

# Ancillary Facility Assessment Windsor Bridge Replacement Project

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# **Glossary / Abbreviations**

AFA	Ancillary Facility Assessment
ASS	Acid sulfate soils
BAR	AustRoads acronym for a Basic Right Turn Treatment
CEMP	Construction Environmental Management Plan
Compliance audit	Verification of how implementation is proceeding with respect to a environmental management plan (EMP) (which incorporates the relevant approval conditions)
CoA	Conditions of approval
DoEE	Commonwealth Department of the Environment and Energy
DP&E	NSW Department of Planning and Environment
DPI	NSW Department of Primary Industries
Ecologically sustainable development	Using, conserving and enhancing the community's resources so that the ecological processes on which life depends are maintained and the total quality of life now and in the future, can be increased (Council of Australian Governments, 1992).
EEC	Endangered Ecological Communities
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EMS	Environmental Management System
Environmental aspect	Defined by AS/NZS ISO 14001:2004 as an element of an organisation's activities, products or services that can interact with the environment.
Environmental impact	Defined by AS/NZS ISO 14001:2004 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.
Environmental incident	An unexpected event that has, or has the potential to, cause harm to the environment and requires some action to minimise the impact or restore the environment.
Environmental objective	Defined by AS/NZS ISO 14001:2004 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve.
Environmental policy	Statement by an organisation of its intention and principles for environmental performance.
Environmental target	Defined by AS/NZS ISO 14001:2004 as a detailed performance requirement, applicable to the organisation or parts thereof, that

	arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.	
Environmental Representative (ER)	A suitably qualified and experienced person independent of Project design and construction personnel employed for the duration of construction. The principal point of advice in relation to all questions and complaints concerning environmental performance.	
EP&A Act	Environmental Planning and Assessment Act 1979	
EPA	Environment Protection Authority	
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999	
EPL	Environment Protection Licence under the <i>Protection of the Environment Operations Act 1997.</i>	
GMS	Georgiou Management System	
Minister, the	Minister for Planning NSW	
Non-compliance	Failure to comply with the requirements of the Project approval or any applicable license, permit or legal requirements.	
Non-conformance	Failure to conform to the requirements of Project system documentation including this CEMP or supporting documentation.	
NOW	NSW Office of Water	
OEH	NSW Office of Environment and Heritage	
ООН	Out of Hours (works outside standard work hours)	
SCMP	Strategic Conservation Management Plan	
SPIR	Submissions Preferred Infrastructure Report	
PoEO Act	Protection of the Environment Operations Act 1997	
Project, the	The Windsor Bridge Replacement Project	
SAP	Sensitive Area Plans	
Secretary	Secretary of the Department of Planning and Environment	
SSI	State Significant Infrastructure	

## 1 INTRODUCTION

## 1.1 Background

The Windsor Bridge Replacement Project team, comprised of NSW Roads and Maritime Services (Roads and Maritime) and Georgiou Group (Georgiou), have partnered together to undertake construction of the new road bridge over the Hawkesbury River at Windsor (the Project), on behalf of the New South Wales (NSW) Government.

Roads and Maritime completed an environmental impact assessment of the Windsor Bridge Replacement Project (the Project EIS) in 2012, and submissions report (and preferred submission infrastructure report) in 2013. These assessments identified a range of environmental, social and planning issues associated with the construction and operation of the Windsor Bridge Replacement and proposed measures to mitigate and manage those potential impacts.

The Minister for Planning subsequently approved the Windsor Bridge Replacement Project under the former Part 5.1 (now Division 5.2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) on 20 December 2013. The approval incorporated the Minister's Conditions of Approval (CoA).

Georgiou proposes to establish an ancillary facility on the northern side of the Hawkesbury River adjacent to Wilberforce Road (Lot 21 DP1196661) and an additional stockpile area located at 33 Wilberforce Road, Windsor on Lot 10 DP1182305.

In 2016 approval was given by the Projects Environmental Representative (ER) to operate a ancillary facility on the northern side of the river during the archaeological testing program. This proved to be an ideal location with minimal environmental impacts. Following the successful operation of that facility, the area was again assessed in October 2017 and managed as an ancillary facility during the salvage works.

#### 1.2 Context

This Ancillary Facility Assessment (AFA) has been prepared to satisfy the CoA and to seek approval from the Secretary of the Department of Planning and Environment (DP&E) under CoA C9. This approval is required prior to the establishment of the ancillary facility.

The AFA is intended for use as a standalone document to be submitted to the DP&E separately from the Construction Environmental Management Plan (CEMP).

## 2 PURPOSE AND OBJECTIVES

## 2.1 Purpose

Georgiou proposes to establish the main ancillary facility on the northern side of the river, adjacent to Wilberforce Road (Lot 21 DP1196661) and an additional stockpile and laydown at Lot 10 DP1182305. These facilities are required as part of the construction activities for the works to be delivered by Georgiou.

The approval pathway for establishing new ancillary facilities in an active construction zone within the approved Project footprint is shown in Figure 2-1.

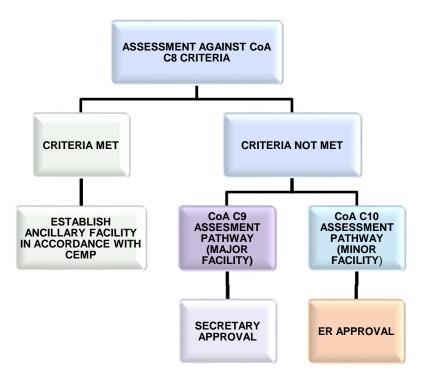


Figure 2-1 Ancillary facilities approval pathway

A desktop review of the site location against the Project's CoA C8 shows that the proposed ancillary facility on the northern side of the river does not meet all criteria listed under CoA C8 as shown in Table 3-1.

Under CoA C9, ancillary facilities that do not meet the criteria listed under CoA C8 require approval from the Secretary. Therefore, this AFA seeks to gain such approval by assessing the proposed ancillary facility against the C8 criteria and subsequently demonstrating how potential environmental impacts will be mitigated and managed to acceptable standards.

All management and mitigation measures proposed in this AFA will be to relevant standards consistent with the environmental management measures in the Windsor Bridge Replacement Environmental Impact Statement (EIS), the Response to Submissions and Preferred Infrastructure Report (SPIR), the CoA and all applicable legislation.

## 2.2 Objectives and Targets

The key objective of the AFA is to ensure that the potential impacts to the environment are minimised and within the scope permitted in the conditions and specifications of the Project. To achieve this objective, the following measures will be undertaken:

- Ensure appropriate controls and procedures are implemented during construction activities to avoid or minimise real and potential impacts to the environment and sensitive receivers along the Project corridor
- Ensure appropriate measures are implemented to address the requirements specified by the Roads and Maritime
- Ensure appropriate measures are implemented to comply with the CoAs, all relevant legislation and other requirements as described in Section 3.1 of this AFA.

The following targets have been established for the management of impacts resulting from operation of the ancillary facility sites during the Project:

- Ensure compliance with the relevant legislative requirements, CoAs and those contained in the EIS and Roads and Maritime' QA Specification G1, G2-C2, G36, G38
- Minimise any impacts on the surrounding sensitive receivers.

## 3 ENVIRONMENTAL REQUIREMENTS

## 3.1 Relevant legislation and guidelines

Legislation relevant to the management of ancillary facilities includes:

- Environmental Planning and Assessment Act 1979 (EP&A Act)
- Protection of the Environment Operations Act 1997 (POEO Act)
- Protection of the Environment Operations (General) Regulation 2009
- Environmentally Hazardous Chemicals Act, 1985
- Pesticide Act 1999
- Contaminated Land Management Act 1997 (CLM Act)
- Waste Management Waste Avoidance and Resource Recovery Act 2001 (WARR Act)
- National Parks and Wildlife Act 1974 (NPW Act)
- Biodiversity Conservation Act 2016 (BC Act).

The main guidelines, specifications and policy documents relevant to this Plan include:

- Roads and Maritime QA Specification G1 General requirements.
- Roads and Maritime QA Specification G2-C2 General requirements (major contracts).
- Roads and Maritime QA Specification G36 Environmental Protection.
- Roads and Maritime QA Specification G38 Soil and Water Management.
- Stockpile Site Management Guideline, Roads and Maritime 2015.

The management of the ancillary facility must comply with the Windsor Bridge Replacement CoA.

#### 3.1.1 Minister's Conditions of Approval

The CoA relevant to this assessment are listed in Table 3-1. A cross reference is also included to indicate where the condition is addressed in this assessment or other Project management documents.

Table 3-1 Conditions of Approval relevant to the AFA

CoA No.	Condition Requirements	Compliance / Reference within this document
CoA C8	Unless otherwise approved by the Director- General, the location of Ancillary Facilities shall:	
	(a) be located more than 50 metres from a waterway;	<b>No</b> . The ancillary facility will be within 50m of the Hawkesbury River
	(b) be located within or adjacent to land where the SSI is being carried out;	Yes. Land is located within the Project study area as depicted in the EIS Figure 5-2 (refer to Appendix A) or on land adjacent to the works (stockpile area)
	(c) have ready access to the road network or direct access to the construction corridor;	Yes. Direct access to Wilberforce Road and Freemans Reach Road. Good line of sight down Wilberforce Road for safe access and egress (refer Figure 4-1).

CoA No.	Condition Requirements	Compliance / Reference within this document
	(d) be located to minimise the need for heavy vehicles to travel through residential areas	Yes. Minimal residential receivers on the northern side of river (refer Figure 4-1).
	(e) be sited on relatively level land	Yes. Site where facility is proposed to be located is on relatively level land with less than 1% fall towards the Hawkesbury River. The ancillary area does not extend to the river banks (refer Figures 5-2 to 5-4).
	(f) be separated from nearest residences by at least 200 metres (or at least 300 metres for a temporary batching plant);	No. There is one residential receiver at the junction of Bridge Street and Wilberforce Rd (27 Wilberforce Road) which is approximately 30m away from the fence line of the proposed facility boundary (refer Figure 4-1).
	(g) not require vegetation clearing beyond that already required by the SSI	Yes. No vegetation clearing required as part of the facility setup beyond that already required by the design.
	(h) not be located within the Thompson Square Conservation Area;	Yes. The facility will is not located in the Thompson Square Conservation Area
	(i) not impact on Heritage items (including identified Aboriginal cultural value and archaeological sensitivity) beyond those already impacted by the SSI and not have any additional impacts to those heritage items impacted by the proposal	Yes. There will be no additional impacts on heritage items from the construction or operation of the facility beyond those already impacted by the Project.
		Excavation will be limited to depths of <30cm below surface at the stockpile site.
	(j) not unreasonably affect the land use of adjacent properties	Yes. There will be no unreasonable effects on adjacent landholders.
	(k) be above the 20 ARI flood level unless a contingency plan to manage flooding is prepared and implemented	No. Facility is located within the 20 ARI Flood level zone (refer Figure 5-1). A Flood Warning and Evacuation Plan has been prepared which outlines design considerations for the establishment of the facility and mitigation measures in the event of a flood. Refer Appendix E.
	(I) provide sufficient area for the storage of raw materials to minimise, to the greatest extent practical, the number of deliveries required outside standard construction hours. The location of the ancillary facilities shall be identified in the Construction Environment Management Plan	Yes. The facility provides sufficient area for the storage of raw materials to minimise, to the greatest extent practical, the number of deliveries required outside standard construction hours. No out of hours deliveries are required during establishment of the ancillary facility and will only occur during operation of the facility once the CEMP has been approved by DPE.
	The location of the ancillary facilities shall be identified in the Construction Environment Management Plan.	The location of the ancillary facility will be identified in the Construction Environment Management Plan.
CoA C9	Ancillary sites that do not meet the criteria set out in this consent shall be approved by the Director-General prior to establishment. In	This AFA

CoA No.	Condition Requirements	Compliance / Reference within this document
	obtaining this approval, the Applicant shall assess the ancillary facility against the criteria set out in this consent to demonstrate how the potential environmental impacts can be mitigated and managed to acceptable standards. Such assessment(s) can be submitted separately or as part of the Construction Environmental Management Plan required under this consent. The assessment shall include, but not necessarily be limited to:	
	(a) a description of the Ancillary Facility, its components and the surrounding environment;	Sections 4.1 and 5
	(b) details on the activities to be carried out at the facility, including the hours of use and the storage of dangerous and hazardous goods;	Sections 4.2, 4.3 and 4.4
	(c) an assessment of the environmental impacts on the site and the surrounding environment, including, but not limited to noise, vibration, air quality, traffic access, flora and fauna, heritage and light spill;	Section 5
	(d) details on the mitigation, monitoring and management procedures specific to the Ancillary Facility that would be implemented to minimise the environmental impacts or, where this is not possible, feasible and reasonable measures to offset these impacts and an assessment of the adequacy of the mitigation or offsetting measures. This shall include consideration of restrictions on the hours of use or exclusion of certain activities;	Sections 6 and 7
	(e) details on the timing for the completion of activities at the ancillary facility and how the site will be decommissioned (including any necessary rehabilitation); and	Section 4.5
	(f) demonstrated overall consistency with the approved project.  The Applicant shall demonstrate to the satisfaction of the Director-General that there will be no additional significant adverse impact from that Ancillary Facility's construction or operation.	Appendix I
CoA C10	The Director-General's approval is not required for minor Ancillary Facilities (e.g. lunch sheds, office sheds, and portable toilet facilities, etc.) that do not comply with the criteria set out in condition C8 of this consent and which:  (a) are located within an active construction	N/A  The ancillary facility does not meet the conditions of a minor ancillary facility, as such this condition is not applicable.
	zone within the approved project footprint; and	

CoA No.	Condition Requirements	Compliance / Reference within this document
	(b) have been assessed by the Environmental Representative to have:	
	(i) no additional adverse impact on the Thompson Square Conservation Area;	
	(ii) minimal amenity impacts to surrounding residences, with consideration to matters such as noise and vibration impacts, traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and	
	(iii) minimal environmental impact in respect to waste management, and no impacts on flora and fauna, soil and water, and heritage beyond those approved for the project; and	
	(c) have environmental and amenity impacts that can be managed through the implementation of environmental measures detailed in a CEMP for the project.	
CoA C11	All Ancillary Facilities shall be rehabilitated to at least their pre-construction condition, unless otherwise agreed by the Director-General.	Section 4.5

## 4 ANCILLARY FACILITY DETAIL

## 4.1 Description

The proposed location of the ancillary facility is located adjacent to Wilberforce Road, Windsor in Lot 21 DP1196661, this area has been assessed in the EIS and was previously used as an ancillary facility for the pre-construction testing investigation and salvage works. Refer Appendix A for all ancillary areas assessed in the project EIS. An additional area of land in Lot 10 DP1182305 has been leased by Roads and Maritime for use as a stockpile site. The leased area was not covered by the EIS and is outside of the approved boundary. However establishment and operation of the area as a stockpile site is considered consistent with the existing Project approval. The leased land has been previously used for turf farming and has been leased by Roads and Maritime for the duration of the Project construction.

Both areas have good access to Wilberforce Road, are central to the works and are positioned on a relatively flat land. The closest waterway is the Hawkesbury River, located approximately 30m from the facility's southern boundary, the nearest residence is approximately 30m away from the of the ancillary areas.

The existing environment of the proposed ancillary facility is agricultural land, specifically a commercial turf farm (33 Wilberforce Road). The commercial turf farm extends north and east from the ancillary area (compound and stockpile site). To the west is an isolated residential property, 27 Wilberforce Road and beyond this property is more commercial turf farm. Directly to the south of the proposed compound site is the Hawkesbury River.

As well as providing the main compound facilities and site office for the Project, the site would support bridge construction activities and would include the casting yard, large cranes, laydown areas and other facilities supporting the incrementally launched bridge. Refer to Figure 4-1 for the location of proposed main facility and adjacent geographic features. The proposed main facility (Lot 21 DP1196661) will include (refer Figure 4-2 for proposed layout):

- Office facilities
- Car park for light vehicles and heavy vehicles
- Ablution facilities
- Hazardous and dangerous goods storage
- Workshop
- Material stockpiles and storage
- Concrete casting beds
- Acid sulphate treatment area
- Erosion and sediment controls.

The stockpile area (Lot 10 DP1182305) will include:

- Temporary storage and stockpiling of materials including topsoil, spoil, mulch, raw materials (aggregate, rock and soil) and demolition wastes. If asbestos is encountered, it will be temporarily stored at the stockpile area.
- Laydown area for construction plant, equipment and pre-fabricated structural elements.

No hazardous or dangerous goods will be stored at the stockpile area.

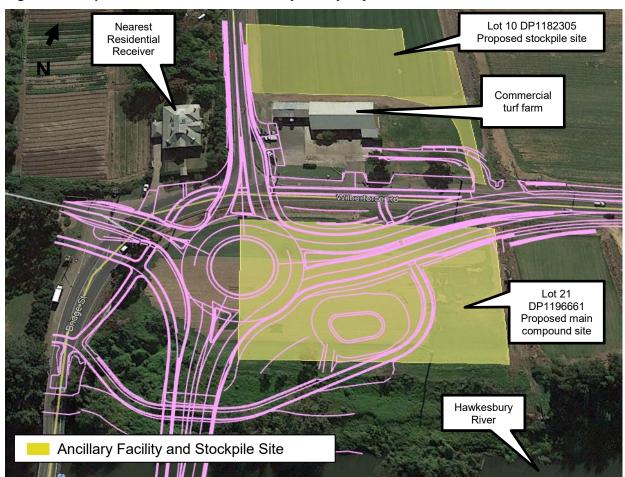
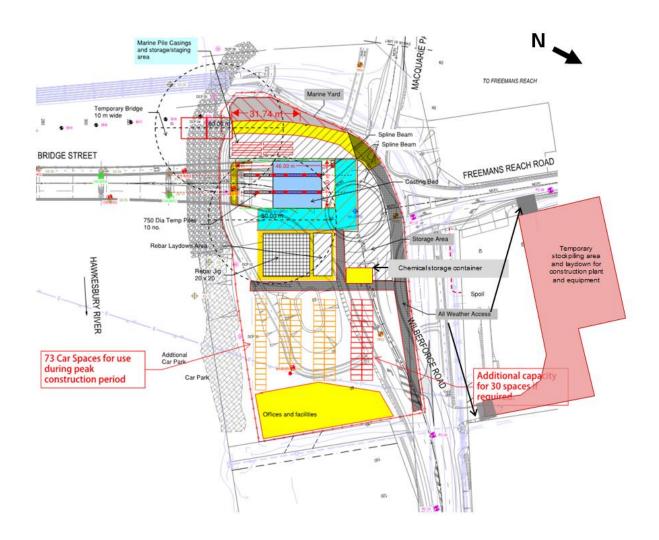


Figure 4-1 Proposed location of main ancillary facility adjacent to Wilberforce Road

Figure 4-2 Proposed Layout for Ancillary Facility



#### 4.2 Activities

Activities to be carried out at the main facility will generally include:

- Pre-start meetings/toolbox talks and site meetings
- Removal of waste products
- Emergency evacuation point
- Parking of heavy and light vehicles (73 car spaces).
- Storage of fuels and chemicals
- Stockpiling of soil and materials
- Treatment of acid sulphate soils
- Casting of concrete structures for the bridge.

## 4.3 Plant and Equipment

Light vehicles will use the site on a daily basis. Heavy vehicles will deliver construction materials to the site and will sometimes be parked at the site. Small power tools will be used. Indicative plant, equipment and material to be stored at the ancillary site are listed below;

#### Plant;

- Backhoe
- Front end loader
- Semi-trucks
- Heavy Vehicles
- · Light vehicles
- 30 tonne excavators
- 35 tonne excavators
- 100T crane.

#### Equipment:

- Various Poly pipe lengths and sizes for culverts
- Generators
- Hand tools; plate compactors, drills, shovels, etc.
- Ablution blocks or equivalent.

#### Materials;

- Geofabric Rolls
- Bedding sand
- Aggregates
- Topsoil (stockpile)
- Spoil (stockpile)
- Mulch (stockpile)
- Treated acid sulfate soil (stockpile)
- Lime (stockpile).

Storage of hazardous and dangerous goods;

 3m x 3m self bunded dangerous goods container, the bund capacity will be 120% of the largest stored container

- Concrete curing chemicals
- Paints
- Adhesives
- Cleaning products
- Small quantities of fuel in jerry cans.

#### Waste Storage and removal;

- Lidded skip bins for putrescible and office waste to prevent pests and vermin.
- Open skip bins to store construction wastes.
- 2 x 4000L Sewage storage tanks at ablution facility these will have high level alarms set at 80% capacity.
- All of the above items will be located at office and facilities location shown in Figure 4-2.
- Licenced waste transporters will be used to remove wastes from site to an appropriately licenced facility and all waste tipping dockets and tracking dockets will be retained on site.

#### Stockpiling of materials;

- All materials generated onsite including topsoil, spoil, and mulch will be temporarily stockpiled in the stockpiling area (see Figure 4-2).
- Raw materials procured for construction like aggregate, rock and soil will also be temporarily stored at the stockpile area.
- Waste bulk materials like excavated soils, demolition wastes will be temporarily stored at the stockpile area until they are classified under the NSW EPA waste classification guidelines and removed from site to licenced facility.
- If asbestos is encountered, and there is need to temporarily store at the stockpile site. The asbestos contaminated material will be covered with builder's plastic to prevent any wind or water erosion prior to being removed offsite by an appropriately licenced contractor.

## 4.4 Timing and Duration

The ancillary facility (main compound and stockpile area) will be established and commence operation once approval is granted by the DP&E. This ancillary facility will operate during the approved construction hours as per CoA C13, C14, and C15 as follows:

#### CoA C13 Standard construction hours

- 7.00am to 6.00pm, Monday to Friday
- 8.00am to 1.00pm on Saturdays; and
- At no time on Sundays or public holidays.

#### CoA C14 Out of hours works

Construction works outside of the standard construction hours identified in condition C13 may be undertaken in the following circumstances:

(a) Construction works that generate noise that is:

- (i) no more than 5 dB(A) above rating background level at any residence in accordance with the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009); and
- (ii) no more than the noise management levels specified in Table 3 of the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009) at other sensitive receivers; or
- (b) For the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or
- (c) Where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm; or
- (d) Works as approved through the out-of-hours work protocol outlined in the CEMP.

#### **CoA C15 High Impact Noise Activities**

Activities resulting in impulsive or tonal noise emission (such as rock breaking, rock hammering, pile driving) shall only be undertaken:

- (a) Between the hours of 8:00 am to 5:00 pm Monday to Friday;
- (b) Between the hours of 8:00 am to 1:00 pm Saturday; and
- (c) In continuous blocks not exceeding three hours each with a minimum respite from those activities and works of not less than one hour between each block.

For the purposes of this condition 'continuous' includes any period during which there is less than a one hour respite between ceasing and recommencing any of the work the subject of this condition.

The ancillary facility (main compound and stockpile area) will remain operational throughout construction period.

## 4.5 Decommissioning and rehabilitation

Decommissioning and rehabilitation of the ancillary facility (main compound and stockpile area) will be undertaken as part of the finishing works towards the end of the construction program in early 2020 and will include the following activities;

- Removal of all fencing, signage and temporary structures
- Site clean-up and disposal of all surplus materials
- Stabilisation and re-vegetation of the sites as per Urban Design and Landscape Plan.
- Reinstatement of the stockpile to the pre-existing condition unless otherwise agreed by the land holder.

In accordance with CoA C11, all ancillary facilities and access points will be rehabilitated to at least their pre-construction condition or better, unless otherwise agreed by the Secretary.

## 5 ENVIRONMENTAL ASSESSMENT

This section of the AFA provides a detailed description of the potential environmental impacts associated with the establishment and operation of the ancillary facility. All aspects of the environment potentially impacted upon by the establishment and operation of the ancillary facility are considered.

#### 5.1 Flora and Fauna

Field surveys for the EIS identified all vegetation within the study area to provide poor quality fauna habitat, with poor structure of canopy, midstorey and lower groundcover flora. Ground debris was generally absent. No habitat trees (hollow-bearing trees including large dead trees) were identified within the study area.

The establishment of the ancillary facility is not anticipated to result in any direct impacts to native flora or fauna and given the low habitat potential of the surrounding area it is unlikely that noise, vibration or light associated with the operation of the ancillary facility will have an adverse impact on the surrounding flora and fauna. The main ancillary facility consists of hardstand and grassed areas which were used for the previous archaeological testing and salvage works. The stockpile site consists of grass associated with its previous land use as a turf farm. No native vegetation clearing is required as part of the ancillary facility establishment or operation.

The safeguards outlined in the Project EIS including; pre clearing surveys, ongoing monitoring, erosion and sediment control, and rehabilitation will appropriately manage the risks to flora and fauna associated with the ancillary facility. These mitigation measures are detailed in Section 6.

#### 5.2 Soil and Water

The Chapter 7.6 of the Project EIS assessed the potential soil, sediment, water and waste impacts associated with the construction and operation of the approved Project. The soil landscape of the ancillary facility site is classified as Freemans Reach (fr), and is an alluvium derived from the Narrabeen Group, Hawkesbury Sandstone and Wianamatta Group materials.

The soils are generally deep brown sands and loams. The site of the ancillary facility occupies the floodplain which can be subject to scour or sheet and rill erosion during floods. The land at both the main compound and stockpile area is relatively flat <1% with a gentle fall towards the river. Sediment controls will be installed downslope of both areas as per the erosion and sediment control plans (refer Appendix B). There are no groundwater wells located on site of the ancillary facility, however, there is one well (GW106373) located immediately adjacent to the project area near the corner of Wilberforce and Freemans Reach Roads. The ancillary facility will not impact the groundwater well. The EIS did not identify any contaminates of concern in the location of the ancillary facility.

The establishment and operation of the ancillary facility would result in clearing of grass and topsoil, stockpiling of soils, stockpiling of pavement materials, chemical storage, general maintenance and refuelling of equipment and plant.

The potential impacts associated with these activities may include;

 Exposure of soils during earthworks, creating the potential for offsite transport of eroded sediments and pollutants

- Increased turbidity of waterway due to exposure, erosion, runoff and dust propagation
- Contamination from site compounds, chemical storage areas and ablution facilities
- Fuel, chemicals, oils, grease and petroleum hydrocarbon spills from construction machinery polluting the river and soils.
- Disturbance of unidentified contaminated land and subsequent generation of contaminated runoff.
- Alteration of surface and subsurface flows that could cause disturbances to hydrology.

Section 6 details the proposed mitigation measures to manage these risks which include;

- Training will be provided to all project personnel on sound erosion and sediment control practices
- Development and implementation of erosion and sediment control plans (refer Appendix B)
- Correct stockpile management
- Correct storage and handling of chemicals and hydrocarbons
- Spill response materials and procedures (refer Appendix C)
- Controls and management for ablution facilities
- Contaminated Lands Unexpected Finds Procedure.

## 5.3 Flooding

Section 7.7 of the Project EIS, a technical working paper was prepared to assess the flooding impacts associated with the construction and operation of the approved Project. The existing environment where the proposed ancillary facility is situated is a floodplain, and is within the 1 in 20 year ARI flood region (refer Figure 5-1). The Project EIS found that flooding impacts from the approved Project would have adverse effects on work activities and increase the risk of soil and sediment erosion.

As the ancillary facility is not above the 1 in 20 year ARI flood level, a Flood Warning and Evacuation Management Plan has been developed in accordance with CoA C8(k). The Flood Warning and Evacuation Management Plan (refer Appendix E) describes contingency measures for flood events to minimise the risk of damage from flooding.

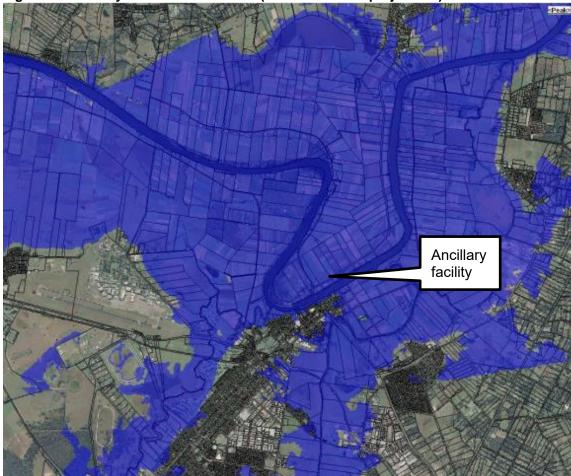


Figure 5-1 1 in 20 year ARI flood extents (extract from the project EIS)

## 5.4 Heritage

The potential impacts on Aboriginal heritage associated with the construction and operation of the approved Project were assessed in Chapter 7.2 of the Project EIS.

### 5.4.1 Main ancillary facility

The Detailed Salvage Strategy (DSS) (AAJV, 2017¹) summarises the methodology for undertaking the Aboriginal archaeological salvage which has now been completed. As such, the main ancillary facility is considered to have been cleared of constraints associated with Aboriginal cultural heritage and no additional Aboriginal salvage works are considered required. As outlined in the DSS, the area of the main ancillary facility will be subject to an unexpected finds procedure should an item of Aboriginal cultural heritage be identified.

The following table summarises identified impacts and management measures in relation to Aboriginal archaeological sites originally listed on the Aboriginal Heritage Information Management System (AHIMS) within the area of the main ancillary facility.

<sup>&</sup>lt;sup>1</sup> Windsor Bridge Replacement Project. Detailed Salvage Strategy, (AAJV, November 2017)

Table 5-1 Aboriginal archaeology - impacts and management

Name	Impact	Management
45-5-3582	Will be impacted	No impact mitigation is required as the site exhibits low Aboriginal heritage significance.
45-5-3583	Will be impacted	No impact mitigation is required as the site exhibits low Aboriginal heritage significance
45-5-3584	Will be impacted	No impact mitigation is required as the site exhibits low Aboriginal heritage significance
45-5-3585	Will be impacted	No impact mitigation is required as the site exhibits low Aboriginal heritage significance

#### 5.4.2 Stockpile site (the leased area)

It is noted that the leased area was not covered by the DSS, however based on these investigations at the main ancillary site Aboriginal Cultural material was primarily recovered between depths of 1.2 to 2.4 metres below ground surface.

Stockpiling at the leased area will require surface activities only. Therefore, it is considered unlikely that construction of the site, with excavations to depths of <0.30m below ground surface, would result in any direct impacts to any cultural deposits. In addition, the location of the works is within a heavily disturbed turf farm. While there is potential for indirect impacts to under-lying cultural materials through compression of the soil profile during construction and operation this would unlikely be significant.

The stockpile site will be limited to surface activities only (<30cm) and subject to an unexpected finds procedure should an item of Aboriginal cultural heritage be identified.

#### 5.4.3 Non-Aboriginal Heritage

In terms of non-aboriginal heritage, the only item of significance is the residential building at 27 Wilberforce Road, Freemans Reach, referred to as 'Bridgeview' (Lot A DP 370895). This building has a local heritage listing under *Hawkesbury Local Environmental Plan 2012*, listed as item number 1274.

There will be no direct physical impact to this item, however pre and post dilapidation surveys will be undertaken to ensure any damage during the construction period is identified.

#### 5.4.4 Mitigation Measures

Mitigation and management measures for heritage are detailed in section 6 and these include;

- Follow Roads and Maritimes unexpected finds procedure should an item of cultural heritage be identified
- Only surface activities will be undertaken at the stockpile site (leased area) unless approval is obtained from the project Heritage Manager.
- Prior to commencing work all construction personnel will undergo a heritage
  induction which would contain information on heritage values and items in the area
  and on environmental management measures to minimise potential heritage impacts.
  This induction will identify procedures for unexpected heritage finds, including an
  immediate stop to work in the vicinity of the find, and reporting to appropriate
  authorities.

 All Heritage buildings within 50m of the construction footprint including the residential building at 27 Wilberforce Road will have pre and post dilapidation surveys to ensure any damage during the construction period is identified.

## 5.5 Noise

The nearest sensitive receiver to the ancillary facility is a residential property located at 27 Wilberforce Road at a distance of approximately 30 metres and one adjacent commercial receiver at 33 Wilberforce Road at a distance of approximately 15 metres.

It is anticipated that establishment and operation of the ancillary facility will generally be carried out during standard construction working hours in accordance with the CoA C13, and Interim Construction Noise Guideline (DECC, 2009);

- 7.00am to 6.00pm, Monday to Friday
- 8.00am to 1.00pm on Saturdays; and
- At no time on Sundays or public holidays.

Establishment of the main ancillary facility will involve the importation of all-weather material and placement of site offices at the site. Operational activities include; vehicle parking, delivery of materials with road trucks and stockpiling/storage of materials.

Table 5-2 provides a summary of construction scenarios, and associated plant and equipment required for the ancillary works. Plant and equipment may be used in isolation or simultaneously. Table 5-3 provides a summary of predicted noise impacts from each related construction scenario. This information has been sourced from the EIS Noise and Vibration working paper where possible, or a desktop assessment using Roads and Maritime Services Noise Estimator Tool<sup>2</sup>. Noise management levels (NML) for each key sensitive receiver location have also been provided and are adopted from the EIS Noise and Vibration working paper.

The predicted noise levels at 27 Wilberforce Road are below NMLs, it should be noted that the noise estimates for Scenario B (using the RMS Noise Calculator) are conservative as the calculations assume a flat ground surface and so do not take into account the propagating effects such as ground effects, atmospheric absorption or weather. In reality noise levels are expected to be lower. Mitigation measures detailed in Table 6-1 will be implemented during site establishment and operation to reduce noise impacts.

The EIS did not predict the noise levels at the commercial receiver at 33 Wilberforce Road, however it is expected that given the proximity of the receiver to the works (within 15m) that the NML of 75 dBA will be exceeded on occasions by certain activities. Based on the RMS Noise Calculator this may be up to 5dBA above the NML during operation of the ancillary facility, noting this is a conservative estimate. Mitigation measures detailed in Table 6-1 will be implemented during site establishment and operation to reduce noise impacts.

Direct consultation with the resident at 27 Wilberforce Road and the commercial premise at 33 Wilberforce Road will be undertaken to notify them of the upcoming works and potential impacts, and to keep them informed of the ancillary facility establishment and operation as shown in Table 6-1.

<sup>&</sup>lt;sup>2</sup> Roads and Maritime Services Construction Noise Estimator (version 23/08/2016)

Table 5-2 Construction scenarios and associated plant and equipment and sound power levels (dB(A))

Construction scenario	Activity	Out of hours works proposed	Plant	LAeq Sound power level dB(A)	Indicative total project duration
	1. Archaeological	No	8 tonne excavator	103	
	investigations		5 tonne vibratory roller	107	3-4 weeks
			Spoil truck	103	
	2. Clearing and		30T excavator	108	
	grubbing	No	Truck	103	2 weeks
	grubbing		Tub grinder	109	
	Northern     approach utility     adjustments	No	Backhoe	108	2 weeks
A – Ancillary area	4. Northern approach site clearing / casting yard construction  5. Erection of tower crane / concrete pad footing	No	30 tonne excavator	103	3 months
establishment			Spoil truck	103	
			Backhoe	108	1
		No	30 tonne excavator	103	
			Concrete truck and pump	111	1 week
			Poker vibrator	112	1
			Mobile 45 tonne crane	105	
	6. Southern approach utility adjustments	No	Backhoe	108	2 weeks
	Light vehicle     parking/movement	No	Light vehicles	88	
B- Ancillary area	Delivery of     materials with road	No	Front end Loader	91	Up to 18
operation <sup>2</sup>	trucks	110	Road Truck	108	months
	3. Stockpiling of	No	Excavator (30t)	103	
	materials		Spoil truck	103	]

<sup>&</sup>lt;sup>1</sup> EIS Noise and Vibration working paper where possible <sup>2</sup> Roads and Maritime Services Noise Estimator Tool

Table 5-3 Noise assessment for proposed ancillary facility establishment and operation

14510 0 0 1	Table 6 6 Holse assessment for proposed anomaly facility establishment and operation							
Sensitive receiver location	Scenario reference no.	Daytime NML (dB(A))	Evening NML*	Night NML*	Predicted LAeq (15minute) (dB(A))	Exceedance of NML		ЛL
						Day (dB(A))	Evening (dB(A))	Night (dB(A))
	$\mathbf{A}^1$	68	55	44	63	0	n/a	n/a
	A.1 <sup>1</sup>	68	55	44	43	0	n/a	n/a
	A.3 <sup>1</sup>	68	55	44	60	0	n/a	n/a
27	A.4 <sup>1</sup>	68	55	44	61	0	n/a	n/a
Wilberforce	A.5 <sup>1</sup>	68	55	44	59	0	n/a	n/a
Road	A.6 <sup>1</sup>	68	55	44	44	0	n/a	n/a
	B.1 <sup>2</sup>	68	55	44	53	0	n/a	n/a
	B.2 <sup>2</sup>	68	55	44	67	0	n/a	n/a
	B.3 <sup>2</sup>	68	55	44	65	0	n/a	n/a

<sup>&</sup>lt;sup>1</sup> EIS Noise and Vibration working paper where possible

#### 5.6 Vibration

The nearest buildings to the ancillary facility are a residential property at 27 Wilberforce Road at a distance of approximately 30 metres and a commercial receiver at 33 Wilberforce Road at a distance of approximately 15 metres.

For the commercial building (33 Wilberforce Rd) the British Standard (BS 7385) structural damage criteria has been applied. For the heritage building (27 Wilberforce Rd) the German DIN 4150 -3 Structural Vibration, Part 3 Effects on Vibration on Structures has been used as guidance.

A small vibratory roller (<50Kn, typically 1-2 tonnes) is likely to be the most vibration intensive equipment to be used during construction of the ancillary facility and the safe working distance for a vibratory roller of this size is approximately 5m for cosmetic damage and approximately 15-20m for human comfort (British Standard (BS 7385) structural damage criteria). The small vibratory roller will be used for site establishment activities for the additional ancillary facility and used for approximately 5 days.

As the safe working distances will not be exceeded, structural damage from vibration is unlikely at both receivers (27 and 33 Wilberforce Road). It is possible that Human discomfort vibration criteria will be exceeded at the commercial premises at 33 Wilberforce Road. The occupants of the commercial premises will be notified of the timing and duration of the works.

As detailed in Section 6, pre and post construction dilapidation surveys will be undertaken on both buildings to identify any impacts associated with the establishment and operation of the ancillary facility.

#### 5.7 Traffic and Access

The Project EIS traffic and transport working paper assessed the impacts associated with the ancillary facility. The existing roads that would be impacted by the ancillary facility are Wilberforce Road and Freemans Reach Road. Wilberforce Road is a sub-arterial road running north-east/south-west from Bridge Street, connecting Windsor to Wilberforce and forming part of State Route 69 to Singleton. The road is one lane in each direction, with about 13,000 vehicles traveling along the each day. Freemans Reach Road is a collector road running north-south from Bridge Street, connecting Windsor to Freemans Reach. The

<sup>&</sup>lt;sup>2</sup> Roads and Maritime Services Noise Estimator Tool

road has one lane in each direction, with about 7,000 vehicles traveling along the road each day.

The EIS detailed that the number of heavy vehicle trips generated by the construction of the project would be relatively low when compared to the underlying general traffic volumes. Even if all the construction activities were to occur concurrently, there would be an average additional 45 truck movements a day which would be less than one percent of daily traffic movements across Windsor Bridge. It is anticipated that most construction-related heavy traffic would travel to and from the project area predominantly from the south, although materials destined for the work areas on the northern side of the river would ideally be delivered from areas to the north.

As detailed in Section 6 the mitigation measures associated with traffic management include;

- Wherever practical all removal and delivery of materials and plant will be timed to
  occur outside of the peak traffic periods to minimise delay in the area. Bulk deliveries
  requiring multiple trips (such as for major concrete pours) would be managed on a
  'just in time' basis with each subsequent delivery called up on two-way radio.
- Delivery trucks would not be permitted to queue on local roads. Also, temporary traffic measures would be implemented to maintain the efficiency and safety of access to the site compound. Consequently, the existing operational performance of roads and intersections would not be significantly impacted by construction.
- Dilapidation surveys of regional and local roads used by construction traffic will be undertaken prior to their use for construction as well as after construction is complete and RMS will be responsible for any necessary repair of deterioration attributable to the impacts of construction traffic.

#### **Access**

Access to the main ancillary facility at Lot 21 DP1196661 is proposed to be located on the southern side of Wilberforce Road, east of Freemans Reach Road, as shown in Figure 5-2.

Access will be constructed and maintained to ensure minimal impact on existing traffic on Wilberforce Road. The access will be designed to allow separation between traffic turning right into the site compound and traffic continuing east on Wilberforce Road, i.e. provision of a temporary basic right-turn (BAR) treatment. The road widening for the BAR will include a shoulder reconstruction of approximately  $200m^2$ , removal of the existing adjacent road verge material, replacement with imported clean material and asphalt and installation of new line marking for safe vehicle movement. This widening of the road will provide capacity for vehicles wanting to turn right into the compound to remain stationary until it's safe to do so. It also provides space for eastbound vehicles to pass vehicles waiting to turn right into the compound.

Figure 5-2 View of main site compound facility facing south west along Wilberforce Rd



For the stockpile site at Lot 10 DP1182305, two access points will be constructed; one at Freemans Reach Road and one at Wilberforce Road as shown in Figures 5-3 and 5-4 respectively. These access points will allow safe entrance and exit from the proposed ancillary facility and ensure minimal impact on existing traffic flows.

Vehicle Management Plans will be developed to ensure safe vehicle movements in and out of the ancillary facility sites and provide specific mitigation measures including those detailed in Section 6.

Figure 5-3 Access to Stockpile site Freemans Reach Road Point of Access to Lot 10 DP1182305



Figure 5-4 Access to Stockpile site Wilberforce Road Point of Access to Lot 10 DP1182305

### 5.8 Visual

The Project EIS established that the receiving environment is visually sensitive, and the approved Project would have a substantial impact on the landscape character and some views, particularly viewpoints within open space areas close to the Hawkesbury River.

The ancillary facility will result in a temporary increase in the visual extent of the construction site and activities within the ancillary facility. The proposed location is turf farmland, located near a residential property at 27 Wilberforce Road at a distance of approximately 30 metres and a commercial receiver at 33 Wilberforce Road at a distance of approximately 15 metres. The ancillary facility will therefore result in a temporary visual change for 27 and 37 Wilberforce Road, however, it will not have tall structures located on it and any obstruction of views to from the existing residential receiver located on the corner of Freemans Reach and Wilberforce Road will be minimal.

The site would have some security lighting which may have potential light spill impacts during the evening and night time period. The security lighting proposed for the site compound will be directed away from the residential property at 27 Wilberforce Road to ensure any light spill impact minimised.

The visual and light spill impacts associated with the ancillary facility will be temporary in nature. The ancillary facility has been designed to occupy the minimal area practicable, and is consistent with the potential impacts presented in the Project EIS. Fencing and hoarding will be installed around the perimeter of the main ancillary site and the stockpile site.

The main ancillary facility will be stabilised and re-vegetated as per the Urban Design and Landscape Plan developed for the Project. The stockpile site will be restored to its preconstruction condition at the end of the Project.

## 5.9 Air Quality

The nearest sensitive receiver to the ancillary facility is a residential property located at 27 Wilberforce Road at a distance of approximately 30 metres and one adjacent commercial receiver at 33 Wilberforce Road at a distance of approximately 15 metres.

Establishment of the ancillary facility will result in the disturbance of approximately 1 hectare of ground surface. Primary sources of dust emissions associated with the establishment and operation of the ancillary facility identified in the Project EIS are;

- Clearing of grasses and topsoil removal
- Movement of soil and fill
- Wind erosion from unsealed surfaces and stockpiles
- Vehicles travelling over unsealed areas.

The effects of construction activities on airborne particulate matter would be temporary and the mitigation measures detailed in Section 6 include;

- The carpark and access tracks will be stabilised to minimise dust impacts from movement of plant within the ancillary area
- A water cart will be utilised when performing earthworks during establishment works and during stockpiling
- Stabilising stockpiles that will be in place for more than 20 days and keeping stockpiles less than 2m in height
- Covering of all materials transported to and from the construction site
- Visual monitoring of air quality to verify the effectiveness of controls and enable early intervention.

## 5.10 Community Consultation

Consultation regarding the Project was undertaken during the EIS exhibition period. This assessment confirms and further informs the findings of the previous assessments undertaken in relation to construction activities located in this area of the Project.

Roads and Maritime has consulted with the owner of the land which the stockpile site would be located on (33 Wilberforce Road). A lease agreement between the land owner and Roads and Maritime currently exists.

Targeted consultation with residents and businesses located near the project area will be undertaken via notifications and/or doorknocking in accordance with the Community Communication Strategy. The consultation will provide the surrounding community with details of the proposed activities for each stage of use (i.e. establishment, operational and decommissioning/rehabilitation).

Roads and Maritime and Georgiou will continue to carry out ongoing consultation activities with neighbouring residents and business to inform them of potential amenity impacts (including noise and vibration, traffic and access, dust and odour, and visual impacts) and explain the appropriate mitigation measures that will be implemented.

## **6 ENVIRONMENTAL MITIGATION MEASURES**

This section details the environmental mitigation measures specific to the Ancillary Facility in accordance with CoA C9(d) that will be implemented to minimise the environmental impacts associated with the establishment and operation of the ancillary facility.

A range of environmental mitigation measures are identified in the various assessment and approval documents for the project, including the EIS, the Submissions Report, Conditions of Approval and Roads and Maritime standard documents. Site specific mitigation measures have been adapted from these documents as relevant to the establishment; operation, decommissioning and rehabilitation of the ancillary facility, as outlined in Table 6-1.

**Table 6-1 Environmental Mitigation Measures** 

ID	Measure/Requirement	When to Implement	Responsibility	Reference
General				
GEN1	Prior to establishing the ancillary facility a pre-construction land condition assessment will be undertaken by an independent environmental consultant. This will assess the land for any pre-existing contamination or waste issues prior to taking possession.	Prior to possession of site	ESR, Independent Consultant	G36, Cl4.15.2
GEN2	A flood response management plan has been developed (Appendix E) to ensure adequate warning of floods is obtained and that appropriate emergency response procedures are implemented in a timely manner.	Pre - construction Construction	Project Manager Superintendent ESR	CoA C8(k) G1
GEN2	When the areas of land used for the site facilities are no longer required, and after restoration of the areas to pre-existing condition or better, a post-construction land condition assessment by an independent environmental consultant is required.	Post - construction	ESR Independent Consultant	G36, Cl4.15.2
Flora and Faun	a			
FF1	Clear boundaries will be applied for construction and exclusion zones for equipment, machinery and traffic to prevent unnecessary damage to native vegetation and fauna habitats.	Pre - construction	Project Manager Superintendent ESR	CoA D4(d) CoA D5(b)(i) G36 Sections 3.1 and 4.8
FF2	Clearing limits will be accurately and clearly marked. Existing trees within construction area and compounds that do not need to be removed will be identified, protected and maintained throughout the construction period.	Pre - construction	Project Manager Superintendent ESR	CoA D5(b)(i) CoA D5(b)(ii) G36 Section 4.8
FF3	Once clearing limits have been surveyed and marked, a suitably qualified and experienced fauna ecologist will undertake a preclearing survey to identify any concerns to specific species.	Pre - construction	Ecologist ESR	CoA D5(b)(i) G36 Section 4.8
FF4	Clearing boundary demarcation and tree protection zones will be inspected during the weekly environmental inspection and recorded in the Georgiou One App Environmental inspection template. Inspection findings will be reported in the environmental monthly report.	Construction	ESR	CoA C9(d)
Soil and water				
SW1	Training will be provided to all project personnel, including relevant subcontractors on sound erosion and sediment control practices and the requirements from this plan through inductions, toolboxes and targeted training.	Pre-construction Construction	Superintendent ESR	G38/G36, Good practice

ID	Measure/Requirement	When to Implement	Responsibility	Reference
SW2	An erosion and sediment control plan (Appendix B) will be developed during detailed design in accordance with Managing Urban Stormwater – Soils and Construction Volume 1 (Landcom, 2004) and Volume 2D (DECC, 2008). This plan will incorporate erosion control measure to limit the movement of soil from disturbed areas, and sediment control measures to remove any sediment from runoff prior to discharge into the river.	Pre-construction Construction	Superintendent ESR	ESCPs (Appendix B) CoA C23
SW3	All soils to be transported offsite, will be identified and classified in accordance with the <i>Protection of the Environment Operations Act</i> 1997 (POEO Act) and Waste Classification Guidelines	Construction	Superintendent ESR	G36 Clause 4.11 CoA C40
SW4	An Unexpected Discovery of Contaminated Land Procedure (Appendix D) will be implemented if potentially contaminated land, spoil or fill is encountered. Works in the vicinity will be stopped or modified and will not recommence until the material has been analysed and management measures implemented.	Construction	Superintendent ESR	G36 Clause 4.2.3
SW5	A spill management procedure (Appendix C) will be developed and personnel will be inducted on its procedures in the event of a spill. All fuels and chemicals will be stored and used in accordance with the appropriate guidelines and standards	Construction	Superintendent ESR	Appendix C
SW6	All erosion and sediment controls will be inspected weekly and post rainfall events >10mm. Required maintenance and improvements will be recorded in the Georgiou One App Environmental inspection template. Inspection findings will be reported in the environmental monthly report.	Construction	ESR	CoA C9(d)
Stockpile M	lanagement			
SP1	Stockpiling of material will not occur within 5m of vegetation protection areas and tree protection zones. Delineation will be in accordance with AS 4970.	Pre-construction Construction	Project Manager ESR	G38 Clause 3.2 CoA D4 (e)
SP2	Stockpiles will be located at least 5m from concentrated water flows and 50m from the top of bank of any watercourse or drainage line	Pre-construction Construction	Project Manager ESR	G38 Clause 3.2 CoA D4 (e)
SP3	Stockpile heights will be no greater than 2m unless otherwise approved by Roads and Maritime, with slopes no steeper than 2:1.	Pre-construction Construction	Project Manager ESR	G38 Clause 3.2 CoA D4 (e)

ID	Measure/Requirement	When to Implement	Responsibility	Reference
SP4	Cover, or otherwise protect from erosion, stockpiles that will be in place for more than 4 weeks as well as any stockpiles that are susceptible to wind or water erosion, within 10 days of forming each stockpile in accordance with the blue book.	Pre-construction Construction	Project Manager ESR	G38 Clause 3.2 CoA D4 (e)
SP5	Clean topsoil to be retained for rehabilitation purposes, weed contaminated topsoil to be separated from clean topsoil.	Pre-construction Construction	Project Manager, ESR	G38 Clause 3.2 CoA D4 (e)
SP6	Weed mitigation measures including early establishment of a sterile cover crop on topsoil stockpiles will be implemented to prevent and minimise the growth of weeds.	Construction	Project Manager ESR	G38 Clause 3.2 CoA D4 (e)
SP7	Stockpiles will be located on relatively flat land <2% grade, to minimise erosion	Pre-construction Construction	Project Manager ESR	G38 Clause 3.2
SP8	Controls will be placed around stockpiles and immediately downslope of excavated areas to minimise siltation and sedimentation.	Pre-construction Construction	Superintendent	G38 Clause 3.2
SP9	The ESCP (Appendix B) must detail the measures that will be implemented to protect stockpiles from erosion by wind and water erosion.	Pre-construction Construction	ESR	G38 Clause 3.2
SP10	The stockpile area will be included in the weekly and post rainfall environmental inspections and recorded in the Georgiou One App Environmental inspection template. Inspection findings will be reported in the environmental monthly report.	Construction	ESR	CoA C9(d)
Material Sto	rage and Management			
CH1	Chemical, fuel and lubricant storage areas will be suitably located and bunded in a secure protected area with an impermeable floor to minimise the impact of any spillage or contamination on the Site and adjoining areas. The bunded area will contain 120% of the volume of the largest single stored volume within the bund.	Construction	Site Supervisor Foreman	G36 CI 4.3 CoA C12
CH2	Inspect all plant and equipment daily for leakages of fuel, oil or hydraulic fluid. Repair any defective or deteriorated equipment that may result in leaks or leaks before using plant or equipment.  Maintain records of plant inspections	Construction	Operators	G36 CI 4.3
CH3	Keep adequate quantities of suitable material to counteract spillage	Construction	Superintendent\Foreman	G36 Clause

ID	Measure/Requirement	When to Implement	Responsibility	Reference
	readily available. Clean up all chemical spills immediately.			4.3 CoA C12
CH4	Emergency spill kits for the management of wet and dry chemical spills must be available at all compound areas	Construction	Superintendent\Foreman	G36 CI 4.3 CoA C12
CH5	Where a plant servicing wash-down area is needed to wash down plant prior to maintenance using degreasers, the wash-down will be constructed with an impermeable base and a dirty water sump.	Construction	ESR, Superintendent Foreman	G36 Cl 4.11 CoA C38
CH6	Waste oil, oily rags, oil filters and oily waters will be disposed of by an appropriately licensed contractor to a waste facility where the materials are lawfully accepted.	Construction	ESR, Superintendent Foreman	G36 CI 4.11 CoA C38
CH7	Do not drive or park any plant and vehicles, including employees' motor vehicles, on unpaved areas outside the Site without the approval of the Principal.	Construction	Superintendent Foreman	G36 CI 4.8
CH8	Provide security for your buildings, materials, construction plant and machinery. Take all necessary precautions to make the area safe to the public	Construction	ESR Superintendent Foreman	Best practice
СН9	Ensure that adequate rubbish receptacles are provided. Service these receptacles regularly and to the satisfaction of the Principal to ensure that the construction area remains tidy.	Construction	ESR Superintendent Foreman	Best practice
CH10	Waste management measures will be based upon the philosophy of reduce, reuse, recycle and appropriate disposal.	Construction	Superintendent ESR	G36 Clause 4.11 CoA C38
CH11	Concrete pumping or concreting activities will be undertaken in accordance with Environmental Best Management Practice Guideline for Concreting Contractors 2002 to prevent and/or minimise spillages.	Construction	Superintendent ESR	Good Practice
CH12	Designated impervious bunded facilities will be provided for washout of concrete trucks and cleaning and/or maintenance of other vehicles, plant or equipment. These facilities will be located at least 40 metres away from natural and built drainage lines.	Construction	Superintendent ESR	Good Practice
CH11	Hydrocarbon, chemical and waste storage areas will be included in the weekly and post rainfall environmental inspections and recorded	Construction	ESR	CoA C9(d)

ID	Measure/Requirement	When to Implement	Responsibility	Reference
	in the Georgiou One App Environmental inspection template. Inspection findings will be reported in the environmental monthly report.			
Heritage				
HER1	Prior to commencing work all construction personnel will undergo a heritage induction which would contain information on heritage values and items in the area and on environmental management measures to minimise potential heritage impacts. This induction will identify procedures for unexpected heritage finds.	Pre - construction	ESR	CoA C4(a) G36 Section 5
HER2	The Roads and Maritime's unexpected finds protocol will be implemented for the works in relation to unexpected heritage finds and in the event of uncovering possible human skeletal remains (Appendix F)	Construction	Project Manager Superintendent ESR	RMS Standard Management Procedure - Unexpected
	This includes cessation of works in the vicinity, assessment of the significance of the item(s) and determination of appropriate mitigation measures including when works can re-commence by a suitably qualified and experienced archaeologist in consultation with the Department, OEH and registered Aboriginal stakeholders and assessment of the consistency of any new non-Aboriginal and Aboriginal heritage impacts against the approved impacts of the project, and notification to the Department, and the OEH for Aboriginal heritage (in accordance with section 89A of the National Parks and Wildlife Act 1974) and the OEH for non-Aboriginal heritage (in accordance with Section 146 of the NSW <i>Heritage Act</i> 1977);			Heritage Items (Appendix F)
HER3	All Heritage buildings within 50m of the construction footprint including the residential building at 27 Wilberforce Road will have pre and post dilapidation surveys to ensure any damage during the construction period is identified.	Pre/post construction	Project Engineer Building surveying consultant	CoA D1 G36 Section 4.7
HER4	Only surface activities will be undertaken at the stockpile site (leased area) unless approval is obtained from the project Heritage Manager.	Construction	Project Manager ESR Heritage Manager	G36
Noise and V				
NV1	Implement all reasonable and feasible mitigation measures to ensure the works comply with the relevant Noise Management	Pre-construction Construction	Superintendent ESR	G36, Cl4.16 CoA C13,

ID	Measure/Requirement	When to Implement	Responsibility	Reference
	<ul> <li>Levels. This shall include;</li> <li>Works will be undertaken in accordance within the standard working hours until the CEMP has been approved by the DPE which includes the Out of Hours Works application (refer Appendix G) and in compliance with the Project CoAs.</li> <li>All construction plant and equipment used on the site will be: <ul> <li>Fitted with properly maintained noise suppression devices in accordance with the manufacturer's specifications.</li> <li>Maintained in an efficient condition.</li> <li>Operated in a proper and efficient manner</li> </ul> </li> <li>All noise and vibration complaints will be managed in accordance with the Community Communications Strategy.</li> <li>Loading and unloading should be carried out away from sensitive receivers, as far as practicable.</li> <li>Avoiding noisy plant from working simultaneously in close proximity adjacent to sensitive receivers will result in reduced noise emissions and exposure.</li> <li>Equipment which is used intermittently is to be shut down when not in use.</li> <li>Where possible, equipment with directional noise emissions should be</li> <li>Oriented away from sensitive receivers.</li> <li>Reversing of equipment should be minimised so as to prevent nuisance caused by reversing alarms.</li> <li>Where possible, schedule a respite period of one hour for every three hours of continuous construction activity, or scheduling high noise generating works to the less sensitive times of 9:00 am to 12:00 pm or 2:00 pm to 5:00 pm.</li> <li>Ensure plant is regularly maintained and replace equipment which becomes noisy</li> <li>Arrange the worksite to minimize the use of movement alarms on vehicles and mobile plant.</li> </ul>			C14,C15,C16, C17,C18
NV2	Pre and post construction dilapidation surveys will be undertaken at 27 and 33 Wilberforce Road to identify any impacts associated with the establishment and operation of the ancillary facility.	Pre-Construction Operation	Project Manager ESR	CoA D1
NV3	Attended noise monitoring will occur monthly at the nearest residential receiver (27 Wilberforce Road) against the NMLs.	Construction	ESR	CoA C9(d)

ID	Measure/Requirement	When to Implement	Responsibility	Reference
	Attended noise monitoring will also occur if a complaint is received or during any OOHW.	·		
NV4	Direct consultation with the resident at 27 Wilberforce Road and the commercial premise at 33 Wilberforce Road will be undertaken to notify them of the upcoming works and potential impacts, and to keep them informed of the ancillary facility establishment and operation.	Pre-construction	Community Liaison Officer ESR	Best Practice
Effluent Ma	nagement			
EM1	Toilet blocks will be fitted with a 4000L waste holding tank. Pumping out of waste is to be conducted by a licensed waste contractor and disposed of at a suitably licensed waste facility in accordance with the Construction Waste and Energy Management sub-plan and EPA requirements	Pre-construction Construction	Project Manager ESR	G36 Clause 4.11, Best Practice
EM2	Push taps will be installed within the toilet blocks to prevent taps being left on accidentally.	Pre-construction Construction	Project Manager ESR	Best Practice
ЕМ3	A high sensor auto shut off valve will be installed on the waste system to prevent the tank from overflowing.	Pre-construction Construction	Project Manager ESR	Best Practice
Traffic and	access			
TR1	Construction temporary works will be developed and implemented to minimise conflicts with the existing road network and to maximise the separation between work areas and travel lanes. This includes accesses to the ancillary facility to allow separation between traffic turning right into the site compound and traffic continuing east on Wilberforce Road.	Pre-construction Construction	Project Manager	G36 Clause 3.1 CoA D5(a)
TR2	Wherever practical all removal and delivery of materials and plant will be timed to occur outside of the peak traffic periods to minimise delay in the area.	Construction	Superintendent	CoA D5(a,c)
TR3	Dilapidation surveys of local roads used by construction traffic will be undertaken prior to their use for construction as well as after construction to identify necessary repair of deterioration attributable to the impacts of construction traffic.	Pre-construction Post-construction	Project Manager	CoA D5(a)
TR4	Footpaths that will be affected by construction activities would be	Pre - construction	Project Manager	CoA D5(a)
				· · · · · · · · · · · · · · · · · · ·

ID	Measure/Requirement	When to Implement	Responsibility	Reference
	temporarily diverted to maintain suitable alternative access routes for pedestrians		Superintendent ESR	
Visual				
VIS1	The visual impact of ancillary facilities on adjacent residential areas will be minimised through the careful planning and positioning of temporary offices, other plant and material laydown areas, and specific management of lighting and potential for light spill within the identified ancillary facility.	Pre-construction Construction	Superintendent ESR	G36, Cl4.16 CoA C47
VIS2	Screening fencing may be introduced between the residential premises and the work site to reduce the visual impacts if community concerns are raised.	Construction	Superintendent ESR	G36, Cl4.16 CoA C47
VIS3	The ancillary facility and associated access points shall be rehabilitated to preconstruction condition or better, unless otherwise agreed by the landowner where relevant.	Prior to completion of project	Superintendent Foreman	G36, Cl4.16 CoA C47
VIS4	Any areas temporarily disturbed during construction will be rehabilitated as soon as feasible and reasonable following the completion of construction/operation of the ancillary facilities.	Prior to completion of project	Superintendent Foreman	G36, Cl4 CoA C11
VIS5	The security lighting proposed for the site compound will be directed away from the residential property at 27 Wilberforce Road to ensure any light spill impact minimised.	Construction	Superintendent ESR	G36, Cl4.16 CoA C8
Air Quality				
AIR1	<ul> <li>The following air quality mitigation measures will be implemented:</li> <li>Engines of on-site vehicles and plant will be switched off when not in use.</li> <li>Vehicles will be maintained and serviced according to manufacturer's specifications.</li> <li>Minimise the area of exposed surfaces.</li> <li>Employ appropriate measures to prevent/minimise wind-blown dust from leaving the site including the use of water carts as required.</li> </ul>	Pre-construction Construction	Superintendent Foreman	G36, Cl4.4 CoA C6, C7
	<ul> <li>Apply barriers, covering or temporary rehabilitation to areas of disturbance.</li> <li>Street cleaning will be undertaken as required to remove dirt tracked onto sealed roads.</li> <li>all vehicles on site do not exceed a speed limit of 30 kilometres per hour;</li> <li>all loaded vehicles entering or leaving the site have their</li> </ul>			

ID	Measure/Requirement	When to Implement	Responsibility	Reference
	loads covered	•		
AIR2	Dust generation will be visually inspected daily by the supervisors during all works to ensure excess dust is not generated and is not leaving site. Air quality and dust management will be formally inspected weekly and recorded in the Georgiou One App Environmental inspection template. Inspection findings will be reported in the environmental monthly report.	Construction	Supervisors, ESR	CoA C9(d)
Community	Consultation			
CON1	Operators of the Hawkesbury Paddle Wheeler will not be impacted by the establishment or operation of the ancillary facility. However, they will be consulted prior to construction to identify appropriate measures to manage the temporary access changes to Windsor wharf (opposite side of river the ancillary facility).	Construction	Community Liaison Officer ESR	G36 Clause 3.7.2 CoA D13
CON2	Public access will be maintained to key areas of the Hawkesbury River during existing planned events. This relates to the southern bank as there is currently no public access to the river in the area of the proposed ancillary facility.	Construction	Superintendent ESR	G36 Clause 3.7.2 CoA D13
CON3	Affected residents and local business owners will be consulted prior to establishing the ancillary facility to identify appropriate measures to manage potential impacts.	Pre - construction	Community Liaison Officer ESR	G36 Clause 3.7.2 CoA D13
CON4	Early and ongoing consultation and communication with residents and local businesses will be undertaken to provide information on construction activities, including timing, duration and likely impacts.	Pre – construction Construction	Community Liaison Officer ESR	G36 Clause 3.7.2 CoA D13

# 7 ENVIRONMENTAL MONITORING AND MANAGEMENT PROCEDURES

### 7.1 Environmental inspections

The Environmental Site Representative will undertake weekly and post rainfall inspections of the both the main compound and stockpile area to evaluate the effectiveness of environmental controls. The inspections will commence during site establishment and continue throughout construction until both site are demobilised and rehabilitated. The Roads and Maritime Environmental Representative and the Independent Environmental Representative (ER) will also conduct inspections on minimum monthly frequency. The Environmental Site Representative will record all inspection findings on the inspection checklist within Georgiou's One App on the IPad. The findings of these inspections will be included in the Monthly Environmental Report which will be provided to Roads and Maritime and the Environmental Representative (ER). If any maintenance and/or deficiencies in environmental controls or in the standard of environmental performance are observed, they will be recorded on the checklist in Georgiou's One App on the IPad and emailed to the responsible party for completion and close out. Records will also include details of any maintenance required, the nature of the deficiency, any actions required and an implementation priority.

### 7.2 Environmental monitoring

Monitoring will be undertaken to validate the impacts predicted for the Project, to measure the effectiveness of environmental controls and implementation of the mitigation measures detailed in Section 6.

The Environmental Representative and Roads and Maritime Representative will be advised of any non-conformances from monitoring and details reported in the monthly report.

Where a non-conformance is detected or monitoring results are outside of the expected range and are directly attributable to the Project (i.e. are influenced by factors under the direct control of the Project e.g. noise from construction equipment), the following will be implemented:

- An analysis of the results by the Environmental Site Representative in more detail with a view of determining possible causes for the non-conformance.
- A site inspection by the Environmental Site Representative or delegate.
- Advising relevant personnel of the problem.
- Identifying and agreeing on actions to resolve or mitigate the non-conformance.
- Implementing actions to rectify or mitigate the non-conformance.
- A non-conformance Environmental Incident Report and/or Environmental Improvement Notice may be issued by the Environmental Site Representative in response to the non-conformance problem if it is found to be construction related.
- The timing for any improvement will be agreed between the relevant Engineer/Superintendent and Environmental Site Representative based on the level of risk (e.g. a significant risk will require immediate action).
- All environmental monitoring equipment shall be maintained and calibrated according to manufacturer's specifications and appropriate records kept.

# 7.3 Progressive erosion and sediment control plans

Progressive Erosion and Sediment Control Plans (PESCPs) are planning documents that clearly show the site layout and the approximate location of erosion and sediment control structures onsite. They cover all construction stages from initial vegetation clearing through

to rehabilitation when erosion and sediment control are no longer required and are removed. A PESCP will be developed for the ancillary facility and implemented throughout the all construction stages when there is a risk of erosion and sediment loss.

PESCP will be developed by environment staff in consultation with the superintendent, site engineers, foreman and other relevant site personnel, as required. They will be modified to reflect site condition at the time of construction. The Environmental Site Representative will approve PESCP for all work areas prior to commencing activities.

### 7.4 Environmental induction

All personnel (including sub-contractors) will attend a compulsory site induction that includes an environmental component prior to commencement on-site. This is done to ensure all personnel involved in the Project are aware of the requirements and to ensure the implementation of environmental management measures.

Short-term visitors to site for purposes such as deliveries will be required to be accompanied by inducted personnel at all times.

The environmental component will include, but not limited to, an overview of:

- Legal requirements and obligations of all the staff that work on the project including due diligence and duty of care.
- Relevant corporate policies and environmental management systems.
- Identification of high risk issues and environmental safeguards e.g. vegetation clearing.
- Relevant details of the CEMP including purpose and objectives.
- Key environmental issues.
- Conditions of environmental licences, permits and approvals.
- Specific environmental management requirements and responsibilities.
- Mitigation measures for the control of environmental issues.
- Incident response and reporting requirements.
- Information relating to the location of environmental constraints.
- Precautionary measures in the event of flooding.
- Information relating to the location of environmental constraints and procedures for working in environmentally sensitive areas.
- Information on heritage values and items in the area and on environmental management measures to minimise potential heritage impacts.
- Waste management measures.
- Protection of biodiversity in the project area.

A record of all environment inductions will be maintained on Georgiou's One App on the IPad and in Georgiou's DMS (Document Management System). Records will be accessible onsite at all times throughout construction.

# 7.5 Toolbox talks, training and awareness

Toolbox talks will be one method of raising awareness and educating personnel on issues related to all aspects of construction including environmental issues. The toolbox talks are used to ensure environmental awareness continues throughout construction.

Toolbox talks will be tailored to specific environmental issues relevant to upcoming works. Relevant environmental issues may include (but are not limited to):

- Erosion and sedimentation control.
- Site preparation prior to significant rainfall and flooding events.
- Community engagement principles.
- Hours of work.
- Emergency and spill response.
- Aboriginal and non-Aboriginal heritage.
- Threatened species, endangered ecological communities, clearing controls and vegetation protection.
- Weed management.
- Dust control.

Toolbox attendance is mandatory and attendees of toolbox talks are required to sign an attendance form and the records maintained in Georgiou's One App on the IPad and in Georgiou's DMS (Document Management System). Records will be accessible onsite at all times throughout construction.

### 7.6 Daily Pre-Start Meetings

The pre-start meeting is a tool for informing the workforce of the day's activities, safe work practices, environmental protection practices, work area restrictions, activities that may affect the works, coordination issues with other trades, hazards and other information that may be relevant to the day's work.

The Superintendent will conduct a daily pre-start meeting with the site workforce before the commencement of work each day (or shift) or where changes occur during a shift. Daily pre-start meetings are generally succinct in nature and take approximately 10-15 minutes.

The environmental component of pre-starts will be determined by relevant staff and environmental personnel and will include any environmental issues that could potentially be impacted by, or impact on, the day's activities. All attendees will be required to sign on to the pre-start and acknowledge their understanding of the issues explained. Pre-start topics, dates delivered and a register of attendees will be recorded on Georgiou's One App on the IPad and in Georgiou's DMS (Document Management System). Records will be accessible onsite at all times throughout construction.

# 7.7 Incident Management

In the event of an environmental incident, Roads and Maritime's Environmental Incident Classification and Reporting Procedure (refer Appendix H) will be implemented.

Typically, environmental incidents will be notified verbally immediately and in writing within one (1) hour of any incident occurring to the RMS Representative. Incident reports will be provided to Roads and Maritime Representative and Independent Environmental Representative within 48 hours of the incident occurring, including lessons learnt from each environmental incident and proposed measures to prevent the occurrence of a similar incident. All efforts will be undertaken immediately to avoid and reduce impacts of incidents and suitable controls put in place. Incidents will be closed out as quickly as possible, taking all required action to resolve each environmental incident.

The Secretary and other relevant government agencies will be notified of any incident with actual or potential significant off-site environmental impacts on people or the biophysical environment as soon as practicable and within 24 hours after the occurrence of the incident. Georgiou will provide full written details of the incident to the Secretary within 7 days of the date on which the incident occurred.

### 7.8 Complaints Management

All community inquiries and complaints related to the construction activities will be referred to the 24-hour community information line (1800 822 486). A postal address (Windsor Bridge Replacement Project, PO Box 973, Parramatta NSW 2124) and email address (windsor\_bridge@rms.nsw.gov.au) has been provided for receipt of complaints and enquiries. The telephone number, the postal address and the email address was published in newspapers circulating in the local area prior to the commencement of construction and is provided on the Project website.

Information on all complaints received, including the means by which they were addressed and whether resolution was reached and whether mediation was required or used, will be included in a complaints register. The information contained within the register will be made available to the Secretary on request.

Attempts will be made to resolve all complaints in accordance with the community engagement strategy. An initial response to complaints will be provided within 24 hours of a complaint being received. A further detailed response, including steps taken to resolve the issue(s) that lead to the complaint, will be provided within 10 days. All complaints will be closed off in the stakeholder database. At all times the stakeholder will be kept informed of when they will receive a response.

The Environmental Site Representative will apply an adaptive approach to ensure that corrective actions are applied in consultation with the appropriate construction staff to allow modifications and improvements in the management of any environmental issues resulting in community complaints.

### 8 CONCLUSION

The proposed location of the ancillary facility is located adjacent to Wilberforce Road, Windsor in Lot 21 DP1196661, this area has been assessed in the EIS and was previously used as an ancillary facility for the pre-construction testing investigation and salvage works. An additional area of land in Lot 10 DP1182305 has been leased by Roads and Maritime for use as a stockpile site. The establishment and operation of the stockpile site is considered consistent with the existing Project approval.

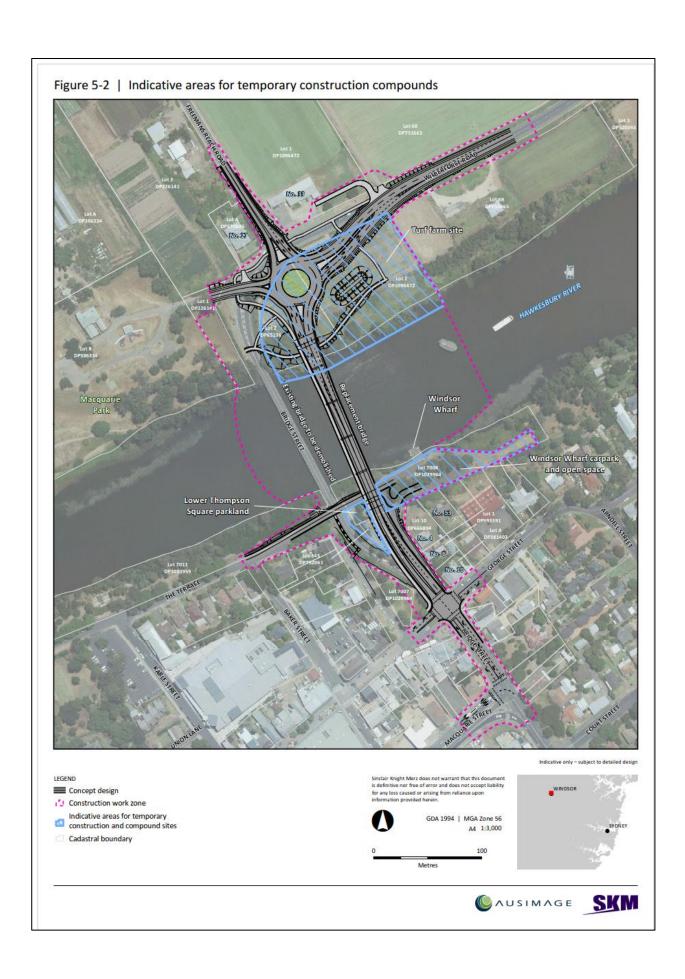
The ancillary facility does not meet all of the location criteria as required by CoA C8, specifically:

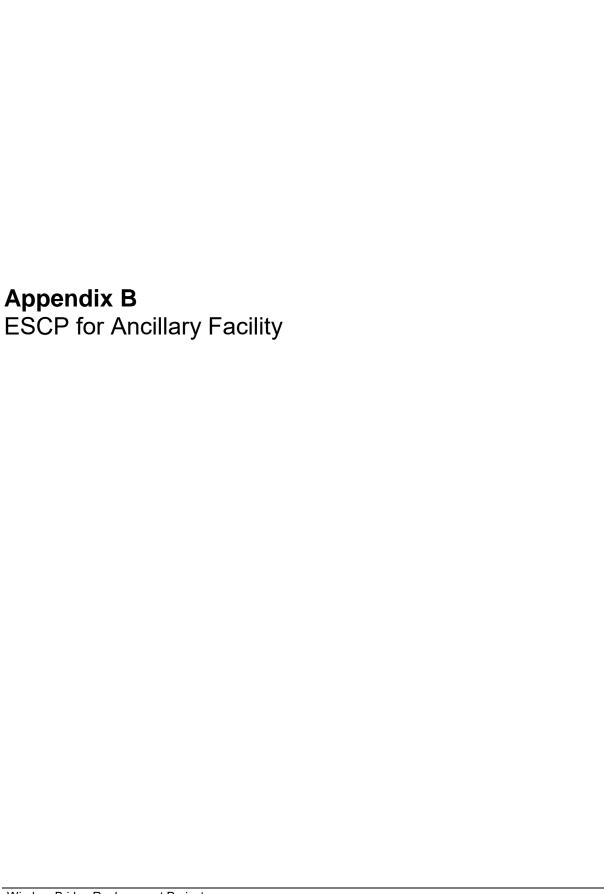
- C8 (a) be located more than 50 metres from a waterway.
- C8 (f) be separated from the nearest residences by at least 200 metres (or at least 300 metres for a temporary batching plant)
- C8 (k) be above the 20 ARI flood level unless a contingency plan to manage flooding is prepared and implemented.

Therefore this assessment is being referred to the Secretary for approval prior to the establishment of an ancillary facility at this location under CoA C9.

The proposed ancillary facility has been selected due to its location in close proximity to the construction works, and the minimal environmental impact associated with the establishment and operation. The environmental management measures outlined in Section 6 have been proposed to further protect the surrounding environment from potential impacts. As a result, with proper implementation of the management measures, it has been determined that the proposed activity is likely to have minimal environmental and community impacts.

Appendix A EIS Indicative Temporary Compound Locations	
Windsor Bridge Replacement Project	





# PROGRESSIVE EROSION AND SEDIMENT CONTROL PLAN Windsor Bridge Replacement



#### **General Construction Notes**

- 1. This plan is to be read together with the SWMP and the Clearing and Grubbing EWMS.
- 2. Weather forecasts are to be regularly monitored
- 3. The principle of minimum disturbance to existing vegetation to be implemented with 'no-go' zones isolated with flagging tape
- 4. The location of temporary controls in this plan are indicative only with actual sites to be determined during work.
- 5. Temporary controls in addition to those shown on the Plan to be constructed at 'key' locations as required (e.g. sediment fences, mulch bunds
- 6. The tracking of mud/soil material onto local roads is to be monitored and controlled
- 7. Temporary controls to be inspected regularly with maintenance/repairs undertaken as required
- 8. This plan has been prepared as per 'Blue Book' guidelines and standard drawings Volumes 1 & 2D
- 9. This plan is to be revised when required

### Specific construction details

- 1. Very minimal earthworks will occur in preparation of this site as it has previously been used as an ancillary area for the enabling works contract.
- 2. There will be no tree clearing required for the compound and stockpile establishment only to the stripping of regrowth (grasses) and topsoil in the area.
- 3. Site works will not start until the erosion and sediment controls are installed and functional.
- 4. The entry/exit of vehicles from the site ancillary area will be confined to one stabilised point.
- 5. Sediment fences with be installed in accordance with the Blue Book (Landcom 2004) standard drawing
- 6. Topsoil from the works area will be stripped and stockpiled for later use in landscaping the site (in accordance with the SWMP).
- 7. All stockpiles will be placed in the location shown on the ESCP, and located away from any possible areas of concentrated water flow.
- 8. Stockpile heights to be no greater than 2m unless otherwise approved by RMS, with slopes no steeper than 2:1
- 9.Stockpiles are to be stabilised in accordance with RMS Technical Guideline EMS-TG-010: Stockpile Site Management and the Blue Book Guidelines. This includes covering, or otherwise protecting from erosion. Eg. Temporary vegetation (seeding in accordance with R178 spec, polymer application etc.
- 10. Approved bins for building waste, putrescible waste will be provided and arrangements made for regular collection and disposal.
- 11. Temporary ablution facilities will be installed with sewage holding tanks, arrangements made for regular collection and disposal
- 12. All hydrocarbons and chemicals are to be bunded. The bund is to be 120% capacity of the largest container stored.
- 13. Keep adequate quantities of suitable materials to counteract spillage readily available. Clean up all chemical spills immediately.
- 14. Designate an impervious bunded wash-down facility for concrete trucks and other vehicles.
- 15.Dust emissions at the compound are to be minimised by stabilising surface with asphalt and the stockpiles are to be stabilised in accordance with RMS Technical Guideline EMS-TG-010: Stockpile Site Management and the Blue Book Guidelines. A water cart is to be used to suppress any dust generated during the construction of the compound and stockpile areas.
- 16. Manage all potential dust offsite impacts in accordance with the construction air quality management plan.
- 17. The ASSMP treatment area is to be bunded, have an impermeable base and have a leachate collection sump on the low side. Construction requirements in the ASSMP to be followed
- 18.Post construction and after all materials and waste have been demobilised from site the compound and stockpile are the area is to be restored to a condition similar to that existing before disturbance, unless authorised otherwise by the Principal
- 19. After restoration of the area a post-construction land condition must be conducted to verify that that no unauthorised project waste remain on the land to be returned to the Principal.

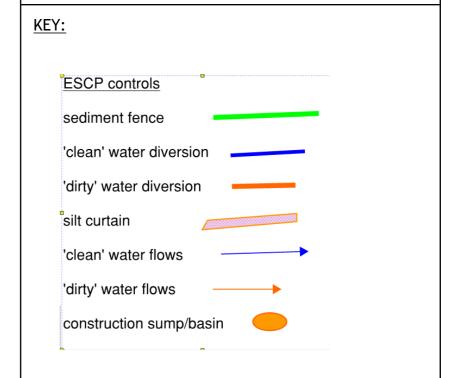
WORK ACTIVITY:
Ancillary Facility Establishment
DOCUMENT NUMBER:

PREPARED BY:

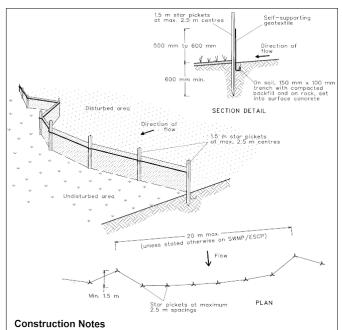
ESCP 001

CHAINAGE/LOCATION Major Ancillary Facility

<u>DATE:</u> REVISION: 1



### Typical details for erosion and sediment controls (Landcom 2004)

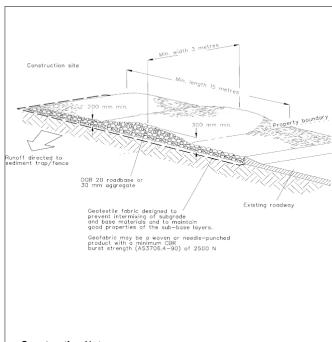


- Construct sediment fences as close as possible to being parallel to the contours of the site, but with small returns as shown in the drawing to limit the catchment area of any one section. The catchment area should be small enough to limit water flow if concentrated at one point to 50 litres per second in the design storm event, usually the 10-year event.
- Cut a 150-mm deep trench along the upslope line of the fence for the bottom of the fabric to be entrenched.
- Drive 1.5 metre long star pickets into ground at 2.5 metre intervals (max) at the downslope edge of the trench. Ensure any star pickets are fitted with safety caps.
- Fix self-supporting geotextile to the upslope side of the posts ensuring it goes to the base of the trench. Fix the geotextile with wire lies or as recommended by the manufacturer. Only use geotextile specifically produced for sediment fencing. The use of shade cloth for this purpose is not satisfactory.
- Join sections of fabric at a support post with a 150-mm overlap.

**ROCK CHECK DAM** 

6. Backfill the trench over the base of the fabric and compact it thoroughly over the geotextile

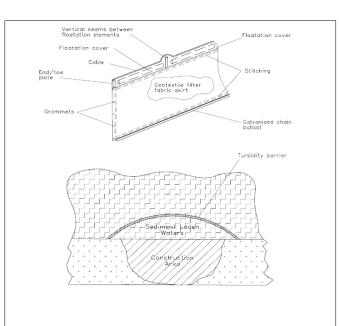
SEDIMENT FENCE SD 6-8



#### **Construction Notes**

- 1. Strip the topsoil, level the site and compact the subgrade.
- 2. Cover the area with needle-punched geotextile.
- 3. Construct a 200-mm thick pad over the geotextile using road base or 30-mm aggregate.
- 4. Ensure the structure is at least 15 metres long or to building alignment and at least 3 metres
- Where a sediment fence joins onto the stabilised access, construct a hump in the stabilised access to divert water to the sediment fence

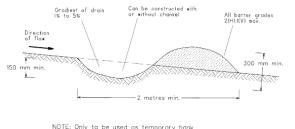
STABILISED SITE ACCESS SD 6-14



#### **Construction Notes**

- Use turbidity barriers only where high flows are unlikely to remove accumulated sediment and/or move the curtain significantly.
- Where the barrier is to remain in place for more than one month, ensure the floatation cover is a UV-resistant, durable material.
- Use only closed cell foam or foam-filled PVC piping as floatation elements. Do not use unfilled pipes.
- Use only woven or heat-set non woven geotextiles. Needle-punched, non woven geotextile
  can become fouled with debris that fray and delaminate them as they move with the waves
  or currents.
- 5. Remove captured sediment before the barrier is decommissioned.
- 6. In tidal areas, ensure the barrier can rise and fall without being moved from its position.

**TURBIDITY BARRIER** SD 6-10



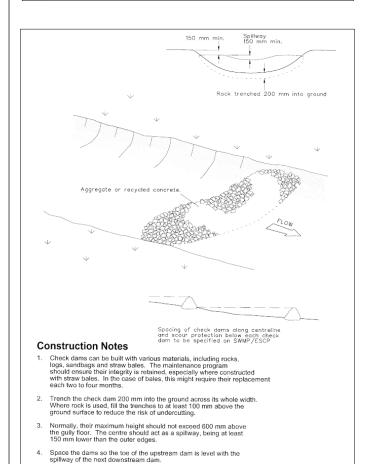
NOTE: Only to be used as temporary bank where maximum upslope length is 80 metres

#### **Construction Notes**

- Build with gradients between 1 percent and 5 percent.
- Avoid removing trees and shrubs if possible work around them.
- Ensure the structures are free of projections or other irregularities that could impede water flow.
- I. Build the drains with circular, parabolic or trapezoidal cross sections, not V
- 5. Ensure the banks are properly compacted to prevent failure.
- Complete permanent or temporary stabilisation within 10 days of construction

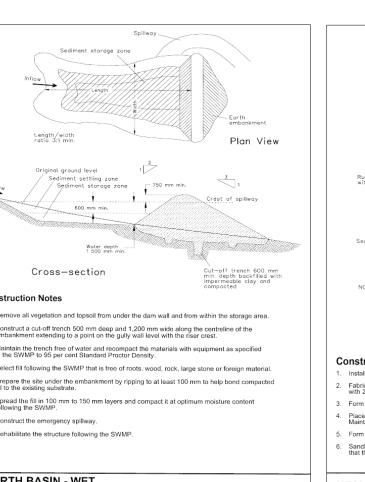
**EARTH BANK (LOW FLOW)** 

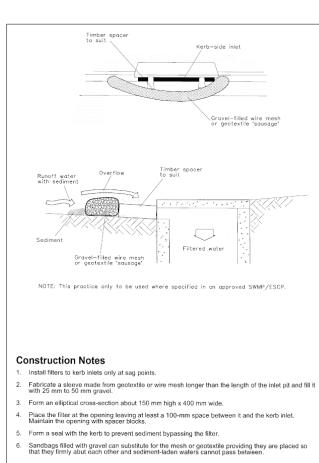
SD 5-5



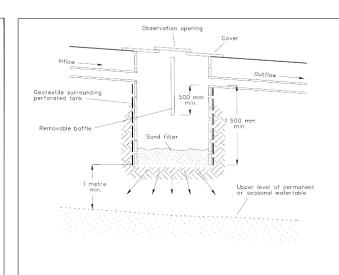
SD 5-4

1 2 **Construction Notes** Remove all vegetation and topsoil from under the dam wall and from within the storage area Construct a cut-off trench 500 mm deep and 1,200 mm wide along the centreline of the embankment extending to a point on the gully wall level with the riser crest. Maintain the trench free of water and recompact the materials with equipment as specified in the SWMP to 95 per cent Standard Proctor Density. Select fill following the SWMP that is free of roots, wood, rock, large stone or foreign material. Prepare the site under the embankment by ripping to at least 100 mm to help bond compacted fill to the existing substrate. Spread the fill in 100 mm to 150 mm layers and compact it at optimum moisture content following the SWMP. Construct the emergency spillway Rehabilitate the structure following the SWMP **EARTH BASIN - WET** SD 6-4





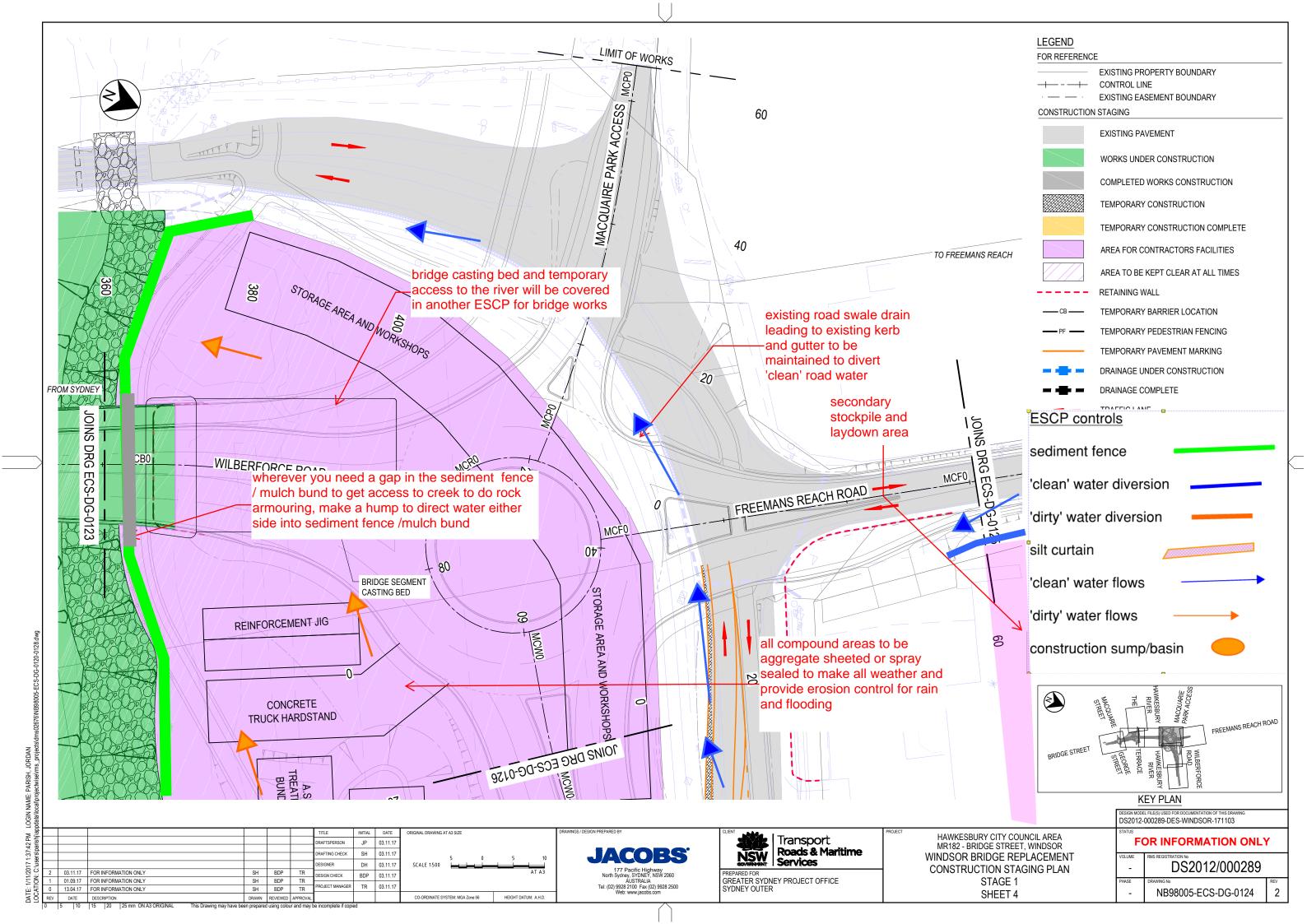
MESH AND GRAVEL INLET FILTER SD 6-11

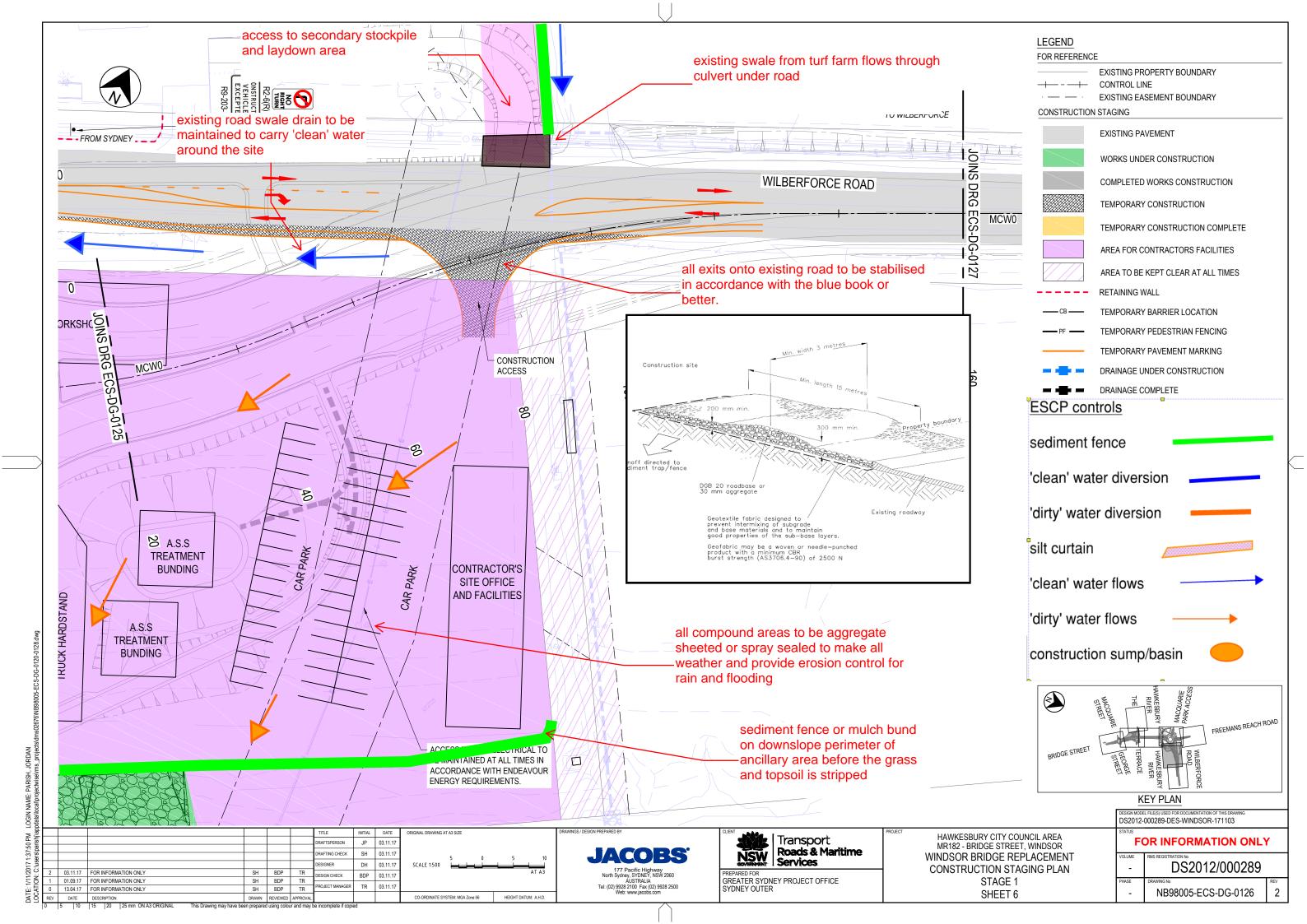


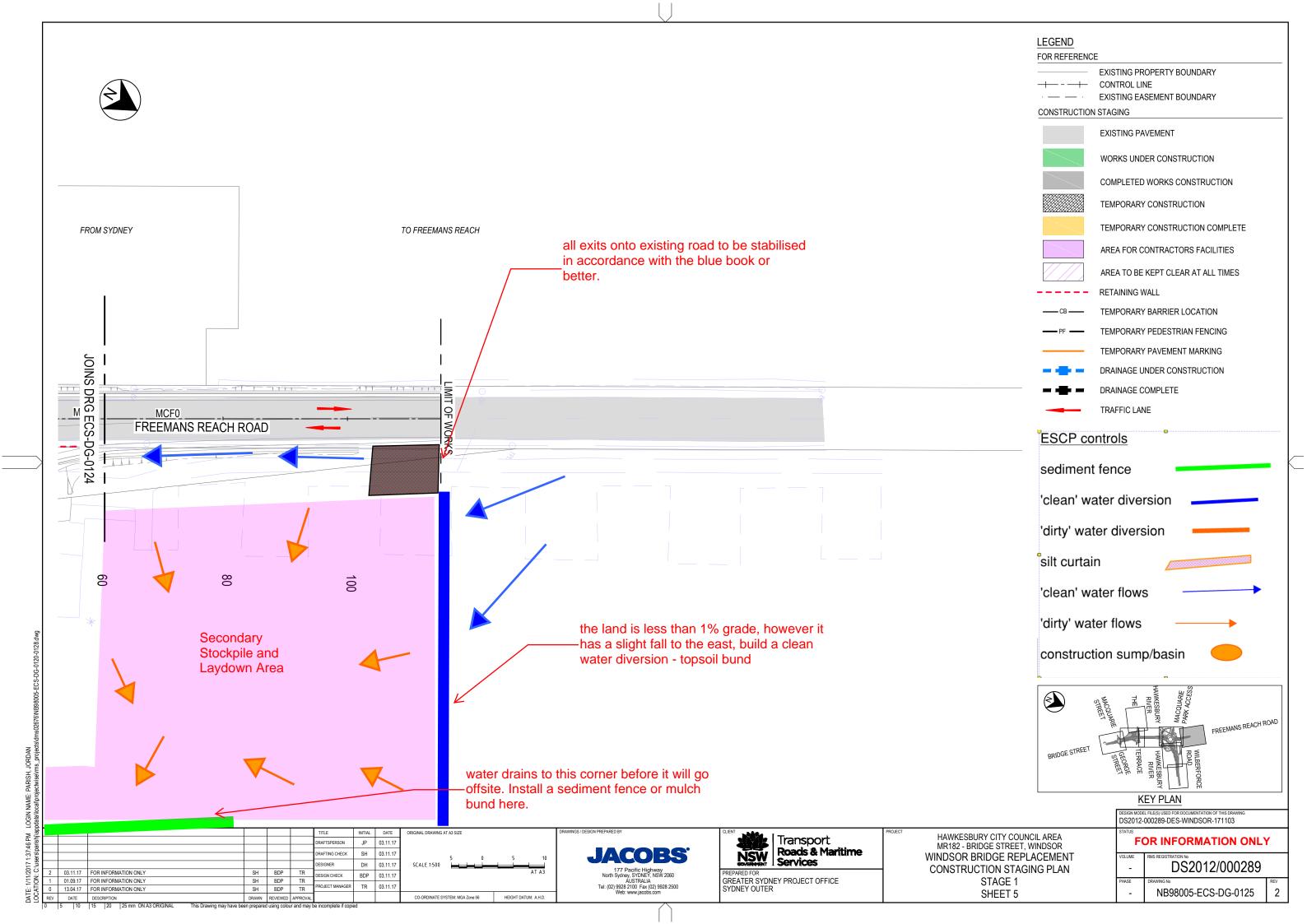
#### Construction Notes

- 1. Join the inlet to the polluted supply taking any suitable step to remove bulky material before
- 2. Connect the outlet to a safe disposal area following the ESCP/SWMP.
- 3. Place a geotextile liner on the outside of the pit.
- Install a removable baffle, central to the inflow/outflow and normal to the direction of flow, ensuring that it reaches 500 mm below the invert of the outlet pipe.
- 5. Install a cover over the pit with an observation port and access cover

INFILTRATION SUMP SD 6-6

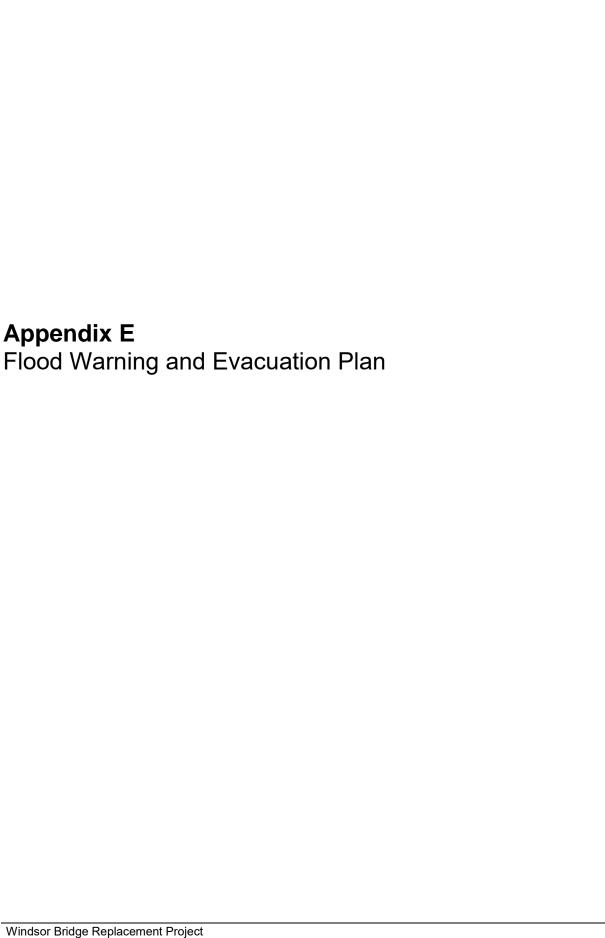






Appendix C
Pollution Incident Response Management Plan
Windsor Bridge Replacement Project

Appendix D Contaminated Lands Unexpected Finds Procedure	
Windsor Bridge Replacement Project	







# FLOOD WARNING AND EVACUATION PLAN

	Site Details
Client:	NSW Roads and Maritime Services
Site Name:	Windsor Bridge Replacement Project
Revision Number:	В
ID Code:	

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Windsor Bridge Replacement Project



# **Revision History**

Version	Date	Revision Details	Author	Reviewed by
Α	28/05/2018	Initial for review		
В	18/06/2018	RMS Review		

# Distribution of Controlled Copies

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1	RMS	A
2	RMS	В





### DETAILS OF REVISION AMENDMENTS TO FLOOD WARNING AND EVACUATION PLAN

#### **Plan Control**

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The latest version of this Plan will be available for all Project personnel, either electronically through the site network or in hard copy in the site files.

The Project Environmental Site Representative (ESR) in conjunction with the Project Manager, will maintain, review and update this plan at least annually.

#### **Amendments**

The revision number is noted in the footer of each page.

The document will be allocated a new revision number when any changes are made. When a new revision to the document is created, a notification email will be distributed to all project personnel by the Project Manager or Project Environmental Site Representative advising of the update.

The Project Manager is responsible for the implementation of the plan and will approve all amendments as detailed above.

Revision	Date	Description	Page	Clause
Α	28/05/2018	Initial submission	All	All
В	18/06/2018	RMS review	All	All



Windsor Bridge Replacement Project

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Windsor Bridge Replacement Project

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# **APPENDICES**

APPENDIX A: APPROXIMATE INUNDATION FOR FLOOD EVENTS

APPENDIX B: FLOOD CHECKLIST

APPENDIX C: CONSTRUCTION WORKS INVENTORY APPENDIX D: PROPOSED EVACUATION ROUTES

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### ABBREVIATIONS AND ACRONYMS

Terms and definitions used within this document are provi ded below.

СЕМР	Construction Environmental Management Plan
COA	Secretary's Condition of Approval
Cwth	Commonwealth
DA	Development Application
DECCW	Now OEH
EIS	Environmental Impact Statement
EMS	Environmental Management Systems
EMPLAN	New South Wales State Emergency Management Plan
EPBC Act	Environmental Protection and Biodiversity Conservation Act 1999 (Cwth)
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
EWMS	Environmental Work Methods Statement
FWEP	Flood Warning and Evacuation Plan
HNFESP	Hawkesbury Nepean Flood Emergency Sub Plan
HCLFP	Hawkesbury City Local Flood Plan
ISEPP	State Environmental Planning Policy (Infrastructure) 2007 (NSW)
NPW Act	National Parks And Wildlife Act 1974 (NSW)
NSW	New South Wales
OEH	(NSW) Office of Environment and Heritage, formerly Department of Environment, Climate Change and Water
REF	Review of Environmental Factors
RMS	Roads and Maritime Services
SEPP	State Environmental Planning Policy (NSW)

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### 1. INTRODUCTION AND PURPOSE

#### 1.1 Context

This Flood Warning and Evacuation Plan has been prepared for the Windsor Bridge Replacement Project to address the requirements of Roads and Maritime's standard specification G1 clause 14.

In addition to providing project personnel with the management measures in the event of a flood this Plan also ensures the requirements of CoA C8(k) and CoA 31 are met, specifically the development of a contingency plan due to the temporary site compounds being below the 20ARI flood level. The proposed site compounds are located on the northern and southern sides of the Hawkesbury River on Roads and Maritime owned land within the Hawkesbury City Council Local Government Area as detailed in the Ancillary Facilities Management Plan (Appendix A4 of the CEMP).

The environmental impact statement for the Windsor Bridge Replacement Project assessed Hydrology impacts for the project which covers the floodplain areas on both sides of the Hawkesbury River downstream of Penrith, and particularly along the reach between Yarramundi and Wilberforce where the project is located. The assessment is primarily the operational impacts of the road and bridge on future flood levels. However, it has also assessed impacts associated with flooding during construction.

### 1.2 Existing Environment

The Hawkesbury-Nepean River system, in particular its upper catchment tributaries, incorporates several major water storage dams, which provide the primary water supply source for Sydney. The largest of these dams is Warragamba Dam (or Lake Burragorang). Large floods in the Hawkesbury-Nepean River system inundate floodplain areas on both sides of the river downstream of Penrith, and particularly along the reach between Yarramundi and Wilberforce. The township of Windsor is located on the banks of this reach.

Much of the township of Windsor is built on a ridge above the river, although the existing Windsor bridge and the floodplain north of the river is at a lower elevation and has been subject to inundation during a number of major floods. Inundation of the existing bridge can last for several days.

Water level records for the river gauge at Windsor between 1987 and 2011 show there have been eight events for which water levels were higher than the level of the existing bridge (7 metres AHD). The average duration of these events was 43 hours. There have been no events where the water levels were higher than the level of the existing bridge after the Warragamba Dam augmentation.

The existing bridge is around 2.6 metres lower than the low point in the proposed ancillary facility which is near the river bank, the land in the ancillary facility then rises on a 1% grade towards Wilberforce Road. At Wilberforce road the land is approximately 10.4 metres AHD and at the land continues to rise at a 1% grade to be approximately 10.8 metres AHD at the proposed stockpile area north of Wilberforce road.

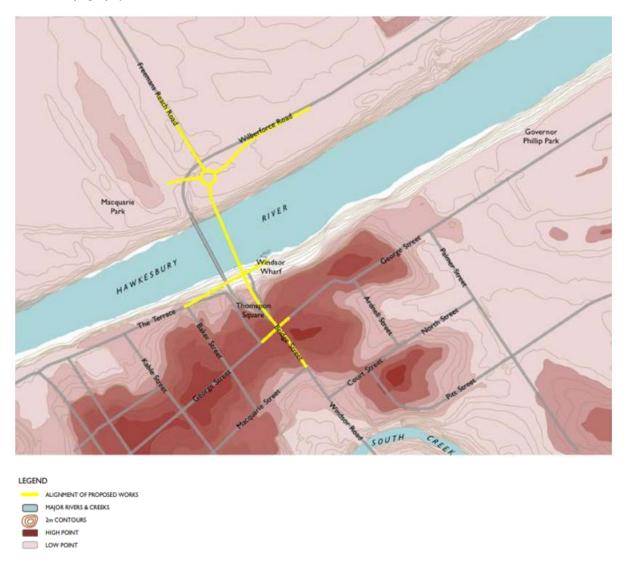
Figure 1 below shows the landforms and topography of the town of Windsor. There is very little change in slope on the Northern side of the Hawkesbury River. However, on the southern side of the River it is evident





that the town of Windsor is positioned on a ridge. The red areas marked as high points in Figure 1-1 correspond with areas above the 1/20 and 1/100 ARI events evident in the flood modelling map in Appendix A.

Figure 1-1 - Site Topography



### 1.3 Flood Levels and Velocities

Following the development of the Project EIS, a draft Hydrology and Hydraulics Report for the Windsor Bridge Replacement was prepared in 2013 for RMS. The report outlines the hydrology and hydraulic assessment undertaken for the detailed design of the replacement Windsor Bridge. The table below provides details of the peak flood levels and velocities at the proposed ancillary facility for a range of design flood events.

The lowest ground level at the location of the proposed ancillary facility at 33 Wilberforce Rd is 9.6m AHD, this means that the ancillary facility will be 4 metres underwater in a 20 year ARI event.





The current height of Windsor Bridge is 7 metres AHD. Therefore, the existing bridge is overtopped by around 6.8 metres of water for the 20 year ARI event. See appendix A for flood maps showing estimated average depth of inundation for existing conditions.

Table 1-1 - Peak Flood Levels (AHD) and flow velocities (m/s) at the ancillary facility

Design Flood Event	Peak Flood Levels (m AHD)	Flood level depth at lowest point of ancillary facility (m)	Peak flow velocities (m/s)
5 year	10.9	1.3	1.2
10 year	12.2	2.6	1.6
20 year	13.8	4.2	1.7
50 year	16	6.4	1.8
100 year	17.8	8.2	1.8
Probable maximum flood (PMF)	26.8	17.2	1.9

#### 1.4 Flood Classification and Notification

Floods in the Hawkesbury-Nepean River are classified in the Hawkesbury Nepean Flood Emergency Sub Plan (HNFESP) as either Level 1 (when the water level at Windsor is less than 15 metres AHD) or Level 2 (for floods greater than 15 metres AHD). State Emergency Services (SES) manages evacuation during a Level 2 flood in accordance with measures provided in the HNFESP. The plan covers the area between Wallacia to downstream of Spencer.

Both Level 1 and level 2 floods will affect the ancillary facility and overtop the existing bridge. A formalised flood warning system has been developed for the Hawkesbury - Nepean Valley which allows predictions of flood heights at various locations along the river network.





Spilling from Warragamba dam has the potential to have flood impacts at the proposed ancillary facility. The spillway gates at Warragamba normally work automatically depending on the dam's water level. Warragamba's gates open automatically when the lake level is about 80mm above full storage level. The gates are routinely partially opened for maintenance works. Water NSW provides the NSW SES with flood information and the time it takes for a discharge from Warragamba to reach Windsor can vary significantly depending on the size of the discharge. The Hawkesbury Floodplain Risk Management Study & Plan (Hawkesbury City Council, 2012) notes that it takes about 9 hours for rainfall on the local catchment to be reflected in river levels at Windsor. However, flooding from the Nepean and Warragamba catchments takes much longer to arrive at Windsor.

### 2. PURPOSE AND OBJECTIVES

### 2.1 Purpose

The purpose of this FWEP is to describe how flood emergency response during construction will be managed. This Plan has been prepared to address the requirements of the RMS QA Specification G1 and CoA C8(k) and CoA 31, specifically the development of a contingency plan due to the proposed ancillary facility below the 20ARI flood level.

## 2.2 Objectives

The key objective of the FWEP is to ensure that ensure that environmental impacts resulting from flooding of the construction site are minimised. To achieve this objective, the following will be undertaken:

- Ensure appropriate controls and procedures are implemented during construction activities to avoid or minimise potential adverse impacts to the environment from flooding in the construction site and ancillary areas.
- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in Section 3 and Section 5 of this Plan.
- Ensure appropriate measures are implemented to address safeguards detailed in the Windsor Bridge Replacement Project EIS and associated documents and RMS QA Specification G1, CoA C8(k) and CoA 31.

### 2.3 Targets

The following targets have been established for the management of flood related impacts during the construction of the Project:

- Ensure compliance with the relevant legislative requirements and those contained in the EIS, CoA and associated documents and the RMS QA Specifications.
- Ensure compliance with procedures for monitoring, preparation and evacuation of construction areas prior to a flood event.
- Ensure training is provided to all Project personnel on flood risks, protection measures and evacuation procedures before they begin work on site.

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### 3. ENVIRONMENTAL REQUIREMENTS

### 3.1 Relevant Legislation and Guidelines

Legislation relevant to flood management includes:

- Environmental Planning and Assessment Act 1979 (EP&A Act)
- Protection of the Environment Operations Act 1997 (POEO Act)
- State Emergency and Rescue Management Act 1989 (SERM Act)
- State Emergency Service Act 1989
- Water Management Act 2000 (WM Act)

The main guidelines, specifications and policy documents relevant to this Plan include:

- Roads and Maritime QA Specification G1 General Requirements
- NSW Government's Floodplain Development Manual (DIPNR, 2005) includes details of changes to local drainage and the potential to affect flooding behaviour
- Hawkesbury Nepean Flood Emergency Sub Plan (HNFESP)
- Hawkesbury City Local Flood Plan
- Floodplain Development Manual (OEH);
- Floodplain Risk Management Guideline (OEH);
- Australian Rainfall and Runoff (Institution of Engineers, Australia);
- New South Wales State Emergency Management Plan (EMPLAN, December 2012);
- New South Wales State Flood Plan (a sub-plan of EMPLAN) (March 2015);

# 3.2 Ministers Conditions of Approval

The CoA relevant to this management plan are listed Table 3-1 below. A cross reference is also included to indicate where the condition is addressed in this assessment or other Project management documents.

Table 3-1 Relevant CoAs

CoA number	Condition Requirements	Where Addressed	Comments
C8	"Unless otherwise approved by the Director-General, the location of Ancillary Facilities shall:  (a) be located more than 50 metres from a waterway;  (b) be located within or adjacent to land where the SSI is being carried out;  (c) have ready access to the road network or direct access to the construction corridor;  (d) be located to minimise the need for heavy vehicles to travel through residential areas;  (e) be sited on relatively level land;	Ancillary Facility Assessment Flood Warning and Evacuation Plan (this plan)	Because the ancillary facility location is not above the 1/20 ARI flood level, this plan has been written to address CoA C8(k)
	(f) be separated from nearest residences by at least 200 metres (or at least 300 metres for a temporary batching plant);		





CoA number	Condition Requirements	Where Addressed	Comments
	(g) not require vegetation clearing beyond that already required by the SSI;		
	(h) not be located within the Thompson Square Conservation Area;		
	(i) not impact on Heritage items (including identified Aboriginal cultural value and archaeological sensitivity) beyond those already impacted by the SSI and not have any additional impacts to those heritage items impacted by the proposal;		
	(j) not unreasonably affect the land use of adjacent properties;		
	(k) be above the 20 ARI flood level unless a contingency plan to manage flooding is prepared and implemented; and		
	(I) provide sufficient area for the storage of raw materials to minimise, to the greatest extent practical, the number of deliveries required outside standard construction hours.		
	The location of the ancillary facilities shall be identified in the Construction Environment Management Plan."		
31	If a flood event occurs during construction the works on-site shall be suspended if instructed by either the Applicant or emergency services. The Applicant shall keep Hawkesbury City Council informed of the status of the works during a flood event and before recommencing activity after the peak of a flood event.	Section 8 Flood Warning and Evacuation Plan (this plan)	Both the Hawkesbury City Council and the SES will be continually informed during a flood event

### 4. ASPECTS AND IMPACTS

#### 4.1 Construction activities

Project construction activities have the potential to result in altered surface water flow conditions where:

- When both bridges are present (and complete) the increase in flood levels is estimated to be around 0.18 metres (that is 0.06 metres above the estimated increase with the bridge alone) in a 5 year ARI event.
- The presence of construction infrastructure and equipment in the river (such as barges and temporary platforms).
- Bulk earthworks and stockpiling material onsite including; spoil, topsoil, mulch storage of plant, equipment.

### 4.2 Potential Impacts

Potential impacts due to flooding include:

- Surface water contamination if chemical storage areas are breached and hazardous chemicals migrate offsite.
- Earthworks on the river banks for temporary works presents a risk of scour of the river bank where vegetation is removed and suitable protection not provided.
- Storage of Soil and Material stockpiles at risk of severe erosion due to flood waters.





- Compound facilities, plant and materials becoming mobile in the flood waters and washed downstream
- Temporary structures in the river being washed downstream resulting in a safety and environmental hazard.
- Restricted access to ancillary construction areas and construction areas on the northern bank.
- Safety risks associated with high flow velocities and/or deep water, constituting a hazard to personnel and equipment.

### 5. ENVIRONMENTAL MITIGATION AND MANAGEMENT MEASURES

Specific measures and requirements to address the potential impacts associated with flood events are outlined in Table 5.1.

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Table 5-1 Flood mitigation measures

ID	Mitigation Measure / Requirement	Resource Required	Implementation Stage	Responsibility	Reference
General		·			
F1	All construction personnel will be provided with information/training regarding the importance of flood warning and evacuation requirements	Induction	Pre-construction Construction	ESR Safety Advisor	
F2	The ancillary carpark and access is to be sealed hardstand to provide a stabilised surface to minimise sediment loss during flood events		Pre-construction Construction	Project Manager Superintendent ESR	
F3	The compound demountable buildings are to be ground anchored. The Ground anchors shall be designed in accordance with AS 4678 Earth Retaining Structures and installation shall be in accordance with the manufacturer's specifications and guidelines.		Site establishment	Project Manager Superintendent	
F4	During bridge construction and demolition only, maintain the minimum amount of equipment (barges, boats and temporary platforms) in the water to perform the works so that there is sufficient time to prepare for a flood event.	EWMS for bridgeworks	Construction	Project Manager Superintendent ESR	RMS Spec G1, cl 14 EIS Hydrology paper
F5	Ensure the program is focussed on reducing the time spent with equipment in the river (barges, boats and temporary platforms).	Contract Program	Construction	Project Manager Superintendent ESR	RMS Spec G1, cl 14 EIS Hydrology paper



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ID	Mitigation Measure / Requirement	Resource Required	Implementation Stage	Responsibility	Reference
F6	Soil stockpiles are to be stored in Lot 10 DP1182305 (see ancillary facility assessment) as this area is the furthest distance to the river and is also on higher ground than the rest of the ancillary facility.	·	Construction	Project Manager Superintendent ESR	RMS Spec G1, cl 14 EIS Hydrology paper
Monitori	ng for potential flood				
F7	The Bureau of Meteorology (BoM) website will be monitored at least daily for the valid weather warnings issued in the greater Metropolitan Sydney to forecast flood levels and provide flood warning.	BOM website	During major rainfall events in the Hawkesbury Catchment	Project Manager/ ESR	RMS Spec G1, cl 14
F8	Water level gauges will be monitored for real-time information about the water levels in the Hawkesbury-Nepean River.  There is one gauge located 0.45km upstream of the Site (Station number 567044) with another gauge further upstream at Freemans Reach (Station number 563011).	BOM website	During major rainfall events in the Hawkesbury Catchment	Project Manager/ ESR	RMS Spec G1, cl 14
F9	Listen to the local radio Hawkesbury Radio 89.9FM for updates on potential flood events.	Local radio	During major rainfall events in the Hawkesbury Catchment	Project Manager/ ESR	RMS Spec G1, cl 14



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ID	Mitigation Measure / Requirement	Resource Required	Implementation Stage	Responsibility	Reference
Prepari	ng the site for flood event				
F10	Secure objects that are likely to float and cause damage.	Appendix B - Flood Checklist	Construction	ESR Supervisors	
F11	Ensure all utilities (e.g. gas, electricity water) to the site office have been turned off and the gensets and gas cylinders have been removed from site;	Appendix B - Flood Checklist	Construction	ESR Supervisors	
F12	Relocate waste containers, chemicals and dangerous goods to higher ground, e.g. southern side of river on high ground (see fig 1-1).	Appendix B - Flood Checklist	Construction	ESR Supervisors	
F13	Ensure effective erosion control in the form of geotextile if there is exposed soils on the river bank because scour protection works have commenced but not been completed. Ensure the geotextile is secured with large stakes and strategically place scour rock.	Appendix B - Flood Checklist	Construction	ESR Supervisors	
F14	Locate plant and equipment on high ground on the southern side of river (see fig 1-1) when flooding is expected.	Appendix B - Flood Checklist	Construction	Supervisors Construction personnel	
F15	Amenities wastewater is transported offsite by a licensed operator to a licensed disposal facility.	Appendix B - Flood Checklist	Construction	ESR, Supervisors	
F16	In-river work platforms must be secured to avoid causing damage to property.	Appendix B - Flood Checklist	Construction	ESR, Supervisors	



ID	Mitigation Measure / Requirement	Resource Required	Implementation Stage	Responsibility	Reference
F17	Turn off electricity and gas, and remove all generators and gas cylinders offsite.	Appendix B - Flood Checklist	Construction	Supervisors Construction personnel	
F18	Store sandbags on site to place at site office doors and equipment shed doors to impede the ingress of floodwaters into the buildings;	Appendix B - Flood Checklist	Construction	Supervisors Construction personnel	
F19	Ensure all stockpiles are located north of Wilberforce Road in the approved stockpile area and securely cover with Geotextile by keying in the base with a 300mm trench and pinning down on the stockpile face.	Appendix B - Flood Checklist	Construction	Project Manager Supervisors	
For a pre	edicted flood > 20-yr ARI the additional preparation requirem		,		
F20	Silt curtains or other in-river environmental controls removal.	Appendix B - Flood Checklist	Construction	Project Manager Supervisors	
F21	In -river work platforms platform removal, transport and storage outside the predicted flood extents.	Appendix B - Flood Checklist	Construction	Project Manager Supervisors	
F22	Barge removal, transport and storage outside the predicted flood extents.	Appendix B - Flood Checklist	Construction	Project Manager Supervisors	
F23	Material stockpiles removal to a temporary storage area outside the predicted flood extents.	Appendix B - Flood Checklist	Construction	Project Manager Supervisors	



ID	Mitigation Measure / Requirement	Resource Required	Implementation Stage	Responsibility	Reference
F24	Removal of all temporary compound buildings from the ancillary area	Appendix B - Flood Checklist	Construction	Project Manager Supervisors	
Notifica	tion				
F25	Declaring the flood potential to the site and workers. A flood alert is sent (via SMS) to all site supervisors.	BOM website	flood warning on BOM website	Project Director, Project Manager, ESR, Safety Advisor	
F26	Contact SES liaison officer for further details on the issued flood warning	SES Liaison officer	flood warning on BOM website	Project Manager, ESR, Safety Advisor	
F27	Declaring the site closed	Hawkesbury City Council, SES and BOM websites	When Hawkesbury Council, SES declare imminent flood	Project Director, Project Manager	
F28	Declaring the site reopened	Hawkesbury City Council, SES and BOM websites	When SES have given the all clear	Project Director, Project Manager	
Evacuation					
F29	The emergency exit route to be taken before flood waters rise areas is through Windsor heading south and over the Windsor flood evacuation bridge (centreline height 17.8 metres AHD) over South Creek and Windsor Road at South Creek (closed at 13.5 metres AHD).	Hawkesbury Nepean Flood Plan	Before flooding of area	All Personnel	



ID	Mitigation Measure / Requirement	Resource Required	Implementation Stage	Responsibility	Reference
	See Appendix D, E - for flood evacuation routes.				
F30	During flooding the SES will advise through radio and the internet what roads are passable in the area. All site personnel will have secured and left the site by this time.	Hawkesbury City Council, SES websites and local radio	During flood event	All Personnel	
F31	No attempt should be made to enter or cross any flood waters that is above a minor flood level, or where the flood inundation level is not known.		During flood event	All Personnel	
Assessm	ent of damage and remediation after flood				
F32	Ensure that damage is assessed and reported when all clear is given to return to site.		Following flood event	Superintendent, ESR Project Manager	
F33	Clean up and removed off site to a licenced landfill any debris, waste materials and sedimentation that have been washed onto the site.		Following flood event	Superintendent, ESR Project Manager	
F34	Repair and make safe any damage to temporary accesses and work areas to ensure there are minimal delays to re commencement of construction.		Following flood event	Superintendent, ESR Project Manager	



ID	Mitigation Measure / Requirement	Resource Required	Implementation Stage	Responsibility	Reference
F35	Investigate structural and electrical damage to compound facilities and repair or replace to ensure all facilities are safe to reoccupy.		Following flood event	Superintendent, ESR Project Manager	
F36	A suitably qualified electrician is to be engaged to test all electrical power points and connections and verify they are safe to be used.		Following flood event	Superintendent, ESR Project Manager	
F37	Any collected water that requires dewatering requires approval from the Environmental Site Representative or their delegate prior to discharge.		Following flood event	Superintendent, ESR Project Manager	
F38	Debrief all key personnel and update / modify the flood warning and evacuation plan, as required.		Following flood event	Superintendent, ESR Project Manager	

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### 6. MEASURES TO BE IMPLEMENTED PRIOR TO A FLOOD EVENT

### **6.1 Monitor Flood Warning services**

The BoM Flood Warning Service Program, whose primary function is the provision of an effective flood forecasting and warning service, will be consulted daily to ascertain if any flood warnings have been issued. The BoM will issue various alerts and warnings during the development of a flood event. They are supported by Water NSW and the NSW SES.

The escalating stages of a flood event coincide with the following warnings:

- Standard Emergency Warning Signal (SEWS): The Standard Emergency Warning Signal is used to precede all Top Priority Flood Warnings and all Evacuation Warnings.
- Flood Watch: Flood Watches are issued by the BoM based on an assessment of catchment conditions and forecast rainfall. This information is published on the BoM's web media outlets.
- Flood Warning: Flood Warnings are developed by the BoM with the assistance of Water NSW and the NSW SES and disseminated in accordance with the State Flood Plan. This information is published on the BoM's web site www.bom.gov.au, and is incorporated into NSW SES Flood Bulletins for distribution to media outlets.
- NSW SES Evacuation Warning: Evacuation Warnings are a message advising the community to prepare for likely evacuation. The warning advises people what to do and what to take with them. The NSW SES Sydney Western Region Incident Controller will prepare, authorise and distribute evacuation warnings. In addition, they will pass the contents of the warnings (verbally) direct to the NSW SES State Operations Centre for further distribution to all metropolitan media outlets. Broadcasts will be followed up using established Warden Systems, by Emergency Service personnel using public announcement systems in vehicles and field teams of Emergency Service personnel door knocking areas.
- NSW SES Evacuation Order: Evacuation Orders communicate the need for a community (or parts of a community) to evacuate by a specified time. An Evacuation Order also advises where people should go and may advise by which route.

Currently the following methods are used to deliver flood warnings and evacuation warnings to the community:

- TV news broadcasts and screen crawlers.
- Radio bulletins via commercial and community radio stations.
- Internet via Water NSW, NSW SES and Bureau web-sites and social media pages.
- WaterNSW automated email notification system
- Automatic telephone dialling with pre-recorded messages (including Emergency Alert).
- Local wardens.
- Mobile public address.
- Door to door personal notification (door knock).

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### 6.2 River Monitoring

Water level gauges provide real-time information to the BoM about the water levels in watercourses across NSW and Australia. This information is used in combination with real-time rainfall data to forecast flood levels and provide flood warning.

Real-time water levels for gauges across Australia can be accessed on the BoM website at the following link. <a href="http://www.bom.gov.au/cgi-bin/wrap\_fwo.pl?IDN60143.html">http://www.bom.gov.au/cgi-bin/wrap\_fwo.pl?IDN60143.html</a> . There is one gauge located 0.45km upstream of the proposed compound sites (Station number 567044) with another gauge further upstream at Freemans Reach (Station number 563011).

### 6.3 Emergency Planning Committee

Upon BoM issuing of a "Flood Watch", the Project's Emergency Planning Committee will be mobilised to co-ordinate the preparation of the site, communicate and notify site personnel and emergency services (e.g. SES, Hawkesbury City Council) and potentially evacuate the site if deemed necessary. The personnel comprising the Emergency Planning Committee are;

- Construction Manager Lead responsible for all disciplines across the entire site
- Project Manager Alternate Lead to Project Director
- Superintendent Responsible for Plant, equipment and materials
- Safety Site Representative responsible for site personnel safety protection measures
- Environmental Site Representative responsible for environmental protection measures

### 6.4 Preparation of Site

To prepare the site for a flood emergency upon the issuing of a "Flood Watch" the following will be considered, as a minimum:

- Inform all site staff well in advance of a predicted flood event and confirm flood emergency procedures;
- The dangerous goods (shipping) container is to be removed/relocated from site to a safe and secure location outside the extent of the predicted flood event
- Pump out of ablution facilities by a licenced water provider.
- All plant and equipment, including earthworks plant and cranes, is to be moved and parked in the highest ground available within the project boundary, if the ground level is not of sufficient height for the predicted flood extent or space does not permit then the plant and equipment is to be removed outside of the flood extents (e.g. moved back to supplier yards back in Sydney).
- In-river work platforms must be secured to avoid causing damage to property.
- Barges are to be secured by setting an additional anchor upstream of the barge and paying out more anchor wire on the upstream side so that the barge is further away from its anchor location. This ensures the load put into the anchors is applied more or less along the riverbed, reducing the potential to cause damage to property and the environment.
- Back-up all computer files and network information off-site;
- Store sandbags on site to place at site office doors and equipment shed doors to impede the ingress of floodwaters into the buildings;





- Store geotextile to place around material stockpiles and exposed river banks, bridge abutments, to prevent erosion and loss of material;
- Ensure all stockpiles are located north of Wilberforce Road in the approved stockpile area and securely
  cover with Geotextile by keying in the base with a 300mm trench and pinning down on the stockpile
  face.

In the event that a "Flood Watch" predicts a flood greater than the 20-yr ARI event the additional works will commence;

- Silt curtains or other in-river environmental controls removal.
- In -river work platforms platform removal, transport and storage outside the predicted flood extents.
- Barge removal, transport and storage outside the predicted flood extents.
- Material stockpiles removal to a temporary storage area outside the predicted flood extents.
- Removal of all temporary compound buildings from the ancillary area.

It should be noted that a "Flood Watch" can be issued for the Hawkesbury River without an actual flood occurring. Therefore, consideration of the actions listed above and the timeframe for securing the work site and moving plant and equipment will be decided by the Project Manager and Superintendent on a case-by-case basis depending on the most current information available and advice received from SES.

### 7. MEASURES TO BE IMPLEMENTED DURING A FLOODING EVENT

#### 7.1 Protect and Secure

Upon the issuing of a "Flood Warning" the following actions are advised if they were unable to be carried out/completed prior to a predicted flood event:

- Secure all items in ancillary facilities that may become hazardous and cause damage if moved by flood water;
- Ensure all utilities (e.g. gas, electricity water) to the site office have been turned off and the gensets and gas cylinders have been removed from site;
- If the barges are staying in the river, check the anchoring is sufficient;
- Relocate chemical and hydrocarbon container to the highest level possible on the southern side of the river.
- Tie down timber, drums and other loose, buoyant items to prevent them from being carried away by flood water or battered against other items or structures.

### 7.2 Evacuate

The Hawkesbury-Nepean Flood Emergency Sub-Plan (NSW Government, 2014) and the Hawkesbury City Local Flood Plan (State Emergency Service, 2010) identify evacuation as one of the key response strategy to minimise risk to life during a flood event.

The SES is the designated Agency for dealing with floods and is responsible for coordinating the evacuation and welfare of affected communities (SES Act 1989; EMPLAN, 2012). In response to a flood event, SES will

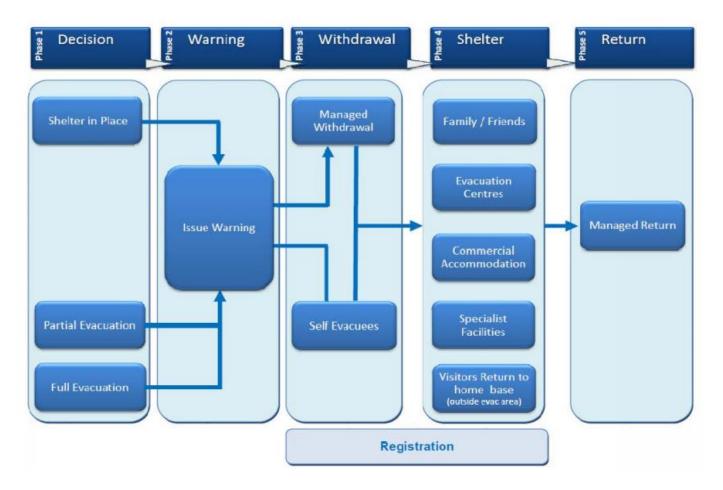




operate a 24 hours a day, 7 days a week "Operations Centre" to manage the Emergency Assistance telephone number (132 500) and co-ordinate their activities.

Following an evacuation order from emergency services or on-site monitoring which prompts the decision to evacuate, the process below is to be followed.

Figure 7-1 Evacuation Process (source NSW State Emergency Management Plan 2014)



#### 7.2.1 The Decision

The decision to commence mobilisation would be made by the SES based on flood prediction advice provided by the BoM. As discussed in Section 1.4, a formalised flood warning system has been developed for the Hawkesbury - Nepean valley. This provides flood warning predictions from local catchment runoff for Windsor with limit of confidence flood prediction (LCFP) of 15 hours. Based on this LCFP of 15 hours, the ECA for Windsor with 2010 population conditions indicates that 100% of vehicles can safely evacuate Windsor.

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#### 7.2.2 Warning

Once a decision to evacuate is made, site personnel will be immediately notified of the decision by members of the Project's Emergency Planning Committee and provided advice on the withdrawal process, including any actions or evacuation routes to follow.

#### 7.2.3 Withdrawal

Withdrawal is to be an orderly, potentially phased, removal from the project site via the site access points. The movements of all site personnel are to be recorded in a register. Site personnel will be encouraged to use their own method of transport to evacuate the site. The key evacuation routes from Windsor identified in The Hawkesbury Floodplain Risk Management Study & Plan (Hawkesbury City Council, 2012) is shown in Appendix E. Based on this map and the flood assessment for the proposed compound site, it is recommended the routes and meeting points listed below and in Appendix D are used in a flood event.

Identification of traffic hazards including fire, flood, roadworks and other events are actively updated by Transport for New South Wales on Live Traffic NSW <a href="https://www.livetraffic.com/desktop.html">https://www.livetraffic.com/desktop.html</a>.

A flood hazard will be identified and will provide specific information of roads/routes that are closed, start time of announcement, and contact details for more information. This will be particularly useful to all personnel evacuating the site if a NSW SES Evacuation Order has been issued.

Table 7-1 Evacuation Routes and meeting points

Route	Criteria	Meeting point
Hawkesbury Valley Way southbound. Travel along Wilberforce Road should only be undertaken if road is not flood affected.	Windsor Bridge Open	Bunnings Warehouse, Rouse Hill.
Wilberforce Road north bound. Travel along Wilberforce Road should only be undertaken if road is not flood affected.	Windsor Bridge closed due to flooding	Council Depot on Old Sackville Road.

### 7.3 Flood Recovery

After the flood warning has been downgraded and there is no imminent risk for people to return to site the Emergency Planning Committee will first assess the site. The following checks should be undertaken when returning to site;

- Access roads to site may have been damaged during the flood event so drive carefully and approach the site safely;
- Do not turn power back on until all electrical equipment on site has been checked and certified by a qualified electrician;
- Check the structural integrity of all buildings on site by a suitably qualified professional.
- Buildings on site will be of a temporary nature so may not be designed to withstand extreme flood flows and depths.





- Check to see if any equipment has been moved by flood waters and relocate equipment back to a safe position/location;
- Check material stockpiles for erosion and losses;
- Check water and waste water systems on site. Water systems may need to be flushed or repaired following the flood event.
- Clean up any ponded water around site to prevent the spread of waterborne disease, any collected water that requires dewatering requires approval from the Environmental Site Representative or their delegate prior to discharge.

The Emergency Planning Committee to re-open site only when it is deemed safe to continue work.

### 8. COMMUNICATION AND NOTIFICATION

Table 8-1 lists the responsibilities and contact details for key organisations responsible for providing flood warning and implementing flood plans in the Hawkesbury Nepean catchment. Timely and accurate warning information is vital during emergencies and is integral to minimising panic and ensuring suitable actions can be taken to minimise risk to life and property. When heavy rainfall is being experienced and throughout the implementation of this plan, communication and consultation with the organisations stipulated below must be undertaken continuously.

Table 8-1 List of Key Organisations

Organisation	Responsibility	Contact Number	Webpage
NSW State Emergency Service (SES)	Flood planning and intelligence, dissemination of flood warnings, evacuations, and emergency help in a flood event.	132 500	http://www.flood safe.com.au/
Bureau of Meteorology (BoM)	Flood forecasting, dissemination of flood warning, provision of real time river and rain data.	(03) 9669 4000	http://www.bom.
Hawkesbury City Council	Georgiou and RMS are to continuously inform Hawkesbury City Council of the status of the works during a flood event and before recommencing activity after the peak of a flood event.	(02) 4587 7740	https://www.haw kes bury.nsw.gov.au/
NSW Police	Coordination of resources or services in response to a flood emergency, respond to time critical emergency situations.	131 444 (or 000)	https://www.nsw .go v.au/
Water NSW	Notification of significant dam releases and potential or actual dam failures. Development of dam safety emergency plans.  The website details dam storage levels and river heights.	1300 722 468	https://www.wat ernsw.com.au/ab out/ewn

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### 9. COMPLIANCE MANAGEMENT

### 9.1 Roles and Responsibility

The Project Team's organisational structure and overall roles and responsibilities are outlined in Section 4.2 of the CEMP. Specific responsibilities for the implementation of environmental controls are detailed in Section 5 of this Plan.

### 9.2 Training

All employees, contractors and sub-contractors working on site will undergo site induction training that will include details of this plan and the flood warning and evacuation requirements. Should evacuation of the site be ordered, it is essential site personnel on site are familiar with the evacuation procedure and routes described in this plan. In addition, the Emergency response plan will be tested every 6 months and will include a flood scenario to test the below requirements associated with this plan;

- Monitoring for flood and extreme weather events
- Notifications
- Site preparation prior to flood
- Evacuation requirements

### 9.3 Monitoring and Inspections

Monitoring and inspections specific to flood management are identified below;

- Monitoring flood warning services and river heights daily, as described in Section 6.1 and 6.2;
- Following the preparation of the site for a flood emergency, inspect the entire site to ensure the site
  is secure and does not pose a risk to life or property; and
- Once a flood emergency has receded, inspect the site and consider the actions described in Section 7.3 before re-opening the site.

### 10. REVIEW AND IMPROVEMENT

### 10.1 Continuous Improvement

Continuous improvement of this plan will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management and performance
- Determine the cause or causes of non-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from process improvement
- Make comparisons with objectives and targets

Windsor Bridge Replacement Project



### 10.2 Update and Amendment

Management reviews will occur quarterly and will include the review of the FWEP. The reviews may result in the need to update or revise this Plan. This will occur as needed.

Any revisions to the FWEP will include consultation with RMS and relevant stakeholders and a copy of the updated plan and changes will be distributed to all relevant stakeholders.

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Windsor Bridge Replacement Project



### 11. APPENDICES

APPENDIX A: APPROXIMATE EXTENT OF INUNDATION IN FLOOD EVENTS

APPENDIX B: FLOOD CHECKLIST

APPENDIX C: CONSTRUCTION WORKS INVENTORY

APPENDIX D: PROPOSED EVACUATION ROUTES

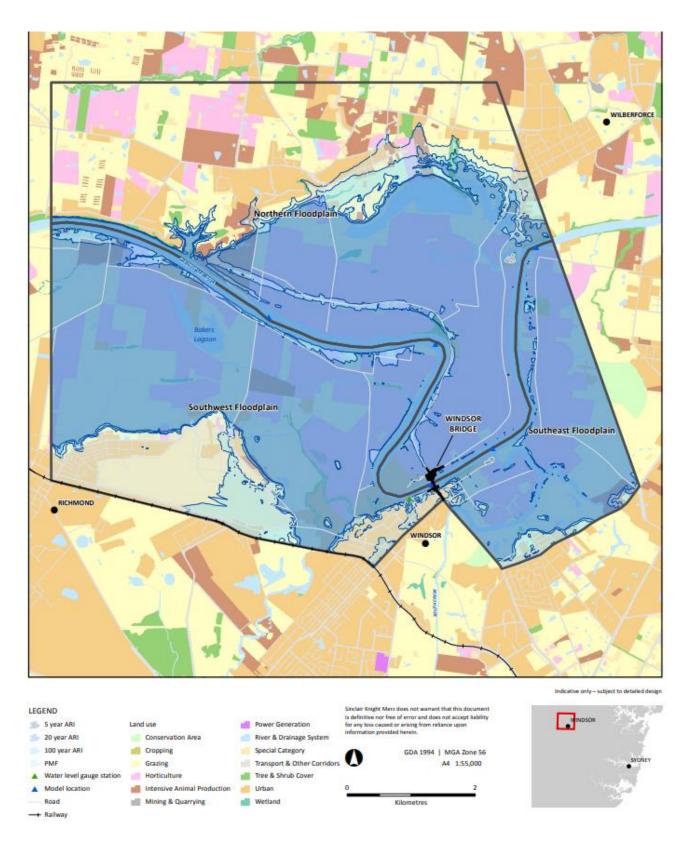
APPENDIX E: ALTERNATIVE WINDSOR EVACUATION ROUTES

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### APPENDIX A: APPROXIMATE EXTENT OF INUNDATION IN FLOOD EVENTS



Extract: Windsor Bridge Replacement - Hydrology Working Paper (EIS)

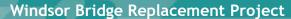
Windsor Bridge Replacement Project



### APPENDIX B: FLOOD CHECKLIST

The following activities should be carried out prior to a Flood Event and signed off as complete by the Project Manager or authorised delegate. It should be noted that a "Flood Watch" can be issued for the Hawkesbury River without an actual flood occurring. Therefore, consideration of the actions listed below and the timeframe for securing the work site and moving plant and equipment will be decided by the Project Manager and Superintendent on a case-by-case basis depending on the most current information available and advice received from SES.

#	Action	Yes / No
1	Secure objects that are likely to float and cause damage.	
2	Ensure construction equipment (or excess materials) are removed from the lowest	
	areas onsite. The lowest construction work areas are at the bridge abutments and	
	scour protection on the river banks	
3	The dangerous goods (shipping) container is to be removed/relocated from site to a	
	safe and secure location outside the extent of the predicted flood extent	
4	Secure barges in the river with three point anchoring.	
5	In-river work platforms must be secured to avoid causing damage to property.	
6	Ensure temporary erosion control in the form of geotextile is in place at active work	
	sites where permanent stabilisation is yet to be established, especially at the bridge	
	abutments and scour protection work areas.	
7	Store sandbags on site to place at site office doors and equipment shed doors to	
	impede the ingress of floodwaters into the buildings	
8	All plant and equipment, including earthworks plant and cranes, are to be moved	
	and parked in the highest ground available within the project boundary	
9	Amenities wastewater is transported offsite by a licensed operator to a licensed	
	disposal facility.	
10	Ensure all stockpiles are located north of Wilberforce Road in the approved stockpile	
	area and securely cover with Geotextile by keying in the base with a 300mm trench	
	and pinning down on the stockpile face.	
11	Turn off electricity and gas. Generators and gas cylinders to be removed outside of	
	the flood extents, e.g. if space allows, the southern side of the river within the	
-10	construction boundary	
12	Back-up all computer files and network information off-site	
	Additional Controls for predicted flood events > 1-20yr ARI	
1	Silt curtains or other in-river environmental controls are to be removed	
2	In river work platforms platform removal, transport and storage outside the	
	predicted flood extents.	
3	Barge removal, transport and storage outside the predicted flood extents.	
4	Material stockpiles removal to a temporary storage area outside the predicted	
_	flood extents.	
5	Removal of all temporary compound buildings from the ancillary area	





### APPENDIX C: CONSTRUCTION WORKS INVENTORY

The following provides a summary of the significant stock or high valued assets or environmental risk items that should be relocated in the event of a flood and high intensity rainfall warning for the Windsor Bridge Replacement construction site. The table includes reference to the entity responsible for coordinating the relocation of specific inventory.

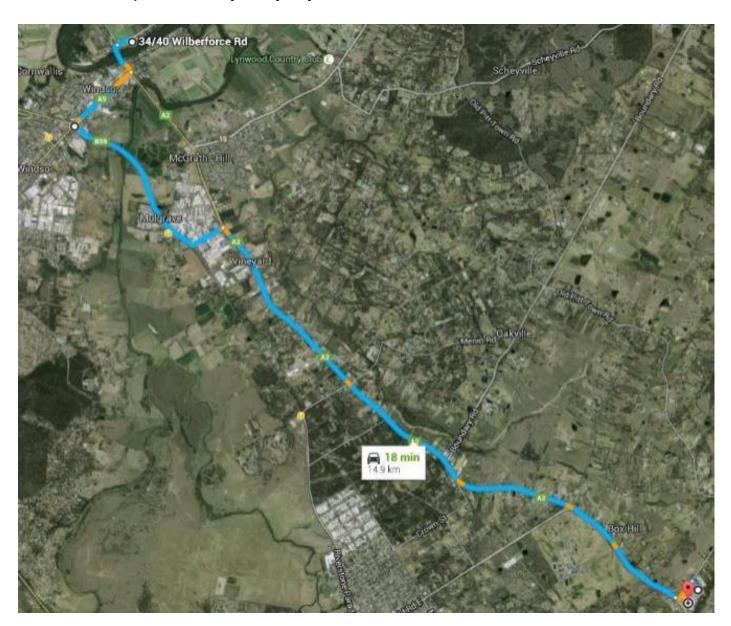
Area	Inventory	Responsible Party for relocating Inventory
Road	Excavators/Trucks/Compactors	Earthworks Supervisor
Drainage	Excavators/Rollers/Cranes/Drainage Equipment	Drainage Supervisor
Compound	Crib and ablution facilities	Superintendent
Area	Chemical Storage/Containers/Generators	
Bridge sites	Pilling Rig/barge/excavators	Structures Supervisor

Windsor Bridge Replacement Project



### **APPENDIX D: PROPOSED EVACUATION ROUTES**

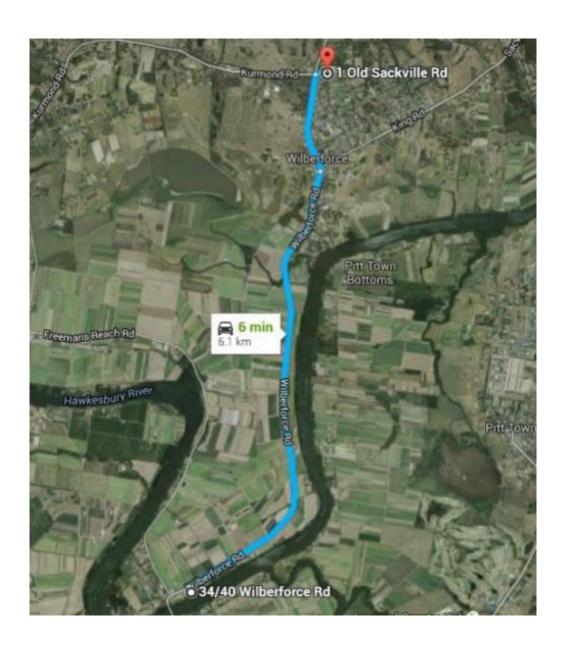
Evacuation route for Hawkesbury Valley Way Southbound







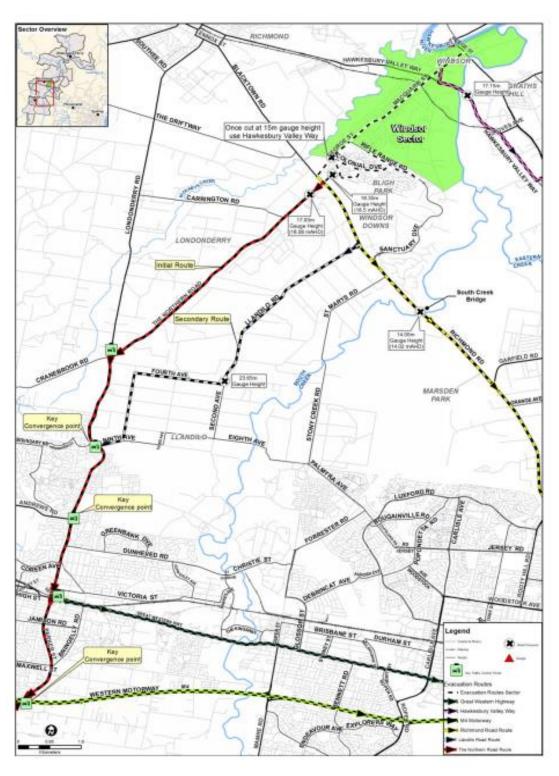
### Evacuation route for Wilberforce Road Northbound



Windsor Bridge Replacement Project



### **APPENDIX E: ALTERNATIVE EVACUATION ROUTES**



Extract: Hawkesbury Nepean Flood Plan

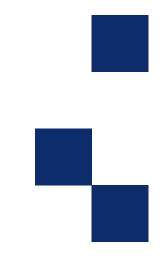
Appendix F Roads and Maritime Unexpected Heritage Items Procedure
Windsor Bridge Replacement Project
Ancillary Facility Management Plan



# STANDARD MANAGEMENT PROCEDURE

Unexpected Heritage Items

March 2015



# About this release

RMS/ISBN numbers	RMS 12.003   ISBN 9781922040305
Title	Unexpected Heritage Items Procedure

Approval and authorisation		Name
Prepared by	Environmental Officer (Heritage)	Gretta Logue
Revised by	Environmental Officer (Heritage)	Daniel Percival
Approved by	Manager Environmental Policy	Michael Crowley

File location	File name
Objective - SF2013/153770	Unexpected heritage items procedure.doc

Document status	Date
Final	16 March 2015

Version	Date	Revision Description
Final	1 November 2011	First Draft
Revised	23 July 2012	Amended to reflect that (a) unexpected finds do not include items covered by a relevant approval; (b) Aboriginal people must be consulted where an unexpected find is likely to be an Aboriginal object; (c) the Department of Planning and Environment must be notified in accordance with Step 5 of this procedure for Part 3A and Part 5.1 projects.
Revised	09 October 2013	Amended to clarify that the procedure applies to all types of unexpected heritage items, not just archaeological items. The procedure introduces the term 'Historic Items' to cover both 'archaeological relics' and 'other historic items' such as works, structures, buildings and movable objects. The title of the document has been amended to better reflect this clarification.
Revised	16 March 2015	The procedure was streamlined to address all project types including maintenance works. The separate maintenance procedure (formerly Appendix B) was removed. Names and titles updated throughout.

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### Please note

This procedure applies to all development and activities concerning roads, road infrastructure and road related assets undertaken by Roads and Maritime.

For advice on how to manage unexpected heritage items as a result of activities related to maritime infrastructure projects, please contact the Senior Environmental Specialist (Heritage).

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# Unexpected heritage items procedure

### 1. Purpose

This procedure has been developed to provide a consistent method for managing unexpected heritage items (both Aboriginal and non-Aboriginal) that are discovered during Roads and Maritime activities. This procedure includes Roads and Maritime's heritage notification obligations under the *Heritage Act 1977* (NSW), *National Parks and Wildlife Act 1974* (NSW), *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Cth) and the *Coroner's Act 2009* (NSW).

This document provides relevant background information in Section 3, followed by the technical procedure in Sections 6 and 7. Associated guidance referred to in the procedure can be found in Appendices A-H.

### 2. Scope

This procedure assumes that an appropriate level of Aboriginal and non-Aboriginal heritage assessment has been undertaken prior to on site project work commencing. In some case, such as exempt development, detailed heritage assessment may not be required.

Despite appropriate and adequate investigation, unexpected heritage items may still be discovered during maintenance and construction works. When this happens, this procedure must be followed. This procedure provides direction on when to stop work, where to seek technical advice and how to notify the regulator, if required.

# This procedure applies to <u>all</u> Road and Maritime construction and maintenance activities

#### This procedure **applies to**:

- The discovery of any unexpected heritage item (usually during construction), where Roads and Maritime does not have approval to disturb the item or where safeguards for managing the disturbance (apart from this procedure) are not contained in the environmental impact assessment.
- All Roads and Maritime projects that are approved or determined under Part 3A (including Transitional Part 3A Projects), Part 4, Part 5 or Part 5.1 of the Environmental Planning and Assessment Act 1979 (EP&A Act), or any development that is exempt under the Act.

This procedure must be followed by Roads and Maritime staff, alliance partners (including local council staff working under Road Maintenance Council Contracts, [RMCC]), developers under works authorisation deeds or any person undertaking Part 5 assessment for Roads and Maritime.

#### This procedure **does not apply** to:

 The legal discovery and disturbance of heritage items as a result of investigations being undertaken in accordance with OEH's Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW (2010); an Aboriginal Heritage Impact Permit (AHIP) issued under the National Parks and Wildlife Act 1974; or an approval issued under the Heritage Act 1977.

- The legal discovery and disturbance of heritage items as a result of investigations (or other activities) that are required to be carried out for the purpose of complying with any environmental assessment requirements under Part 3A (including Transitional Part 3A Projects) or Part 5.1 of the EP&A Act.
- The legal discovery and disturbance of heritage items as a result of construction related activities, where the disturbance is permissible in accordance with an AHIP<sup>2</sup>; an approval issued under the *Heritage Act 1977*; the Minister for Planning's conditions of project approval; or safeguards (apart from this procedure) that are contained in the relevant environmental impact assessment.

All construction environment management plans (CEMPs) must make reference to and/or include this procedure (often included as a heritage sub-plan). Where approved CEMPs exist they must be followed in the first instance. Where there is a difference between approved CEMPs and this procedure, the approved CEMP must be followed. Where an approved CEMP does not provide sufficient detail on particular issues, this procedure should be used as additional guidance. When in doubt always seek environment and legal advice on varying approved CEMPs.

# Types of unexpected heritage items and their legal protection

The roles of project, field and environmental staff are critical to the early identification and protection of unexpected heritage items. **Appendix A** illustrates the wide range of heritage discoveries found on Roads and Maritime projects and provides a useful photographic guide. Subsequent confirmation of heritage discoveries must then be identified and assessed by technical specialists (usually an archaeologist).

An 'unexpected heritage item' means any unanticipated discovery of an actual or potential heritage item, for which Roads and Maritime does not have approval to disturb<sup>3</sup> or does not have a safeguard in place (apart from this procedure) to manage the disturbance.

These discoveries are categorised as either:

- (a) Aboriginal objects
- (b) Historic (non-Aboriginal) heritage items
- (c) Human skeletal remains.

The relevant legislation that applies to each of these categories is described below.

### 3.1 Aboriginal objects

The National Park and Wildlife Act 1974 protects Aboriginal objects which are defined as:

<sup>&</sup>lt;sup>1</sup> RMS' heritage obligations are incorporated into the conditions of heritage approvals.

<sup>&</sup>lt;sup>2</sup> RMS *Procedure for Aboriginal cultural heritage consultation and investigation* (2011) recommends that Part 4 and Part 5 projects that are likely to impact Aboriginal objects during construction seek a whole-of-project AHIP. This type of AHIP generally allows a project to impact known and potential Aboriginal objects within the entire project area, without the need to stop works. It should be noted that an AHIP may exclude impact to certain objects and areas, such as burials or ceremonial sites. In such cases, the project must follow this procedure.

<sup>&</sup>lt;sup>3</sup> Disturbance is considered to be any physical interference with the item that results in it being destroyed, defaced, damaged, harmed, impacted or altered in any way (this includes archaeological investigation activities).

"any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non Aboriginal extraction, and includes Aboriginal remains"<sup>4</sup>.

Examples of Aboriginal objects include stone tool artefacts, shell middens, axe grinding grooves, pigment or engraved rock art, burials and scarred trees.

#### **MPORTANT!**

### All Aboriginal objects, regardless of significance, are protected under law.

If any impact is expected to an Aboriginal object, an Aboriginal Heritage Impact Permit (AHIP) is usually required from the Office of Environment and Heritage (OEH)<sup>5</sup>. Also, when a person becomes aware of an Aboriginal object they must notify the Director-General of OEH about its location<sup>6</sup>. Assistance on how to do this is provided in Section 7 (Step 5).

### 3.2 Historic heritage items

Historic (non-Aboriginal) heritage items may include:

- Archaeological 'relics'
- Other historic items (i.e. works, structures, buildings or movable objects).

#### 3.2.1 Archaeological relics

The Heritage Act 1977 protects relics which are defined as:

"any deposit, artefact, object or material evidence that relates to the settlement of the area that comprises NSW, not being Aboriginal settlement; and is of State or local heritage significance".

Relics are archaeological items of local or state significance which may relate to past domestic, industrial or agricultural activities in NSW, and can include bottles, remnants of clothing, pottery, building materials and general refuse.

<sup>&</sup>lt;sup>4</sup> Section 5(1) National Park and Wildlife Act 1974.

<sup>&</sup>lt;sup>5</sup> Except when Part 3A, Division 4.1 of Part 4 or Part 5.1 of the *EP&A Act* applies.

<sup>&</sup>lt;sup>6</sup> This is required under s89(A) of the *National Park and Wildlife Act 1974* and applies to **all projects** assessed under Part 3A, Part 4, Part 5 and Part 5.1 of the *EP&A Act*, including exempt development.

<sup>7</sup> Section 4(1) *Heritage Act 1977*.

#### **MPORTANT!**

#### All relics are subject to statutory controls and protections.

If a relic is likely to be disturbed, a heritage approval is usually required from the NSW Heritage Council<sup>8</sup>. Also, when a person discovers a relic they must notify the NSW Heritage Council of its location<sup>9</sup>. Advice on how to do this is provided in Section 7 (Step 5).

#### 3.2.2 Other historic items

Some historic heritage items are not considered to be 'relics'; but are instead referred to as works, buildings, structures or movable objects. Examples of these items that Roads and Maritime may encounter include culverts, historic road formations, historic pavements, buried roads, retaining walls, tramlines, cisterns, fences, sheds, buildings and conduits. Although an approval under the *Heritage Act 1977* may not be required to disturb these items, their discovery must be managed in accordance with this procedure.

As a general rule, an archaeological relic requires discovery or examination through the act of excavation. An archaeological excavation permit under Section 140 of the *Heritage Act 1977* is required to do this. In contrast, 'other historic items' either exist above the ground's surface (e.g. a shed), or they are designed to operate and exist beneath the ground's surface (e.g. a culvert).

Despite this difference, it should be remembered that relics can often be associated with 'other heritage items', such as archaeological deposits within cisterns and underfloor deposits under buildings.

#### 3.3 Human skeletal remains

Human skeletal remains can be identified as either an Aboriginal object or non-Aboriginal relic depending on ancestry of the individual (Aboriginal or non-Aboriginal) and burial context (archaeological or non-archaeological). Remains are considered to be archaeological when the time elapsed since death is suspected of being 100 years or more. Depending on ancestry and context, different legislation applies.

As a simple example, a pre-contact archaeological Aboriginal burial would be protected under the *National Park and Wildlife Act 1974*, while a historic (non-Aboriginal) archaeological burial within a cemetery would be protected under the *Heritage Act 1977*. For these cases, the relevant heritage approval and notification requirements described in the above sections 3.1 and 3.2 would apply. In addition to the *National Park and Wildlife Act 1974*, finding Aboriginal human remains also triggers notification requirements to the Commonwealth Minister for the Environment under s20(1) of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Cth).

<sup>&</sup>lt;sup>8</sup> Except when Part 3A, Division 4.1 of Part 4 or Part 5.1 of the *EP&A Act* applies.

<sup>&</sup>lt;sup>9</sup> This is required under s146 of the *Heritage Act 1977* and applies to **all projects** assessed under Part 3A, Part 4, Part 5 and Part 5.1 of the *EP&A Act*, including exempt development.

#### **MPORTANT!**

### All human skeletal remains are subject to statutory controls and protections.

All bones must be treated as potential human skeletal remains and work around them must stop while they are protected and investigated urgently.

However, where it is suspected that less than 100 years has elapsed since death, the human skeletal remains come under the jurisdiction of the State Coroner and the *Coroners Act 2009* (NSW). Such a case would be considered a 'reportable death' and under legal notification obligations set out in s35(2); a person must report the death to a police officer, a coroner or an assistant coroner as soon as possible. This applies to all human remains less than 100 years old<sup>10</sup> regardless of ancestry (ie both Aboriginal and non-Aboriginal remains). Public health controls may also apply.

Guidance on what to do when suspected human remains are found is provided in **Appendix E**.

\_

<sup>&</sup>lt;sup>10</sup> Under s19 of the *Coroners Act 2009*, the coroner has no jurisdiction to conduct an inquest into reportable death unless it appears to the coroner that (or that there is reasonable cause to suspect that) the death or suspected death occurred within the last 100 years.

# 4. Responsibilities

The following roles and responsibilities are relevant to this procedure.

Role	Definition/responsibility
Aboriginal Cultural Heritage Advisor (ACHA)	Provides Aboriginal cultural heritage advice to project teams. Acts as Aboriginal community liaison for projects on cultural heritage matters. Engages and consults with the Aboriginal community as per the Roads and Maritime <i>Procedure for Aboriginal Cultural Heritage Consultation and Investigation</i> .
Aboriginal Sites Officer (ASO)	Is an appropriately trained and skilled Aboriginal person whose role is to identify and assess Aboriginal objects and cultural values. For details on engaging Aboriginal Sites Officers, refer to Roads and Maritime <i>Procedure for Aboriginal Cultural Heritage Consultation and Investigation</i> .
Archaeologist (A)	Professional consultant, contracted on a case-by-case basis to provide heritage and archaeological advice and technical services (such as reports, heritage approval documentation etc).  Major projects with complex heritage issues often have an on call Project archaeologist.
Project Manager (PM)	Ensures all aspects of this procedure are implemented. The PM can delegate specific tasks to a construction environment manager, Roads and Maritime site representatives or regional environment staff, where appropriate.
Regional Environment Staff (RES)	Provides advice on this procedure to project teams. Ensuring this procedure is implemented consistently by supporting the PM. Supporting project teams during the uncovering of unexpected finds. Reviewing archaeological management plans and liaising with heritage staff and archaeological consultants as needed.
Registered Aboriginal Parties (RAPs)	RAPs are Aboriginal people who have registered with Roads and Maritime to be consulted about a proposed Roads and Maritime project or activity in accordance with OEH's Aboriginal cultural heritage consultation requirements for proponents (2010).
Senior Environmental Specialist (Heritage) (SES(H))	Provides technical assistance on this procedure and archaeological technical matters, as required. Reviewing the archaeological management plans and facilitating heritage approval applications, where required. Assists with regulator engagement, where required.
Team Leader - Regional Maintenance Delivery (TL-RMD)	Ensures Regional Maintenance Delivery staff stop work in the vicinity of an unexpected heritage item. Completes Unexpected Heritage Item Recording Form 418 and notifies WS-RMD.
Technical Specialist	Professional consultant contracted to provide specific technical advice that relates to the specific type of

	unexpected heritage find (eg a forensic or physical anthropologist who can identify and analyse human skeletal remains).
Works Supervisor - Regional Maintenance Delivery (WS-RMD)	Ensures Regional Maintenance Delivery staff are aware of this procedure. Supports the Team Leader - Regional Maintenance Delivery during the implementation of this procedure and ensures reporting of unexpected heritage items through environment management systems.

# 5. Acronyms

The following acronyms are relevant to this procedure.

Acronym	Meaning
Α	Archaeologist
ACHA	Aboriginal Cultural Heritage Advisor
AHIP	Aboriginal Heritage Impact Permit
ASO	Aboriginal Site Officer
CEMP	Construction Environment Management Plan
OEH	Office of Environment and Heritage.
PACHCI	Procedure for Aboriginal Cultural Heritage Consultation and Investigation
PM	Project Manager
RAP	Registered Aboriginal Parties
RES	Regional Environmental Staff
SES(H)	Senior Environmental Specialist (Heritage)
TL-RMD	Team Leader – Regional Maintenance Division
RMD	Regional Maintenance Delivery
RMS	Roads and Maritime
WS-RMD	Works Supervisor - Regional Maintenance Division

### 6. Overview of the procedure

On discovering something that could be an unexpected heritage item ('the item'), the following procedure must be followed. There are eight steps in the procedure. These steps are summarised in **Figure 1** below and explained in detail in Section 7.

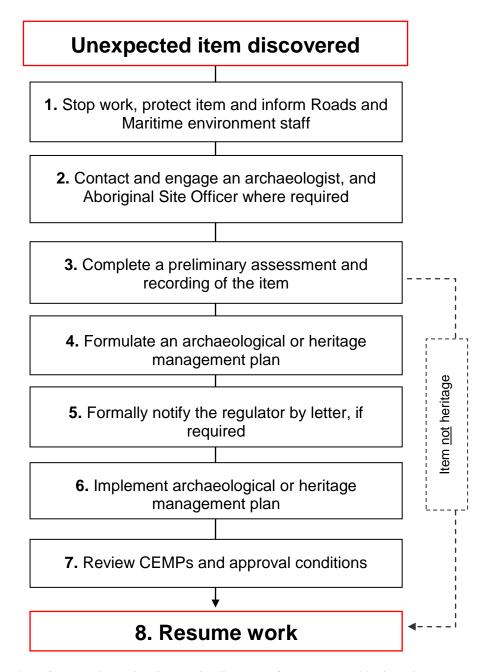


Figure 1: Overview of steps to be undertaken on the discovery of an unexpected heritage item.

#### **MPORTANT!**

RMS may have approval or specific safeguards in place (apart from this procedure) to impact on certain heritage items during construction. If you discover a heritage item and you are unsure whether an approval or safeguard is in place, STOP works and follow this procedure.

# 7. Unexpected heritage items procedure

**Table 1:** Specific tasks to be implemented following the discovery of an unexpected heritage item.

Aboriginal Cultural Heritage Advisor (ACHA); Aboriginal Sites Officer (ASO); Archaeologist (A); Project Manager (PM); Regional Environment Staff (RES); Registered Aboriginal Parties (RAPs); Senior Environmental Specialist (Heritage) (SES(H)); Team leader – Roads and Maintenance Division (TL - RMD); Works supervisor – Roads and Maintenance Division (WS - RMD).

Step	Task	Responsibility	Guidance & Tools
1	Stop work, protect item and inform Roads and Maritime environment staff		
1.1	Stop all work in the immediate area of the item and notify the Project Manager or Team Leader-RMD. (For maintenance activities, the Team Leader is to also notify the Works Supervisor-RMD)	All	Appendix A (Identifying Unexpected Heritage items)
1.2	Establish a 'no-go zone' around the item. Use high visibility fencing, where practical.	PM or TL-RMD	
1.3	Inform all site personnel about the no-go zone. No further interference, including works, ground disturbance, touching or moving the item must occur within the no-go zone.	PM or TL-RMD	
1.4	Inspect, document and photograph the item using 'Unexpected Heritage Item Recording Form 418'.	PM or TL-RMD	Appendix B (Unexpected Heritage Item Recording Form 418) Appendix C (Photographing Unexpected Heritage items)

Step	Task	Responsibility	Guidance & Tools
1.5	Is the item likely to be bone?  If <b>yes</b> , follow the steps in Appendix E – 'Uncovering bones'. Where it is obvious that the bones are human remains, you must notify the local police by telephone immediately. They may take command of all or part of the site.  If <b>no</b> , proceed to next step.	PM or WS-RMD	Appendix E (Uncovering Bones)
1.6	Is the item likely to be:  a) A relic? (A relic is evidence of past human activity which has local or state heritage significance. It may include items such as bottles, utensils, remnants of clothing, crockery, personal effects, tools, machinery and domestic or industrial refuse) and/or  b) An Aboriginal object? (An Aboriginal object may include a shell midden, stone tools, bones, rock art or a scarred tree).  If yes, proceed directly to Step 1.8  If no, proceed to next step.	PM or WS-RMD	Appendix A (Identifying heritage items)
1.7	Is the item likely to be a "work", building or standing structure? (This may include tram tracks, kerbing, historic road pavement, fences, sheds or building foundations).  If <b>yes</b> , can works avoid further disturbance to the item? (E.g. if historic road base/tram tracks have been exposed, can they be left in place?) If <b>yes</b> , works may proceed without further disturbance to the item. Complete Step 1.8 within 24 hours.  If works cannot avoid further disturbance to the item, works must not recommence at this time. Complete the remaining steps in this procedure.	PM or WS-RMD	Appendix A (Identifying heritage items)

Step	Task	Responsibility	Guidance & Tools
1.8	Inform relevant Roads and Maritime Regional Environmental Staff of item by providing them with the completed 'Form 418'.	PM or WS-RMD (RES)	Appendix D (Key Environmental Contacts)
	Regional Environmental Staff to advise Project Manager or Works Supervisor whether RMS has an approval or safeguard in place (apart from this procedure) to impact on the 'item'. (An approval may include an approval under the <i>Heritage Act</i> , the <i>National Parks and Wildlife Act</i> or the <i>Planning and Assessment Act</i> ).		
1.9	Does RMS have an approval, permit or appropriate safeguard in place to impact on the item?		
	If <b>yes</b> , work may recommence in accordance with the approval, permit or safeguard. There is no further requirement to follow this procedure.		
	If <b>no</b> , continue to next step.		
1.10	Liaise with Traffic Management Centre where the delay is likely to affect traffic flow.	PM or WS-RMD	
1.11	Report the item as a 'Reportable Event' in accordance with the Roads and Maritime Environmental Incident Classification and Reporting Procedure. Implement any additional reporting requirements related to the project's approval and CEMP, where relevant.	PM or WS-RMD	RMS Environmental Incident Classification and Reporting Procedure
2	Contact and engage an archaeologist and, where required, an Aboriginal site officer		
2.1	Contact the Project (on-call) Archaeologist to discuss the location and extent of the item and to arrange a site inspection, if required. The project CEMP may contain contact details of the Project Archaeologist.	PM or WS-RMD (A; RES; SES(H))	Also see <b>Appendix D</b> (Key Environmental Contacts)
	OR		

Step	Task	Responsibility	Guidance & Tools
	Where there is no project archaeologist engaged for the works, engage a suitably qualified and experienced archaeological consultant to assess the find. A list of heritage consultants is available on the RMS contractor panels on the Buyways homepage. Regional environment staff and Roads and Maritime heritage staff can also advise on appropriate consultants.		<u>Buyways</u>
2.2	Where the item is likely to be an Aboriginal object, speak with your Aboriginal Cultural Heritage Advisor to arrange for an Aboriginal Sites Officer to assess the find. Generally, an Aboriginal Sites Officer would be from the relevant local Aboriginal land council. If an alternative contact person (ie a RAP) has been nominated as a result of previous consultation, then that person is to be contacted.	PM or WS-RMD (ACHA; ASO)	
2.3	If requested, provide photographs of the item taken at Step 1.4 to the archaeologist, and Aboriginal Sites Officer if relevant.	PM or WS-RMD (RES)	Appendix C (Photographing Unexpected Heritage items)
3	Preliminary assessment and recording of the find		
3.1	In a minority of cases, the archaeologist (and Aboriginal Sites Officer, if relevant) may determine from the photographs that no site inspection is required because no archaeological constraint exists for the project (eg the item is not a 'relic', a 'heritage item' or an 'Aboriginal object'). Any such advice should be provided in writing (eg via email) and confirmed by the Project Manager or Works Supervisor - RMD.	A/PM/ASO/ WS- RMD	Proceed to Step 8
3.2	Arrange site access for the archaeologist (and Aboriginal Sites Officer, if relevant) to inspect the item as soon as practicable. In the majority of cases a site inspection is required to conduct a preliminary assessment.	PM or WS-RMD	
3.3	Subject to the archaeologist's assessment (and the Aboriginal Sites Officer's assessment, if relevant), work may recommence at a set distance from the item. This is to protect any other archaeological material that may exist in the vicinity, which has not yet been uncovered. Existing protective fencing established in Step 1.2 may need to be adjusted to	A/PM/ASO/ WS- RMD	

Step	Task	Responsibility	Guidance & Tools
	reflect the extent of the newly assessed protective area. No works are to take place within this area once established.		
3.4	The archaeologist (and Aboriginal Sites Officer, if relevant) may provide advice after the site inspection and preliminary assessment that no archaeological constraint exists for the project (eg the item is not a 'relic', a 'heritage item' or an 'Aboriginal object'). Any such advice should be provided in writing (eg via email) and confirmed by the Project Manager or Works Supervisor - RMD.	A/PM/ASO/ WS- RMD	Proceed to Step 8
3.5	Where required, seek additional specialist technical advice (such as a forensic or physical anthropologist to identify skeletal remains). Regional environment staff and/or Roads and Maritime heritage staff can provide contacts for such specialist consultants.	RES/SES(H)	Appendix D (Key Environmental Contacts)
3.6	Where the item has been identified as a 'relic', 'heritage item' or an 'Aboriginal object' the archaeologist should formally record the item.	А	
3.7	The regulator can be notified informally by telephone at this stage by the archaeologist, Project Manager (or delegate) or Works Supervisor - RMD. Any verbal conversations with regulators must be noted on the project file for future reference.	PM/A/WS-RMD	
4	Prepare an archaeological or heritage management plan		
4.1	The archaeologist must prepare an archaeological or heritage management plan (with input from the Aboriginal Sites Officer, where relevant) shortly after the site inspection. This plan is a brief overview of the following: (a) description of the feature, (b) historic context, if data is easily accessible, (c) likely significance, (d) heritage approval and regulatory notification requirements, (e) heritage reporting requirements, (f) stakeholder consultation requirements, (g) relevance to other project approvals and management plans etc.	A/ASO	Appendix F (Archaeological/ Heritage Advice Checklist)
4.2	In preparing the plan, the archaeologist with the assistance of regional environment staff must review the CEMP, any heritage sub-plans, any conditions of heritage approvals, conditions of project approval (and or Minister's Conditions of Approval) and heritage assessment documentation (eg Aboriginal Cultural Heritage Assessment Report). This will outline if the unexpected item is consistent with previous heritage/project approval(s)	A/RES/PM	Appendix F (Archaeological/ Heritage Advice Checklist)

Step	Task	Responsibility	Guidance & Tools
	and/or previously agreed management strategies. The Project Manager and regional environment staff must provide all relevant documents to the archaeologist to assist with this. Discussions should occur with design engineers to consider if re-design options exist and are appropriate.		
4.3	The archaeologist must submit this plan as a letter, brief report or email to the Project Manager outlining all relevant archaeological or heritage issues. This plan should be submitted to the Project Manager as soon as practicable. Given that the archaeological management plan is an overview of all the necessary requirements (and the urgency of the situation), it should take no longer than two working days to submit to the Project Manager.	A	
4.4	The Project Manager or Works Supervisor must review the archaeological or heritage management plan to ensure all requirements can reasonably be implemented. Seek additional advice from regional environment staff and Roads and Maritime heritage staff, if required.	PM/RES/SES(H)/ WS-RMD	
5	Notify the regulator, if required.		
5.1	Review the archaeological or heritage management plan to confirm if regulator notification is required. Is notification required?  If <b>no</b> , proceed directly to Step 6	PM/RES/SES(H)/ WS-RMD	
	If <b>yes</b> , proceed to next step.		
5.2	If notification is required, complete the template notification letter.	PM or WS-RMD	Appendix G (Template Notification Letter)
5.3	Forward the draft notification letter, archaeological or heritage management plan and the site recording form to regional environment staff and Senior Environmental Specialist (Heritage) for review, and consider any suggested amendments.	PM/RES/SES(H)/ WS-RMD	

Step	Task	Responsibility	Guidance & Tools
5.4	Forward the signed notification letter to the relevant regulator (ie notification of relics must be given to the Heritage Division, Office of Environment and Heritage (OEH), while notification for Aboriginal objects must be given to the relevant Aboriginal section of OEH).  Informal notification (via a phone call or email) to the regulator prior to sending the letter is appropriate. The archaeological management plan and the completed site recording form must be submitted with the notification letter. For Part 3A and Part 5.1 projects, the Department of Planning and Environment must also be notified.	PM or WS-RMD	Appendix D (Key Environmental Contacts)
5.5	A copy of the final signed notification letter, archaeological or heritage management plan and the site recording form should be kept on file by the Project Manager or Works Supervisor- RMD and a copy sent to the Senior Environmental Specialist (Heritage).	PM or WS-RMD	
6	Implement archaeological or heritage management plan		
6.1	Modify the archaeological or heritage management plan to take into account any additional advice resulting from notification and discussions with the regulator.	A/PM or WS- RMD (RES)	
6.2	Implement the archaeological or heritage management plan. Where impact is expected, this would include such things as a formal assessment of significance and heritage impact assessment, preparation of excavation or recording methodologies, consultation with registered Aboriginal parties, obtaining heritage approvals etc, if required.	PM or WS-RMD (RAPs and RES)	PACHCI Stage 3
6.3	Where heritage approval is required contact regional environment staff for further advice and support material. Please note time constraints associated with heritage approval preparation and processing. Project scheduling may need to be revised where extensive delays are expected.	PM/RES/WS- RMD	
6.4	For Part 3A/Part 5.1 projects, assess whether heritage impact is consistent with the project approval or if project approval modification is required from the Department of Planning and Environment. Seek advice from regional environment staff and Environment Branch specialist staff if unsure.	PM/RES	

Step	Task	Responsibility	Guidance & Tools
6.5	Where statutory approvals (or project approval modification) are required, impact upon relics and/or Aboriginal objects must not occur until heritage approvals are issued by the appropriate regulator.	PM or WS-RMD	
6.6	Where statutory approval (or Part 3A/Part 5.1 project modification) is not required and where recording is recommended by the archaeologist, sufficient time must be allowed for this to occur.	PM or WS-RMD	
6.7	Ensure short term and permanent storage locations are identified for archaeological material or other heritage material is removed from site, where required. Interested third parties (eg museums or local councils) should be consulted on this issue. Contact regional environment staff and Senior Environmental Specialist (Heritage) for advice on this matter, if required.	PM or WS-RMD	
7	Review CEMPs and approval conditions		
7.1	Check whether written notification is required to be sent to the regulator before recommencing work. Where this is not explicit in heritage approval conditions, expectations should be clarified directly with the regulator.	PM	
7.2	Update the CEMP, site mapping and project delivery program as appropriate with any project changes resulting from final heritage management (eg retention of heritage item, salvage of item). Updated CEMPs must incorporate additional conditions arising from any heritage approvals, and Aboriginal community consultation if relevant. Include any changes to CEMP in site induction material and update site workers during toolbox talks.	РМ	
8	Resume work		
8.1	Seek written clearance to resume project work from regional environment staff and the archaeologist (and regulator, if required). Clearance would only be given once all archaeological excavation and/or heritage recommendations (where required) are complete. Resumption of project work must be in accordance with the all relevant project/heritage approvals/determinations.	RES/A/PM/WS- RMD	
8.2	If required, ensure archaeological excavation/heritage reporting and other heritage	PM/A/WS-RMD	

Step	Task	Responsibility	Guidance & Tools
	approval conditions are completed in the required timeframes. This includes artefact retention repositories, conservation and/or disposal strategies.		
8.3	Forward all heritage/archaeological assessments, heritage location data and its ownership status to the Senior Environmental Specialist (Heritage). They will ensure all heritage items in Roads and Maritime ownership and/or control are considered for the Roads and Maritime S170 Heritage and Conservation Register.	PM/SES(H)/ WS- RMD	
8.4	If additional unexpected items are discovered this procedure must begin again from Step 1.	PM/TL-RMD	

## 8. Seeking advice

Advice on this procedure should be sought from Roads and Maritime regional environment staff in the first instance. Contractors and alliance partners should ensure their own project environment managers are aware of and understand this procedure. Regional environment staff can assist non-Roads and Maritime project environment managers with enquires concerning this procedure.

#### **MPORTANT!**

Roads and Maritime Services staff and contractors are not to seek advice on this procedure directly from the Office of Environment and Heritage without first seeking advice from regional environment staff and heritage policy staff.

Technical archaeological or heritage advice regarding an unexpected heritage item should be sought from the contracted archaeologist. Technical specialist advice can also be sought from heritage policy staff within Environment Branch to assist with the preliminary archaeological identification and technical reviews of heritage/archaeological reports.

#### 9. Related information

Contact details: Senior Environmental Specialist (Heritage), Environment Branch, 02

8588 5754

Effective date: 01 February 2015 Review date: 01 February 2016

This procedure should be read in conjunction with:

- Roads and Maritimes' Heritage Guidelines 2015.
- Roads and Maritime Services *Environmental Incident Classification and Reporting Procedure*
- Roads and Maritime's Procedure for Aboriginal Cultural Heritage Consultation and Investigation
- RTA Environmental Impact Assessment Guidelines.

This procedure replaces:

 Procedure 5.5 ("unexpected discovery of an archaeological relic or Aboriginal object") outlined in the RTA's Heritage Guidelines 2004.

Other relevant reading material:

- NSW Heritage Office (1998), Skeletal remains: guidelines for the management of human skeletal remains.
- Department of Environment and Conservation NSW (2006), Manual for the identification of Aboriginal remains.
- Department of Health (April 2008), Policy Directive: Burials exhumation of human remains<sup>11</sup>.

http://www.health.nsw.gov.au/policies/pd/2008/pdf/PD2008\_022.pdf

# 10. List of appendices

The following appendices are included to support this procedure.

Appendix A	Identifying Unexpected Heritage items
Appendix B	Unexpected Heritage Item Recording Form 418
Appendix C	Photographing Unexpected Heritage Items
Appendix D	Key Environment Contacts
Appendix E	Uncovering Bones
Appendix F	Archaeological Advice Checklist
Appendix G	Template Notification Letter

## Appendix A

## Identifying unexpected heritage items

The following images can be used to assist in the preliminary identification of potential unexpected items (both Aboriginal and non-Aboriginal) during construction and maintenance works. Please note this is not a comprehensive typology.



**Top left hand picture continuing clockwise:** Stock camp remnants (Hume Highway Bypass at Tarcutta); Linear archaeological feature with post holes (Hume Highway Duplication), Animal bones (Hume Highway Bypass at Woomargama); Cut wooden stake; Glass jars, bottles, spoon and fork recovered from refuse pit associated with a Newcastle Hotel (Pacific Highway, Adamstown Heights, Newcastle area).



**Top left hand picture continuing clockwise:** Woodstave water pipe with tar and wire sealing (Horsley Drive); Tram tracks (Sydney); Brick lined cistern (Clyde); Retaining wall (Great Western Highway, Leura).



**Top left hand picture continuing clockwise:** Road pavement (Great Western Highway, Lawson); Sandstone kerbing and guttering (Parramatta Road, Mays Hill); Telford road (sandstone road base, Great Western Highway, Leura); Ceramic conduit and sandstone culvert headwall (Blue Mountains, NSW); Corduroy road (timber road base, Entrance Road, Wamberai).



**Top left hand corner continuing clockwise:** Alignment Pin (Great Western Highway, Wentworth Falls); Survey tree (MR7, Albury); Survey tree (Kidman Way, Darlington Point, Murrumbidgee); Survey tree (Cobb Highway, Deniliquin); Milestone (Great Western Highway, Kingswood, Penrith); Alignment Stone (near Guntawong Road, Riverstone). Please note survey marks may have additional statutory protection under the *Surveying and Spatial Information Act 2002*.









**Top left hand corner continuing clockwise:** Remnant bridge piers (Putty Road, Bulga); Wooden boundary fence (Campbelltown Road, Denham Court); Dairy shed (Ballina); Golden Arrow Mine Shaft.



**Top left hand corner:** Culturally modified stone discovered on Main Road 92, about two kilometres west of Sassafras. The remaining images show a selection of stone artefacts retrieved from test and salvage archaeological excavations during the Hume Highway Duplication and Bypass projects from 2006-2010.

# Appendix B

Unexpected heritage item recording form 418

## Unexpected heritage item recording form

418

This form is to be filled in by a project manager (or their delegate) or a team leader - Road and Maintenance Division, on the discovery of an unexpected heritage item during construction or maintenance works. Recorded by: Date: (Include name and position) **Project name:** Description of works being undertaken (eg Removal of failed pavement by excavation and pouring concrete slabs in 1m x 1m replacement sections). **Description of exact location of item** (eg Within the road formation on Parramatta Road, east bound lane, at the corner of Johnston Street. Annandale, Sydney). **Description of item found** (What type of item is it likely to be? Tick the relevant boxes). A. A relic A 'relic' is evidence of a past human activity relating to the settlement of NSW with local or state heritage significance. A relic might include bottles, utensils, plates, cups, household items, tools, implements, and similar items. B. A 'work, building or structure' A 'work' can generally be defined as a form infrastructure such as tram tracks, a culvert, road base, a bridge pier, kerbing, and similar items. C. An Aboriginal object An 'Aboriginal object' may include stone tools, stone flakes, shell middens, rock art, scarred trees and human bones. D. Bone Bones can either be human or animal remains. П Remember that you must contact the local police immediately by telephone if you are <u>certain</u> that the bone(s) are human remains. E. Other 

Provide short description of item  eg Metal tram tracks running parallel to road
an Matal tram tracks rupping parallel to road
alignment. Good condition. Tracks set in
concrete, approximately 10cms (100 mm) pelow the current ground surface).
below the current ground surface).
Pleatab
<b>Sketch</b> Provide a sketch of the item's general location in relation to other road features so its approximate location can be
napped without having to re-excavate it. In addition, please include details of the location and direction of any
photographs of the item taken).
<b>Action taken</b> (Tick either A <i>or</i> B)
A. Unexpected item would not be further impacted on by works
<b>Describe how works would avoid impact on the item.</b> (eg The tram tracks will be left <i>in situ</i> , and recovered with road paving).
B. Unexpected item would be further impacted on by works
Describe how works would impact on the item. (eg Milling is required to be continued to 200 mm depth to ensure road pavement requirements are met. Tram tracks will need to be removed).
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## **Appendix C**

## Photographing unexpected heritage items

Removal of the item from its context (e.g. excavating from the ground) for photographic purposes is not permitted.

Photographs of unexpected items in their current context (*in situ*) may assist heritage staff and archaeologists to better identify the heritage values of the item. Emailing good quality photographs to specialists can allow for better quality and faster heritage advice. The key elements that must be captured in photographs of the item include its position, the item itself and any distinguishing features. All photographs must have a scale (ruler, scale bar, mobile phone, coin) and a note describing the direction of the photograph.

#### Context and detailed photographs

It is important to take a general photograph (Figure 1) to convey the location and setting of the item. This will add much value to the subsequent detailed photographs also required (Figure 2).

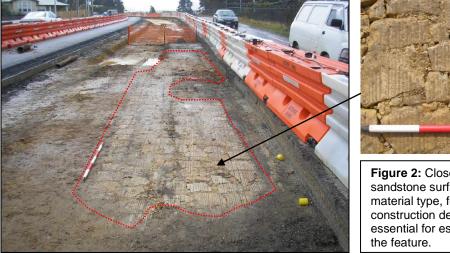




Figure 2: Close up detail of the sandstone surface showing material type, formation and construction detail. This is essential for establishing date of the feature

Figure 1: Telford road uncovered on the Great Western Highway (Leura) in 2008.

#### Photographing distinguishing features

Where unexpected items have a distinguishing feature, close up detailed photographs must be taken of this, where practicable. In the case of a building or bridge, this may include diagnostic details architectural or technical features. See Figures 3 and 4 for examples.



Figure 3: Ceramic bottle artefact with stamp.



**Figure 4:** Detail of the stamp allows '*Tooth & Co Limited*' to be made out. This is helpful to a specialist in gauging the artefact's origin, manufacturing date and likely significance.

#### Photographing bones

The majority of bones found on site will those of be recently deceased animal bones often requiring no further assessment (unless they are in archaeological context). However, if bones are human, Roads and Maritime must contact the police immediately (see Appendix F for detailed guidance). Taking quality photographs of the bones can often resolve this issue quickly. Heritage staff in Environment Branch can confirm if bones are human or non-human if provided with appropriate photographs. Ensure that photographs of bones are not concealed by foliage (Figure 5) as this makes it difficult to identify. Minor hand removal of foliage can be undertaken as long as disturbance of the bone does not occur. Excavation of the ground to remove bone(s) should not occur, nor should they be pulled out of the ground if partially exposed. Where sediment (adhering to a bone found on the ground surface) conceals portions of a bone (Figure 6) ensure the photograph is taken of the bone (if any) that is not concealed by sediment.



Figure 5: Bone concealed by foliage.



Figure 6: Bone covered in sediment

Ensure that all close up photographs include the whole bone and then specific details of the bone (especially the ends of long bones, the *epiphysis*, which is critical for species identification). Figures 7 and 8 are examples of good photographs of bones that can easily be identified from the photograph alone. They show sufficient detail of the complete bone and the epiphysis.



Figure 7: Photograph showing complete bone.



Figure 8: Close up of a long bone's epiphysis.

# **Appendix D**

## Key environmental contacts

Hunter region	Environmental Manager (Hunter)	4924 0440
	Aboriginal Cultural Heritage Advisor	4924 0383
Northern region	Environment Manager (North)	6640 1072
	Aboriginal Cultural Heritage Advisor	6604 9305
Southern region	Environmental Manager (South)	6492 9515
	Aboriginal Cultural Heritage Advisor	4221 2767
South West region	Environment Manager (South West)	6937 1634
	Aboriginal Cultural Heritage Advisor	6937 1647
Sydney region	Environment Manager (Sydney)	8849 2516
	Aboriginal Cultural Heritage Advisor	8849 2583
Western region	Environment Manager (West)	6861 1628
	Aboriginal Cultural Heritage Advisor	6861 1658
Pacific Highway Office	Environment Manager	6640 1375
Regional Maintenance	Environment Manager	9598 7721
Delivery		
Environment Branch	Senior Environmental Specialist	8588 5754
	(Heritage)	

## **Heritage Regulators**

Heritage Division Office of Environment and Heritage Locked Bag 5020 Parramatta NSW 2124 Phone: (02) 9873 8500	Department of the Environment (Clth) GPO Box 787 Canberra ACT 2601 Phone: (02) 6274 1111
Office of Environment and Heritage (Sydney Metropolitan) Planning and Aboriginal Heritage Section PO Box 668 Parramatta NSW 2124 Phone: (02) 9995 5000	Office of Environment and Heritage (North Eastern NSW) Planning and Aboriginal Heritage Section Locked Bag 914 Coffs Harbour NSW 2450 Phone: (02) 6651 5946
Office of Environment and Heritage (North Western NSW) Environment and Conservation Programs PO Box 2111 Dubbo NSW 2830 Phone: (02) 6883 5330	Office of Environment and Heritage (Southern NSW) Landscape and Aboriginal Heritage Protection Section PO Box 733 Queanbeyan NSW 2620 Phone: (02) 6229 7188

## **Project-Specific Contacts**

Position	Name	Phone Number
Project Manager		
Site/Alliance Environment Manager		
Regional Environmental Officer		
Aboriginal Cultural Heritage Advisor		
Consultant Archaeologist		
Local Police Station		
OEH: Environment Line		131 555

## Appendix E

## **Uncovering bones**

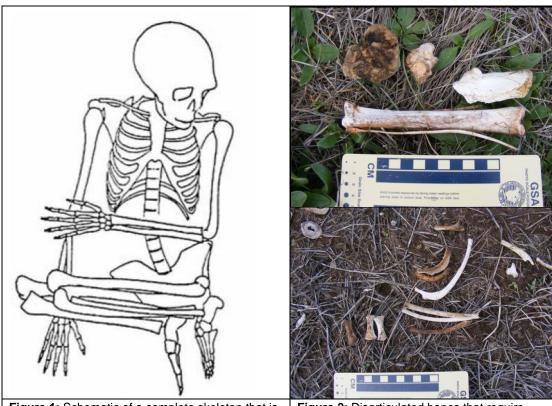
\*\*Mall matters relating to uncovering bones and RMS' human remains notification obligations should involve RMS regional environment and heritage staff. They will guide Project Managers through occurrences of uncovering bones.

This appendix provides Project Managers with advice (1) on what to do on first uncovering bones (2) the range of human skeletal notification pathways and (3) additional considerations and requirements when managing the discovery of human remains.

#### 1. First uncovering bones

Stop all work in the vicinity of the find. All bones uncovered during project works should be **treated with care and urgency** as they have the potential to be human remains. Therefore they must be identified as either human or non-human as soon as possible by a qualified forensic or physical anthropologist. These specialist consultants can be sought by contacting regional environment staff and/or heritage staff at Environment Branch.

On the very rare occasion where it is *instantly obvious* from the remains that they are human, the Project Manager (or a delegate) should <u>inform the police by telephone</u> prior to seeking specialist advice. It will be obvious that it is human skeletal remains where there is no doubt, as demonstrated by the example in Figure 1. Often skeletal elements in isolation (such as a skull) can also clearly be identified as human. Note it may also be obvious that human remains have been uncovered when soft tissue and clothing are present.



**Figure 1:** Schematic of a complete skeleton that is 'obviously' human<sup>12</sup>.

**Figure 2:** Disarticulated bones that require assessment to determine species.

<sup>&</sup>lt;sup>12</sup> After Department of Environment and Conservation NSW (2006), Manual for the identification of Aboriginal Remains: 17.

This preliminary phone call is to let the police know that Roads and Maritime is undertaking a specialist skeletal assessment to determine the approximate date of death which will inform legal jurisdiction. The police may wish to take control of the site at this stage. If not, a forensic or physical anthropologist must be requested to make an on-site assessment of the skeletal remains.

Where it is not 'obvious' that the bones are human (in the majority of cases, illustrated by Figure 2), specialist assessment is required to establish the species of the bones. Photographs of the bones can assist this assessment if they are clear and taken in accordance with guidance provided in Appendix C. Good photographs often result in the bones being identified by a specialist without requiring a site visit; noting they are nearly always non-human. In these cases, non-human skeletal remains must be treated like any other unexpected archaeological find.

If the bones are identified as human (either by photographs or an on-site inspection) a technical specialist must determine the likely ancestry (Aboriginal or non-Aboriginal) and burial context (archaeological or forensic). This assessment is required to identify the legal regulator of the human remains so **urgent notification** (as below) can occur. Preliminary telephone or verbal notification by the Project Manager or regional environment staff is considered appropriate. This must be followed up later by Roads and Maritime's formal letter notification as per Appendix G when a management plan has been developed and agreed to by the relevant parties.

## 2. Range of human skeletal notification pathways

The following is a summary of the different notification pathways required for human skeletal remains depending on the preliminary skeletal assessment of ancestry and burial context.

A. Human bones are from a recently deceased person (less than 100 years old).

#### **☑** Action

A police officer must be notified immediately as per the obligations to report a death or suspected death under s35 of the *Coroners Act 2009* (NSW). It should be assumed the police will then take command of the site until otherwise directed.

B. Human bones are archaeological in nature (*more than* 100 years old) and are likely to be *Aboriginal* remains.

#### **⋈** Action

The OEH and the RMS Aboriginal Cultural Heritage Advisor (ACHA) must be notified immediately. The ACHA must contact and inform the relevant Aboriginal community stakeholders who may request to be present on site. Relevant stakeholders are determined by the RTA's *Procedure for Aboriginal Cultural Heritage Consultation and Investigation*.

C. Human bones are archaeological in nature (*more than* 100 years old) and likely to be *non-Aboriginal* remains.

#### ☑ Action

The OEH (Heritage Branch, Conservation Team) must be notified immediately.

**BONES Preliminary** Non-Human Human notification to police Forensic (<100yrs) Archaeological (>100yrs) Non Archaeological Non-Aboriginal **Aboriginal** Archaeological **Notify Police** Notify OEH Notify OEH (take direction (EPRG), (Heritage from them) DSEWPC & Branch) Community Formulate Archaeological Management Plan Record site Resume works (Go to Step 3.6) (Go to Step 4) (Go to Step 8)

The simple diagram below summarises the notification pathways on finding bones.

After the appropriate verbal notifications (as described in B and C), the Project Manager must proceed through the *Unexpected Heritage Items Procedure* to formulate an archaeological management plan (Step 4). Note no archaeological management plan is required for forensic cases (A), as all future management is a police matter. Non-human skeletal remains must be treated like any other unexpected archaeological find and so must proceed to recording the find as per Step 3.6.

#### 3. Additional considerations and requirements

Uncovering archaeological human remains must be managed intensively and needs to consider a number of additional specific issues. These issues might include facilitating culturally appropriate processes when dealing with Aboriginal remains (such as repatriation and cultural ceremonies). Roads and Maritime's ACHA can provide advice on this and how to engage with the relevant Aboriginal community. Project Managers, more generally, may also need to consider overnight site security of any exposed remains and may need to manage the onsite attendance of a number of different external stakeholders during assessment and/or investigation of remains. Project Managers may also be advised to liaise with local church/religious groups and the media to manage community issues arising from the find. Additional investigations may be required to identify living descendants, particularly if the remains are to be removed and relocated.

If exhumation of the remains (from a formal burial or a vault) is required, Project Managers should also be aware of additional approval requirements under the *Public Health Act 1991* (NSW). Specifically, Roads and Maritime is required to apply to the Director General of NSW Department of Health for approval to exhume human remains as per Clause 26 of the *Public Health (Disposal of Bodies) Regulation 2002* (NSW)<sup>13</sup>. Further, the exhumation of such remains needs to consider health risks such as infectious disease control, exhumation procedures and reburial approval and registration. Further guidance on this matter can be found at the NSW Department of Health website.

In addition, due to the potential significant statutory and common law controls and prohibitions associated with interfering with a public cemetery, project teams are

<sup>&</sup>lt;sup>13</sup> This requirement is in addition to heritage approvals under the *Heritage Act 1977*.

advised, when works uncover human remains adjacent to cemeteries, to confirm the cemetery's exact boundaries.

## Appendix F

## Archaeological/heritage advice checklist

The archaeologist must advise the Project Manager of an appropriate archaeological or heritage management plan as soon as possible after site inspection (see Step 4). An archaeological or heritage management plan can include a range of activities and processes, which differ depending on the find and its significance. In discussions with the archaeologist the following checklist can be used by the Project Manager and the archaeologist as a prompt to ensure all relevant archaeological issues are considered when developing this plan. This will allow the project team to receive clear and full advice to move forward quickly and in the right direction. Archaeological and/or heritage advice on how to proceed can be received in a letter or email outlining all relevant archaeological and/or heritage issues.

	Required	Outcome/notes
Assessment and investigation		
Assessment of significance	Yes/No	
Assessment of heritage impact	Yes/No	
Archaeological excavation	Yes/No	
Archival photographic recording	Yes/No	
Heritage approvals and notifications		
AHIPs, Section 140, S139 exceptions etc	Yes/No	
Regulator relics/objects notification	Yes/No	
<ul> <li>Roads and Maritime's S170 Heritage and Conservation Register listing requirements</li> </ul>	Yes/No	
Compliance with CEMP or other project heritage approvals	Yes/No	
Stakeholder consultation		
Aboriginal stakeholder consultation requirements and how it relates to RTA Procedure for Aboriginal Cultural Heritage Consultation and Investigation (PACHCI).	Yes/No	
Advice from regional environmental staff, Aboriginal Cultural Heritage Advisor, Roads and Maritime heritage team.	Yes/No	
Artefact/ heritage item management		
Retention or conservation strategy (eg items may be subject to long conservation and interpretation)	Yes/No	
<ul> <li>Disposal strategy (eg former road pavement)</li> </ul>		
Short term and permanent storage locations (interested third parties should be		

#### **Roads & Maritime Services**

consulted on this issue).		
Control Agreement for Aboriginal objects.	Yes/No	
Program and budget		
Time estimate associated with archaeological or heritage conservation work.		
Total cost of archaeological/heritage work.		

# Appendix G

Template notification letter



[Select and type date]
[Select and type reference number]
[Select and type file number]
[Insert recipient's name and address, see Appendix D]

[Select and type salutation and name],

# Re: Unexpected heritage item discovered during Roads and Maritime Services project works.

I write to inform you of an unexpected [select: relic, heritage item or Aboriginal object] found during Roads and Maritime Services construction works at [insert location] on [insert date]. [Where the regulator has been informally notified at an earlier date by telephone, this should be referred to here].

This letter is in accordance with the notification requirement under [select: Section 146 of the Heritage Act 1977 (NSW) or Section 89(A) of the National Parks and Wildlife Act 1974 (NSW) NB: There may be not be statutory requirement to notify of the discovery of a 'heritage Item that is not a relic or Aboriginal object].

**NB:** On finding Aboriginal human skeletal remains this letter must also be sent to the Commonwealth Minister for Sustainability, Environment, Water, Populations and Communities (SEWPC) in accordance with notification requirements under Section 20(1) of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Cth).

[Provide a brief overview of the project background and project area. Provide a summary of the description and location of the item, including a map and image where possible. Also include how the project was assessed under the *Environmental Planning and Assessment Act* 1979 (NSW) (eg Part 5). Also include any project approval number, if available].

Roads and Maritime Services [or contractor] has sought professional archaeological advice regarding the item. A preliminary assessment indicates [provide a summary description and likely significance of the item]. Please find additional information on the site recording form attached.

Resulting from these preliminary findings, Roads and Maritime Services [or contractor] is proposing [provide a summary of the proposed archaeological/heritage approach (eg develop archaeological research design (where relevant), seek heritage approvals, undertake archaeological investigation or conservation/interpretation strategy). Also include preliminary justification of such heritage impact with regard to project design constraints and delivery program].

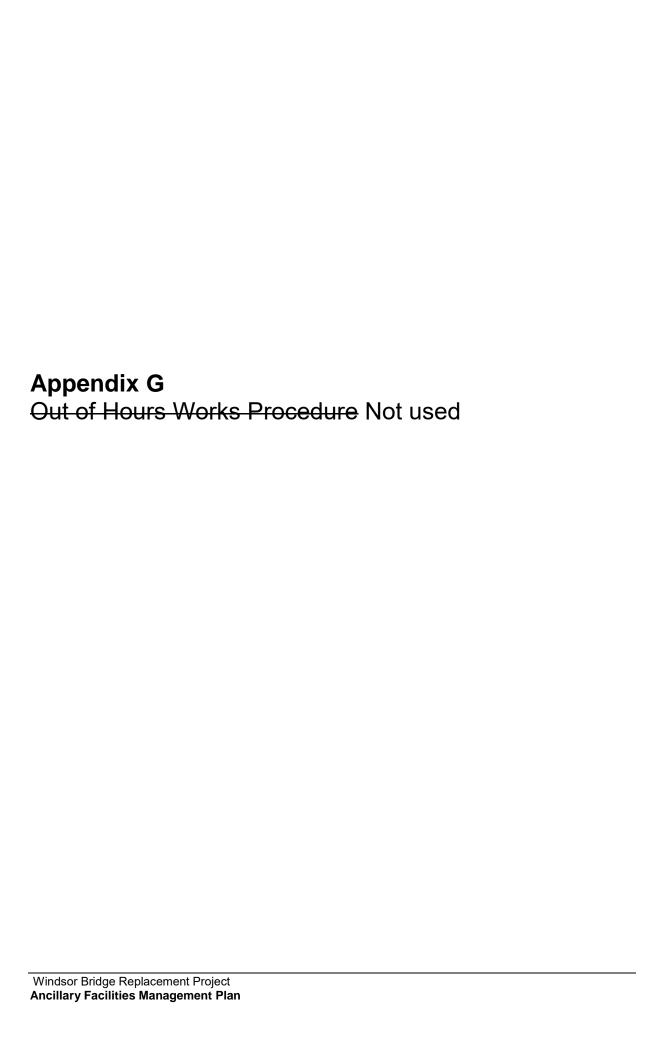
The proposed approach will be further developed in consultation with a nominated Office of Environment and Heritage staff member.

Please contact me if you have any input on this approach or if you require any further information.

Yours sincerely

[Sender name and position]

[Attach the archaeological/heritage management plan and site recording form].	



# **Appendix H**

Roads and Maritime's Environmental Incident Classification and Reporting Procedure



# Environmental Incident Classification and Reporting Procedure

September 2017

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# **About this release**

Title Environmental Incident Classification and Reporting Procedure
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Approval		
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Acronyms and definitions		
Acronym	Definition	
DE	(Roads and Maritime Services) Director Environment	
DEO	(Roads and Maritime Services) Director Environment Operations	
DPE	Department of Planning and Environment	
Environmental harm	Any act that degrades or pollutes the environment	
EPA	NSW Environment Protection Authority	
EP&A Act	Environmental Planning and Assessment Act 1997	
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999	
EPL	Environment Protection Licence	
POEO Act	Protection of the Environment Operations Act 1997	
REF	Review of Environmental Factors	
Roads and Maritime	NSW Roads and Maritime Services	
SEQC	(Roads and Maritime Services) Safety Environment and Quality Co-ordinator	
SEQO	(Roads and Maritime Services) Safety Environment and Quality Officer	

## 1. Introduction

#### 1.1 Aim

The Environmental Incident Classification and Reporting Procedure (the Procedure) aims to ensure Roads and Maritime Services workers and contractors understand how to classify, respond to and report environmental incidents that occur as a result of Roads and Maritime managed activities.

## 1.2 Objectives

The objectives of the Procedure are to:

- Ensure all relevant Roads and Maritime workers, managers and contractors are made aware of environmental incidents promptly and can respond accordingly
- Ensure site workers understand the immediate environmental incident reporting requirements
- Ensure all workers understand reporting timeframes, including statutory requirements
- Ensure incidents are reported to enable monitoring, sharing of lessons learnt and response to emerging environmental incident trends
- Comply with statutory obligations to report certain environmental incidents to regulators and other relevant government agencies (see <a href="section 5.1">section 5.1</a>).

## 1.3 Scope and coverage

This Procedure is applicable to all Roads and Maritime activities where environmental incidents may occur. This includes (but is not limited to):

- Temporary activities, such as preliminary investigations (e.g. geotechnical and environmental surveys) and the construction and maintenance of Roads and Maritime assets
- Activities at Roads and Maritime properties and facilities
- Vessels operated by Maritime division
- Activities undertaken by contractors on behalf of Roads and Maritime.

The requirements of this Procedure must be communicated to all Roads and Maritime workers and contractors (e.g. during inductions) who are undertaking activities where incidents may occur.

The Procedure is for internal reporting processes, except where incidents are identified that need to be notified to regulators, and other relevant authorities (see section 5.1).

The procedure does NOT cover environmental incidents caused by:

- Operational road and traffic activities of the general public (e.g. vehicle accidents, fires caused by discarded cigarette butts)
- Boating accidents (except those involving Roads and Maritime vessels)
- Dumping of materials by members of the public on Roads and Maritime roadsides or land (except where hazardous materials are unexpectedly found during road construction or maintenance activities).
   Illegal dumping should be reported to the NSW Environment Protection Authority (EPA)
- Marine oil and chemical spills covered by the <u>National Plan for Maritime Environmental Emergencies</u> (Australian Maritime Safety Authority, 2014).

# 2. Environmental incident classification

There are three categories of environmental incidents, as detailed in Table 2.

Table 2: Environmental incident classification				
Category	Description	Examples		
	failures of process that result in actual off- site environmental harm, or residual on- site environmental harm or Works undertaken outside approved areas, without required approval or without environmental assessment or Any Material Harm pollution incident as defined by Part 5.7 of the Protection of the Environment Operations Act 1997 (POEO Act).	Pollution Incidents	Discharge of waters from site not in accordance with any approval requirements (e.g. discharge criteria in an Review of Environmental Factors (REF) safeguard or Environment Protection Licence (EPL) condition)	
			Pollution, or potential pollution, of waters	
			Unmanaged vehicle tracking of materials or emissions of dust, offensive odours or noise beyond the site boundary that are not managed in accordance with approval requirements and/or might impact on nearby land users	
			Pollution incidents that threaten harm to the health or safety of people (e.g. odours)	
Category 1			Unauthorised or illegal disposal or transport of waste	
catogory :			A spill or other incident that causes pollution to land	
		Conservation Breaches	Unauthorised harm or damage to native flora and fauna (terrestrial or aquatic/marine)	
			Unauthorised dredging or reclamation works within a watercourse	
		Dieaches	A fire caused by Roads and Maritime activities that travels beyond the boundary causing or potentially causing harm to the environment or community	
		Heritage Breaches	Unauthorised harm to Aboriginal objects and Aboriginal places	
			Unauthorised damage to any State or locally significant relic or Heritage item, or item listed on the Roads and Maritime Section 170 register	

Table 2: Environmental incident classification				
Category	Description	Examples		
		Failure to comply with the requirements of:  The Environmental Planning and Assessment Act 1997 (EP&A Act), including exempt activities, Part 5 determinations and Part 5.1 approvals  An Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) approval  An EPL  A CEMP or environmental work method statement  A permit from a regulator (e.g. under the Fisheries Management Act 1994)		
Category 2	Failures of process or events that do not result in off-site environmental harm, or residual on-site environmental harm. These incidents may result in temporary on-site environmental harm that can be rectified to pre-existing conditions.	A procedural, administrative or technical breach of environmental requirements, including:  • Failure to prepare or submit required documents, reports or other correspondence  • Failure to comply with the requirements of:  ○ The Environmental Planning and Assessment Act 1997 (EP&A Act), including exempt activities, Part 5 determinations and Part 5.1 approvals  ○ An Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) approval  ○ An EPL  ○ A CEMP or environmental work method statement  ○ A permit from a regulator (e.g. under the Fisheries Management Act 1994).  Spills and discharges that do not leave a site boundary and are cleaned up without residual on-site environmental harm, and the area of temporary impact can be restored to pre-existing conditions  A fire that is contained on site and does not cause or potentially cause adverse impact to the environment or community		
Reportable Event	An event or unexpected find that occurs outside the scope of reasonable environmental controls and mitigation measures	<ul> <li>Sediment or site water travelling beyond a site boundary, and where it can be demonstrated that:</li> <li>Erosion and sediment controls were installed and maintained in accordance with an erosion and sediment control plan, and</li> <li>The cause of the incident was reasonably unforeseen or the weather (rain, wind etc) event exceeded the design capacity of controls.</li> <li>Note these events are considered to have occurred (and the response should commence in accordance with Section 3) when sediment or site water first travels beyond the site boundary (e.g. when an appropriately sized and maintained sediment basin commences overtopping)</li> <li>An unexpected archaeological find that is being managed in accordance with the "Roads and Maritime"</li> </ul>		

Table 2: Environmental incident classification				
Category	gory Description Examples			
		Standard Management Procedure - Unexpected Archaeological Finds"		
		An unexpected threatened species find that is being managed in accordance with the "Roads and Maritime Biodiversity Guidelines – unexpected threatened species finds procedure"		
		An unexpected find of contaminated soils, asbestos or other potentially hazardous substances during construction or maintenance works. Note that once a particular contaminant is identified or found for the first time (either during project planning or construction phases) it is then reasonably expected to be found, so additional finds need not be reported in this category.		
Regulatory Action	Formal regulatory action from an environmental regulator (that has not already been reported in conjunction with another incident)	Formal regulatory action from an environmental regulator includes, but is not limited to:  Penalty infringement notices (PINs)  Clean up notices  Prevention notices  Official cautions / warnings  EPA show cause notifications.		

**Note:** For any incident where there is associated formal regulatory action from an environmental regulator, copies of this correspondence must be forwarded to <a href="mailto:envops@rms.nsw.gov.au">envops@rms.nsw.gov.au</a> in addition to the Environmental Incident Report (see <a href="mailto:section4">section 4</a>).

# 3. Environmental incident response

## 3.1 Considerations and steps for environmental incident response

The step-by-step response for Category 1 incidents, Category 2 incidents and Reportable Events is detailed in Table 3.1a (activities undertaken by contractors) and Table 3.1b (activities undertaken by Roads and Maritime Regional Maintenance). However, some key points apply throughout all stages of the response to any environmental incident:

- If in doubt, treat all incidents as Category 1 to ensure reporting timeframes can be met
- Strong consideration should be given to notifying:
  - Roads and Maritime Corporate Communications for any incidents that have potential for community or media attention (see <u>section 4.4</u>)
  - Roads and Maritime Work Health and Safety Branch for any incidents that involve actual or potential risks to worker health and safety (see <u>section 4.4</u>).
- The person responsible for operational management of the site/activity shall assume responsibility for the response to the incident and direct actions as necessary and in accordance with this Procedure
- A Roads and Maritime Environment Manager can consult with the Director Environment Operations (DEO) to reclassify the category of an incident where appropriate.

Any Regulatory Action received (that has not already been reported in conjunction with another incident) should be immediately forwarded to the <a href="mailto:envops@rms.nsw.gov.au">envops@rms.nsw.gov.au</a> mailbox, and followed by an immediate phone call to the relevant Roads and Maritime Environment Manager, who will immediately advise the DEO. Consideration should then be given as to whether an environmental incident has occurred (see <a href="mailto:seetion.">section 2</a>) that should be reported in accordance with this section.

	Table 3.1a: Environmental incident response – activities undertaken by contractors				
		Responsibility for	Timeframe		
Step	Action	completing action	Category 1 Incidents	Category 2 Incidents / Reportable Events	
1	Stop work in relevant area (if necessary) and take actions to prevent adverse impact to human health or the environment.  Note human health and safety is the primary concern, and no action should be taken if it is not safe to do so.	Person who identifies incident	Immediate	Immediate	
2	Advise the contractor site management team.	Person who identifies incident	Immediate	Immediate	
3	Advise the Roads and Maritime project management team and the relevant Roads and Maritime Environment Manager.	Contractor	Immediate	Day of the incident	
4	Consider if the incident is a pollution incident that constitutes Material Harm in accordance with Part 5.7 of the POEO Act. For Material Harm pollution incidents, notify relevant agencies (see <a href="section 5.2">section 5.2</a> ). Sites with an EPL should implement their Pollution Incident Response Management Plan.	Contractor	Immediate	Immediate	
5	Advise DEO by phone. The DEO may request photographs and a brief summary of known information via email. The following Roads and Maritime managers should also be notified by phone as relevant:  • Director Environment (Major Projects)  • Director Environment (Motorways).	Roads and Maritime Environment Manager	Immediately following advice of the incident	N/A	
6	Where relevant, notify incident to appropriate regulatory agency (see <u>section 5.1</u> ). Note this does not refer to the requirement to notify Material Harm pollutions incidents (see Step 4).	Contractor	As required by legislation	As required by legislation	
7	Complete the incident report form (see <u>section 4.2</u> ), including sign-off from Roads and Maritime Project Manager, and submit to Roads and Maritime Environment Manager* (see sections <u>4.3</u> and <u>4.4</u> ).	Contractor	Within 3 business days of the incident	Within 3 business days of the incident	
8	Sign and submit incident report form to <a href="mailto:envops@rms.nsw.gov.au">envops@rms.nsw.gov.au</a> .	Roads and Maritime Environment Manager	On the day of receipt of the form	On the day of receipt of the form	
9	For Material Harm pollution incidents, provide a written report to each relevant authority (see <a href="section"><u>section</u></a> <a href="5.2">5.2</a> ).	Contractor	Within 7 days of the incident	N/A	
10	Undertake incident investigation (level of investigation to be appropriate to the severity of the incident) to determine root cause and any necessary corrective actions. Summarise findings in 'Incident Lessons Learnt' template and submit to Environment Manager for review.	Contractor	Within 1 month of incident	N/A	
11	Submit final Incident Lessons Learnt to <a href="mailto:envops@rms.nsw.gov.au">envops@rms.nsw.gov.au</a> .	Roads and Maritime Environment Manager	Within 1 week of receipt	N/A	
12	Consider the need for any required corrective actions to be addressed through a management system (e.g. corrective action request).	Roads and Maritime Environment Manager and project team	As appropriate	As appropriate	

\*Alternate workflow / signatory arrangements may be required for projects where a third party is involved (e.g. a delivery authority). These arrangements can be confirmed with the relevant Roads and Maritime Environment Manager.

		Responsibility for	Timeframe	
Step	Action	completing action	Category 1 Incidents	Category 2 Incidents / Reportable Events
1	Stop work in relevant area (if necessary) and take actions to prevent adverse impact to human health or the environment.  Note human health and safety is the primary concern, and no action should be taken if it is not safe to do so.	Person who identifies incident	Immediate	Immediate
2	Advise the Roads and Maritime site management team and the relevant Roads and Maritime Environment Manager and Safety Environment Quality Officer (SEQO) / Safety Environment Quality Coordinator (SEQC).	Person who identifies incident	Immediate	Immediate
3	Advise DEO by phone. The DEO may request photographs and a brief summary of known information via email. The relevant Regional Maintenance Manager must also be notified.	Environment Manager	Immediate	N/A
4	Consider if the incident is a pollution incident that constitutes Material Harm in accordance with Part 5.7 of the POEO Act. For Material Harm pollution incidents, notify relevant agencies (see <a href="section 5.2">section 5.2</a> ). Sites with an EPL should implement their Pollution Incident Response Management Plan.	DEO	Immediately following advice of the incident	N/A
5	Where relevant, notify incident to appropriate regulatory agency (see <a href="section 5.1">section 5.1</a> ). Note this does not refer to the requirement to notify Material Harm pollutions incidents (see Step 4).	Environment Manager	As required by legislation	As required by legislation
6	Complete the incident report form (see <u>section 4.2</u> ), including sign-off from Roads and Maritime Project Manager, and submit to SEQC (see <u>section 4.3</u> ).	Relevant Roads and Maritime site representative	Within 3 business days of the incident	Within 3 business days of the incident
7	SEQC to sign and submit incident report form to relevant Environment Manager (see section 4.4).	SEQC	On the day of receipt of the form	On the day of receipt of the form
8	Sign and submit incident report form to <a href="mailto:envops@rms.nsw.gov.au">envops@rms.nsw.gov.au</a> .	Environment Manager	On the day of receipt of the form	On the day of receipt of the form
9	For Material Harm pollution incidents, provide a written report to each relevant authority (see section 5.2).	DEO	Within 7 days of the incident	N/A
10	Undertake incident investigation (level of investigation to be appropriate to the severity of the incident) to determine root cause and any necessary corrective actions. Summarise findings in 'Incident Lessons Learnt' template and submit both to Environment Manager for review. Consider the need for any required corrective actions to be addressed through a management system (e.g. corrective action request).	SEQC	Within 1 month of incident	N/A
11	Submit final Incident Lessons Learnt to <a href="mailto:envops@rms.nsw.gov.au">envops@rms.nsw.gov.au</a> .	Roads and Maritime Environment Manager	Within 1 week of receipt	N/A

Copies of formal regulatory action from an environmental regulator (that has not already been reported in conjunction with another incident) must be forwarded to the relevant Roads and Maritime Environment Manager (and SEQC/SEQO for Regional Maintenance projects) and <a href="mailto:envops@rms.nsw.gov.au">envops@rms.nsw.gov.au</a> immediately upon receipt.

#### 3.2 Critical incidents

Some Category 1 incidents require escalation so relevant members of the Roads and Maritime Executive are aware of the incident and ready to respond as necessary. Category 1 incidents will be deemed 'Critical Incidents' for escalation to the Executive when they have the potential for:

- Regulatory action (e.g. EPA Penalty Infringement Notice) and/or
- Reputational damage (e.g. media coverage) and/or
- Significant environmental harm.

Guiding factors that will be considered when determining whether there has been 'significant' environmental harm include:

- When there has been actual or potential harm to the health or safety of people or to the environment that is not trivial
- Actions required to prevent, mitigate or make good the actual or potential environmental harm are likely to exceed \$10,000

When a potential 'Critical Incident' is reported, the DEO will immediately brief the Director Environment (DE) who will make a determination on whether it will be considered a 'Critical Incident'. The DE will then brief the Roads and Maritime Chief Executive and relevant Executive Director, as well as any other members of the Executive as appropriate. When the DE cannot be contacted, the DEO will make the determination and make the relevant Executive briefings.

# 4. Environmental incident reporting

## 4.1 Environmental incident report form

The Environmental Incident Report Form should be completed for Category 1 incidents, Category 2 incidents and Reportable Events, and is available on the Roads and Maritime website.

## 4.2 Completing the incident report form

All parts of the Incident Report Form must be completed in accordance with this procedure and following the instructions within the form. The Form (and any subsequent reports) must only include factual information. Speculation about the causes and outcomes of incidents are not to be included.

The Form <u>must</u> be signed by the following:

Signatory	Reason			
The person making the report	The person witnessed the incident or has the most knowledge of the incident, and can provide sufficient factual information.			
The Roads and Maritime Project Manager	To ensure all relevant Roads and Maritime parties can be made aware of the incident, and appropriate resources can be allocated and/or approved to respond to the incident. This also ensures the project management team are aware of any environmental performance trends if multiple incidents occur.			
Safety Environment and Quality Co-ordinator (Roads and Maritime Regional Maintenance only)	To ensure Regional Maintenance management system staff are aware of the incident, and any necessary management system changes can be made once corrective actions and lessons learnt are finalised.			
The relevant Roads and Maritime Environment Manager	Concurrence that the incident is adequately described, and the immediate actions and corrective actions are appropriate.			

As noted in <u>Table 3.1a</u>, alternate signatory arrangements may be required for projects where a third party is involved (e.g. a delivery authority). These arrangements can be confirmed with the relevant Roads and Maritime Environment Manager.

# 4.3 Submitting the incident report form

All Incident Report Forms must be populated, signed and submitted electronically (never printed / signed / scanned etc.) to enable Roads and Maritime to electronically capture the information entered in the form.

Completed Incident Report Forms should be submitted by the Roads and Maritime Environment Manager to the Environment Operations mailbox:

• envops@rms.nsw.gov.au

It is essential that a clear and consistent subject line convention is used to allow tracking of correspondence about each incident. All emails about an incident between all parties should structure the subject line as follows:

- Category X project name / incident location date
- For example, Category 1 Main Road Upgrade dd/mm/yy.

Where information cannot be gathered within the timeframes set out in this Procedure, the incident form should be submitted to the mailbox as a 'draft', whether or not the information contained is fully completed.

For example, Category 1 – Main Road Upgrade – dd/mm/yy (DRAFT).

The Environment Manager should then request further information from the person making the report, and the final report should be submitted within the next 24 hours.

#### 4.4 Roads and Maritime contacts

The relevant Environment Manager for each region and Project Office is the first point of contact for enquiries relating to environmental incidents. Current contacts for all Roads and Maritime Environment Managers can be found on the Roads and Maritime website.

Environment Managers can also provide contact details for other relevant contacts during an incident, such as Communications or Work, Health and Safety.

The DEO oversees the application of this Procedure, and can be contacted in the absence of the relevant Environment Manager for Category 1 incidents:

• Phone - (02) 8843 3048

# 5. Regulatory agency notification

## 5.1 Notification of Material Harm pollution incidents

#### 5.1.1 Definition of Material Harm pollution incidents

Under Part 5.7 of the POEO Act, there is a duty to immediately notify (i.e. promptly and without delay) each relevant authority (see <a href="section 5.1.3">section 5.1.3</a>) of a pollution incident where material harm to the environment is caused or threatened.

The POEO Act states that a pollution incident should be considered Material Harm if:

- "(i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or
- (ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000"

Material Harm only relates to pollution incidents. Other environmental incidents, such as conservation, heritage and planning breaches, are not included in the definition of a pollution incident.

#### 5.1.2 Determining if an incident should be considered Material Harm

As soon as a person becomes aware of a pollution incident that has the potential to cause Material Harm, the Category 1 incident response should be followed (see <u>Table 3.1a</u> and <u>Table 3.1b</u> above). The determination on whether a pollution incident should be considered Material Harm should be made in accordance with Table 5.1.2.

	Table 5.1.2: Determination of Material Harm pollution incidents		
Project delivery	Material Harm determination		
	The DEO should make the determination (and any associated notifications) on whether a pollution incident should be considered Material Harm.		
Activities undertaken by Regional Maintenance	If the DEO is not available, the relevant Environment Manager should seek advice from other Roads and Maritime Environment Branch Directors, or make the material harm determination themselves.		
Wainterland	If no assistance can be obtained and it is suspected that a pollution incident should be considered Material Harm, the project should notify the relevant authorities in accordance with <a href="Table 5.1.3a">Table 5.1.3b</a> (as relevant).		
	The contractor project team should make the determination (and any associated notifications) on whether a pollution incident should be considered Material Harm.		
Activities undertaken	The relevant Roads and Maritime Environment Manager or Environment Branch Director may contact the DEO to assist in making an assessment of the incident, to aid the contractor in determining if the pollution incident should be considered Material Harm.		
by contractors	Where Roads and Maritime believes a pollution incident should be considered Material Harm but the contractor disagrees, Roads and Maritime is required by law to notify EPA and other relevant authorities. In this instance the DEO or DE would make a determination on whether the incident should be notified by Roads and Maritime as Material Harm. Roads and Maritime would provide details of any notifications made to the contractor.		

Even if only limited information is available for a pollution incident being considered Material Harm, each relevant authority must be immediately notified with the information available and updates provided as soon as further relevant information becomes available.

In circumstances where there is doubt about the need to notify a pollution incident as Material Harm, Roads and Maritime and its contractors should always err on the side of notification.

### When in doubt, communicate!

Note: Roads and Maritime is not responsible for notifying a Material Harm pollution incident caused by a traffic or vehicle accident where notification has already occurred by someone at the scene. However, if it is believed notification has not been undertaken, Roads and Maritime should undertake notification in accordance with section 5.1.3. Environment Branch can provide advice in this instance (see section 4.4).

## 5.1.3 Relevant authorities to notify

The relevant authorities that must be notified for a Material Harm pollution incident are listed in tables <u>5.1.3a</u> and <u>5.1.3b</u> below. It is important to note the order of notification and phone numbers to use can vary depending on the nature of the pollution incident, as detailed in the two tables.

All of the authorities listed (whether considered relevant or not) must be contacted for each Material Harm pollution incident to satisfy POEO Act requirements. Serious penalties apply to both individuals and corporations for failing to notify Material Harm pollution incidents:

- Maximum penalty for individuals \$500,000
- Maximum penalty for corporations \$2,000,000.

Table 5.1.3a: Authorities to notify for Material Harm pollution incidents that present an immediate threat to human health or property			
Order	Authority	Contact Number	
1	Fire and Rescue NSW	000	
2	NSW EPA environment line	131 555	
3	Ministry of Health (via the local Public Health Unit)*	Contact 1300 066 055 to be directed to the local Public Health Unit, or visit the NSW Health Website	
4	SafeWork NSW	131 050	
5	The Appropriate Regulatory Authority*, being either:  Local council  Western Lands Commissioner for the Western Division (except any part of the Western Division within the area of a local council).	Local council - contact Office of Local Government on 4428 4100, or visit the Office of Local Government website Western Lands Commissioner – phone 6883 5400	

Table 5.1.3b: Authorities to notify for Material Harm pollution incidents that do <u>NOT</u> present an immediate threat to human health or property				
Order	Authority	Contact Number		
1	NSW EPA environment line	131 555		
2	<ul> <li>The Appropriate Regulatory Authority*, being either:</li> <li>Local council</li> <li>Western Lands Commissioner for the Western Division (except any part of the Western Division within the area of a local council).</li> </ul>	Local council - contact Office of Local Government on 4428 4100, or visit the Office of Local Government website Western Lands Commissioner – phone 6883 5400		
3	Ministry of Health (via the local Public Health Unit)*	Contact 1300 066 055 to be directed to the local Public Health Unit, or visit the NSW Health Website		

4	SafeWork NSW	131 050
5	Fire and Rescue NSW	1300 729 579

<sup>\*</sup> The appropriate contact for the Appropriate Regulatory Authority and Public Health Unit will vary according to the geographic location of the activity. These contact numbers should be found in advance and stored for immediate access (e.g. in a project's Construction Environmental Management Plan and/or on site notice boards) should a pollution incident need to be notified.

#### 5.1.4 The relevant information to provide

It is important to avoid speculation on origin, causes or outcomes of a pollution incident in discussions with the authorities. Section 150 of the POEO Act provides the information that needs to be notified, being:

- a) The time, date, nature, duration and location of the incident
- b) The location of the place where pollution is occurring or is likely to occur, the nature, the estimated quantity or volume and the concentration of any pollutants involved, if known
- c) The circumstances in which the incident occurred (including the cause of the incident, if known)
- d) The action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution, if known
- e) Other information prescribed by the regulations.

Only known information should be provided when notifying of a Material Harm pollution incident. If further information becomes known after the initial notification, that information must immediately be notified to all authorities in accordance with Section 150 (see above). The immediate verbal notification is to be followed by written notification to each relevant authority within seven days of the date on which the incident occurred.

Complying with these notification requirements does not remove the need to comply with any other legislative requirements for incident notification (e.g. requirements under EPL conditions or the Work Health and Safety Act 2011).

# 5.2 Summary of other regulatory agency notification requirements

Specific statutory requirements relating to the notification of environmental incidents to relevant regulatory agencies are summarised in Table 5.2. Additional requirements adopted by Roads and Maritime are indicated in *italics*. Any notification to regulatory agencies should be indicated in the Environmental Incident Report Form to confirm that any required notifications have been initiated.

Table 5.2: Regulatory agency notification requirements				
Legislation / issue Regulating authority		Section / requirement		
Commonwealth Aboriginal and Torres Strait Islanders Heritage Protection Act 1984	Department of the Environment and Energy	Section 20 – requirement to notify the Minister of the discovery of Aboriginal remains.		
Contaminated Land Management Act 1997	<u>EPA</u>	Section 60 – requirement to notify if Roads and Maritime activities have contaminated land or if Roads and Maritime owns land that has been contaminated.		
Heritage Act 1977	Office of Environment and Heritage	Section 146 – requirement to notify the Heritage Council of the location of the relic once a relic has been discovered or located.		
National Parks and Wildlife Act 1974	Office of Environment and Heritage	Section 89A – requirement to notify the location of an Aboriginal object that is the property of the Crown.		
Protection of the Environment Operations Act 1997	EPA and other relevant authorities	Section 148 – requirement to immediately notify pollution incidents that cause or threaten Material Harm to the environment (see Section 5.1)		

#### Environmental Incident Classification and Reporting Procedure

	<u>EPA</u>	Pro-active reporting to the local EPA officer of offsite pollution incidents that occur as a result of Roads and Maritime activities is encouraged as soon as practicable after the pollution incident occurs.
Rural Fires Act 1997	NSW Rural Fire Service	Section 64 – requirement to notify an appropriate fire officer of the inability to extinguish any fire burning during a bush fire danger period applicable to the land.
Breach of Conditions of Approval (projects approved under Part 5.1 of the EP&A Act)	Department of Planning and Environment (DPE)	DPE should be notified by the project proponent when there has been a breach of a Condition of Approval (CoA). There may also be other notification requirements included in the CoA.
Water supply catchment areas	Local water supply authority	If an environmental incident has the potential for unapproved impacts on a drinking water supply, the relevant water supply authority must be advised.

# 5.3 Requests for written reports from regulatory authorities (activities delivered internally by Roads and Maritime)

Should Roads and Maritime directly receive a request from a regulatory authority for a written report regarding an environmental incident, Environment Branch and Legal Branch must be immediately contacted for advice. No further correspondence (including email) about the incident should be distributed either internally or externally until advice is received. Environment Branch will coordinate with Legal Branch to:

- · Assist in the investigation of the incident
- Provide legal advice to the project
- Co-ordinate the preparation of the written response to the regulatory authority.

Appendix I Consistency with the Approved Project
Windsor Bridge Replacement Project

Table D1 Consistency against relevant CoA for the project

No.	Condition of Approval	Discussion	Consistent
A1	The Applicant shall carry out the SSI generally in accordance with the:  (a) State Significant Infrastructure Application SSI-4951;  (b) Windsor Bridge Replacement Project Environmental Impact Statement Volumes 1, 2, 3 and 4 prepared by Sinclair Knight Merz for Roads and Maritime Services, dated November 2012;  (c) Windsor Bridge Replacement Project Submissions Report incorporating Preferred Infrastructure Report, dated April 2013 prepared by Sinclair Knight Merz for Roads and Maritime Services, including the revised Statement of Commitments contained therein;  (d) Any plans and/or documentation submitted to satisfy the Pre-Construction Conditions of this consent as approved in writing by the Director-General; and  (e) The conditions of this consent.	The general consistency with the Project EIS and the CoA has been considered in Chapter 5, and it is concluded that the impacts would be generally consistent with the Project EIS, and the Submissions and Preferred Infrastructure Report (and addendums/ supplementary material) for the approved Project.  Consideration of the CoA is included within this table and in Chapter 4. It is concluded that the ancillary facility is consistent with the approved Project.	Yes
B4	The Applicant shall undertake an Archaeological Investigation Program comprising Aboriginal Heritage in the northern side of the Hawkesbury River project area, prior to the commencement of pre-construction and construction activities in the northern area. The program shall be conducted to the satisfaction of the Director-General and prepared in consultation with the OEH (Aboriginal heritage) and the Aboriginal stakeholders.	The Archaeological Investigation Program on the northern side of Hawkesbury River was undertaken in 2016.  The ancillary facility (main compound area and stockpile area) will not impact on the ability to comply with this condition.	Yes
	The results of the Archaeological Investigation Program conducted in the project area on the northern side of the Hawkesbury River are to be detailed in a Historic Archaeological Report and a Detailed Salvage Strategy comprising the Aboriginal heritage findings in northern side of the Hawkesbury River. These are to be prepared in consultation with the OEH (Aboriginal heritage) and to the satisfaction of the Director-General, and shall include but not necessarily be limited to:  (a) detailed recommendations for further Aboriginal archaeological work;  (b) consideration of measures to avoid or minimise disturbance to Aboriginal sites, where archaeology of Aboriginal heritage archaeological significance are found to be present;  (c) where impacts cannot be avoided by construction of the SSI, recommend actions to salvage and interpret salvaged sites, conduct further research and archival recording of the Aboriginal heritage value of each site, and to enhance and preserve the Aboriginal heritage significance.  (d) consideration of providing visual evidence of heritage sites within the final	A Historical Archaeology Testing Report, an Aboriginal Heritage Testing Report, a Hawkesbury Region Sand Bodies Study and a Detailed Salvage Strategy have been prepared for the Project.  The ancillary facility (main compound area and stockpile area) will not impact on the ability to comply with this condition.	Yes

No.	Condition of Approval	Discussion	Consistent
	landscape design of the SSI to preserve and acknowledge the Aboriginal heritage value of the northern project area; (e) management and mitigation measures to minimise impacts due to preconstruction and construction activities; and (f) preparation of a Hawkesbury Region Sand Bodies Study as detailed in Condition B3(f)		
B5	The Applicant shall not commence construction of the project on or within those areas likely to alter flood conditions until such time as works identified in the Hydrological Mitigation Report, required under condition C27, have been completed, unless otherwise agreed by the Director-General.	The Hydrological Mitigation Report prepared for the Project does not identify the requirements for any 'at property' mitigation works.  The ancillary facility (main compound area and stockpile area) will not impact on the ability to comply with this condition.	Yes
C1	During all stages of the project, the Applicant must comply with all programs and reports prepared by the Applicant in accordance with conditions B1 to B8 of this consent.	The ancillary facility (main compound area and stockpile area) will not impact on the ability to comply with this condition. The mitigation measures from conditions B1 to B8, relevant to the ancillary facility, have been incorporated into this AFA.	Yes
C2	In the event that any Pleistocene and/or early Holocene is encountered during any construction activities, condition 3(f) applies as if the relevant construction works were works carried out under condition B3.	The ancillary facility (main compound area and stockpile area) will not impact on the ability to comply with this condition.	Yes
C3	This consent does not allow the Applicant to disturb any human remains found on the site without further approval from the Director-General, and/or the NSW Police Force.	The ancillary facility (main compound area and stockpile area) will not impact on the ability to comply with this condition.	Yes
C6	The Applicant shall carry out all reasonable and feasible measures to minimise dust generated by the SSI, including wind-blown and traffic-generated dust.	The ancillary facility (main compound area and stockpile area) will not impact on the ability to comply with this condition.	Yes
C7	During construction, the Applicant shall ensure that:  (a) all vehicles on site do not exceed a speed limit of 30 kilometres per hour;  (b) all loaded vehicles entering or leaving the site have their loads covered; and  (c) all loaded vehicles leaving the site are cleaned of dirt, sand and other materials before they leave the site, to avoid tracking these materials on public roads.	The ancillary facility (main compound area and stockpile area) will not impact on the ability to comply with this condition.	Yes

No.	Condition of Approval	Discussion	Consistent
C8	Unless otherwise approved by the Director-General, the location of Ancillary Facilities shall:  (a) be located more than 50 metres from a waterway; (b) be located within or adjacent to land where the SSI is being carried out; (c) have ready access to the road network or direct access to the construction corridor; (d) be located to minimise the need for heavy vehicles to travel through residential areas; (e) be sited on relatively level land; (f) be separated from nearest residences by at least 200 metres (or at least 300 metres for a temporary batching plant); (g) not require vegetation clearing beyond that already required by the SSI; (h) not be located within the Thompson Square Conservation Area; (i) not impact on Heritage items (including identified Aboriginal cultural value and archaeological sensitivity) beyond those already impacted by the SSI and not have any additional impacts to those heritage items impacted by the proposal; (j) not unreasonably affect the land use of adjacent properties; (k) be above the 20 ARI flood level unless a contingency plan to manage flooding is prepared and implemented; and (l) provide sufficient area for the storage of raw materials to minimise, to the greatest extent practical, the number of deliveries required outside standard construction hours.  The location of the ancillary facilities shall be identified in the Construction Environment Management Plan.	The proposed ancillary facility (main compound area and stockpile area) is not consistent with condition C8(a), C8 (f) and C8 (k). Refer Table 3-1 for more information.	No
C9	Ancillary sites that do not meet the criteria set out in this consent shall be approved by the Director-General prior to establishment. In obtaining this approval, the Applicant shall assess the ancillary facility against the criteria set out in this consent to demonstrate how the potential environmental impacts can be mitigated and managed to acceptable standards. Such assessment(s) can be submitted separately or as part of the Construction Environmental Management Plan required under this consent. The assessment shall include, but not necessarily be limited to:  (a) a description of the Ancillary Facility, its components and the surrounding environment;  (b) details on the activities to be carried out at the facility, including the hours of use and the storage of dangerous and hazardous goods;  (c) an assessment of the environmental impacts on the site and the surrounding	This AFA report has been prepared to address this condition.	Yes

No.	Condition of Approval	Discussion	Consistent
	environment, including, but not limited to noise, vibration, air quality, traffic access, flora and fauna, heritage and light spill; (d) details on the mitigation, monitoring and management procedures specific to the Ancillary Facility that would be implemented to minimise the environmental impacts or, where this is not possible, feasible and reasonable measures to offset these impacts and an assessment of the adequacy of the mitigation or offsetting measures. This shall include consideration of restrictions on the hours of use or exclusion of certain activities; (e) details on the timing for the completion of activities at the ancillary facility and how the site will be decommissioned (including any necessary rehabilitation); and (f) demonstrated overall consistency with the approved project. The Applicant shall demonstrate to the satisfaction of the Director-General that there will be no additional significant adverse impact from that Ancillary Facility's construction or operation.		
C10	The Director-General's approval is not required for minor Ancillary Facilities (e.g. lunch sheds, office sheds, and portable toilet facilities, etc.) that do not comply with the criteria set out in condition C8 of this consent and which:  (a) are located within an active construction zone within the approved project footprint; and  (b) have been assessed by the Environmental Representative to have:  (i) no additional adverse impact on the Thompson Square Conservation Area;  (ii) minimal amenity impacts to surrounding residences, with consideration to matters such as noise and vibration impacts, traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and  (iii) minimal environmental impact in respect to waste management, and no impacts on flora and fauna, soil and water, and heritage beyond those approved for the project; and  (c) have environmental and amenity impacts that can be managed through the implementation of environmental measures detailed in a CEMP for the project.	The ancillary facility (main compound area and stockpile area) will not impact on the ability to comply with this condition.	Yes
C11	All Ancillary Facilities shall be rehabilitated to at least their pre-construction condition, unless otherwise agreed by the Director-General.	The proposed changes to the approved Project would not impact on the ability to comply with this requirement.	Yes

No.	Condition of Approval	Discussion	Consistent
C12	Dangerous goods, as defined by the Australian Dangerous Goods Code, shall be stored and handled strictly in accordance with: (a) all relevant Australian Standards; (b) for liquids, a minimum bund volume requirement of 110% of the volume of the largest single stored volume within the bund; and (c) the Environment Protection Manual for Authorised Officers: Bunding and Spill Management, Technical Bulletin (Environment Protection Authority, 1997). In the event of an inconsistency between the requirements listed from (a) to (c) above, the most stringent requirement shall prevail to the extent of the inconsistency.	The ancillary facility (main compound area and stockpile area) will not impact on the ability to comply with this condition.	Yes
C13	Construction activities associated with the SSI shall be undertaken during the following standard construction hours: (a) 7:00am to 6:00pm Mondays to Fridays, inclusive; and (b) 8:00am to 1:00pm Saturdays; and (c) at no time on Sundays or public holidays.	The ancillary facility (main compound area and stockpile area) will not impact on the ability to comply with this condition.	Yes
C14	Construction works outside of the standard construction hours identified in condition C13 may be undertaken in the following circumstances:  (a) construction works that generate noise that is:  (i) no more than 5 dB(A() above rating background level at any residence in accordance with the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009); and  (ii) no more than the noise management levels specified in Table 3 of the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009) at other sensitive receivers; or  (b) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or  (c) where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm; or  (d) works as approved through the out-of-hours work protocol outlined in the CEMP.	The ancillary facility (main compound area and stockpile area) will not impact on the ability to comply with this condition.	Yes

No.	Condition of Approval	Discussion	Consistent
C18	All feasible and reasonable noise mitigation measures shall be implemented and any activities that could exceed the construction noise management levels shall be identified and managed in accordance with the CEMP. Note: The Interim Construction Noise Guideline identifies 'particularly annoying' activities that require the addition of 5dB(A) to the predicted level before comparing to the construction NML.	The ancillary facility (main compound area and stockpile area) will not impact on the ability to comply with this condition.	Yes
C19	The SSI shall be constructed with the aim of achieving the following construction vibration goals:  (a) for structural damage, the vibration limits set out in the German Standard DIN 4150-3: Structural Vibration - effects of vibration on structures; and  (b) for damage to other buildings and/or structures, the vibration limits set out in the British Standard BS 7385-1:1990 — Evaluation and measurement for vibration in buildings. Guide for measurement of vibration and evaluation of their effects on buildings; and  (c) for human exposure, the acceptable vibration values set out in the Environmental Noise Management Assessing Vibration: A Technical Guideline (Department of Environment and Conservation, 2006).	The ancillary facility (main compound area and stockpile area) will not impact on the ability to comply with this condition.	Yes
C21	During construction, affected educational institutions shall be consulted and reasonable steps taken to ensure that noise generating construction works in the vicinity of affected buildings are not timetabled during examination periods where practicable, unless other reasonable arrangements to the affected institutions are made at no cost to the affected institution.	The ancillary facility (main compound area and stockpile area) will not impact on the ability to comply with this condition.	Yes
C23	Soil and water management measures consistent with Managing Urban Stormwater - Soils and Construction Vol 1 (Landcom, 2004) shall be employed during the construction of the SSI to minimise soil erosion and the discharge of sediment and other pollutants to land and/or waters.	The ancillary facility (main compound area and stockpile area) will not impact on the ability to comply with this condition.	Yes
C24	The Applicant shall prepare and implement a Water Quality Management Program to monitor and minimise the impacts of the project on surface and groundwater quality and resources and wetlands, during construction and operation of the SSI. The Program shall be developed in consultation with the OEH, EPA, DPI (Fishing and Aquaculture) and NOW and shall include but not necessarily be limited to:  (a) identification of surface and groundwater quality monitoring locations (including watercourses and waterbodies) which are representative of the potential extent of	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes

Ν	No. Condition of Approval	Discussion	Consistent
	impacts from the project; (b) the results of the groundwater modelling undertaken under this consent; (c) identification of works and activities during construction and operation of the project, including emergencies and spill events, that have the potential to impact or surface water quality of potentially affected waterways; (d) development and presentation of parameters and standards against which any changes to water quality will be assessed, having regard to the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 (Australian and New Zealand Environment Conservation Council, 2000); (e) representative background monitoring of surface and groundwater quality parameters for a minimum of six months (considering seasonality) prior to the commencement of construction, to establish baseline water conditions, unless otherwise agreed by the Director-General; (f) a minimum monitoring period of three years following the completion of		
	construction or until the affected waterways and/ or groundwater resources are certified by an independent expert as being rehabilitated to an acceptable condition. The monitoring shall also confirm the establishment of operational water control measures (such as sedimentation basins and vegetation swales);  (g) contingency and ameliorative measures in the event that adverse impacts to water quality are identified; and  (h) reporting of the monitoring results to the Department, OEH, EPA and NOW. The Program shall be submitted to the Director-General for approval 6 months prior to the commencement of construction of the project, or as otherwise agreed by the Director General. A copy of the Program shall be submitted to the OEH, EPA, DPI (Fishing and Aquaculture) and NOW prior to its implementation.	e	

No.	Condition of Approval	Discussion	Consistent
C25	Prior to the commencement of site preparation and excavation activities, or as otherwise agreed by the Director-General, in areas identified as having a moderate to high risk of contamination, a site audit shall be carried out by a site auditor. A site audit report is to be prepared by the site auditor detailing the outcomes of Phase 2 contamination investigations within these areas. The site audit report shall detail, where relevant, whether the land is suitable (for the intended land use) or can be made suitable through remediation.  A site audit statement(s) must be prepared verifying that the site has been remediated to a standard consistent with the intended land use. The site audit statement(s) shall be submitted to the Director-General prior to operation of the SSI, unless otherwise agreed by the Director-General.  Note: Terms used in this condition have the same meaning as in the Contaminated Land Management Act 1997.	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes
C26	The Applicant shall ensure, where feasible and reasonable, that the project is designed to not exceed the efflux and other flooding criteria within the vicinity of the project as identified or predicted in the documents listed under condition A2.	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes
C31	If a flood event occurs during construction the works on-site shall be suspended if instructed by either the Applicant or emergency services. The Applicant shall keep Hawkesbury City Council informed of the status of the works during a flood event and before recommencing activity after the peak of a flood event.	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes
C32	A flood warning sign of durable material shall be permanently fixed in a prominent location within the vicinity of the SSI. The sign shall advise members of the public that the area may be subject to inundation during times of flood. The design and location of this sign shall be determined in consultation with Hawkesbury City Council, the OEH and submitted for the approval of the Director-General prior to operation.	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes
C33	The outlet structure for the water quality basin must be consistent with the Controlled Activities on Waterfront Land: Guidelines for Outlet Structures on Waterfront Land (NSW Office of Water, July 2012).	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes

No.	Condition of Approval	Discussion	Consistent
C35	A Vegetation Management Plan (VMP) is to be prepared consistent with the Controlled Activities on Waterfront Land: Guidelines for Vegetation Management Plan on Waterfront Land (NSW Office of Water, July 2012) that demonstrates the protection of remnant native riparian vegetation and the rehabilitation of the riparian corridor. The VMP must be complied with.	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes
C38	The Applicant shall maximise the reuse and/or recycling of waste materials generated on site as far as practicable, to minimise the need for treatment or disposal of those materials off site.	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes
C39	All waste materials removed from the site shall only be directed to a waste management facility or premises lawfully permitted to accept the materials.	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes
C40	All liquid and/or non-liquid waste generated on the site shall be assessed and classified in accordance with Waste Classification Guidelines (Department of Environment, Climate Change and Water, 2009), or any superseding document.	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes
C44	The SSI shall be designed with the objective of minimising adverse changes to existing access and services for other transport modes and, where feasible, and reasonable facilitate an improved level of access and service to other transport modes compared to the existing situation.	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes
C45	Access to private property shall be maintained during construction unless otherwise agreed with the property owner in advance. A landowner's access that is physically affected by the SSI shall be reinstated to at least meet the relevant Australian standard, in consultation with the property owner.	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes
D1	The Applicant shall engage a suitably qualified person to prepare a pre-construction dilapidation report prior to the commencement of construction and a post-construction dilapidation report at the completion of construction works. These reports are to ascertain the:  (a) structural condition of local roads likely to be used by the project's construction traffic identified in the Traffic Management Sub-plan required under condition D5(a).  (b) structural condition of footpaths, buildings and other utilities in the vicinity of the SSI;  (a) whether the construction works resulted in any structural damage to roads,	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes

No.	Condition of Approval	Discussion	Consistent
	buildings and other utilities in the vicinity of the SSI. In ascertaining whether adverse structural damage has occurred to adjoining buildings, infrastructure and roads, the post-construction dilapidation report must:  (i) compare the post-construction with the pre-construction dilapidation report; and (ii) have written confirmation from the relevant authority that there is no adverse structural damage to their infrastructure and roads.  The pre-construction and post-construction dilapidation reports shall be prepared in consultation with Hawkesbury City Council and submitted for the approval of the Director-General.		
D2	The Applicant shall undertake road pavement deflection testing of the construction truck routes at 20 metre intervals along all wheel paths prior to commencement of construction. At completion of construction, the Applicant shall undertake road pavement deflection testing of the truck routes. If the deflection tests show an increase in defection, the Applicant shall undertake pavement rehabilitation of the affected road pavements to achieve the pavement deflection that existing prior to the commencement of works.	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes
D4	The Applicant shall prepare and (following approval) implement a Construction Environmental Management Plan for the project. The Plan shall outline the environmental management practices and procedures that are to be followed during construction, and shall be prepared in consultation with the relevant agencies and in accordance with the Guideline for the Preparation of Environmental Management Plans (Department of Infrastructure, Planning and Natural Resources, 2004). The Plan shall include, but not necessarily be limited to:  (a) a description of activities to be undertaken during construction of the project or stages of construction, as relevant;  (b) statutory and other obligations that the Applicant is required to fulfil during construction including approvals, consultations and agreements required from agencies and key legislation and policies. Evidence of consultation with relevant agencies shall be included identifying how issues raised by these agencies have been addressed in the CEMP;  (c) a description of the roles and responsibilities for relevant employees involved in the construction of the project including relevant training and induction provisions for ensuring that employees, including contractors and sub-contractors are aware of their environmental and compliance obligations under these conditions of consent;  (d) identification of ancillary facility site locations, including an assessment against the	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes

No.	Condition of Approval	Discussion	Consistent
	location criteria outlined in this consent;  (e) an environmental risk analysis to identify the key environmental performance issues associated with the construction phase and details of how environmental performance would be monitored and managed to meet acceptable outcomes including what actions will be taken to address identified potential adverse environmental impacts. In particular, the following environmental performance issues shall be addressed in the Plan:  (i) measures to monitor and manage dust emissions including dust from stockpiles, blasting, traffic on unsealed public roads and materials tracking from construction sites onto public roads;  (ii) measures to minimise hydrology impacts, including measures to stabilise bed and bank structures as required,  (iii) measures to monitor and manage impacts associated with the construction and operation of ancillary facilities,  (iv) measures for the handling, treatment and management of contaminated materials,  (v) measures to monitor and manage waste generated during construction including but not necessarily limited to: general procedures for waste classification, handling, reuse, and disposal; use of secondary waste material in construction wherever feasible and reasonable; procedures for dealing with green waste including timber and mulch from clearing activities; and measures for reducing demand on water resources (including the potential for reuse of treated water from sediment control basins);  (vi) measures to monitor and manage spoil, fill and materials stockpile sites including details of how spoil, fill or material would be handled, stockpiled, reused and disposed and a stockpile management protocol detailing locational criteria that would guide the placement of stockpiles and management measures that would be implemented to avoid/ minimise amenity impacts to surrounding residents and environmental risks (including to surrounding water courses). Stockpile sites that affect heritage, threatened species, populations or Endangered Ecological Commun		
	<ul> <li>(viii) the issues identified in condition D7;</li> <li>(f) details of community involvement and complaints handling procedures during construction, consistent with the requirements of conditions D11 to D13;</li> <li>(g) details of compliance and incident management consistent with the requirements</li> </ul>		

No.	Condition of Approval	Discussion	Consistent
	of conditions D7 and D8; and (h) procedures for the periodic review and update of the CEMP and sub-plans required under this consent respectively, as necessary (including where minor changes can be approved by the Environmental Representative).		
D5	As part of the CEMP for the project, the Applicant shall prepare and implement the following sub plan(s):  (a) a Construction Traffic Management Sub-plan, prepared in accordance with the Roads and Maritime Service's QA Specification G10 — Control of Traffic and Traffic Control at Work Sites Manual (2003) to manage disruptions to traffic movements as a result of construction traffic associated with the project. The sub-plan shall be developed in consultation with the relevant council and shall include, but not necessarily be limited to:  (i) identification of construction traffic routes and quantification of construction traffic volumes (including heavy vehicle/ spoil haulage) on these routes;  (ii) details of vehicle movements for construction sites and site compounds including parking, dedicated vehicle turning areas, and ingress and egress points;  (iii) details of potential impacts to traffic on the existing road network, including, intersection level of service and potential disruptions to pedestrians, public transport, parking, cyclists and property access;  (iv) details of temporary and interim traffic arrangements to address potential impacts;  (v) a response procedure for dealing with traffic incidents; and  (vi) mechanism for the monitoring, review and amendment of this sub-plan.	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes
	(b) a Construction Flora and Fauna Management Sub-plan to detail how construction impacts on ecology will be minimised and managed. The sub-plan shall be developed in consultation with the OEH and DPI (Fishing and Aquaculture) and shall include, but not necessarily be limited to: (i) details of pre-construction surveys undertaken by a suitably qualified and experienced ecologist to verify the construction boundaries/ footprint of the project based on detailed design and to confirm the vegetation to be cleared as part of the project (including tree hollows, threatened flora and fauna species and riparian vegetation); (ii) updated sensitive area/ vegetation maps based on (i) above and previous survey work; (iii) details of general work practices and mitigation measures to be implemented during construction to minimise impacts on native fauna and native vegetation	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes

No.	Condition of Approval	Discussion	Consistent
	(particularly threatened species and EECs) not proposed to be cleared as part of the project, including, but not necessarily limited to: fencing of sensitive areas, a protocol for the removal and relocation of fauna during clearing, engagement of a suitably qualified and experienced ecologist to identify locations where they would be present to oversee clearing activities and facilitate fauna rescues and re-location, clearing timing with consideration to breeding periods, measures for maintaining existing habitat features (such as bush rock and tree branches etc.), seed harvesting and appropriate topsoil management, construction worker education, weed management (including controls to prevent the introduction or spread of <i>Phytophthora cinnamom</i> , erosion and sediment control and progressive re-vegetation; (iv) specific procedures to deal with EEC/ threatened species anticipated to be encountered within the project corridor including re-location, translocation and/or management and protection measures; (v) a procedure for dealing with unexpected EEC/threatened species identified during construction including cessation of work and notification of the OEH, determination of appropriate mitigation measures in consultation with the OEH (including relevant re-location measures); and (vi) mechanism for the monitoring, review and amendment of this sub-plan;		
	(c) a Construction Noise and Vibration Management Sub-plan to detail how construction noise and vibration impacts will be minimised and managed. The sub-plan shall be developed in consultation with the EPA and include, but not necessarily be limited to:  (i) identification of nearest sensitive receptors and relevant construction noise and vibration goals applicable to the project;  (ii) identification of key noise and/or vibration generating construction activities (based on representative construction scenarios, including at ancillary facilities) that have the potential to impact on surrounding sensitive receivers including expected noise/ vibration levels;  (iii) identification of feasible and reasonable measures proposed to be implemented to minimise construction noise and vibration impacts (including construction traffic noise impacts);  (iv) procedures for dealing with out-of-hours works in accordance with condition C14, including procedures for notifying the Director-General concerning complaints received in relation to the extended hours approved under condition C14;  (v) procedures and mitigation measures to ensure relevant vibration and blasting criteria are achieved, including a suitable blast program, applicable buffer distances	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes

No.	Condition of Approval	Discussion	Consistent
	for vibration intensive works, use of low-vibration generating equipment/ vibration dampeners or alternative construction methodology, and pre- and post- construction dilapidation surveys of sensitive structures where blasting and/ or vibration is likely to result in damage to buildings and structures (including surveys being undertaken immediately following a monitored exceedance of the criteria); (vi) procedures for notifying sensitive receivers of construction activities that are likely to affect their noise and vibration amenity, as well as procedures for dealing with and responding to noise complaints; and (vii) a program for construction noise and vibration monitoring clearly indicating monitoring frequency, location, how the results of this monitoring would be recorded and, procedures to be followed where significant exceedances of relevant noise and vibration goals are detected;		
	(d) a Construction Soil and Water Quality Management Sub-plan to manage surface and groundwater impacts during construction of the project. The sub-plan shall be developed in consultation with the OEH, EPA, DPI (Fishing and Aquaculture) and NOW and include, but not necessarily be limited to: (i) identification of potential sources of erosion and sedimentation, and water pollution (including those resulting from maintenance activities); (ii) details of how construction activities would be managed and mitigated to minimise erosion and sedimentation consistent with condition C23; (iii) where construction activities have the potential to impact on waterways or wetlands (through direct disturbance such as construction of waterway crossings or works in close proximity to waterways or wetlands), site specific mitigation measures to be implemented to minimise water quality, riparian and stream hydrology impacts as far as practicable, including measures to stabilise bed and/ or bank structures where feasible and reasonable, and to rehabilitate affected riparian vegetation to existing or better condition. The timing of rehabilitation of the waterways shall be identified in the sub-plan; a contingency plan, consistent with the Acid Sulphate Soils Manual, to deal with the unexpected discovery of actual or potential acid sulfate soils, including procedures for the investigation, handling, treatment and management of such soils and water seepage; iv) a contingency plan, consistent with the Acid Sulfate Soils Manual, to deal with the unexpected discovery of actual or potential acid sulfate soils, including procedures for the investigation, handling, treatment of such soils and water seepage;	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes

No.	Condition of Approval	Discussion	Consistent
	(e) a Construction Heritage Management Sub-plan to detail how construction impacts on Aboriginal and non-Aboriginal heritage will be avoided, minimised and managed. The sub-plan shall be prepared by an appropriately qualified heritage consultant(s) approved by the Director-General and the OEH (Aboriginal heritage) and be developed in consultation with registered Aboriginal stakeholders, and include, but not necessarily be limited to: (i) details of management measures and strategies for protection, excavation, salvage and archival recording, and/or conservation of heritage items and sites that will be directly or indirectly impacted during construction (including further archaeological investigations, salvage measures and/ or measures to protect unaffected sites during construction works in the vicinity); (ii) procedures for dealing with previously unidentified non-Aboriginal and Aboriginal objects (excluding human remains) including cessation of works in the vicinity, assessment of the significance of the item(s) and determination of appropriate mitigation measures including when works can re-commence by a suitably qualified and experienced archaeologist in consultation with the Department, OEH and registered Aboriginal stakeholders and assessment of the consistency of any new non-Aboriginal and Aboriginal heritage impacts against the approved impacts of the project, and notification to the Department, and the OEH for Aboriginal heritage (in accordance with section 89A of the National Parks and Wildlife Act 1974) and the OEH for non-Aboriginal heritage (in accordance with Section 146 of the NSW Heritage Act 1977); (iii) procedures for dealing with human remains, including cessation of works in the vicinity and notification of the Department, NSW Police Force, OEH and registered Aboriginal stakeholders and not recommencing any works in the area unless authorised by the Department and/ or the NSW Police Force); and (iv) induction processes (identification, protection) for construction personnel (including proced	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes
D6	The Applicant shall develop and implement a Compliance Tracking Program to track compliance with the requirements of this consent. The Program shall be submitted to the Director-General for approval prior to the commencement of construction and relate to both the construction and operational phases of the project, and include, but not necessarily be limited to:  (a) provisions for the notification of the Director-General of the commencement of works prior to the commencement of construction and prior to the		

No.	Condition of Approval	Discussion	Consistent
	commencement of operation of the project (including prior to each stage, where works are being staged); (b) provisions for periodic reporting of compliance status against the requirements of this consent including the Statement of Commitments, to the Director-General including at least one month prior to the commencement of construction and operation of the project and at intervals during the construction and operation, as identified in the Program (c) a program for independent environmental auditing in accordance with ISO19011:2003 - Guidelines for Quality and/ or Environmental Management Systems Auditing; (d) mechanisms for reporting and recording incidents and actions taken in response to those incidents; (e) provisions for reporting environmental incidents to the Director-General during construction and operation; and (f) procedures for rectifying any non-compliance identified during environmental auditing, review of compliance or incident management.		
D7	The Applicant shall notify the Director-General and other relevant government agencies of any incident with actual or potential significant off-site environmental impacts on people or the biophysical environment as soon as practicable and within 24 hours after the occurrence of the incident. The Applicant shall provide full written details of the incident to the Director-General within seven days of the date on which the incident occurred.	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	
D8	The Applicant shall develop and implement a Compliance Tracking Program to track compliance with the requirements of this consent. The Program shall be submitted to the Director-General for approval prior to the commencement of construction and relate to both the construction and operational phases of the project, and include, but not necessarily be limited to:  (a) provisions for the notification of the Director-General of the commencement of works prior to the commencement of construction and prior to the commencement of operation of the project (including prior to each stage, where works are being staged);  (b) provisions for periodic reporting of compliance status against the requirements of this consent, including the Statement of Commitments, to the Director-General including at least one month prior to the commencement of construction and operation of the project and at other intervals during the construction and operation, as identified in the Program;	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes

No.	Condition of Approval	Discussion	Consistent
	(c) a program for independent environmental auditing in accordance with ISO 19011:2003 - Guidelines for Quality and/ or Environmental Management Systems Auditing; (d) mechanisms for reporting and recording incidents and actions taken in response to those incidents; (e) provisions for reporting environmental incidents to the Director-General during construction and operation; and (f) procedures for rectifying any non-compliance identified during environmental auditing, review of compliance or incident management.		
D9	The Applicant shall notify the Director-General and other relevant government agencies of any incident with actual or potential significant off-site environmental impacts on people or the biophysical environment as soon as practicable and within 24 hours after the occurrence of the incident. The Applicant shall provide full written details of the incident to the Director-General within seven days of the date on which the incident occurred.  Note: Where an incident also requires reporting to the NSW Heritage Council, the OEH and/or EPA the incident report prepared for the purposes of notifying the NSW Heritage Council, the OEH and/or EPA would meet this requirement.	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes
D10	The Applicant shall meet the requirements of the Director-General or relevant government agency (as determined by the Director-General) to address the cause or impact of any incident, as it relates to this consent, reported in accordance with this consent, within such period as the Director-General may require.	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes
D11	Prior to the commencement of construction, the Applicant shall ensure that the following are available for community complaints and enquiries during the construction period:  (a) a 24 hour telephone number on which complaints and enquiries about construction and operation activities may be registered;  (b) a postal address to which written complaints and enquiries may be sent; and  (c) an email address to which electronic complaints and enquiries may be transmitted. The telephone number, the postal address and the email address shall be published in a newspaper circulating in the local area prior to the commencement of construction and prior to the commencement of project operation. The above details shall also be provided on the website (or dedicated pages) required by this consent.	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes

No.	Condition of Approval	Discussion	Consistent
D12	The Applicant shall prepare and implement a Construction Complaints Management System consistent with AS 4269 Complaints Handling prior to the commencement of construction activities and must maintain the System for the duration of construction activities. Information on all complaints received, including the means by which they were addressed and whether resolution was reached and whether mediation was required or used, shall be maintained by the Applicant and included in a Complaints Register. The information contained within the System shall be made available to the Director-General on request.	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes
D13	The Applicant shall prepare and implement a Community Communication Strategy for the project. This Strategy shall be designed to provide mechanisms to facilitate communication between the Applicant, the Contractor, the Environmental Representative, the relevant council and the local community (broader and local stakeholders) on the construction and environmental management of the project. The Strategy shall include, but not necessarily be limited to:  (a) identification of stakeholders to be consulted as part of the Strategy, including affected and adjoining landowners;  (b) procedures and mechanisms for the regular distribution of information to stakeholders on the progress of the project and matters associated with environmental management;  (c) procedures and mechanisms through which stakeholders can discuss or provide feedback to the Applicant and/ or Environmental Representative in relation to the environmental management and delivery of the project;  (d) procedures and mechanisms through which the Applicant can respond to enquires or feedback from stakeholders in relation to the environmental management and delivery of the project; and  (e) procedures and mechanisms that would be implemented to resolve issues/disputes that may arise between parties on the matters relating to environmental management and the delivery of the project. This may include the use of an appropriately qualified and experienced independent mediator.  (f) consultation to be undertaken for the bridge naming process. Key issues that should be addressed in the Community Communication Strategy should include (but not necessarily be limited to):  (i) traffic management (including property access, pedestrian access);  (ii) landscaping/urban design matters;  (iii) landscaping/urban design matters;  (iv) construction activities; and	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes

N	lo.	Condition of Approval	Discussion	Consistent
		(v) noise and vibration mitigation and management.  The Applicant shall maintain and implement the Strategy throughout construction of the project. The Strategy shall be approved by the Director General prior to the commencement of construction.		

## Table D2 Consistency against relevant environmental management measures

No.	Statement of Commitment / mitigation measure	Discussion	Consistent
HH5	Prior to construction dilapidation reports will be prepared as identified in Section 7.5.6 (generally receivers within 50 metres of piling, rock breaking and vibratory compaction activities). These will be undertaken in consultation with the relevant property owners.	This mitigation measure has been incorporated into this AFA.	Yes
НН6	All heritage items within the study area will be clearly identified on construction plans to minimise the risk of inadvertent impacts.	This mitigation measure has been incorporated into this AFA.	Yes
HH7	Environmental management measures identified in Section 7.5.5 will be implemented to minimise vibration risks and impacts on heritage items.	This mitigation measure has been incorporated into this AFA.	Yes
HH8	Heritage items at risk of vibration impacts will be inspected and monitored periodically during construction to identify any construction-related impacts. If impacts are detected, work in the area will cease and appropriate environmental management measures will be implemented such as using alternative low vibration construction techniques.	This mitigation measure has been incorporated into this AFA.	Yes
H4	Appropriate procedures to manage the effects of flooding during construction, and minimise any associated adverse environmental impacts to the greatest extent practicable, will be incorporated into a construction environmental management plan and emergency response plan (to be prepared and approved before the start of construction). The emergency response plan would include procedures to ensure adequate warning of floods is obtained and that appropriate emergency response procedures are implemented in a timely manner.	The Flood Management Plan provided in Appendix E includes the ancillary facility.	Yes
SE9	Areas affected by construction will be reinstated and restored in accordance with	This mitigation measure has been incorporated into this AFA.	Yes

No.	Statement of Commitment / mitigation measure	Discussion	Consistent
	the urban design and landscape concept for the project as soon as practicable.		
NV1	A Construction Noise and Vibration Management Plan (CNVMP) will be prepared and will include general controls such as:  • Further detailed noise impact assessments will be undertaken of all construction works and works outside standard construction hours once detailed construction planning is complete as the location and type of construction works may change. These detailed noise impact assessments will be used to identify affected sensitive receivers and develop detailed mitigation measures.  • The nearest noise sensitive receivers will be notified of future works and expected levels of noise well in advance of the works occurring.  • Construction programming will be developed to minimise noise impacts - this may include time and duration restrictions and respite periods, and will be developed after consultation with affected receivers.  • Where possible, works outside of standard construction hours will be planned so that noisier works are carried out in the earlier part of the evening or night time.  • Where noisy works are required outside of standard construction hours, negotiated agreements will be sought with affected sensitive receivers.  • Where possible, the use of noisy plant simultaneously and/or close together will be avoided.  • Equipment and excavation work sites will be orientated away from sensitive receivers where possible to reduce noise emissions.  • Equipment will be maintained in efficient working order.  • Quieter construction methods will be used where feasible and reasonable. This may include grinding, rock splitting or terrain levelling instead of rock breaking where it is feasible and reasonable.  • Where acceptable from a work health and safety perspective, quieter alternatives to reversing alarms (such as spotters, closed circuit television monitors and 'smart' reversing alarms) will be used particularly during out of hours activities  • All noise complaints will be investigated and appropriate mitigation measures implemented where practicable to minimise further impacts.	Relevant mitigation measures have been incorporated into this AFA.	Yes

No.	Statement of Commitment / mitigation measure	Discussion	Consistent
	<ul> <li>routes outlined in the Construction Traffic Management Plan</li> <li>Noise monitoring will be undertaken to assess compliance with NMLs and assess the effectiveness of noise mitigation The use of temporary noise shielding will be considered at locations along Bridge Street where substantial exceedances of noise criteria are predicted.</li> <li>In addition where work is undertaken in close proximity to Thompson Square or along Freemans Reach Road, temporary noise barriers will be considered</li> <li>Buildings/structural conditions surveys will be undertaken prior to and following construction works at receivers within 50 metres of piling, rock breaking and vibratory compaction activities, includ ing the heritage retaining wall at 4 Bridge Street.</li> <li>No impact piling works will be undertaken within 20 metres of any heritage structure, unless additional assessment and monitoring confirm that vibration levels will be below project specific criteria.</li> <li>Rock breaking/hammering will not be undertaken within seven metres of any heritage item or building unless additional assessment and monitoring confirm that vibration levels will be below project specific criteria.</li> <li>Rock breaking/hammering will not be undertaken within five metres of any non heritage building unless additional assessment and monitoring confirm that vibration levels will be below project specific criteria.</li> <li>Where rock breaking/hammering is planned within 10 metres of any occupied dwelling, the occupants will be notified of the works and the duration of the activity will be restricted, unless otherwise agreed with affected residents.</li> <li>Where heavy plant is used within seven metres of a heritage structure, attended vibration monitoring will be undertaken to assess compliance with project specific vibration criteria.</li> <li>Where an exceedance of project specific vibration criteria for structural damage is recorded during monitoring, work will cease immediately and alternative construction methods will be use</li></ul>		
SW1	An erosion and sediment control plan will be developed during detailed design in accordance with Managing Urban Stormwater – Soils and Construction Volume 1 (Landcom, 2004) and Volume 2D (DECC, 2008). This plan will incorporate erosion control measure to limit the movement of soil from disturbed areas, and sediment control measures to remove any sediment from runoff prior to discharge into the	This mitigation measure has been incorporated into this AFA (Refer Appendix B).	Yes

No.	Statement of Commitment / mitigation measure	Discussion	Consistent
	river.		
SW2	Appropriate measure will be implemented to contain any turbid water by applying best management practices such as silt curtains or similar.	The ancillary facility (main compound area and stockpile area) will be not impact on the ability to comply with this condition.	Yes
SW13	All fuels and chemicals will be stored and used in compliance with appropriate guidelines and standards. A spill management procedure will be developed and implemented if required.	This mitigation measure has been incorporated into this AFA.	Yes
T1	<ul> <li>A Construction Traffic Management Plan will be prepared and implemented which would enable the safe management of traffic and minimise impacts on the local community. The plan will be structure to address the following issues:</li> <li>Identification of public roads to be utilised by construction traffic.</li> <li>Management measures so that construction traffic utilise the identified roads.</li> <li>Identification of any public roads that may be partially or completely closed during the construction phase and the relevant expected timings and duration of closures.</li> <li>Identification of sources of major construction materials and routes for their delivery to site.</li> <li>Temporary access and traffic arrangements to be implemented during construction.</li> <li>Access arrangements to construction sites and compounds and measures to prevent construction traffic from obstructing traffic flow inadvertently.</li> <li>Parking for construction workers.</li> <li>A response plan for any construction traffic incident.</li> <li>Monitoring, review and amendment mechanisms.</li> </ul>	Relevant mitigation measures have been incorporated into this AFA.	Yes
FF2	Temporary infrastructure (plant sites and offices etc) will be located in cleared areas away from vegetation. Clear boundaries will be applied for construction and exclusion zones for equipment, machinery and traffic to prevent unnecessary damage to native vegetation and fauna habitats.	Relevant mitigation measures have been incorporated into this AFA.	Yes
FF3	Clearing limits will be accurately and clearly marked including trees/vegetation to be retained including riparian zones.	Relevant mitigation measures have been incorporated into this AFA.	Yes

No.	Statement of Commitment / mitigation measure	Discussion	Consistent
FF6	<ul> <li>Minimise the area of disturbance in riparian zones by clearly marking out work zones in riparian areas and protect areas with para-web fencing or similar material.</li> <li>All works near riparian zones will have adequate sediment and erosion control.</li> </ul>	Relevant mitigation measures have been incorporated into this AFA.	Yes
FF7	<ul> <li>Establish a noxious weed management protocol.</li> <li>All noxious weeds which are cleared as part of the project will be disposed of appropriately.</li> <li>Inspection/maintenance procedures will be implemented to reduce the carriage of weed material on machinery.</li> </ul>	Relevant mitigation measures have been incorporated into this AFA.	Yes
FF12	<ul> <li>Areas disturbed as a result of the project will be stabilised and rehabilitated through a progressive landscaping program that takes advantage of optimal growing conditions and is appropriate to the final land use.</li> <li>Where possible riparian zone rehabilitation will include appropriate native species.</li> </ul>	Relevant mitigation measures have been incorporated into this AFA.	Yes
AQ1	<ul> <li>Covering of all materials transported to and from the construction site.</li> <li>Covering of or spraying water on stockpiles of soil or other erodible materials, particularly during dry or windy conditions.</li> <li>Suppressing dust on unsealed surfaces, temporary roadways, and other exposed areas using water trucks, hand held hoses, temporary vegetation or other appropriate practices.</li> <li>Imposing work vehicle speed limits on unsealed surfaces.</li> <li>Locating stockpiles as far away from residences as practically possible.</li> <li>Minimising the extent of disturbed areas as far as practicable.</li> <li>Rehabilitating disturbed areas as quickly as possible.</li> <li>Modifying or stopping dust generating activities during very windy conditions.</li> <li>Operating and maintaining vehicles and equipment in accordance with manufacturer's specifications.</li> <li>Visual monitoring of air quality to verify the effectiveness of controls and enable early intervention.</li> <li>Installing wheel wash facilities to reduce tracking of mud and soil off-site.</li> <li>A procedure to receive, respond and monitor complaints about air quality and other environmental issues.</li> </ul>	Relevant mitigation measures have been incorporated into this AFA.	Yes