significant in the environment strategy; or	No	The revised proposal would not affect any areas identified as environmentally significant. Overall, while the project area discharges into the Mill Ponds (also known as the Sydney Airport Wetlands, and makes up part of the Botany Wetlands) which is an environmentally significant area in the environment strategy, the effect to water quantity and quality has been determined to be negligible (refer to Section 7.6 and 7.8 of the Project REF). The non-Aboriginal heritage and biodiversity assessments have also confirmed that the project would not have an impact on the wetlands (refer to Section 7.4 and 7.5 of the Project REF).
(na)	a development of a kind that is likely to have a significant impact on the local or regional community; or	No	Socio-economic impacts associated with the project have been assessed in Section 7.13 of the Project REF. This found the project would not have a significant impact on the local or regional community. The revised proposal would not result in additional changes.
	a development in relation to which the Minister has given an approval under section 89A	No	The Minister has not given approval to the project under section 89A of the Airports Act.
(o)	a development of a kind specified in the regulations	No	This revised proposal is not a development of a kind specified in the regulations for which a major development plan would need to be prepared.
Airports Act 1996 – Sect 89, item (4)			
(4)	Airports Act 1996 – Sect 9, item (4). The Minister may determine in writing that specified developments that are carried out at an airport site together constitute a major airport development if: Each individual development is : covered by subparagraph (1)(e)(i), (f)(i), (g)(i), (h)(i), (j)(i), (k)(i) or (l)(i); but not covered by subparagraph (1)(e)(ii), (f)(ii), (g)(ii),(h)(ii), (j)(ii), (k)(ii) or (l)(ii);	No	The revised proposal does not involve multiple specified developments. Furthermore, the revised proposal does not meet criteria specified in (1)(e)(i), (f)(i), (g)(i), (h)(i), (j)(i), (k)(i) or (l)(i), as the revised proposal does not include constructing a new building, and its purpose is not to increase the capacity of the airport. Rather its purpose is to meet the projected demand in

	Development type	Y/N/NR	Reason
	and the developments are: consecutive or concurrent projects; or extensions to existing buildings.		general traffic for the project area. The cost of construction for the project exceeds \$20 million.
	"Significant Impact on Local/ Regional Community" Guide - January 2012	No	In consideration of the significant impact guidelines and significant impact on local/regional community guide, there was found to be no significant impact as a result of the project (refer Chapter 7 of the Project REF). The revised proposal would not change this result.
Potential impacts include:			
(a)	noise	No	A construction and operational noise assessment confirmed that the impact of the project is not significant (refer to Section 7.3 of the Project REF). The revised proposal would not change this result.
(b)	odour	No	The revised proposal would not generate odour.
(c)	dust or other physical intrusions	No	An air quality impact assessment (refer to Section 7.10 of the Project REF) and impact to airport operations assessment (Section 7.2 of the Project REF) have found that the dust generated during construction of the project and the temporary physical intrusion into the protected airspace as a result of construction are not significant. The revised proposal would not alter these findings.
(d)	noticeable traffic impacts such as increased traffic congestion at certain times or an increase in heavy vehicle traffic	No	The revised proposal would not have a significant impact to traffic flows during construction with the implementation of appropriate traffic control measures and by maintaining through traffic during peak periods. Furthermore, operation of the overall project would improve traffic flows, network performance and reduce travel times within the project area (refer to Section 7.1 of the Project REF).
(e)	impacts on public transport linkages or services	No	The project would maintain public transport infrastructure within

	Development type	Y/N/NR	Reason
			the project area. The improvement to the network performance, traffic flows and travel times is likely to have a positive flow-on effect to bus services that pass through the project area (refer to Section 7.1 of the Project REF).
(f)	commercial impacts affecting the viability of business centres in the surrounding areas	No	The project and revised proposal would not reduce the viability of business centres in the surrounding areas (refer to Section 7.1 of the Project REF).
(g)	lighting impacts on residential areas or other businesses	No	The revised proposal would not affect lighting on any residential areas or other businesses.
(h)	hazardous materials or dangerous goods	No	The revised proposal would not generate any hazardous materials or dangerous goods.
(i)	impacts on implementation of local and regional planning schemes, including land use and transport planning	No	The revised proposal is consistent with the Project REF, which reviewed the proposal against the Botany Bay Local Environmental Plan 2013 and Sydney Airport Master Plan objectives (refer to Section 5.4.1 and 5.6.1 of the Project REF). The review has found that the proposal is consistent with the objectives of the zones that it is located within.
(j)	impacts on the safety, security or amenity of local communities	No	The project would have a beneficial impact on the safety of the local community, by removing the railway level crossing, which currently poses a risk to road users. The project would also improve the amenity of the local community as it would rehabilitate and restore the area of disused land between General Holmes Drive and the Port Botany Freight Rail Line.
(k)	impediments to emergency planning and response access or services	No	Improvements to the road network such as reduced travel times and improved traffic flows would have positive flow-on benefits to access for emergency services through the project area.

Airports should ask themselves the following questions:



	Development type	Y/N/NR	Reason
(l)	Is the type of development proposed of known concern to the community or government?	No	Several years ago, Sydney Airport undertook a project to construct a runway end safety area (RESA) at the western end of the east-west runway. This resulted in the operation of that runway being affected for around 18 months which, in turn, resulted in a significant change to the distribution of aircraft noise around the airport. At the time, this concerned many in the community. However, as outlined in the reasons for section 89(1)(ba) above, with respect to this project, the additional noise impacts associated with this project are expected to be minor. This is because the period during which runway operations will be affected is significantly less than occurred for the RESA project. The Sydney Airport Community Forum was briefed about the project at its meeting on 21 November 2014. No concerns were raised by the forum.
(m)	Is the proposed development in conflict with planning schemes for the local and regional communities surrounding the airport?	No	Not applicable.
(n)	Have similar types of development raised substantial community concerns in the past?	No	See response to paragraph (l) above.
(o)	Are there any other potential community impacts	No	Other potential community impacts are addressed elsewhere in this table.
<p>Dealing with cumulative impacts</p> <p>Intermittent and cumulative effects need to be considered and if the proposed development is to be undertaken in stages over a period of time, the impacts of the development once completed need to be considered, even if the potential impacts will not be evident in the first instance.</p>			
(p)	Will the development be undertaken in stages over a period of time?	No	
<p>External consultation</p> <p>The Guidelines indicate that:</p> <p><i>Airport lessee companies should undertake early consultation with their local consultation groups to allow a reasonable time for issues to be worked through and to avoid delays to development schedules. Effective consultation arrangements will be an important part of the process of identifying whether potential impacts are</i></p>			

Development type	Y/N/NR	Reason
<p><i>significant enough to warrant a major development plan process.</i></p> <p>For Sydney Airport, the following need to be consulted as part of the process of deciding whether or not the proposed development is of a kind that is likely to have a significant impact on the local or regional community:</p> <p>Sydney Airport Community Forum            Planning Coordination Forum            City of Sydney Council, City of Botany Bay Council, Marrickville Council; and Rockdale City Council            Other people or bodies as appropriate.</p> <p>To enable the consultation to be meaningful, the following information will need to be provided to the stakeholder:</p> <p>A full description of the proposed development, where it is proposed to occur on the airport site and the expected timeframe. Maps, diagrams or a photo montage showing the proposal are recommended;            A preliminary list of the anticipated environmental and/or community impacts associated with the development. Refer to paragraphs (a) to (o) above as a guide to what should be included. These should address impacts associated with construction and any impacts expected to occur once the development is operational; and            Where negative impacts are anticipated, a description of what action(s) will be undertaken to ameliorate those impacts (both during construction and once operational).</p> <p>Stakeholders should be given a period of not less than two weeks in which to provide their comments (and preferably more). This will allow time to brief them directly if needed. The feedback received should be assessed to gauge the likely level of community concern about the proposed development.</p>		



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[contactus@rms.nsw.gov.au](mailto:contactus@rms.nsw.gov.au)



Customer feedback  
Roads and Maritime  
Locked Bag 928,  
North Sydney NSW 2059



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