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<tr>
<th>Term</th>
<th>Expanded text</th>
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<tbody>
<tr>
<td>ACM</td>
<td>Asbestos containing material</td>
</tr>
<tr>
<td>AEI</td>
<td>Area of Environmental Interest</td>
</tr>
<tr>
<td>CCLMP</td>
<td>Construction Contaminated Land Management Plan</td>
</tr>
<tr>
<td>CCS</td>
<td>Community Communication Strategy</td>
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<tr>
<td>CEMP</td>
<td>Construction Environmental Management Plan</td>
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<tr>
<td>CSWMP</td>
<td>Construction Soil and Water Management Plan</td>
</tr>
<tr>
<td>CWEMP</td>
<td>Construction Waste and Energy Management Plan</td>
</tr>
<tr>
<td>CLM Act</td>
<td>Contaminated Land Management Act 1997</td>
</tr>
<tr>
<td>CMS</td>
<td>Complaints Management System</td>
</tr>
<tr>
<td>CoA</td>
<td>Condition of approval</td>
</tr>
<tr>
<td>Compliance audit</td>
<td>Verification of how implementation is proceeding with respect to an OACEMP (which incorporates the relevant approval conditions)</td>
</tr>
<tr>
<td>CSSI</td>
<td>Critical State Significant Infrastructure</td>
</tr>
<tr>
<td>DEC</td>
<td>Department of Environment and Conservation (NSW) (former)</td>
</tr>
<tr>
<td>DECC</td>
<td>Department of Environment and Climate Change (NSW) (former)</td>
</tr>
<tr>
<td>DEHP</td>
<td>Defence Environment and Heritage Panel</td>
</tr>
<tr>
<td>DEOH</td>
<td>Defence Establishment Orchard Hills</td>
</tr>
<tr>
<td>DoEE</td>
<td>Commonwealth Department of the Environment and Energy</td>
</tr>
<tr>
<td>Dol</td>
<td>Department of Industry – Water (former, now NRAR)</td>
</tr>
<tr>
<td>DP&amp;E</td>
<td>NSW Department of Planning and Environment</td>
</tr>
<tr>
<td>DPI</td>
<td>Department of Primary Industries</td>
</tr>
<tr>
<td>DUXOP</td>
<td>Commonwealth Department of Defence UXO Panel</td>
</tr>
<tr>
<td>EMS</td>
<td>Environmental Management System</td>
</tr>
<tr>
<td>Environmental aspect</td>
<td>Defined by AS/NZS ISO 14001:2015 as an element of an organisation’s activities, products or services that can interact with the environment</td>
</tr>
<tr>
<td>Environmental impact</td>
<td>Defined by AS/NZS ISO 14001:2015 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation’s environmental aspects</td>
</tr>
<tr>
<td>Environmental incident</td>
<td>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</td>
</tr>
<tr>
<td>Environmental objective</td>
<td>Defined by AS/NZS ISO 14001:2015 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve</td>
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<tr>
<td>Term</td>
<td>Expanded text</td>
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<tr>
<td>Environmental Representative (ER)</td>
<td>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</td>
</tr>
<tr>
<td>Environmental target</td>
<td>Defined by AS/NZS ISO 14001:2015 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</td>
</tr>
<tr>
<td>EPA</td>
<td>NSW Environment Protection Authority</td>
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<tr>
<td>EP&amp;A Act</td>
<td>NSW Environmental Planning and Assessment Act 1979</td>
</tr>
<tr>
<td>EPBC Act</td>
<td>Commonwealth Environmental Protection and Biodiversity Conservation Act 1999</td>
</tr>
<tr>
<td>EWMS</td>
<td>Environmental Work Method Statement</td>
</tr>
<tr>
<td>Federal-CoA</td>
<td>Condition of the Federal Department of the Environment and Energy Approval Decision</td>
</tr>
<tr>
<td>Hold Point</td>
<td>A point beyond which a work process must not proceed without express written authorisation from Roads and Maritime</td>
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<tr>
<td>MSDS</td>
<td>Material Safety Data Sheet</td>
</tr>
<tr>
<td>Non-compliance</td>
<td>Failure to comply with the requirements of the Project approval or any applicable licence, permit or legal requirements</td>
</tr>
<tr>
<td>Non-conformance</td>
<td>Failure to conform to the requirements of Project system documentation including this OACEMP or supporting documentation</td>
</tr>
<tr>
<td>NRAR</td>
<td>NSW Natural Resources Access Regulator</td>
</tr>
<tr>
<td>NSW-CoA</td>
<td>Condition of the NSW DP&amp;E Infrastructure Approval</td>
</tr>
<tr>
<td>NSW Infrastructure Approval</td>
<td>The infrastructure approval for the Northern Road Upgrade issued by the New South Wales Government on 30 May 2018</td>
</tr>
<tr>
<td>OACEMP</td>
<td>Overarching Construction Environmental Management Plan</td>
</tr>
<tr>
<td>OEH</td>
<td>NSW Office of Environment and Heritage</td>
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<tr>
<td>OHS</td>
<td>Occupational health and safety</td>
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<tr>
<td>PIRMP</td>
<td>Pollution Incident Response Management Plan</td>
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<tr>
<td>PPE</td>
<td>Personal Protective Equipment</td>
</tr>
<tr>
<td>Principal, the</td>
<td>NSW Roads and Maritime Services</td>
</tr>
<tr>
<td>Project, the</td>
<td>The Northern Road Upgrade – Mersey Road, Bringelly to Glenmore Parkway, Glenmore Park</td>
</tr>
<tr>
<td>QA/QC</td>
<td>Quality assurance / Quality control</td>
</tr>
<tr>
<td>RAP</td>
<td>Remediation Action Plan</td>
</tr>
<tr>
<td>Term</td>
<td>Expanded text</td>
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<td>-----------------------</td>
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</tr>
<tr>
<td>REMM</td>
<td>Revised Environmental Management Measure as provided in the Final EIS / SPIR</td>
</tr>
<tr>
<td>Roads and Maritime, RMS</td>
<td>NSW Roads and Maritime Services</td>
</tr>
<tr>
<td>SEARs</td>
<td>Secretary’s Environmental Assessment Requirements</td>
</tr>
<tr>
<td>Secretary</td>
<td>Secretary of the NSW Department of Planning and Environment, or delegate</td>
</tr>
<tr>
<td>SPIR</td>
<td>Submissions and Preferred Infrastructure Report</td>
</tr>
<tr>
<td>SWMS</td>
<td>Safe Work Method Statement</td>
</tr>
<tr>
<td>TNR</td>
<td>The Northern Road</td>
</tr>
<tr>
<td>UXO</td>
<td>Unexploded ordnance</td>
</tr>
<tr>
<td>WHS Act</td>
<td><em>Work Health and Safety Act (2011)</em></td>
</tr>
</tbody>
</table>
1 Introduction

1.1 Context

This Construction Contaminated Land Management Plan (CCLMP) forms part of the Overarching Construction Environmental Management Plan (OACEMP) for The Northern Road Upgrade – Mersey Road, Bringelly to Glenmore Parkway, Glenmore Park (the Project).

This CCLMP has been prepared to address the requirements of:

- the NSW Minister’s Infrastructure Approval dated 30 May 2018 and Federal Minister for the Environment and Energy’s Approval dated 15 June 2018
- the environmental management measures listed in The Northern Road Upgrade – Mersey Road, Bringelly to Glenmore Parkway, Glenmore Park NSW Environmental Impact Statement / Commonwealth Draft Environmental Impact Statement (EIS) (prepared by Jacobs for Roads and Maritime, 2017) as amended by The Northern Road Upgrade – Mersey Road, Bringelly to Glenmore Parkway, Glenmore Park Submissions and Preferred Infrastructure Report (SPIR) (prepared by Jacobs for Roads and Maritime, 2017)
- Roads and Maritime specifications
- all applicable legislation.

Construction of the Project will be undertaken in three stages:

- Stage 4 - Mersey Road, Bringelly, to Eaton Road, Luddenham
- Stage 5 - Littlefields Road, Luddenham, to Glenmore Parkway, Glenmore Park
- Stage 6 - Littlefields Road, Luddenham to Eaton Road, Luddenham

An overview of the Project, including the extent of the Project stages, is shown on Figure 1-1 and Figure 1-2.

Each stage will be delivered in a separate Construction package that will include all activities needed to complete the stage. Details of the proposed Project staging, including construction activities and submission of corresponding environmental plans, strategies and protocols, is documented in the Project Staging Report.

The Construction Contractors will develop stage-specific environmental management documentation to address the operational control requirements outlined in the OACEMP that apply to the stages that they are delivering. Stage-specific CCLMPs will be updated, tailored and finalised by the Contractors. Roads and Maritime will review the Contractors’ CCLMPs for compliance with the approved OACEMP.

It should be noted that the CCLMP is also referred to in the Project environmental documents as:

- Water, soil and contamination CEMP Sub-plan

A full list of alternative and interchangeable sub-plan names is included in Appendix A5 of the OACEMP.
Figure 1-1: Overview of the Project (northern section)
Figure 1-2: Overview of the Project (southern section)
1.2 Background

The EIS assessed the impacts of areas of potential contaminated land on the Construction of the Project. The detailed contaminated land assessment was included at Appendix L to the EIS.

The EIS proposed the implementation of mitigation and management measures, including further assessment of the identified potential contaminated sites. The EIS management measures were subsequently updated within the SPIR. The revised environmental management measures (REMMs), as well as applicable environmental requirements and control measures identified in the conditions of approval and relevant Roads and Maritime documents have been incorporated into this CCLMP to manage potential impacts from the disturbance of contaminated land.

1.3 Environmental management system overview

The overarching Environmental Management System (EMS) for the Project is described in Section 3 of the OACEMP. The Contractors delivering the Project will have certified EMSs consistent with the overarching EMS described in the OACEMP. The Contractors will develop stage-specific CCLMPs in accordance with the OACEMP and their EMS.

This overarching CCLMP forms part of the environmental management framework for the Project, as described in Section 3.3 of the OACEMP.

The Contractors will be required to develop, as part of their stage-specific CCLMPs, detailed plans and procedures to address specific requirements of the conditions of approval and REMMs identified in this overarching CCLMP. The purpose of these environmental management documents in regard to minimisation and management of contaminated land impacts associated with the Project is outlined in Section 6 of this CCLMP.

Templates and guidance information for the environmental documentation to be prepared by the Contractors are provided in the following annexures to this overarching CCLMP:

- Annexure B Template Unexpected Discovery of Contaminated Land Procedure
- Annexure C Template Asbestos Management Plan
- Annexure D Template Military Material Management Plan

A Construction Water, Soil and Contamination Monitoring Program is provided at Annexure B to the Construction Soil and Water Management Plan (CSWMP) (refer to Appendix B4 of the OACEMP). Relevant contaminated land information from this overarching CCLMP has been incorporated into the Monitoring Program to inform the monitoring activities to be undertaken during Construction of the Project.

The Contractors will complete the preparation of the documentation contained in the annexures with stage-specific information and include the updated annexures in their CCLMPs. Where appropriate, the Contractors may provide Roads and Maritime with an alternative equivalent plan or procedure that meets the requirements identified in this CCLMP and the relevant Roads and Maritime specifications. Roads and Maritime will review the Contractors’ documentation to confirm compliance with the requirements of this CCLMP and specifications.
Management measures identified in this CCLMP may also be incorporated into site or activity specific Environmental Work Method Statements (EWMS). EWMS incorporate appropriate mitigation measures and controls and identify key procedures to be used concurrently with the EWMS. A template EWMS for use by the Contractors is provided in Appendix A9 of the OACEMP. EWMS will be prepared for the management of materials containing asbestos, and for any other high risk activities identified in the Contractors’ environmental risk workshops.

EWMS will be prepared by the Contractor Environmental Site Representatives and reviewed by the Roads and Maritime Environmental Manager (or delegate) and independent Environmental Representative (ER) prior to the commencement of the construction activities to which they apply. Construction personnel undertaking a task governed by an EWMS will undertake the activity in accordance with the mitigation and management measures identified in the EWMS.

Used together, the OACEMP, strategies, procedures and EWMS form management guides that clearly identify required environmental management actions for reference by Roads and Maritime and its Contractors.

The review and document control processes for this CCLMP are described in Section 6.7 and 6.8 of the OACEMP.

### 1.3.1 CCLMP preparation, endorsement and approval

This overarching CCLMP has been prepared to satisfy the NSW and Federal conditions of approval (CoA) in relation to contaminated land management during Construction of the Project. A Construction Water, Soil and Contamination Monitoring Program has been prepared to support this CCLMP and satisfy the requirements of NSW-CoA C9(c), and is provided in Annexure B of the CSWMP (Appendix B4 of the OACEMP).

This CCLMP and the Construction Water, Soil and Contamination Monitoring Program will be reviewed by the Roads and Maritime Senior Project Manager and the Senior Environment Officer and endorsed by the ER prior to submission to the Secretary of the Department of Planning and Environment (DP&E) for approval in accordance with NSW-CoA C3 and C12.

This CCLMP and Construction Water, Soil and Contamination Monitoring Program will be submitted to the Secretary for approval no later than one month prior to commencement of Construction of the Project, or as otherwise agreed by the Secretary.

In accordance with NSW-CoA C8 and C13, Construction of the Project will not commence prior to approval by the Secretary of the CCLMP and the Construction Water, Soil and Contamination Monitoring Program, and all relevant contaminated land baseline data for the Project has been collected.

### 1.4 Consultation

#### 1.4.1 Consultation for preparation of the CCLMP

This CCLMP and the Construction Water, Soil and Contamination Monitoring Program has been developed in consultation with NSW Natural Resources Access Regulator (NRAR) (previously Department of Industry – Water (DoI Water)), NSW Department of Industry – Fisheries (DPI Fisheries), Penrith City Council and Liverpool City Council as required by
NSW-CoA C4(d) and C9(c). The draft CCLMP, together with the Monitoring Program, was provided to NRAR, DPI Fisheries and the Councils in June 2018.

In accordance with NSW-CoA A8, where a condition requires consultation with identified parties, details of the consultation undertaken, matters raised by the parties, and how the matters were considered will be documented in this CCLMP. The evidence of the consultation undertaken for the preparation of this CCLMP, including documentation of the engagement with the parties and a summary of issues raised and responses, is provided in Annexure A. Evidence of consultation undertaken for the preparation of the Construction Water, Soil and Contamination Monitoring Program is provided in Annexure A of the CSWMP. Appendix A8 to the OACEMP documents all consultation undertaken for the preparation of the OACEMP.

1.4.2 Ongoing consultation during Construction

Consultation between Roads and Maritime and its Contractors, and stakeholders, the community and relevant agencies regarding the management of contaminated land will be undertaken during the Construction of the Project as required. The process for the consultation will be documented in the Community Communication Strategy (CCS).
2 Purpose and objectives

2.1 Purpose

The purpose of this CCLMP is to establish a set of best practice procedures to be undertaken by the Contractors for the identification and management of contaminated land if encountered during works undertaken for the Project.

2.2 Objectives

The key objective of the CCLMP is to ensure that contaminated land is managed appropriately throughout the Construction of the Project. To achieve this objective, the Contractors will undertake the following:

• avoid and minimise the environmental and human health risks arising from the disturbance of contaminated land encountered during Construction of the Project
• follow the guidelines set out in the statutory requirements for managing contaminated land and the transport of contaminated goods
• investigate areas identified as moderate risk contaminated sites within the EIS prior to the commencement of Construction, with Remediation Action Plans (RAPs) developed and implemented where required
• identify, signpost and segregate all known and unexpected contaminated soils and/or groundwater by the erection of physical barriers until it is managed and/or removed from site
• implement appropriate controls and procedures to protect the public, Project personnel and the environment from areas of contaminated materials, in accordance with the requirements of the conditions of approval outlined in Table 3-1 and the REMMs detailed in Table 6-1
• implement appropriate measures to comply with all relevant legislation and other requirements as described in Section 3 of this CCLMP.

2.3 Targets

Targets for the management of contaminated land impacts during the Project include:

• full compliance with the relevant legislative requirements and conditions of approval
• no degradation to the receiving environment as a result of disturbance of contaminated land
• no contamination of soil, air or water as a result of spillages or other impacts arising from construction activities
• follow correct procedure and ensure notification of any contamination uncovered during Construction
• ensure Project personnel are informed via tool box talks and the Project induction to enable the identification of potentially contaminated land
• minimise impacts on, and complaints from, the community and stakeholders.
3 Environmental requirements

3.1 Relevant legislation and guidelines

3.1.1 Legislation and regulatory requirements

Legislation and regulations relevant to this CCLMP includes:

- *Environmental Planning and Assessment Act 1979* (EP&A Act)
- *Contaminated Land Management Act (1997)* (CLM Act)
- *Environmentally Hazardous Chemicals Act 1985*
- Environmentally Hazardous Chemicals Regulation 2008
- *Pesticides Act 1999*
- Pesticides Regulation 2009

Relevant provisions of the above legislation are identified in the register of legal requirements included in Appendix A1 of the OACEMP.

3.1.2 Guidelines and standards

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

- Roads and Maritime QA Specification G1 – Job Specific Requirements for The Northern Road Upgrade
- Roads and Maritime QA Specification G36 – Environmental Protection (Management System)
- Roads and Maritime QA Specification R44 – Earthworks
- Guideline for the Management of Contamination (Roads and Maritime, 2013)
- Environmental Procedure Management of Wastes on Roads and Maritime Services Land (Roads and Maritime, 2014)
- Environmental Incident Classification and Reporting Procedure (Roads and Maritime, 2017)
- National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPM), Schedule B5a, Guideline on Ecological Risk Assessment
• How to Safely Remove Asbestos Code of Practice (Safe Work Australia, 2011)
• Waste Classification Guidelines – Part 1: Classification of waste (NSW Environment Protection Authority (EPA), 2014)
• Contaminated Land Management – Guidelines for the NSW Site Auditor Scheme (3rd edition) (EPA, 2017)
• Managing Land Contamination: Planning Guidelines State Environmental Planning Policy (SEPP 55) – Remediation of Land (NSW Department of Urban Affairs and Planning and EPA, 1998)
• Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, 1998)
• Guidelines for Consultants Reporting on Contamination Sites (Office of Environment and Heritage (OEH), 2011).

Roads and Maritime specifications are a key source of environmental protection management processes relevant to this CCLMP. The specifications set out environmental protection requirements, including Hold Points, that must be complied with by the Construction Contractors during Construction of the Project. A Hold Point is a point beyond which a work process must not proceed without express written authorisation from Roads and Maritime.

3.2 Conditions of approval

This overarching CCLMP provides a consistent approach to address the requirements of both the State and Federal approvals in the one document. The Project is located on both NSW and Federal (Stages 4 and 5 only) land. However, the NSW Infrastructure Approval conditions apply to both NSW and Federal land within the Project. The Federal approval conditions also apply to both NSW and Federal land within the Project. The extent of Federal land located in the vicinity of the Project is shown on Figure 1-1 and Figure 1-2.

The State (NSW-CoA) and Federal (Federal-CoA) conditions of approval relevant to this CCLMP and their applicability to each stage of the Project are listed in Table 3-1. A cross-reference is also included to indicate where the condition is addressed in this CCLMP or other project management documents.
<table>
<thead>
<tr>
<th>CoA no.</th>
<th>Condition requirement</th>
<th>Applicability</th>
<th>Reference</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Federal conditions of approval</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal-CoA 1</td>
<td>The approval holder must undertake the action, including those parts of the action that occur on Commonwealth Land, in accordance with all conditions in the NSW Infrastructure Approval.</td>
<td>✓ ✓ ✓ ✓ ✓</td>
<td>This CCLMP</td>
</tr>
<tr>
<td>Federal-CoA 8</td>
<td>No topsoil material generated outside the DEOH site may be used as soil, fill, or a component of soil or fill, within the boundaries of DEOH nor within 30 metres of the DEOH boundary, unless: &lt;br&gt;a. the approval holder can make all reasonable practical efforts to ensure the topsoil material is free from contaminants that would adversely affect the environment and &lt;br&gt;b. the topsoil material is sourced from a location that appropriate testing demonstrates is free of weed propagules and/or <em>Phytophthora cinnamomi</em>. Details of the topsoil material source and testing undertaken must be provided to the Minister before the topsoil is taken onto the DEOH site. The Minister may write to the approval holder at any time and advise that the Minister is not satisfied with the testing undertaken. If the Minister provides such advice, the approval holder must not source any further topsoil material from that site without the Minister’s written agreement.</td>
<td>✓ ✓ ✓ ✓ ✓</td>
<td>App B2 CFFMP Annexure D – Weed and Pathogen Management Plan</td>
</tr>
<tr>
<td>CoA no.</td>
<td>Condition requirement</td>
<td>Stage 4</td>
<td>Stage 5</td>
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<td>Cth</td>
<td>NSW</td>
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<tr>
<td>Federal-CoA 11</td>
<td>The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement all management plans required by this approval, and make them available upon request to the Department. Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department’s website. The results of audits may also be publicised through the general media.</td>
<td>✓</td>
<td>✓</td>
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</table>

**State conditions of approval**

| NSW-CoA C4(d) | The following **CEMP Sub-plans** must be prepared in consultation with the relevant government agencies identified for each **CEMP Sub-plan** and be consistent with the **CEMP** referred to in **Condition C1**:
| Water, soil and contamination | Dol (NRAR), DPI Fisheries and relevant Councils | ✓      | ✓      | ✓      | ✓        | ✓        | Section 1.4.1 Annexure A – Consultation correspondence |

| NSW-CoA C5 | The **CEMP Sub-plans** must state how:
<p>| (a) | the environmental performance outcomes identified in the documents listed in <strong>Condition A1</strong>, as modified by these conditions, will be achieved; | ✓      | ✓      | ✓      | ✓        | ✓        | Section 6 |
| (b) | the mitigation measures identified in the documents listed in <strong>Condition A1</strong> as modified by these conditions will be implemented; | ✓      | ✓      | ✓      | ✓        | ✓        | Section 6 |
| (c) | the relevant terms of this approval will be complied with; | ✓      | ✓      | ✓      | ✓        | ✓        | Section 6 |
| (d) | the identification of the relevant environmental specific training and induction processes for construction personnel; and | ✓      | ✓      | ✓      | ✓        | ✓        | Section 7.4 |</p>
<table>
<thead>
<tr>
<th>CoA no.</th>
<th>Condition requirement</th>
<th>Applicability</th>
<th>Reference</th>
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<td></td>
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<td>Stage 4</td>
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<tr>
<td>(e)</td>
<td>issues requiring management during Construction, as identified through ongoing environmental risk analysis, will be managed.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>NSW-CoA C6</td>
<td>The CEMP Sub-plans must be developed in consultation with relevant government agencies identified in Table 3 of Condition C4. Where an agency(ies) request(s) is not included, the Proponent must provide the Secretary justification as to why. Details of all information requested by an agency to be included in a CEMP Sub-plan as a result of consultation, including copies of all correspondence from those agencies, must be provided with the relevant CEMP Sub-Plan.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>NSW-CoA C7</td>
<td>Any of the CEMP Sub-plans may be submitted to the Secretary along with, or subsequent to, the submission of the CEMP but in any event, no later than one (1) month before commencement of Construction.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>NSW-CoA C8</td>
<td>Subject to the provisions in this condition relating to staging Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the Secretary. The CEMP and CEMP Sub-plans, as approved by the Secretary, including any minor amendments approved by the ER must be implemented for the duration of Construction. Unless otherwise agreed by the Secretary where the CSSI is being staged, Construction of a stage is not to commence unless the CEMP and the CEMP Sub-plans referred to above cover those stages or the Secretary has approved a specific CEMP and sub-plans for that stage.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>CoA no.</td>
<td>Condition requirement</td>
<td>Stage 4</td>
<td>Stage 5</td>
</tr>
<tr>
<td>----------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>NSW-CoA C16</td>
<td>Where a relevant CEMP Sub-plan exists, the relevant Construction Monitoring Program may be incorporated into that CEMP Sub-plan.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>NSW-CoA E46</td>
<td>A Site Contamination Report, documenting the outcomes of Stage 1 and Stage 2 contamination assessments of land upon which the CSSI is to be carried out, that is suspected, or known to be, contaminated must be prepared by a suitably qualified and experienced person in accordance with guidelines made or approved under the Contaminated Land Management Act 1997 (NSW).</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>NSW-CoA E47</td>
<td>If a Site Contamination Report prepared under Condition E46 concludes that specified land is contaminated such that it is and will remain unsuitable for the CSSI, even after completion of all physical works required to construct the CSSI, then:</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>(a) a Remediation Action Plan must be prepared in relation to the specified land, by a suitably qualified and experienced person and in accordance with all guidelines made or approved under the Contaminated Land Management Act (NSW);</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>(b) the Remediation Action Plan must be approved in writing by a NSW EPA Accredited Site Auditor, and that approval must state that the specified land can be made suitable for the purpose approved by this approval, if the works described in the Remediation Action Plan are carried out; and</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>CoA no.</td>
<td>Condition requirement</td>
<td>Applicability</td>
<td>Reference</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------</td>
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</tr>
<tr>
<td></td>
<td>(c) the specified land must be remediated in accordance with the Remediation Action Plan, as approved by the Site Auditor. Any land to which condition E47 applies must not be used for the CSSI until a Site Audit Statement is obtained that states that the land is suitable for that purpose. There must be compliance with any and all conditions of the Site Audit Statement obtained in accordance with condition E48.</td>
<td>✓ ✓ ✓ ✓</td>
<td>Section 6.1.1</td>
</tr>
<tr>
<td>NSW-CoA E48</td>
<td>A copy of the Site Audit Statement and the associated Site Audit Report must be submitted to the Secretary and the relevant Council for information no later than one (1) month before the commencement of Operation.</td>
<td>✓ ✓ ✓ ✓</td>
<td>Section 6.1.1</td>
</tr>
<tr>
<td>NSW-CoA E49</td>
<td>An Unexpected Contaminated Land and Asbestos Finds Procedure must be prepared and must be followed should unexpected contaminated land or asbestos be excavated or otherwise discovered during Construction.</td>
<td>✓ ✓ ✓ ✓</td>
<td>Annexure B - Unexpected Discovery of Contaminated Land Procedure Annexure C – Asbestos Management Plan</td>
</tr>
<tr>
<td>NSW-CoA E50</td>
<td>The Unexpected Contaminated Land and Asbestos Finds Procedure must be implemented throughout Construction.</td>
<td>✓ ✓ ✓ ✓</td>
<td>Annexure B Annexure C</td>
</tr>
</tbody>
</table>
4 Existing environment

This section describes what is known about existing and potential contaminated land in the vicinity of the Project, based on investigations undertaken to date.

4.1 Previous investigations

A Stage 1 Contamination Assessment was undertaken to address the Secretary's Environmental Assessment Requirements (SEARs) as part of the development of the EIS. The assessment involved a review of existing information from databases, a review of historical aerial photography and a site walkover and inspection of areas of interest to verify locations of potential contamination.

A search of the NSW EPA Contaminated Sites Register and Record of Notices (under Section 58 of the CLM Act) was carried out as part of the assessment. The search identified a service station located on the Northern Road in Luddenham that is a notified site. Due to the location of the site relative to the Project Construction footprint it is unlikely to be a source of contamination to the Project.

A search of areas of concern from the Department of Defence’s unexploded ordnance (UXO) website (http://www.defence.gov.au/UXO/Where/Default.asp) revealed no known areas of concern within or adjacent to the Project, including the Defence Establishment Orchard Hills (DEOH) site.

A site inspection of the Project area, adjacent land uses and potential Areas of Environmental Interest (AEI) was conducted on 19 November 2015. AEIs are areas that could potentially impact soil and groundwater as a result of historic and/or current activities. The site inspection did not involve any sampling or testing of soils.

4.1.1 Areas of potential contamination

The site inspection carried out for the Stage 1 Assessment identified 21 potential AEI in the vicinity of the Project. The AEI related to current and historic land uses that have associated contamination risks such as service stations, stockpiles, agricultural land and the DEOH site. Details of the AEIs that were identified during the inspection are presented in Table 4-1. The locations of the AEIs are shown on Figure 4-1. The AEIs are also shown on the sensitive area maps included in Appendix A6 of the OACEMP.

The contaminants typically associated with the land uses identified at the AEIs included heavy metals, hydrocarbons, pesticides, asbestos and excess nutrients. There was also a risk of encountering UXO as the AEIs included land used for military training.

Any existing contamination underlying the Project and ancillary facilities areas has the potential to be exposed or disturbed by Construction activities. Activities with the highest level of risk include excavation, earthworks and demolition.

The majority of the potential AEIs identified during the site inspection were assessed as being at a low risk of exposure during Construction of the Project, as Construction activities are unlikely to be undertaken at these sites.
There is a moderate risk of exposure of potentially contaminated material from the removal of stockpiles or disturbance of agricultural land within or adjacent to the Project. Deep excavation poses a moderate risk of disturbance of contaminated material within potential AEIs located at Luddenham. Further investigation and assessment of AEIs assessed as moderate risk will be undertaken prior to Construction to ensure appropriate risk management measures are implemented.

No high risk AEIs were identified during the site inspection.

While it is unlikely that UXO will be encountered on DEOH land during Construction activities, an Unexpected Finds Procedure has been developed to ensure the safety of Project staff, nearby residents and the environment in the event that this does occur. The Procedure is provided in Annexure B of this CCLMP.

### Table 4-1: Areas of potential contamination identified during the site inspection

<table>
<thead>
<tr>
<th>AEI</th>
<th>Location</th>
<th>Project Stage/s</th>
<th>Contaminants of potential concern</th>
<th>Exposure likelihood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stockpiles</td>
<td>Private Property, western side of The Northern Road between Glenmore Parkway and Bradley Street, Glenmore Park</td>
<td>5</td>
<td>Heavy metals, hydrocarbons, pesticides, polychlorinated biphenyls, asbestos</td>
<td>Low</td>
</tr>
<tr>
<td>DEOH (Commonwealth land)</td>
<td>Eastern side of The Northern Road, Orchard Hills</td>
<td>5</td>
<td>Heavy metals, hydrocarbons, pesticides, polychlorinated biphenyls, asbestos</td>
<td>Low</td>
</tr>
<tr>
<td>DEOH (Commonwealth land)</td>
<td>Eastern side of The Northern Road, Orchard Hills</td>
<td>5</td>
<td>UXO</td>
<td>Moderate</td>
</tr>
<tr>
<td>Stockpiles</td>
<td>Eastern side of The Northern Road between Kingshill and Longview Roads, Orchard Hills</td>
<td>5</td>
<td>Heavy metals, hydrocarbons, pesticides, polychlorinated biphenyls, asbestos</td>
<td>Moderate</td>
</tr>
<tr>
<td>Sub-station</td>
<td>Eastern side of The Northern Road, Orchard Hills</td>
<td>5</td>
<td>Heavy metals, hydrocarbons, polychlorinated biphenyls, asbestos</td>
<td>Low</td>
</tr>
<tr>
<td>WaterNSW Supply Pipelines</td>
<td>Eastern and western sides of The Northern Road, Orchard Hills</td>
<td>5</td>
<td>Heavy metals</td>
<td>Moderate</td>
</tr>
<tr>
<td>Filling</td>
<td>Private property, eastern side of Galaxy Road, Luddenham</td>
<td>6</td>
<td>Heavy metals, hydrocarbons, pesticides, polychlorinated biphenyls, asbestos</td>
<td>Low</td>
</tr>
<tr>
<td>Stockpiles</td>
<td>Private property, eastern side of Galaxy Road, Luddenham</td>
<td>6</td>
<td>Heavy metals, hydrocarbons, pesticides, polychlorinated biphenyls, asbestos</td>
<td>Low</td>
</tr>
<tr>
<td>AEI</td>
<td>Location</td>
<td>Project Stage/s</td>
<td>Contaminants of potential concern</td>
<td>Exposure likelihood</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>-----------------</td>
<td>----------------------------------------------------------------------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Market Gardens</td>
<td>Private property, north-east of the intersection of The Northern Road and Elizabeth Drive</td>
<td>6</td>
<td>Heavy metals, hydrocarbons, pesticides, nutrients</td>
<td>Moderate</td>
</tr>
<tr>
<td>Stockpiles</td>
<td>Western side of The Northern Road, north of Park Road, Luddenham</td>
<td>6</td>
<td>Heavy metals, hydrocarbons, pesticides, polychlorinated biphenyls, asbestos</td>
<td>Moderate</td>
</tr>
<tr>
<td>Roads and Maritime Stockpile</td>
<td>North of the intersection of The Northern Road and Park Road, Luddenham</td>
<td>6</td>
<td>Heavy metals, hydrocarbons, pesticides, polychlorinated biphenyls, asbestos</td>
<td>Low</td>
</tr>
<tr>
<td>Service Station</td>
<td>South of the intersection of The Northern Road and Park Road, Luddenham</td>
<td>6</td>
<td>Heavy metals, hydrocarbons</td>
<td>Low</td>
</tr>
<tr>
<td>Cemetery</td>
<td>South of the intersection of The Northern Road and Roots Avenue, Luddenham</td>
<td>6</td>
<td>Heavy metals, nutrients, formaldehyde, biological</td>
<td>Low</td>
</tr>
<tr>
<td>Non-operational service station</td>
<td>Shops – The Northern Road, Luddenham</td>
<td>6</td>
<td>Heavy metals, hydrocarbons</td>
<td>Moderate</td>
</tr>
<tr>
<td>Service Station</td>
<td>Shops – The Northern Road, Luddenham</td>
<td>6</td>
<td>Heavy metals, hydrocarbons</td>
<td>Moderate</td>
</tr>
<tr>
<td>Dumped tyres</td>
<td>Southern side of Adams Road, Luddenham</td>
<td>6</td>
<td>Heavy metals, hydrocarbons</td>
<td>Low</td>
</tr>
<tr>
<td>Filling</td>
<td>Private property, western side of Willowdene Road, Luddenham</td>
<td>4</td>
<td>Heavy metals, hydrocarbons, pesticides, polychlorinated biphenyls, asbestos</td>
<td>Low</td>
</tr>
<tr>
<td>Stockpile</td>
<td>Western side of Willowdene Road, Luddenham</td>
<td>4</td>
<td>Heavy metals, hydrocarbons, pesticides, polychlorinated biphenyls, asbestos</td>
<td>Low</td>
</tr>
<tr>
<td>Septic Systems</td>
<td>Numerous tanks and pump out points observed within the project area</td>
<td>4, 5, 6</td>
<td>Heavy metals, nutrients, biological</td>
<td>Low</td>
</tr>
<tr>
<td>Agricultural Land Use</td>
<td>Numerous locations within and adjacent to the project area</td>
<td>4, 5, 6</td>
<td>Heavy metals, hydrocarbons, pesticides, asbestos</td>
<td>Moderate</td>
</tr>
<tr>
<td>Vehicle Accidents</td>
<td>Numerous locations within and adjacent to the project area</td>
<td>4, 5, 6</td>
<td>Hydrocarbons, aqueous firefighting foam (AFFF).</td>
<td>Low to moderate</td>
</tr>
</tbody>
</table>
Figure 4-1: Location of potential contaminated land in the vicinity of the Project

Source: EIS (Roads and Maritime, 2017)
5 Environmental aspects and impacts

5.1 Construction activities

Key aspects of the Project that could result in the disturbance of contaminated land include:

- pre-construction activities including utility adjustments, site access provisions, property adjustments
- planned salvage of Aboriginal or non-Aboriginal heritage items
- clearing of vegetation
- initial removal of topsoil
- general earthworks, particularly during site establishment
- building demolition
- construction of site compounds and spoil / mulch and / or equipment stockpile areas
- temporary access roads during Construction
- bulk earthworks
- drilling and blasting.

Refer also to the Aspects and Impacts Register (Appendix A2 of the OACEMP).

5.2 Impacts

Potential impacts from the disturbance of contaminated land due to Construction include:

- inappropriate handling or disposal of contaminated or hazardous excavated materials
- exposure of contaminated soils and/or groundwater to humans (Construction personnel, Project team, or nearby communities)
- mobilisation of surface and subsurface contaminants
- migration of contaminants into the surrounding area via leaching, overland flow and/or subsurface flow
- mobilisation of groundwater and/or surface water contamination
- exposure of contaminants to flora and fauna
- exposure of UXO
- release of asbestos
- release of odours from contaminated materials.

5.3 Contaminated land

The potential for widespread contamination within the Project area as result of past and present land use activities is generally considered to be low. There is potential for legacy residual contamination to affect surface and shallow soils, however the location of these sites relative to Construction activities results in reduced risk of contamination.
Incidents such as vehicle accidents have the potential to cause spillage of contaminants or hazardous materials on to the roadway. If not contained, these contaminants may be mobilised and affect surface and shallow soils. There is also potential for chemical and fuel spills to occur during Construction which may result in localised contamination of soils.

The Contractors will develop stage-specific Pollution Incident Response Management Plans (PIRMPs) including spill management measures, as part of their Construction Soil and Water Management Plans, in accordance with the Code of Practice for Water Management (RTA, 1999) and relevant EPA guidelines (refer to Appendix B4 of the OACEMP). The plans will contain measures to be implemented in the event of a spill including initial response and containment, notification of emergency services and relevant authorities (including Roads and Maritime and EPA). The Contractors will also implement the Roads and Maritime Environmental Incident Classification and Reporting Procedure (refer to Appendix A7 of the OACEMP) during Construction.

Hazardous materials, including asbestos, may be encountered during the demolition or removal of built structures or property adjustments. Inspection and removal of potential asbestos or asbestos-containing materials will be undertaken by a suitably qualified specialist under the Work Health and Safety Regulation 2017 and in accordance with the Asbestos Management Plan (refer Annexure C). In addition, Contractors will prepare and implement Environmental Work Method Statements (EWMS) and Safe Work Method Statements for the management of materials containing asbestos.

5.4 Contaminated land incident notification

Persons whose activities have contaminated land and owners of land who become aware, or ought reasonably to be aware, that the land has been contaminated must notify the EPA as soon as practicable after becoming aware of the contamination, if the contamination meets certain criteria. The duty to notify is a requirement under section 60 of the Contaminated Land Management Act 1997 (CLM Act). A person has a duty to notify if that person ought reasonably to have been aware of the contamination. The EPA can be notified using the Site Contamination Notification form.

The Guidelines on The Duty to Report Contamination under the Contaminated Land Management Act 1997 (EPA, 2015) set out the duty of landowners and persons whose activities have contaminated land to report to the EPA. This includes a range of considerations for those who encounter land contamination (including particular trigger levels for various contaminants) and information on how to proceed where there is uncertainty. The guidelines also outline how the EPA assesses and determines whether or not contamination is significant enough to warrant regulation.

The Roads and Maritime Environmental Manager (or delegate), the ER and relevant authorities will be promptly notified of any suspected or potential contamination exposed during Construction activities as required by the Roads and Maritime Environmental Incident Classification and Reporting Procedure.
6 Environmental mitigation and management measures

A range of environmental requirements and management measures are identified in the EIS and SPIR, the conditions of approval and relevant Roads and Maritime documents.

Specific measures and requirements to address impacts from contaminated land are provided in Table 6-1.

6.1 Further investigations

6.1.1 Contaminated land

Prior to the commencement of Construction, the Contractor will carry out Stage 2 contamination investigations for the AEIs identified in Table 4-1 as having a moderate risk of exposure of contaminated material. Investigations will also be carried out for any unnatural landforms (eg stockpiles). The Contractor will undertake an advanced contamination assessment prior to disturbance of any land being or intended to be used by the Contractor for the location of stockpiles. These investigations will include the sampling of soil to the depth of proposed excavations. If the investigations conclude that the specified land is contaminated such that it is and will remain unsuitable for the Project, even after completion of all physical works required to construct the Project, then:

- a Remediation Action Plan (RAP) will be prepared for the specified land by a suitably qualified and experienced person and in accordance with all guidelines under the CLM Act
- the RAP will be approved in writing by a NSW EPA Accredited Site Auditor and the approval will state that the land can be made suitable for the Project if the works described in the RAP are carried out
- the specified land will be remediated in accordance with the approved RAP.

The land to which any RAP applies will not be used for the Project until a Site Audit Statement has been obtained that states that the land is suitable for that purpose. All conditions of the Site Audit Statement will be complied with. A copy of the Site Audit Statement and the associated Site Audit Report will be submitted to the Secretary and the relevant Council for information no later than one month before the commencement of Operation.

The Unexpected Discovery of Contaminated Material Procedure (Annexure B) will be implemented for contamination discovered in areas not identified as a moderate risk of exposure of contaminated material in Table 4-1 or as an unnatural landform.

The preferred approach for management of contamination for the Project is to leave contamination that is not migrating off site in situ, to minimise the potential for an increase in exposure pathways. Where disturbance to material cannot be avoided and it complies with the requirements of the Excavated Public Road Material Exemption, the material will be used in the road works, in accordance with an approved RAP.

The Contractors will maintain a register of contaminated sites for the Project and will update the register in response to the findings of any site contamination assessments. The register will also be used to track the ongoing management of the sites.
6.1.2 Topsoil Management

**Advance contamination inspection**

Prior to disturbance or removal of the topsoil in any area, the Contractor Environmental Scientist / Engineer will inspect and document the presence or absence of visible contamination at the ground surface (including asbestos and asbestos containing material) of the area in accordance with Specification R44. The Environmental Scientist / Engineer will also document the likelihood of contamination being present in the topsoil below the ground surface and the inspection or other data used to make that assessment. If asbestos or other contamination is visible or considered likely to be present, the Contractor will propose management or remediation measures for the contaminant(s) prior to disturbance or removal of the topsoil. The Environmental Scientist / Engineer’s report and any proposals for management or remediation will be issued to Roads and Maritime as a Hold Point. Roads and Maritime will consider the documents and instruct the Contractor regarding the methodology for topsoil removal.

**Removal of topsoil**

Following advance contamination investigation works, the Contractor’s Environmental Scientist / Engineer will attend and inspect all topsoil removal works and provide ongoing advice regarding the appropriate management of topsoil that is considered likely to be contaminated, including by asbestos.

For areas with visible surface contamination or where subsurface contamination has been suspected, the Environmental Scientist / Engineer will monitor the methodology employed for topsoil removal and the management or remediation measures instructed by Roads and Maritime for their effectiveness. The Environmental Scientist / Engineer may recommend changes to the methodology and/or management or remediation measures, in which case the Contractor must seek further instruction from Roads and Maritime.

For areas without visible surface contamination or suspected subsurface contamination, the Environmental Scientist / Engineer will monitor the topsoil removal activities and if any topsoil contamination becomes evident during the removal process, the Contractor will cease work in that area, follow the Unexpected Finds Procedure (Section 6.2) and seek further instruction from Roads and Maritime.

The Contractor will till each topsoil lot with an excavator (in 100 mm depth increments) to allow the Environmental Scientist / Engineer to assess the topsoil composition prior to commencing topsoil removal or management or remedial measures. Deeper tilling will be undertaken if necessary to enable the Environmental Scientist / Engineer to determine the presence or extent of any contamination.

The Environmental Scientist / Engineer will provide a contaminant clearance report for each topsoil lot not containing any contaminated material and a contamination report for each contaminated topsoil lot noting the nature of the contaminant and the method of treatment or disposal approved by Roads and Maritime.

Removal of topsoil or other material contaminated with asbestos / asbestos containing material (ACM) will be in accordance with the procedure outlined in Section 3 of the Asbestos Management Plan (Annexure C).
6.1.3 Unexploded ordnance

Prior to commencement of Construction on the DEOH site, further investigation and confirmation of the potential for encountering UXO will be carried out by an UXO Consultant registered on the Defence Environment and Heritage Panel, in accordance with the procedure outlined in the Military Material Management Plan (Annexure D).

6.2 Areas of unexpected contamination

Where earthworks are required, there is potential to expose unexpected forms of contamination within the surface and subsurface. In such instances, action is required to mitigate potential contaminated soil/material encountered during excavation or Construction activities. If potentially contaminated material is encountered, the Unexpected Discovery of Contaminated Land Procedure (Annexure B) will be followed. Unexpected finds of material suspected or confirmed to be contaminated by asbestos / ACM will be managed in accordance with the Asbestos Management Plan (Annexure C). Works in the vicinity will be stopped or modified and will not recommence until the material has been analysed and management measures developed.

Where contamination of the Project site is encountered or is required to be managed, the Contractor, in consultation with the Contractor’s contamination specialists, will develop site methodologies and risk controls in accordance with the relevant legislative requirements and guidelines as detailed in Section 3. This will include, but not be limited, to:

- Work Health and Safety (WHS) requirements
- community, agency and stakeholder notification, where required
- identification of contamination extent
- appropriate controls for on-site material management and/or off-site disposal
- site validation.
Table 6-1: Contaminated land revised environmental management measures

<table>
<thead>
<tr>
<th>ID</th>
<th>Measure / requirement</th>
<th>When to implement</th>
<th>Responsibility</th>
<th>Applicability</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWC-10</td>
<td>Disturbance of contaminated or potentially contaminated land</td>
<td></td>
<td>Pre-Construction Construction, Construction</td>
<td>Yes</td>
<td>This CCLMP Contaminated Land Management – Guidelines for the NSW Site Auditor Scheme (3rd ed.) (EPA, 2017)</td>
</tr>
<tr>
<td></td>
<td>Intrusive investigations should be undertaken in the vicinity of moderate risk areas including service stations (operational and non-operational), stockpiles and market gardens</td>
<td></td>
<td>Contractor Construction Manager / Contractor Contaminated Site Assessment Specialist</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A Contaminated Land Management Plan would be prepared in accordance with the Contaminated Land Management Act 1997, relevant EPA Guidelines and Roads and Maritime Guideline for Management of Contamination (Roads and Maritime, 2013) and would include at a minimum:</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Contaminated land legislation and guidelines including any relevant licences and approvals to be obtained</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Identification of locations of known or potential contamination and preparation of a map showing these locations</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Identification of rehabilitation requirements, classification, transport and disposal requirements of any contaminated land within the construction footprint</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>ID</td>
<td>Measure / requirement</td>
<td>When to implement</td>
<td>Responsibility</td>
<td>Applicability</td>
<td>Reference</td>
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<td></td>
<td></td>
<td></td>
<td>Stage 4 Cth</td>
<td>Stage 5 Cth</td>
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<td>NSW</td>
<td>NSW</td>
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<td></td>
<td>Construction</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Contractor</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Construction</td>
<td>✓</td>
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<td>Construction</td>
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<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Construction</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

- Measures to manage stockpiled potentially contaminated soil in accordance with the requirements of NSW EPA Waste Guidelines
- Contamination management measures including waste classification and reuse procedures and unexpected finds procedures for unanticipated discovery of contaminated material during construction
- Asbestos handling and disposal requirements in accordance with NSW EPA guidelines
- Excavated material that is not suitable for on-site reuse or recycling would be transported to a site that may legally accept that material for reuse or disposal.
<table>
<thead>
<tr>
<th>ID</th>
<th>Measure / requirement</th>
<th>When to implement</th>
<th>Responsibility</th>
<th>Applicability</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Encountering UXO</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SWC-11</td>
<td>For UXOs, an investigation should be undertaken to confirm the likelihood of UXOs being present within the areas of the project within DEOH. The investigation should be undertaken prior to construction activities by a suitably qualified consultant registered on the Commonwealth Department of Defence UXO Panel (DUXOP) now subsumed into the Defence Environment and Heritage Panel (DEHP).</td>
<td>Pre-Construction</td>
<td>Roads and Maritime Environmental Manager (or delegate) / Roads and Maritime Project Manager / Independent Consultant</td>
<td>✓</td>
<td>Section 6.1.2 Annexure D - Military Material Management Plan</td>
</tr>
<tr>
<td></td>
<td><strong>Odours arising from uncovered contaminated and/or hazardous materials.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AQ-5</td>
<td>Application of odour supressing agents to materials as necessary to minimise related impacts should any contaminated or hazardous materials be uncovered during the works.</td>
<td>Construction</td>
<td>Contractor Environmental Site Representative / Contractor Site Engineer</td>
<td>✓</td>
<td>CAQMP (Appendix B6)</td>
</tr>
<tr>
<td></td>
<td><strong>Inappropriate handling and/ or disposal of waste</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WR-3</td>
<td>All wastes, including contaminated wastes, would be identified and classified in accordance with the <em>Waste Classification Guidelines: Part 1 Classifying Waste.</em></td>
<td>Construction</td>
<td>Contractor Environmental Site Representative / Contractor Site Engineer</td>
<td>✓</td>
<td>CWEMP (Appendix B7)</td>
</tr>
</tbody>
</table>
### Contamination from transportation of hazardous goods

<table>
<thead>
<tr>
<th>ID</th>
<th>Measure / requirement</th>
<th>When to implement</th>
<th>Responsibility</th>
<th>Applicability</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR-6</td>
<td>Transport all hazardous substances in accordance with relevant legislation and codes, including the <em>Road and Rail Transport (Dangerous Goods) (Road) Regulation 1998</em> and the ‘Australian Code for the Transport of Dangerous Goods by Road and Rail’ (National Transport Commission, 2008).</td>
<td>Construction</td>
<td>Contractor Environmental Site Representative / Contractor Site Engineer</td>
<td>✓</td>
<td>CWEMP (Appendix B7)</td>
</tr>
</tbody>
</table>
7 Compliance management

7.1 Roles and responsibilities

The Project organisational structure and overall roles and environmental responsibilities are outlined in Section 5.1 of the OACEMP. Specific responsibilities for the implementation of contaminated land management are detailed in Section 6 of this CCLMP. Roles relevant to contamination management are described further below.

Contractor’s Environmental Scientist / Engineer

The Contractor’s site team will include an Environmental Scientist / Engineer who is appropriately degree qualified and have a minimum of five years’ experience in contaminated land, site assessment and remediation in accordance with Specification R44. The Contractor’s Environmental Scientist/ Engineer will also have appropriate accreditation as an occupational hygienist. The Environmental Scientist / Engineer will be an independent consultant engaged by the Contractor. This role is a separate role to the Contractor’s Environmental Site Representative.

The Contractor’s Environmental Scientist / Engineer will be responsible for taking samples of suspected asbestos / ACM, arranging air monitoring and testing and engaging an asbestos removalist.

The Contractor Environmental Scientist / Engineer will be on site:

- during advance contamination assessments (refer Section 6.1.1 and Annexure C Section 2)
- whenever topsoil operations are underway and
- at other times required within Roads and Maritime QA specification R44.

Removal of asbestos must be undertaken by the holder of a Class A or Class B Asbestos Removal Licence issued by WorkCover NSW, as required.

Contractor’s Geotechnical Engineer

The Contractor’s site team will include a Geotechnical Engineer to undertake or arrange tests, drawings, calculations, reports and assessments in accordance with Specification R44. The Geotechnical Engineer will be a Chartered Professional Engineer with membership of Engineers Australia with a minimum of five years practising in the field of geotechnical engineering (or equivalent). The Geotechnical Engineer will be an independent consultant engaged by the Contractor.

7.2 Communication

Roads and Maritime will prepare and implement a Community Communication Strategy (CCS) to document the approach to stakeholder and community communications for the Project. The CCS will identify opportunities and tools for providing information and consulting with the community and stakeholders during the Construction of the Project. The Contractors will support the delivery of the CCS.
When contamination is identified or contamination removal activities are to occur in the vicinity of any occupied residence or business, the Contractor Community Relations Managers will inform and engage with the affected resident/s or business owner/s and any other relevant stakeholders at the earliest possible stage, and continue this process until the contamination issue is finalised. Communication of encountered contamination on the Project will be consistent with the guidelines provided in schedule B(8) of the NEPM Guidelines for Community Consultation and Risk Communication and the CCS.

The Contractors will develop a communication strategy for each contamination issue, with the extent of the engagement dependent on the nature and impact of the contaminants, proximity of the community, extent of the risk (perceived or real) of the issue and stage of the assessment process. The communication strategy will include methods to proactively provide the community with the fullest possible explanation of known contamination and to provide regular updates on the progress of work to deal with the contamination. Communication techniques will include, but not be limited to, individual discussions with residents and business owners (via telephone, face-to-face meetings and doorknocking), Project website notices, and distribution of information bulletins and brochures to the affected area (refer CCS).

Where asbestos is encountered in locations within the Project area that are in close proximity and visible to the public, displayed signage and active monitoring of the site and Project boundary may be considered effective methods of mitigating the community’s concerns.

Further detail about the CCS is provided in Section 5.5.3 of the OACEMP.

7.3 Complaints management

Roads and Maritime will develop a Complaints Management System (CMS) to document the overall approach to complaints management for the Project. The Contractors will adopt the requirements of the CMS, including reporting requirements. The CMS will include Complaints Register which will record the details of all complaints relating to the Project.

Further detail about the CMS is provided in Section 5.5.3 of the OACEMP.

7.4 Training

To ensure that this CCLMP is implemented effectively, all site personnel (including subcontractors) will undergo site induction training relating to contaminated land management issues prior to Construction commencing. The induction training will address elements related to contaminated land management, including:

- existence and requirements of this overarching CCLMP, the Contractor’s CCLMP and all plans and procedures prepared under the CCLMPs
- relevant legislation and regulations
- environmental and occupational health and safety and workplace health and safety risks associated with contaminated materials
- Personal Protective Equipment (PPE) requirements
- incident response, management and reporting
- roles and responsibilities for contaminated land management
• location of identified potential contaminated land sites
• environmentally sensitive locations and no-go/exclusion zones
• contamination management and protection measures
• signs of contaminated soil
• visual asbestos identification protocols
• site controls, such as spill kits, erosion and sediment control, bunding
• groundwater and surface water
• reporting and notification requirements for pollution and other environmental incidents
• complaints response and reporting
• procedure to follow in the event of unexpected contaminated land findings during Construction works (refer to Annexure B)
• procedure to follow in the event of uncovering asbestos during Construction works (refer to Annexure C).

Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in contaminated land management or those undertaking an activity with a high risk of environmental impact. Site personnel will undergo refresher training at not less than six monthly intervals.

The ER will review and approve the induction and training program prior to the commencement of Construction and monitor implementation.

Daily pre-start meetings conducted by the Contractor Foreman will inform the site workforce of any environmental issues relevant to contaminated land that could potentially be impacted by, or impact on, the day’s activities.

Further details regarding staff induction and training are provided in Section 5.3 of the OACEMP.

7.5 Monitoring and inspections

7.5.1 Monitoring

An overarching Construction Water, Soil and Contamination Monitoring Program has been prepared in accordance with NSW-CoA C9(c) and is provided in Annexure B of the CSWMP (Appendix B4 of the OACEMP).

Monitoring for contamination will include, but not be limited to:

• monitoring / testing of asbestos containing soil
• monitoring of surface water and groundwater
• sampling of excess soil material prior to removal of soil material from Construction sites in accordance with the *Waste Classification Guidelines* (EPA, 2014)

• sampling of material during and at the completion of demolition works, prior to commencement of Construction at that site, in accordance with *AS 2601 – 2001 The Demolition of Structures*

• prior to disturbance or removal of the topsoil in any area monitoring/inspection of topsoil removal activities in accordance with Roads and Maritime Specification R44 (refer Annexure C).

### 7.5.2 Inspections

Regular inspections of sensitive areas and activities with the potential to uncover contaminated land will occur for the duration of the Project. The Contractor Environmental Site Representatives will carry out weekly site inspections. Roads and Maritime will also conduct independent inspections to confirm the Contractors’ compliance with contaminated land management requirements.

Weekly and other routine inspections by the Roads and Maritime Environmental Manager (or delegate), Environmental Review Group (ERG) representatives and ER will occur throughout Construction. Detail on the nature and frequency of these inspections are documented in Section 6.1 of the OACEMP.

Proposed inspections to be carried out by the Contractors that are relevant to contaminated land are contained in Table 7-1.

#### Table 7-1: Contaminated land inspections

<table>
<thead>
<tr>
<th>Inspection</th>
<th>Responsibility</th>
<th>Frequency</th>
</tr>
</thead>
</table>
| Inspect all plant and equipment daily for leakages of fuel, oil or hydraulic fluid. Repair any leaks before using item of plant or equipment. Maintain records of plant inspections | Contractor Environmental Site Representative  
Contractor Superintendent | Daily |
| Contamination management inspections (where contamination is found)        | Contractor Environmental Site Representative  
Roads and Maritime Environmental Manager (or delegate) | Weekly, as required |
| Inspection of managed bunded areas, erosion and sediment controls as part of the weekly environmental inspection | Contractor Environmental Site Representative  
Roads and Maritime Environmental Manager (or delegate)  
Contractor Soil Conservationist  
Roads and Maritime Soil Conservationist | Weekly |
| Assessment of suspected and potential contaminated sites                  | Contractor Construction Manager  
Contractor or Roads and Maritime Contamination Specialist  
Roads and Maritime Environmental Manager (or delegate) / Roads and Maritime Project Manager | As required |
7.6 Incident planning and response

Response to incidents will be undertaken as described in Section 5.6 of the OACEMP and in accordance with the Environmental Incident Classification and Reporting Procedure (refer to Appendix A7 of the OACEMP).

7.7 Auditing

Audits (both internal and external) will be undertaken to assess the effectiveness of contaminated land management measures, compliance with this CCLMP, conditions of approval and other relevant approvals, licenses and guidelines.

Audit requirements are detailed in Section 6.4 of the OACEMP.

7.8 Non-conformances

A non-conformance is the failure or refusal to comply with the requirements of project system documentation, including this CCLMP. Any member of the Contractors’ Project team may raise a non-conformance or improvement opportunity.

Where a non-conformance is detected or monitoring results directly attributable to the Project exceed a target set in the Construction Water, Soil and Contamination Monitoring Program (refer to Annexure B of the CSWMP), the process described in the Monitoring Program and Section 6.6 of the OACEMP will be implemented. The Contractor’s Quality Plan will describe the process for managing non-conforming work practices and initiating corrective/preventative actions or system improvements in accordance with the process outlined in Section 6.6.1 of the OACEMP.

7.9 Reporting

Reporting requirements and responsibilities are documented in the Construction Water, Soil and Contamination Monitoring Program and Section 6.5 of the OACEMP.

In the event that suspected contamination is uncovered during Construction of the Project, the following reporting will occur:

- in accordance with the Environmental Incident Classification and Reporting Procedure (Appendix A7 of the OACEMP), the unexpected discovery of contaminated land is classed as a ‘Reportable Event’, as such finds of this nature will be reported to Roads and Maritime in accordance with the guidelines

- where it is deemed that the contamination has been, or could have been caused or changed by, the operations of the Contractor, the EPA will be notified in accordance with Section 60 of the CLM Act.

The Construction Contractors will report on contamination monitoring in accordance with the Construction Water, Soil and Contamination Monitoring Program (refer to Annexure B of the CSWMP). The Contractors will be required to maintain accurate records substantiating all Construction activities associated with the Project or relevant to the conditions of approval, including measures taken to implement this CCLMP. Records will be made available to the DP&E and DoEE upon request, within the timeframe nominated in the request.
8 Review and improvement

8.1 Continuous improvement

Continuous improvement of this CCLMP 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 contaminated land management and performance of environmental controls
- identify environmental risks not already included in the risk register
- 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.

The Contractors will be responsible for ensuring Project environmental risks are identified and included in the risk register and appropriate mitigation measures implemented throughout the Construction of the Project as part of the continuous improvement process. The process for ongoing risk identification and management during Construction is outlined in Section 4.3.2 of the OACEMP.

8.2 CCLMP update and amendment

The processes described in Section 6.8 of the OACEMP may result in the need to update or revise this CCLMP. This will occur as needed.

Any revisions to this CCLMP will be in accordance with the process outlined in Sections 1.6 and 6.8 of the OACEMP.

A copy of the updated CCLMP and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure (refer to Section 1.5 of the OACEMP).
Annexure A - Consultation correspondence
1 Introduction

Consultation with relevant stakeholders and Government agencies was undertaken as part of the development of this CCLMP in accordance with the requirements of the Infrastructure Approval. The agencies required to be consulted under the Infrastructure Approval are listed in Table 1-1.

Table 1-1: Consultation requirements under the Infrastructure Approval

<table>
<thead>
<tr>
<th>NSW CoA</th>
<th>Relevant OACEMP Sub-plan / document</th>
<th>Agency to be consulted</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>C4(d)</td>
<td>Water, soil and contamination CEMP Sub-plan</td>
<td>DoI Water (NRAR), DPI Fisheries, Penrith City Council, Liverpool City Council</td>
<td>This CCLMP</td>
</tr>
<tr>
<td>C9(c)</td>
<td>Construction Water, soil and contamination Monitoring Program</td>
<td>DPI, DoI (NRAR), Penrith City Council, Liverpool City Council</td>
<td>Annexure B to the CSWMP</td>
</tr>
</tbody>
</table>

The consolidated evidence of the consultation undertaken and comments relevant to the preparation of this CCLMP is provided in this annexure. This annexure includes:

- documentation of the engagement with the parties identified in Table 1-1 that occurred prior to submitting the document to the Secretary for approval (Section 2)
- a log of the points of engagement or attempted engagement with the identified parties (Section 2) and a summary of the issues raised by them (Section 3)
- documentation of the follow-up with the identified parties where feedback has not been provided to confirm that they have no feedback or have failed to provide feedback after repeated requests (Section 2)
- an outline of the issues raised by the identified parties, a summary of how they have been addressed and a cross reference to the section of the CCLMP where the issue has been addressed (Section 3)
- a description of the outstanding issues raised by the identified parties and the reasons why they have not been addressed (Section 4)
- copies of all consultation correspondence relevant to this CCLMP (Attachment 1).

Note that consultation for the Construction Water, Soil and Contamination Monitoring Program is provided in Annexure A of the CSWMP (refer Appendix B4 of the OACEMP).

2 Documentation and log of the engagement and follow up

Table 2-1: Requests for comment from Roads and Maritime

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Contact</th>
<th>Date</th>
<th>Correspondence Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPI Fisheries</td>
<td>Carla Ganassin</td>
<td>26/06/2018</td>
<td>Letter (via email)</td>
<td>Request from Roads and Maritime for comment CCLMP</td>
</tr>
<tr>
<td>Organisation</td>
<td>Contact</td>
<td>Date</td>
<td>Correspondence Type</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------------------</td>
<td>------------</td>
<td>---------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>NRAR (Dol Water)</td>
<td>Irene Zinger</td>
<td>26/06/2018</td>
<td>Letter (via email)</td>
<td>Request from Roads and Maritime for comment on CCLMP</td>
</tr>
<tr>
<td>Liverpool City Council</td>
<td>Charles Wiafe</td>
<td>26/06/2018</td>
<td>Letter (via email)</td>
<td>Request from Roads and Maritime for comment on CCLMP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11/07/2018</td>
<td>Follow up phone call, voicemail and email</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>26/07/2018</td>
<td>Follow up phone call and voicemail</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>27/07/2018</td>
<td>Follow up email</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>02/08/2018</td>
<td>Follow up phone call in which LCC agreed to respond by 09/08/2018</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>14/08/2018</td>
<td>Follow up phone call and voicemail</td>
<td></td>
</tr>
<tr>
<td>Penrith City Council</td>
<td>Kristy Johnson</td>
<td>26/06/2018</td>
<td>Letter (via email)</td>
<td>Request from Roads and Maritime for comment on CCLMP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12/07/2018</td>
<td>Follow up phone call</td>
<td></td>
</tr>
</tbody>
</table>

**Table 2-2: List of Responses**

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Contact</th>
<th>Date</th>
<th>Correspondence Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPI Fisheries</td>
<td>Carla Ganassin</td>
<td>3/07/2018</td>
<td>Email</td>
<td>Comment on CCLMP</td>
</tr>
<tr>
<td></td>
<td>Fisheries Manager</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Aquatic Ecosystems Unit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NRAR (Dol Water)</td>
<td>Irene Zinger</td>
<td>08/07/2018</td>
<td>Letter (via email)</td>
<td>Comment on CCLMP</td>
</tr>
<tr>
<td></td>
<td>Manager, Water Regulation Branch (East)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liverpool City Council</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>No response provided</td>
</tr>
<tr>
<td>Penrith City Council</td>
<td>Ari Fernando</td>
<td>20/07/2018</td>
<td>Email</td>
<td>Comment on CCLMP</td>
</tr>
<tr>
<td></td>
<td>Major Projects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&amp; Design Coordinator</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3 Summary of issues raised and responses

Table 3-1: Summary of issues raised and Roads and Maritime responses

<table>
<thead>
<tr>
<th>Summary of agency comment</th>
<th>Roads and Maritime response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liverpool City Council</td>
<td>No comments provided</td>
</tr>
<tr>
<td>Penrith City Council</td>
<td>No further comments on Construction Contamination Land Management Plan. Noted</td>
</tr>
<tr>
<td>NRAR (Dol Water)</td>
<td>Any reference to either “Department of Primary Industries” / “DPI Water” or “Department of Industry – Water” / “Dol Water” should be amended to “Natural Resources Access Regulator” or “NRAR”. CCLMP has been updated to reference “Natural Resources Access Regulator” or “NRAR”.</td>
</tr>
<tr>
<td>DPI Fisheries</td>
<td>DPI Fisheries has no objections to this draft Construction Contaminated Land Management Plan. Noted</td>
</tr>
</tbody>
</table>

4 Outstanding issues

There are no outstanding issues to be resolved arising from the consultation on the CLLMP.
Attachment 1: Copies of Consultation Correspondence
Dear Suzette,

Thanks you for referring the following draft construction environmental management plans for The Northern Road Upgrade (between Mersey Road, Bringelly to Glenmore Parkway, Glenmore park) to DPI Fisheries for comment in accordance with the pending Conditions of Approval for this project.

DPI Fisheries wishes to provide the following comments on the referred plans. Please use this response to satisfy the approval consultation requirements for these plans.

**The Northern Road Upgrade – Mersey Road, Bringelly to Glenmore Parkway, Glenmore Park – June 2018 – Construction Flora and Fauna Management Plan – Version 0**

DPI Fisheries has no objections to the draft Flora and Fauna Management Plan.

Regarding section 4.3.2 and Table 4-5, please be aware that the presence of key fish habitat in the first instance should be determined from the key fish habitat maps on DPI Fisheries website. Looking at these maps, the only key fish habitat within the footprint of these works is situated at Cosgrove Creek and Badgerys Creek.

**The Northern Road Upgrade – Mersey Road, Bringelly to Glenmore Parkway, Glenmore Park – June 2018 – Construction Soil and Water Management Plan – Version 0**

DPI Fisheries has no objections to this draft Soil and Water Management Plan.

Page 24 and 28: Note that key fish habitat within the development footprint is only situated in Cosgrove Creek and Badgerys Creek (see comment above).

**Annexure B – Construction Water, Soil and Contamination Monitoring Program**

DPI Fisheries has no objections to this draft Water, Soil and Contamination Monitoring Program.

**The Northern Road Upgrade – Mersey Road, Bringelly to Glenmore Parkway, Glenmore Park – June 2018 – Construction Contaminated Land Management Plan – Version 0**

DPI Fisheries has no objections to this draft Construction Contaminated Land Management Plan.

If you have any questions regarding this response, please call.

Regards,

Carla Ganassin | Fisheries Manager | Aquatic Ecosystems Unit
NSW Department of Primary Industries | Fisheries NSW
Block E, Level 3, 84 Crown Street, Wollongong NSW 2500
SEND MAIL TO: Locked Bag 1 | Nelson Bay NSW 2315
T: 02 4222 8342 | F: 02 4225 9056 | E: carla.ganassin@dpi.nsw.gov.au
W: www.dpi.nsw.gov.au
Conserve, Share, Provide

EMAIL COMPLETED APPLICATIONS TO: ahp.central@dpi.nsw.gov.au
APPLICATION PROCESSING TIMES (from date received): 28 days for Permits & Consultations; 40 days for IDA Referrals

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Dear Ms Graham


The Natural Resources Access Regulator (NRAR), previously DoI-Water, has had the opportunity to review Draft for Consultation Construction Environmental Management Plan (CEMP) The Northern Road Upgrade, dated June 2018.

The project proposes to upgrade 16 km of the Northern Road as part of the Western Sydney Infrastructure Plan. The project aims to increase travel flow and access to the Western Sydney Airport; the project will be conducted in three separate stages stretching from Mersey Road, Bringely to Glenmore Parkway, Glenmore Park.

NRAR recommends that the CEMP for the Northern Road be modified to address the following.

- Badgery Creek, Thompsons Creek and Cosgroves Creek require additional surface monitoring points. The catchments have highly fragile river styles that need to be preserved. Each point will require preconstruction monitoring to ensure adequate data is acquired.
- Clarity and confirmation of the Trigger Action Values for Groundwater monitoring will be required prior to commencement of construction, as stated in Appendix B4 of the CEMP.
- Any reference to either “Department of Primary Industries” / “DPI Water” or “Department of Industry – Water” / “Dol Water” should be amended to “Natural Resources Access Regulator” or “NRAR”.

Please contact Annika Lawrence, Water Regulation Officer (Newcastle) on (02) 4904 2516 or annika.lawrence@nrar.nsw.gov.au if you have further enquiries regarding this matter.

Yours sincerely

Irene Zinger
Manager, Water Regulation Branch (East)

08/07/2018
Hi Suzette

I have now collated comments received for the sub plans attached and is noted as below.

1. **Construction Traffic Management Plan**
   Section 5 - Construction Traffic Management Sub Plan did not recognise Grover’s Cr as a local road accessed by both construction and light vehicles and should be included. Whether programmed night works are undertaken for utility installation is not noted. Our experience is some work will be required. Where bus stops are relocated for construction, safe crossing points for bus commuters will need to be provided with sufficient lighting for changed locations.

   A dilapidation report will be required for the local roads to be accessed/ upgraded.

   Minor comment – Section 6.11 (Emergency Services notification – should be Nepean Local Area Command (As Penrith/St Marys have amalgamated).

   There should be notations included that Local Roads not be included in any TMP’s for State Road traffic detours.

2. **Construction Noise & Vibration Management Plan**

   Council’s Environmental Health Section has noted that the Draft Noise Mgt Plan is comprehensive.

   However, in Section 8 it should be noted that any variation of hours of work or Out of hours work or should have Penrith City Council agreement be noted.

   A copy of the final CNVMP should be provided to Council.

3. **Construction Soil & Water Management Plan**

   The draft CSWMP is considered to be comprehensive and no further comments.

4. **Water & Soil Contamination Management Plan**

   The draft WSCMP is considered to be comprehensive and no further comments.

5. No further comments on Construction Contamination Land Management Plan.

6. I am awaiting some further comments from Aboriginal Liaison Officer with respect to Aboriginal Heritage component of the Construction Heritage Management Plan.

Regards
Hi Ari,

Here are the NSW and Federal Approvals for The Northern Road Project to assist with the CEMP Sub-plan reviews.

Thanks,

Kind regards,

Suzette Graham
Senior Environment Officer, WSPO
Environment | Stakeholder and Community Engagement
M 0476 828 524 PH: (02) 8849 2618
www.rms.nsw.gov.au
Every journey matters
Roads and Maritime Services
27 Argyle Street, Parramatta NSW 2150
Annexure B – Template Unexpected Discovery of Contaminated Land Procedure

A template for the proposed structure and content for the Contractors’ Unexpected Discovery of Contaminated Land Procedure is provided below. The Contractors will prepare an Unexpected Discovery of Contaminated Land Procedure as part of the Contractors’ CCLMPs in accordance with the legislation, guidelines and standards identified in Section 3 of this overarching CCLMP and consistent with this template Unexpected Discovery of Contaminated Land Procedure.

Where appropriate, the Contractors may supply an Unexpected Discovery of Contaminated Land Procedure with an alternative structure provided it meets the requirements identified in this CCLMP and the relevant Roads and Maritime specifications. Roads and Maritime will review the Contractors’ documentation to confirm compliance with the applicable requirements.
Contents

1 Introduction
   1.1 Purpose
   1.2 Scope
   1.3 Induction / training
   1.4 Roles and responsibilities
   1.5 Review
2 Procedure
3 Records
1 Introduction

1.1 Purpose

This Unexpected Discovery of Contaminated Land Procedure details the actions to be taken when potential contaminated soil/material is encountered during excavation/Construction activities. In the event that hazardous materials are discovered, this Procedure should be implemented.

This Procedure has been developed in accordance with best practice EPA contamination management guidelines and Roads and Maritime specifications.

1.2 Scope

This Procedure is applicable to all activities conducted by site personnel (including sub-contractors) on the Project that have the potential to uncover/encounter contaminated soil/material. This procedure is not applicable to the identification of soils suspected to be contaminated with plant pathogens.

1.3 Induction / training

Where required, all site personnel (including sub-contractors) are to be inducted on the identification of potential contaminated soil/material along with the requirements of this Procedure during inductions and/or regular toolbox talks. Site personnel should be informed of the potential sources of contamination within the Project and indications of contamination in soil and groundwater, such as:

- odour
- discolouration/staining of soils
- evidence of landfilling/discarded drums.

1.4 Roles and responsibilities

The Contractor Environmental Site Representative will ensure that this Procedure is effectively implemented and all site personnel are aware of the requirements of this Procedure.

The Contractor Superintendent will be responsible for ensuring that in the event that contaminated land is discovered, site personnel are informed immediately and all work in the vicinity of the find ceases. The Contractor Superintendent will be advised of any required actions for the control of discovered contamination on site, such as implementation of exclusion zones and signage, and will be responsible for ensuring the actions are undertaken.

The Roads and Maritime Environmental Manager (or delegate) will liaise with the relevant authorities (such as EPA and a Contaminated Land Specialist) where required, and will approve the recommencement of works following any remediation undertaken.
1.5 Review

This Procedure will be updated by the Contractors and reviewed by the Contractors’ Contamination Specialist (if required) and the Roads and Maritime Environmental Manager (or delegate) prior to commencement of Construction of the Project.

This Procedure will be updated throughout Construction of the Project to include any new identified sites of contamination, if required, and subsequent additional management measures. This Procedure will be reviewed annually, or as required in accordance with the continuous improvement process described in Section 8 of this CCLMP.
2 Procedure

The steps to be followed in the event that contaminated material is encountered during construction are outlined below. Indicators of contamination in soils include:

- discolouration of the soil, including staining and horizontal layers of discolouration
- odours from soil
- oily sheen on water leaving soils.

Step 1. Potential contaminated soil/material encountered during construction activities

If potential contaminated soil/material is encountered during excavation/Construction activities:

- **cease work** in the immediate/affected area
- the Contractor Foreman will immediately notify the Roads and Maritime Environmental Manager (or delegate) and the ER
- install environmental controls around the site to contain the contaminated material, including diversion of water to minimise potential spread via surface water runoff
- if it is determined that there is a risk of environmental harm from the potential contamination, the EPA will be notified immediately in accordance with the Roads and Maritime Environmental Incident and Classification Procedure (refer to Appendix A7 of the OACEMP)
- recommence works in an alternate area where practicable.

Step 2. Environmental management and work health safety management

Prior to any contamination investigation, management or remediation activities, appropriate Safe Work Method Statements (SWMS) and EWMS will be prepared for review and approval by the Roads and Maritime Environmental Manager (or delegate).

Personal Protective Equipment (PPE) will be worn as per the relevant Material Safety Data Sheet/s. This may include, but not be limited, to:

- eye goggles
- face mask
- rubber boots
- rubber gloves
- work clothes (i.e. long sleeve shirt/pants and steel capped boots)

Step 3. Undertake a site/area contamination investigation

The Roads and Maritime Environmental Manager (or delegate) will assess the situation and if considered necessary, commission a suitably qualified contamination specialist to undertake a contamination investigation in the area of the find.
The material will be classified in accordance with the *Waste Classification Guidelines* (EPA, 2014).

If necessary, the Roads and Maritime Environmental Manager (or delegate) will liaise with the relevant authorities to determine the appropriate management options.

The Roads and Maritime Environmental Manager (or delegate) (in consultation with specialists) will determine the appropriate management measures to be implemented. This may include leaving contamination undisturbed, capping of contamination, treatment or off-site disposal. Material to be disposed of off-site will be transferred to an appropriately licensed waste facility, as outlined in the CWEMP (refer to Appendix B7 of the OACEMP).

If the material is determined to be acid sulfate soil or potential acid sulfate soil, the management procedures outlined in the *Acid Sulfate Soil Manual* (Acid Sulfate Soil Management Advisory Committee, 1998) will be followed.

**Step 4. Remedial action**

Remedial actions will be incorporated into specific Remediation Action Plans (RAPs). RAPs will be prepared by a suitably qualified and experienced person and in accordance with all guidelines under the *Contaminated Land Management Act* (NSW).

RAPs will be verified by a Contaminated Land Specialist and submitted to the Roads and Maritime Environmental Manager (or delegate) for approval prior to commencement of remediation.

Relevant EWMS or SWMS will be reviewed and updated when required.

**Step 5. Recommence works**

Recommence works once remedial works have been implemented and sampling has validated that the remediation strategy has been successful. The Roads and Maritime Environmental Manager (or delegate) will grant approval for the Contractor to recommence works.

### 3 Records

The Contractors will maintain a register of any unexpected contamination finds, including a map of all contaminated and/or remediated sites. The register will be made available to the Roads and Maritime Environmental Manager (or delegate) on request for inclusion in Project Monthly Reports.
Annexure C – Template Asbestos Management Plan

A template for the proposed structure and content for the Contractors’ Asbestos Management Plan is provided below. The Contractors will prepare an Asbestos Management Plan as part of the Contractors’ CCLMPs in accordance with the legislation, guidelines and standards identified in Section 3 of this overarching CCLMP and consistent with this template Asbestos Management Plan.

Where appropriate, the Contractors may supply an Asbestos Management Plan with an alternative structure provided it meets the requirements identified in this CCLMP and the relevant Roads and Maritime specifications. Roads and Maritime will review the Contractors’ documentation to confirm consistency with the applicable requirements.
Contents

1 Introduction
   1.1 Purpose
   1.2 Objectives
   1.3 Scope
   1.4 Induction / training
   1.5 Roles and responsibilities
   1.6 Review

2 Topsoil Management
   2.1 Advance contamination inspection
   2.2 Removal of topsoil

3 Unexpected asbestos / ACM find procedure

4 Asbestos management principles
   4.1 Risk control
   4.2 Management of ACM
   4.3 Source removal and off-site disposal
   4.4 Signage
   4.5 Control of airborne asbestos
   4.6 Removal of asbestos / ACM
   4.7 Clearance
   4.8 Disposal
   4.9 Decontamination
   4.10 Encapsulation

5 Monitoring, reporting and records
   5.1 Monitoring
   5.2 Reporting
   5.3 Incidents and emergencies
   5.4 Asbestos Register

Attachments
   1 Asbestos management procedure during Construction
   2 Asbestos management feasibility screening assessment
   3 Asbestos management cost and feasibility assessment
1 Introduction

1.1 Purpose

This Asbestos Management Plan has been prepared to document the procedure to be undertaken in the event that potential asbestos containing material (ACM) or actual asbestos is uncovered during Construction of the Project. Implementation of this Plan will ensure that asbestos is managed in such a way as to avoid harm to site personnel, visitors and the community.

Asbestos / ACM fragments that are remnant from previous activities may be scattered throughout the Project area or present in existing stockpiled material. Asbestos-contaminated ground may be encountered when undertaking excavation for roadworks and/or property adjustments at unknown locations. It may also be encountered during demolition works or removal of structures. Disturbance of ground and/or pits associated with utilities creates the potential for exposure to airborne asbestos fibres.

This Plan has been developed in accordance with relevant legislation, EPA-endorsed guidelines (including the waste guidelines), industry codes of practice, Roads and Maritime draft Asbestos Management Procedure (Coffey, 2018) and Roads and Maritime specifications.

1.2 Objectives

The key objectives of this Plan are to:

- provide the procedure for assessment of asbestos / ACM in the Project area
- maintain accurate records of the location of asbestos in an Asbestos Register
- avoid or minimise asbestos-related risks by implementing environmental control measures
- ensure control measures are effectively implemented
- ensure asbestos removal is performed by a licensed asbestos removalist under the direction / recommendation of an accredited occupational hygienist.

1.3 Scope

Work involving, or likely to involve the disturbance of asbestos is considered a high risk Construction activity. Implementation of this Plan does not replace the need for the Contractors to prepare EWMS and Safe Work Method Statements (SWMS) for the management of materials containing asbestos. EWMS and SWMS will be completed and reviewed by the Roads and Maritime Environmental Manager (or delegate) and ER prior to the commencement of activities to which they apply. EWMS and SWMS will support the implementation of this Plan.
1.4 Induction / training

All site personnel (including sub-contractors) will undertake an induction to ensure that they understand the types and location of ACM/potential ACM on site and control measures and safe work methods before they commence work. Site personnel will be adequately trained to recognise the health risks of asbestos, use of the Asbestos Register, processes and safe work procedures to be followed to prevent exposure and correct use of PPE.

Prior to commencement of each shift, or change in shift, the Contractor Foreman will inform all site personnel of any planned asbestos removal work on site.

A copy of the Plan will be kept at the Construction work site where the work is being carried out.

1.5 Roles and responsibilities

All site personnel are responsible for ensuring they are familiar with the Asbestos Register and the locations where asbestos / ACM is identified. Any suspected asbestos / ACM finds will be reported to the Contractor Foreman and the Contractor Environmental Scientist / Engineer.

Contractor’s Environmental Scientist / Engineer

The Contractor will engage an Environmental Scientist / Engineer who is appropriately degree qualified and have a minimum of five years’ experience in contaminated land, site assessment and remediation in accordance with Specification R44. The Contractor’s Environmental Scientist / Engineer will also have appropriate accreditation as an occupational hygienist. The Environmental Scientist / Engineer will be an independent consultant engaged by the Contractor. This role is a separate role to the Contractor’s Environmental Site Representative.

The Contractor Environmental Scientist / Engineer will be responsible for taking samples of suspected asbestos / ACM, arranging air monitoring and testing and engaging an asbestos removalist.

The Contractor Environmental Scientist / Engineer will be on site:

- during advance contamination assessments (refer Section 2 below)
- whenever topsoil operations are underway and
- at other times required within Roads and Maritime QA specification R44.

Removal of asbestos must be undertaken by the holder of a Class A or Class B Asbestos Removal Licence issued by WorkCover NSW, as required.

1.6 Review

This template Asbestos Management Plan will be updated by the Contractor, in consultation with the Contractor’s Environmental Scientist / Engineer, and reviewed by the Roads and Maritime Environmental Manager (or delegate) prior to commencement of Construction of the Project.
This Plan will be updated throughout Construction of the Project to document the location of any asbestos / ACM discovered on site and any changes to Construction methodologies and subsequent additional management measures. This Plan will be reviewed annually, or as required in accordance with the continuous improvement process described in Section 8 of the CCLMP.

2  Topsoil Management

2.1  Advance contamination inspection

Prior to disturbance or removal of the topsoil in any area, the Contractor Environmental Scientist / Engineer will inspect and document the presence or absence of visible contamination at the ground surface (including asbestos and asbestos containing material) of the area in accordance with Specification R44. The Environmental Scientist / Engineer will also document the likelihood of contamination being present in the topsoil below the ground surface and the inspection or other data used to make that assessment. If asbestos or other contamination is visible or considered likely to be present, the Contractor will propose management or remediation measures for the contaminant(s) prior to disturbance or removal of the topsoil. The Environmental Scientist / Engineer’s report and any proposals for management or remediation will be issued to Roads and Maritime as a Hold Point. Roads and Maritime will consider the documents and instruct the Contractor regarding the methodology for topsoil removal.

2.2  Removal of topsoil

Following advance contamination investigation works detailed in Section 2.1, Roads and Maritime QA Specifications G36 and G38, the Contractor’s Environmental Scientist / Engineer will attend and inspect all topsoil removal works and provide ongoing advice regarding the appropriate management of topsoil that is considered likely to be contaminated, including by asbestos.

For areas with visible surface contamination or where subsurface contamination has been suspected, the Environmental Scientist / Engineer will monitor the methodology employed for topsoil removal and the management or remediation measures instructed by Roads and Maritime for their effectiveness. The Environmental Scientist / Engineer may recommend changes to the methodology and/or management or remediation measures, in which case the Contractor will seek further instruction from Roads and Maritime.

For areas without visible surface contamination or suspected subsurface contamination, the Environmental Scientist / Engineer will monitor the topsoil removal activities and if any topsoil contamination becomes evident during the removal process, the Contractor will cease work in that area, follow the Unexpected Finds Procedure (Section 3) and seek further instruction from Roads and Maritime.

The Contractor will till each topsoil lot with an excavator (in 100 mm depth increments) to allow the Environmental Scientist / Engineer to assess the topsoil composition prior to commencing topsoil removal or management or remedial measures. Deeper tilling will be undertaken if necessary to enable the Environmental Scientist / Engineer to determine the presence or extent of any contamination.
The Environmental Scientist / Engineer will provide a contaminant clearance report for each topsoil lot not containing any contaminated material and a contamination report for each contaminated topsoil lot noting the nature of the contaminant and the method of treatment or disposal approved by Roads and Maritime.

Removal of topsoil or other material contaminated with asbestos / ACM will be in accordance with the procedure outlined in Section 3 of this Plan.

3 Unexpected asbestos / ACM find procedure

In the event that a person on site identifies or disturbs asbestos / ACM that is not already identified in the Asbestos Register, the Contractor will follow all reporting and notification requirements in OACEMP Appendix A7 Roads and Maritime Environmental Incident Classification and Reporting Procedure, including notifying the ER. The Contractor will also undertake the following actions:

1. Stop work in the area potentially impacted by ACM as soon as it is safe to do so and move to the upwind side of the area, or away from the area.

2. Assess the potential immediate risk to human health posed by the unexpected find and assess if evacuation is necessary.

3. Delineate an exclusion zone around the affected area using fencing and/or appropriate barriers and signage. Keeping soil damp will minimise the release of fibres to air.

4. Contact the Environmental Scientist / Engineer for advice and request a site visit to undertake a risk assessment of the unexpected find and determine what further assessment and/or remediation works are required.

5. Implement advice and validate outcomes are assessed by the Environmental Scientist / Engineer to be satisfactory. Document outcome, presenting recommendations to the Roads and Maritime Project Manager.

6. The Roads and Maritime Project Manager to confirm that works may resume in the affected area, in consultation with the ER.

Note: Where a NSW EPA Accredited Site Auditor has been engaged, Roads and Maritime in consultation with the specialist Contaminated Land Consultant, will inform the Site Auditor of the unexpected find and proposed measures to remediate/manage risks from ACM. These measures should be endorsed by the Site Auditor before implementation.

The unexpected asbestos management procedure during Construction is summarised in the flow chart in Attachment 1.

Where small fragments of ACM or suspected ACM are found, and provided that:

- the total number of fragments is < 20, or
- the total surface area of the fragment/piece is < 1 m², or
- the fragments are spread over an area of < 10 m², and
- the fragments are non-friable and located on ground surface or within the topsoil layer
then the Contractor Environmental Scientist / Engineer will collect any fragments and place it in a 200 mm polythene bag for later disposal at an appropriate waste facility. A detailed visual inspection of the area will be carried out by the Contractor Environmental Scientist / Engineer, which will involve wet raking of the areas to a depth of 10 cm for any further fragments. If no further fragments are identified, works can continue.

If, during the visual inspection, the Contractor Environmental Scientist / Engineer determines that the criteria described above are exceeded, or if suspected asbestos / ACM continues to be identified during excavation works and/or if it is thought that any uncovered material might be considered asbestos containing and friable, works will cease and the Environmental Scientist / Engineer will assess the situation and determine an appropriate course of action in accordance with Section 4.

The Contractor Environmental Scientist / Engineer will remove samples of the material for testing at a NATA-accredited laboratory and will monitor airborne dust levels. Following testing, the Environmental Scientist / Engineer will determine and report:

- if the asbestos is non-friable or friable
- the extent of the contamination
- options for the appropriate remediation of the area (Section 4)
- the requirement for a licenced asbestos removalist (Section 4)
- the requirement for health screening of workers on site.
4 Asbestos management principles

4.1 Risk control

Asbestos-contaminated material encountered during Construction of the Project will be identified, managed, encapsulated on site, or removed and disposed off-site at a licenced waste facility. The Contractor will engage only appropriately licensed, accredited and insured asbestos removalists to handle, remove, encapsulate and/or dispose of asbestos / ACM in accordance with legislation.

The following risk control methods for asbestos / ACM will be used during Construction:

- removal and disposal of ACM
- encapsulation of ACM
- safe work practices, tools and equipment
- Personal Protective Equipment (PPE)
- decontamination process.

4.2 Management of ACM

Factors that influence how ACM in soil is managed include:

- the form of the ACM and the likelihood that it will release fibres into the air
- the location, lateral extent and depth of ACM-impacts within the Project and
- the current and future uses of the Project, and whether these uses could affect the risk posed by ACM.

The checklists provided in Attachments 2 and 3 provide a method to evaluate the feasibility of source removal and encapsulation, and the selection of the most appropriate ACM management option. The presence of other contaminants may also affect the option selected to manage ACM.

Where there is uncertainty in how to assess these factors, the Contractor Project Manager will seek advice from Roads and Maritime Environmental Manager (or delegate) or specialist Contaminated Land Consultant.

4.3 Source removal and off-site disposal

Table 4-1 outlines the techniques which may be used to remove ACM in soil.

Table 4-1: ACM removal techniques, applications and limitations

<table>
<thead>
<tr>
<th>Removal Technique</th>
<th>Applicability and Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand Picking</td>
<td>suitable for bonded ACM in near surface soils only (i.e. &lt;10 cm)</td>
</tr>
<tr>
<td></td>
<td>raking may enhance removal, although only in sandy soils</td>
</tr>
<tr>
<td></td>
<td>not applicable for friable asbestos</td>
</tr>
<tr>
<td></td>
<td>less effective in areas of dense vegetation</td>
</tr>
</tbody>
</table>
### Removal Technique | Applicability and Limitations
--- | ---
Tilling | • mechanical tilling to turn over soil followed by hand picking  
• suitable for bonded ACM in soils to approx. 30 cm in sandy soils  
• not applicable for friable asbestos  
• less effective in areas of dense vegetation, or clayey soils
Mechanical screening | • suitable for large volumes of soil impacted by Bonded ACM  
• susceptible to generate fibres requiring effective dust/fibre control  
• not applicable for friable asbestos
Mechanical excavation | • physical excavation of soil containing ACM where impact extends beneath surface soils  
• generates larger volume of soil that requires further management (i.e. off-site disposal, screening, spreading and handpicking/tilling)

The Contractor Environmental Scientist / Engineer will attend and monitor any asbestos / ACM removal works or remediation measures undertaken for treatment of asbestos / ACM on site.

The Contractor will provide appropriate validation to demonstrate removal of ACM using the above techniques has been successful.

#### 4.4 Signage

The Contractor will install warning signs and labels to clearly identify asbestos affected areas and where asbestos related work is being carried out. Protective barricades will be installed to delineate the asbestos related area/s and restrict unauthorised persons from entering the asbestos removal work. Stockpiles will be covered and labelled.

Signage and barricades will stay in place until all licensed asbestos removal work is complete and a clearance certificate is provided.

#### 4.5 Control of airborne asbestos

An asbestos removalist may use techniques to eliminate or minimise the generation of asbestos fibres if required. The techniques include wet spraying method, saturation and water injection method and the dry method (only used if the wet spray method is not suitable due to safety reasons). The Contractor will follow any directions provided by the asbestos removalist.

#### 4.6 Removal of asbestos / ACM

The Contractor Environmental Scientist / Engineer will determine if a licensed asbestos removalist will be required for removal works. A licensed asbestos removalist will be required for removal works where there is friable asbestos, or the contaminated area is greater than 10 m². There are two types of asbestos removal licences: Class A and Class B. The type of licence required depends on the type and quantity of asbestos or ACM to be removed, as outlined in Table 4-2.
### Table 4-2: Asbestos removal licence classes

<table>
<thead>
<tr>
<th>Licence type</th>
<th>What asbestos can be removed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class A</td>
<td>Can remove any amount or quantity of asbestos or ACM, including:</td>
</tr>
<tr>
<td></td>
<td>• any amount of friable asbestos or ACM</td>
</tr>
<tr>
<td></td>
<td>• any amount of asbestos-contaminated dust or debris (ACD)</td>
</tr>
<tr>
<td></td>
<td>• any amount of non-friable asbestos or ACM.</td>
</tr>
<tr>
<td>Class B</td>
<td>Can remove:</td>
</tr>
<tr>
<td></td>
<td>• any amount of non-friable asbestos or ACM</td>
</tr>
<tr>
<td></td>
<td>Note: A Class B licence is required for removal of more than 10 m² of non-friable asbestos or ACM but the licence holder can also remove up to 10 m² of non-friable asbestos or ACM.</td>
</tr>
<tr>
<td></td>
<td>• ACD associated with the removal of non-friable asbestos or ACM</td>
</tr>
<tr>
<td></td>
<td>Note: A Class B licence is required for removal of ACD associated with the removal of more than 10 m² of non-friable asbestos or ACM but the licence holder can also remove ACD associated with removal of up to 10m² of non-friable asbestos or ACM</td>
</tr>
<tr>
<td>No licence required</td>
<td>Can remove:</td>
</tr>
<tr>
<td></td>
<td>• up to 10 m² of non-friable asbestos or ACM</td>
</tr>
<tr>
<td></td>
<td>• ACD that is:</td>
</tr>
<tr>
<td></td>
<td>• associated with the removal of less than 10 m² of non-friable asbestos or ACM</td>
</tr>
<tr>
<td></td>
<td>• not associated with the removal of friable or non-friable asbestos and is only a minor contamination.</td>
</tr>
</tbody>
</table>

The licensed asbestos removalist will prepare an Asbestos Removal Control Plan prior to the removal of any asbestos / ACM. The Asbestos Removal Control Plan documents the specific control measures to be implemented to ensure site personnel and others are not at risk when asbestos removal work is being conducted. It includes how the asbestos removal will be carried out, including the method, tools, equipment and PPE to be used and the asbestos / ACM to be removed, including the location, type and condition of the asbestos / ACM.

The Roads and Maritime Environmental Manager (or delegate) and Roads and Maritime Project Manager will be informed prior to excavation or removal of asbestos or ACM. If the removal activity is to occur in the vicinity of any occupied residence or business, the Contractor Community Relations Managers will notify the affected resident/s or business owner/s in accordance with the Community Communication Strategy.

#### 4.7 Clearance

Following removal of asbestos / ACM, the licensed asbestos removalist will arrange for a clearance inspection of the area to facilitate the issue of a clearance certificate and allow Construction to recommence in the affected area. The clearance inspection is conducted by:
• an independent licensed asbestos assessor, for work that was carried out by a Class A licensed asbestos removalist
• an independent competent person, for asbestos work that is not required to be carried out by a Class A licensed asbestos removalist

To be independent, the licensed asbestos assessor must not be involved in the removal of asbestos for that specific job and is not involved in a business or undertaking involved in the removal of the asbestos for that specific job.

A clearance certificate will be issued if the independent licensed asbestos assessor or competent person is satisfied that the asbestos removal area and the immediate area are free from visible asbestos contamination. Entry to the area will be permitted following confirmation of certification.

4.8 Disposal

The Asbestos Removal Control Plan prepared by the licensed asbestos removalist will include a waste disposal program that will detail the method of transport and location of disposal of asbestos / ACM removed from site and any other asbestos waste.

The licensed asbestos removalist will dispose of any asbestos waste at a licensed asbestos waste disposal site in accordance with NSW EPA guidelines (including Waste Classification Guidelines (EPA, 2014)) and relevant industry codes of practice. Disposal of ACM will be to an approved asbestos waste facility listed on the NSW EPA website (http://www.epa.nsw.gov.au/waste/asbestos/). The Contractors will notify the Roads and Maritime Environmental Manager (or delegate) and Roads and Maritime Project Manager at least 24 hours prior to removal of ACM from site and will provide details of the proposed method and location of disposal.

The Contractors will maintain records of all asbestos / ACM disposed off site, the location of the facility at which it was disposed, and any receipt/certificate issued by the facility/disposal authority.

4.9 Decontamination

Decontamination of site personnel, PPE and tools used in asbestos removal work will minimise exposure and spread of asbestos outside of the removal area.

Personal decontamination will occur every time a worker leaves the asbestos removal work area and involves removal of all visible asbestos dust/residue from PPE and Respiratory. Protective Equipment using an asbestos vacuum cleaner and /or wet wiping with a damp cloth. Disposable PPE is considered asbestos waste and will be disposed of at an appropriate waste facility. Non-disposable protective clothing will be laundered in a suitable laundering facility that is equipped to launder asbestos-contaminated clothing.

Workers must be aware of personal hygiene and ensure that they carefully wash when leaving an asbestos removal area, paying particular attention to hands, fingernails, face and head.

Tools will be dismantled (where appropriate), cleaned under controlled conditions and decontaminated prior to removal from the area, or disposed of at a suitable off site location.
4.10 Encapsulation

Encapsulation involves the placement of a cover layer over ACM-impacted soil to isolate this material so that it cannot be readily disturbed and release fibres. The cover layer may comprise soils, road or pavement construction materials of a specified form and thickness.

Encapsulation of ACM within the earthworks formation on site minimises the need to dispose of the material off site. Encapsulation of ACM on site will be determined by the Contractor Geotechnical Engineer and Contractor Environmental Scientist / Engineer in accordance with the requirements of Roads and Maritime Specification R44, NSW-CoA E47 and Federal CoA-7 and 8.

Non-woven geotextiles are used to separate ACM-impacted material from the clean materials used to construct the cover layer. Geotextile materials should be of a high visibility colour to provide a warning of underlying ACM contamination. The geotextile selected may also need other properties, depending on its application (e.g. increased tensile strength, permeability, chemically inert etc.).

The following will be considered for the location and method of encapsulation on the Project:

- under pavement or above ground method of encapsulation
- preferred placement will be below large fill embankments
- nature of material with ACM e.g. topsoil, general fill, mixed with other materials (asphalt, concrete) affecting suitability for reuse under pavement
- encapsulated ACM will be located to:
  - be at a depth of emplacement to minimise risk of pavement failures and impact on underground utilities
  - be in an area free of drainage structures and utilities which will require maintenance
  - be in an area off line to the critical path of road Construction
  - be where excavation can be undertaken relatively easily
  - allow easy access for maintenance, inspection and revegetation work
  - avoid additional clearing or impact on threatened species or EECs
  - minimise flood risk
  - not impact on groundwater sources
  - be removed from sensitive receivers.

Prior to on site encapsulation of ACM, the Contractor Geotechnical Engineer and Contractor Environmental Scientist / Engineer, in consultation with relevant statutory authorities and agencies, will prepare a Long Term Environmental Management Plan (LTEMP) for the encapsulation. Any required approvals will be obtained by the Contractors. The Contractors will submit the LTEMP, including details of consultation undertaken during its development and copies of any applicable statutory documentation, to the Roads and Maritime Environmental Manager (or delegate) for approval at least four weeks prior to on site encapsulation of ACM. The Roads and Maritime Environmental Manager (or delegate) will assess the proposed encapsulation plan for consistency with Roads and Maritime specifications and other requirements.
The LTEMP should include:

- a summary of the encapsulation arrangement, including the survey recording the location, lateral extent and depth of ACM encapsulated, the form of ACM present and thickness and form of the cover layer
- a regime to conduct periodic inspections of the cover layer to check it remains effective
- guidance for workers conducting subsurface works that encroach or overlap the area where ACM has been encapsulated including measures to prevent exposure during the works and requirements to reinstate the cover layer at the completion of the works
- notation on Section 149 Planning Certificate indicating the site is the subject of an LTEMP
- arrangements to disseminate the LTEMP to Roads and Maritime Stakeholders (e.g. a record added to Roads and Maritime Asset Log system, Dial Before You Dig records etc.).
5 Monitoring, reporting and records

5.1 Monitoring

The Contractor Environmental Scientist / Engineer may recommend that, as a precaution during asbestos removal works, continuous asbestos fibre monitoring be carried out at the perimeter of the area, and if deemed necessary, personal exposure asbestos fibre air monitoring for workers in area. Monitoring will be undertaken daily in accordance with Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition [NOHSC: 3003(2005)] (National Occupational Health and Safety Commission, 2005) and How to Safely Remove Asbestos Code of Practice (Safe Work Australia, 2011).

5.2 Reporting

Reporting will be carried out in accordance with the requirements of the Asbestos Management Plan.

Any asbestos finds will be reported by the Contractor Environmental Scientist / Engineer to the Roads and Maritime Environment Manager (or delegate) and the EPA in accordance with the Environmental Incident Classification and Reporting Procedure (refer Appendix A7 of the OACEMP).

5. Asbestos register

The Contractors will maintain an Asbestos Register that documents all identified or potential asbestos-containing material in the Project area. The Asbestos Register will contain the following information:

- identification of any potential or asbestos-containing material
- location, type and condition of the asbestos-containing material
- date when the asbestos was identified
- labelling of the asbestos
- maps, photographs or diagrams detailing the location of the asbestos within the Project area.

The Asbestos Register will be made available to the Roads and Maritime Environmental Manager on request for inclusion in Project Monthly Reports.
Attachment 1: Asbestos management procedure during Construction
Figure 2: Asbestos Management Procedure During Construction

1. Unexpected finds of ACM occurs during construction
2. Undertake Asbestos Management Feasibility Screening Assessment (Refer Attachment 2)
3. Are there sufficient data available to evaluate options to manage ACM?
   - Yes
   - No
     - Collect more data
     - UNSURE?
4. Is there opportunity to Encapsulate ACM within project?
   - Yes
   - No
     - Implement controls to prevent exposure over short term
     - Remove from site and dispose to suitably licensed landfill
5. Is the volume of impacted material < 1000m³?
   - Yes
   - No
     - Are there other reasons Why detailed Feasibility Assessment should not be completed?
       - Yes
         - Document reasons and seek review from RMS Environment Branch Representative
       - No
         - Proceed with Detailed Cost and Feasibility Assessment to manage ACM (Refer Attachment 3)
     - UNSURE?
6. Is friable Asbestos present AND persons will be foreseeably exposed to airborne asbestos fibers?
   - Yes
   - No
     - Seek advice from RMS Environment Branch Representative or other Competent Person

Attachment 2: Asbestos management feasibility screening assessment
Asbestos only poses a risk to human health when elevated levels of asbestos fibres are breathed in. (Source: Management of Asbestos in or on Soil, WorkCover NSW, 2014).

There are two feasible management options to minimise exposure to asbestos:
1) Source Removal & Offsite disposal - remove asbestos impacted material and dispose to a licensed landfill
2) Encapsulation - cover asbestos impacted material with barriers to prevent exposure.

This feasibility assessment aims to evaluate the feasibility of each option within the context of the project setting and stakeholder expectations.

There are factors which will limit the applicability of the Encapsulation option on some Projects. This Screening Assessment aims to identify project scenarios where a Detailed Cost & Feasibility Assessment should not be prepared.

<table>
<thead>
<tr>
<th>Factors for consideration</th>
<th>Y/N/?</th>
<th>Comments to support response</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Is there opportunity to encapsulate ACM within the Project site?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Is the volume of the impacted material less than 1000m$^3$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Is there evidence of unbonded ACM, or Bonded ACM that is in a friable state in/on soil AND persons will be foreseeably exposed to elevated levels of asbestos fibres</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) Are there other Project-specific factors why a Detailed Cost and Feasibility Assessment should not be prepared?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Is the answer to any of the questions ‘Yes’?

- **Yes**: If ‘Yes’, the Encapsulation option is not considered feasible for this Project. Implement controls to prevent exposure. Develop plan to remove asbestos impacted materials from the Project. Prepare pre-tender cost estimate to remove asbestos impacted soils
- **No**: If ‘No’, proceed with Detailed Cost & Feasibility Assessment (Attachment 3).
- **Unsure (?)**: If ‘Unsure’, seek advice from RMS Environmental Specialist and Competent Person to formulate an opinion, or proceed with Detailed Cost & Feasibility Assessment (Attachment 3).

Assessment prepared by Project Manager:
Name:
Signature:
Date

Assessment reviewed by RMS Environmental Specialist
Name:
Signature:
Date
Attachment 3: Asbestos management cost and feasibility assessment
Attachment 3: Asbestos Management Cost & Feasibility Assessment

In undertaking the Option selection process, it is important that all options are considered and the preferred one should be supported by strong argument when compared with the others. Although cost, time, convenience and future owner perception will be important considerations, the arguments presented for selection should be primarily stated in terms of public and worker protection.

(Source: Guidelines for the Assessment, Remediation & Management of Asbestos-Contaminated Sites, WA DoH, 2009)

The cost and feasibility assessment aims to identify the preferred option to manage asbestos impacted materials taking into consideration a range of Project-specific criteria.

**Form 3a: Detailed Feasibility Assessment**

The feasibility of each option is evaluated qualitatively against a range of criteria, with the assessor assigning a weighted score from 1 to 5 as defined within the footer of each page.

<table>
<thead>
<tr>
<th>Feasibility Criteria</th>
<th>Source Removal &amp; Offsite Disposal</th>
<th>Assessor Comments / Rationale</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Encapsulate</td>
<td></td>
<td>Aspects the assessor should consider when evaluating each option</td>
</tr>
</tbody>
</table>

**Site Setting Considerations:** The setting of the project may influence the applicability of a particular option:

- Geology

<table>
<thead>
<tr>
<th>Source Removal &amp; Offsite Disposal</th>
<th>Assessor Comments / Rationale</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encapsulate</td>
<td></td>
<td>The presence of shallow bedrock may restrict/prevent the encapsulation option, or prevent effective removal of impacted materials.</td>
</tr>
</tbody>
</table>

**Evaluation Criteria**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Feasible / Significant Constraints</td>
<td>Limited Feasibility / Some Constraints to manage</td>
<td>Feasible / No significant constraint</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feasibility Criteria</td>
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<td>Considerations</td>
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<td></td>
</tr>
<tr>
<td>- Topography</td>
<td></td>
<td></td>
<td>The effectiveness of excavation or material handling may be restricted by topography. Erosion may be a factor where materials are buried on steep slopes.</td>
<td></td>
</tr>
<tr>
<td>- Depth to groundwater</td>
<td></td>
<td></td>
<td>Shallow water table may require consideration of excavation dewatering (removal), and/or integrity of buried materials over the longer term.</td>
<td></td>
</tr>
<tr>
<td>- Acid sulfate soils</td>
<td></td>
<td></td>
<td>Excavation through ASS to bury ACM should be avoided. ASS is likely to constrain the encapsulation option unless risks from ASS can be managed.</td>
<td></td>
</tr>
<tr>
<td>- Watercourse nearby</td>
<td></td>
<td></td>
<td>Material handling near watercourses may trigger the need for additional controls (e.g. erosion, runoff). Flood risk may prevent burial in some areas of the Project.</td>
<td></td>
</tr>
<tr>
<td>- Sensitive receptors nearby</td>
<td></td>
<td></td>
<td>Sensitive receptors include the public and workers within the project area. Both proposed and future settings to be considered. The presence of sensitive receptors may limit the applicability of either option.</td>
<td></td>
</tr>
<tr>
<td>- Existing Infrastructure</td>
<td></td>
<td></td>
<td>Buried infrastructure such as existing or proposed services will present a constraint to source removal and/or encapsulation option.</td>
<td></td>
</tr>
</tbody>
</table>

**Evaluation Criteria**

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</tbody>
</table>
| Feasibility Criteria | Source Removal & Offsite Disposal | Encapsulate | Assessor Comments / Rationale | Considerations
Aspects the assessor should consider when evaluating each option |
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<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Other contaminants present</td>
<td></td>
<td></td>
<td></td>
<td>The presence of other chemicals (i.e. as identified within previous contamination studies) may limit the ability to bury asbestos impacted materials on site.</td>
</tr>
</tbody>
</table>

**Asbestos Characteristics:** The form, lateral extent of impact and depth of asbestos will influence the applicability of the preferred management option.

- **Form of asbestos present (Friability?)**
  - Considerations: The friability of asbestos may influence the feasibility of a particular option. For example, it may be safer to leave friable asbestos in-situ to prevent disturbance?

- **Lateral extent of asbestos impacts**
  - Considerations: If asbestos impacts spread over a large area, source removal may not be practical/feasible?

- **Relative depth of asbestos impacts**
  - Considerations: Asbestos encountered at depth (i.e. >1m below construction formation level) may limit the feasibility and/or effectiveness of source removal.

**Material handling considerations:** Material handling constraints applicable will influence the effectiveness of minimising risks to workers and the surrounding public.

- **Plant/competent labour available**
  - Considerations: The effective management of asbestos impacted materials relies on competent personal.

- **Sufficient space available to stockpile, segregate or bury ACM**
  - Considerations: Is there sufficient space to store/segregate asbestos impacted material, if required? Can this be done safely without cross contamination?

**Evaluation Criteria**

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<tr>
<td>----------------------</td>
<td>----------------------------------</td>
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<td>-------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Programme</td>
<td></td>
<td></td>
<td></td>
<td><em>Is there sufficient time within the Project programme to effectively manage asbestos impacted materials? Will double handling of materials impact programme?</em></td>
</tr>
<tr>
<td>Land use considerations (Current/Future)</td>
<td></td>
<td></td>
<td></td>
<td><em>Is the burial of asbestos impacted material compatible with current/future land uses?</em></td>
</tr>
<tr>
<td>Stakeholder support</td>
<td></td>
<td></td>
<td></td>
<td><em>Is the burial of asbestos impacted material acceptable to other Project Stakeholders (e.g. local council, adjoining landowners/community, EPA etc.)</em></td>
</tr>
<tr>
<td>Sustainability considerations</td>
<td></td>
<td></td>
<td></td>
<td><em>Does the project need to meet particular sustainability performance criteria (ISCA, project-specific waste minimisation targets etc.)</em></td>
</tr>
<tr>
<td>Likelihood of Impacts to development consent approval process</td>
<td></td>
<td></td>
<td></td>
<td><em>Would the management option impact on development consent pathway?</em></td>
</tr>
<tr>
<td>Availability of suitably licensed landfill close to the site</td>
<td>N/A</td>
<td></td>
<td></td>
<td><em>Is there a landfill within reasonable proximity of the Project that is licensed to receive asbestos wastes?</em></td>
</tr>
<tr>
<td>Availability of suitable capping / clean fill materials close to the site</td>
<td></td>
<td></td>
<td></td>
<td><em>Are there clean fill materials available that are (a) suitable to encapsulate buried ACM, or (b) backfill areas where ACM has been removed?</em></td>
</tr>
</tbody>
</table>

**Evaluation Criteria**

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## Evaluation Criteria

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<th>Assessor Comments / Rationale</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long term management considerations</td>
<td>N/A</td>
<td></td>
<td></td>
<td>Can buried ACM be managed over the long term? Considerations to inform this may include land ownership, land management, responsibility for management and scope of management well understood?</td>
</tr>
</tbody>
</table>

**TOTAL**

| | | | | Sum of Evaluation Criteria |

Totalise the criteria for each option. The option with the highest Total shall be considered the most feasible option to managed ACM.

Further guidance in evaluating the feasibility of asbestos management options can be found in the following documents:

- Work Cover NSW (2014); Managing Asbestos in or on Soil
- WA DER (2009); Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia
- Safe Work NSW (2016); Code of Practice – How to Safely Remove Asbestos

## Evaluation Criteria

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<td>Feasible / No significant constraint</td>
<td></td>
</tr>
</tbody>
</table>
Annexure D – Template Military Materials Management Plan

A template for the proposed structure and content for the Contractor’s Military Materials Management Plan is provided below. This Military Materials Management Plan applies to the Defence Establishment Orchard Hills (DEOH) land that is located within the Construction footprint of Stage 5 of the Project. The Contractor delivering Stage 5 of the Project will prepare a Military Materials Management Plan as part of the Contractor’s CCLMP in accordance with the legislation, guidelines and standards identified in Section 3 of this overarching CCLMP and consistent with this template Military Materials Management Plan.

Where appropriate, the Contractor may supply a Military Materials Management Plan with an alternative structure provided it meets the requirements identified in this CCLMP and the relevant Roads and Maritime specifications. Roads and Maritime will review the Contractor’s documentation to confirm compliance with the applicable requirements.
Contents

1 Introduction
   1.1 Purpose
   1.2 Scope
   1.3 Induction / training
   1.4 Roles and responsibilities
   1.5 Review

2 Management plan
   2.1 EWMS
   2.2 Unexpected Finds Procedure
   2.3 Ordnance management controls

3 Records
1 Introduction

1.1 Purpose

Stage 5 of the Project requires realignment of the existing The Northern Road along the western boundary of the Defence Establishment Orchard Hills (DEOH) site. The DEOH site is a current and historical ammunition storage and disposal area for the Department of Defence and there is the potential for remnant explosive ordnance (EO), explosive ordnance waste (EOW), and/or unexploded ordnance (UXO) to be located within the Construction footprint for Stage 5 of the Project.

Desktop and site investigations to assess the potential ordnance related risk within the DEOH land impacted by the Project by G-ték (2018) concluded that:

- the portion of DEOH impacted by the Stage 5 works has minimal risk of remnant UXO or EO other than small arms ammunition (SAA)
- the portion of DEOH impacted by the Stage 5 works has minor risk of remnant SAA and small arms ammunition waste (SAAW)
- remnant SAA and SAAW may be randomly discarded or disposed within the southern portion of the Stage 5 corridor with DEOH.

This Military Materials Management Plan sets out the procedure for further investigation and confirmation of the potential for encountering ordnance related material during Construction on the DEOH site. This Plan provides a framework for identifying and addressing the discovery of potentially explosive ordnance to ensure a safe working environment for site personnel during Construction and to minimise impacts on the environment. This Plan identifies control measures to minimise risks associated with encountering UXO during Construction activities.

This Plan has been developed with reference to Defence Instruction General (DI(G)) on Explosive Ordnance Management in Defence - DI(G) LOG 4-1-013 Management of Explosive Ordnance in Defence (Department of Defence, 2006) and Roads and Maritime specifications.

1.2 Scope

This Plan applies to all activities associated with Construction of Stage 5 of the Project that have the potential to uncover or encounter ordnance related material.

1.3 Induction / training

All site personnel (including sub-contractors) working on DEOH land will be inducted on the identification of potential UXO along with the requirements of this Plan during inductions and/or regular toolbox talks. Training will include the need for site personnel to be vigilant and watch for unfamiliar items when working within the DEOH land, particularly during any earthworks, clearing or other activities that disturb the surface. Site personnel will be informed of the potential location of UXO within the Project.
1.4 Roles and responsibilities

The Contractor Environmental Site Representative will ensure that this Plan is effectively implemented and all site personnel are aware of the requirements of this Plan.

The Contractor Superintendent and/or Contractor Foreman will be responsible for ensuring that in the event that UXO is discovered, site personnel are informed immediately and all work in the vicinity of the find ceases. The Contractor Superintendent and/or Contractor Foreman will be advised of any required actions for the control of discovered UXO on site, such as implementation of exclusion zones and signage, and will be responsible for ensuring the actions are undertaken.

The Contractor will engage a suitably qualified consultant registered on the Commonwealth Department of Defence UXO Panel (now subsumed into the Defence Environment and Heritage Panel (DEHP)) to carry out any investigations of potential UXO containing land for the Project.

The Roads and Maritime Environmental Manager (or delegate) and Roads and Maritime Project Manager will liaise with the relevant authorities where required and will approve the recommencement of works following any remediation undertaken.

1.3 Review

This Plan will be updated by the Contractor and reviewed by the Roads and Maritime Environmental Manager (or delegate) and Roads and Maritime Project Manager prior to commencement of Construction of the Project.

This Plan will be reviewed annually, or:

- following a site inspection or pre-work review that highlights an unexpected ordnance risk
- following any site activity or undertaking where unexpected ordnance is discovered
- following a change in legislation
- following a major change in Construction method.
2 Management plan

2.1 EWMS

The Contractor will prepare an EWMS for work activities that involve working in DEOH land.

- 2.2 Ordnance management controls

Detail on the timing and responsibilities for risk assessment and management of ordnance-related material is outlined in Table 2-1.

Table 2-1: Ordnance management controls

<table>
<thead>
<tr>
<th>Task</th>
<th>Timing</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Risk identification</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Detailed design</td>
<td>Pre-Construction</td>
<td>Roads and Maritime Environmental Manager (or delegate)</td>
</tr>
<tr>
<td>Roads and Maritime and its Contractors will consult Department of Defence before starting any work within the limits of the DEOH land (Project Stage 5)</td>
<td>Roads and Maritime Project Manager Contractor Construction Manager</td>
<td></td>
</tr>
<tr>
<td>The consultation will determine if there are any areas where there is an ordnance risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Despite certain areas not being at risk, a consultant registered on the DEHP will undertake a ‘safeguarding’ exercise to confirm if any work activity is at risk of being impacted by explosive ordnance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work will only take place in areas where there is no risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locations where there is a risk will be further assessed by a consultant registered on the DEHP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A specialist trained munitions and ordnance contractor may be engaged to provide advice</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **No risk areas**                |                       |                                    |
| Pre-Construction                 | Construction          | Contractor Construction Manager   |
| Despite the areas being cleared by Department of Defence there will be a requirement to implement an expected ordnance management procedure |                       |                                    |
| This procedure must be developed by the DEHP registered consultant and will include provisions to ensure that certain work activities (such as the use of naked flames, excavation work) are strictly controlled |                       |                                    |
| All staff working in the DEOH site will be trained in basic ordnance recognition and hazards |                       |                                    |
| Any excavation work will be subject to additional clearance and inspection by a qualified specialist |                       |                                    |
| All work to immediately stop if the work disturbs any suspicious areas or items |                       |                                    |
| Area must be immediately marked and evacuated |                       |                                    |
| Department of Defence and the Police must be notified |                       |                                    |
| A trained munitions and ordnance contractor will search the area to confirm the risk and to undertake a wider search to delimit any confirmed risk |                       |                                    |
### At risk areas

- Roads and Maritime and its Contractors will work with Department of Defence to define and establish the required safe work methods to allow Construction to take place in ‘at risk’ areas
- Additional extensive pre-clearance inspections and checks will be undertaken
- If required, a munitions and ordnance contractor will be retained on-site. Alternatively, a specialist contractor will be used to undertake various Construction work

### 2.3 Unexpected Finds Procedure

Any ordnance related material identified during Construction will be treated as an Unexpected Find and the Procedure below followed and a Remediation Action Plan (RAP) will be prepared.

#### Establish exclusion zone

- **cease work** in the immediate area
- do not touch, disturb or move the item
- mark and geo-locate the location of the find so that it can be located later
- establish an exclusion zone around the item to prevent access
- the Contractor Foreman will immediately notify the Roads and Maritime Environmental Manager (or delegate) and Roads and Maritime Project Manager
- NSW Police will be informed that a possible ammunition item has been found on site. The Police will attend and will request attendance by a Department of Defence representative.

#### Inspection by approved UXO Contractor

- an inspection of the find will be conducted by an approved Department of Defence-accredited UXO Contractor (registered on the DEHP)
- the UXO Contractor will assess the ordnance find and undertake any surveys, sampling and delineation required.

#### Notification to Defence

- if the UXO Contractor determines that the item has the potential to contain energetic material, the Department of Defence Regional Explosive Ordnance Services (REOS) at DEOH will be notified.

#### Disposal of reported item by Defence

- the item will be left in-situ and processed and disposed of by REOS at DEOH in accordance with current Department of Defence policy and requirements.
Validation

- prior to recommencement of works, the UXO Contractor will carry out a search (validation) of the area in which the find was made to ensure that there are no more potentially hazardous items in the vicinity of the find
- if, during the UXO Contractor’s validation of the area, concentrations of fragmentation and other items of explosive ordnance waste (such as fuse bodies or fuse fragments) are encountered, it could be an indication of an impact area. In the event that an area is suspected to be an impact area, Construction in the immediate and surrounding area will be suspended until a specialist search-trained ammunition contractor is engaged to ensure that there are no potentially hazardous items in the vicinity of the area.

Disposal of inert material

- if the UXO Contractor identifies the item to be non-ordnance or harmless fragments of ordnance, the item will be removed and disposed of by the UXO Contractor at a suitable off-site location and works can recommence
- all items of EO, expended/inert munitions and EOW will be catalogued, recorded and reported and a clearance report prepared by the UXO Contractor that identifies the location and nature of the item and activities undertaken.

Reporting / recommence works

- the UXO Contractor will validate any remediation required to make the site safe for recommencement of Construction. The UXO Contractor will complete a clearance report on the area investigated and/or remediated and provide a copy to the Roads and Maritime Environmental Manager (or delegate) and Roads and Maritime Project Manager
- the Roads and Maritime Project Manager (or delegate) will grant approval for the Contractor to recommence works
- the Contractor will prepare updated safe work method statements and/or EWMS if required.

3 Records

The UXO Contractor will complete an UXO Discovery Report for each Unexpected Find of UXO on DEOH land. The UXO Discovery Report will be a record of the description and location of the find, the clearance or disposal actions undertaken, date of action and the name of the UXO Contractor and/or Department of Defence representative responsible for the action. Copies of the UXO Discovery Report will be provided to REOS DEOH and made available to the Contractor and the Roads and Maritime Environmental Manager (or delegate) and Roads and Maritime Project Manager on request for inclusion in Project Monthly Reports.

In addition, the Contractor will maintain a register and detailed map of any items found and areas of remediation.