

# Arncliffe Construction Compound Sub-Plan

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## Document Approval

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Signature:						

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## Details of Revision Amendments

### Document Control

The Project Director is responsible for ensuring that this Plan is reviewed and approved. The Support Services Director (SSD) is responsible for updating this Plan to reflect changes to the Project, legal and other requirements, as required.

### Amendments

Any revisions or amendments must be approved by the Project Director before being distributed or implemented.

### Revision Details

Revision	Details
00	Prepared for consultation.
01	Updated following consultation with Dr [REDACTED] & OEH. Issued for approval.
02	Updated with DP&E comments.
03	Updated to include reference to DP&E letter (dated 14/02/17).
04	Updated to include boundary realignment to facilitate MOC3 retaining wall (dated 26/11/18).
05	Updated based on DPE review
06	Updated based on additional DPE review

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## 1. Introduction

### 1.1 Purpose, scope and objective

The purpose of this document is to outline the specific management measures CPB Contractors, Dragados and Samsung C&T Joint Venture (CDS-JV) will undertake at the Arncliffe Construction Compound during activities detailed in the Ancillary Facilities Management Plan (AFMP). These include:

- The installation of the Frog and Security Fences;
- The decommissioning of the existing ponds at the Kogarah Golf Course which are located within the CDS-JV construction boundaries;
- Installation of erosion and sediment controls;
- Dust suppression and management;
- Acid sulfate soil management; and
- Biosecurity

The objective of these management measures is to mitigate impacts on the Green and Golden Bell Frog which is listed as Endangered under the NSW *Threatened Species Conservation Act 1995* and as vulnerable under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999*.

This Plan was developed in consultation with the NSW Office of Environment and Heritage and under the Infrastructure Approval SSI 6788, Condition of Approval (CoA) D58(f). The AFMP contains further detail on the key work activities, potential impacts and controls that will be completed at the Arncliffe Construction Compound.

### 1.2 Roles and Responsibilities

Table 1 Roles and Responsibilities

Role	Responsibilities
<b>CDS-JV Project Director</b>	The environmental responsibilities of the CDS-JV Project Director include, but are not limited to: <ul style="list-style-type: none"> <li>• Be an emergency contact and available to be contacted by EPA and RMS Representative on a 24 hour basis;</li> <li>• Endorse and support the project's Environmental Policy and plans; and</li> <li>• Provide environmental leadership and ensure adequate resources are provided to effectively implement this construction environmental management plan.</li> </ul>
<b>CDS-JV Support Services Director</b>	The environmental responsibilities of the CDS-JV Support Services Director include, but are not limited to: <ul style="list-style-type: none"> <li>• Provide environmental oversight, direction and leadership regarding the environmental management of the project.</li> </ul>
<b>CDS-JV Construction / Project Managers</b>	The environmental responsibilities of the CDS-JV Construction Project Managers include, but are not limited to: <ul style="list-style-type: none"> <li>• Ensure work is planned and executed to ensure compliance with environmental requirements.</li> </ul>
<b>CDS-JV Project / Site Engineers</b>	The environmental responsibilities of the CDS-JV Project/Site Engineers include, but are not limited to: <ul style="list-style-type: none"> <li>• Ensure appropriate mitigation and management measures are implemented and maintained on site; and</li> <li>• Implement corrective or preventative actions as required to fulfil the requirements of this plan.</li> </ul>
<b>CDS-JV Foremen / Supervisors</b>	The environmental responsibilities of the CDS-JV Foremen/Supervisors include, but are not limited to: <ul style="list-style-type: none"> <li>• Ensure appropriate mitigation and management measures are implemented and maintained on site;</li> </ul>

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Role	Responsibilities
	<ul style="list-style-type: none"> <li>Ensure regular inspections and monitoring requirements are undertaken to check effectiveness of environmental controls;</li> <li>Report environmental incidents and complaints immediately.</li> </ul>
<b>CDS-JV Environment and Sustainability Manager</b>	<p>The environmental responsibilities of the CDS-JV Environment and Sustainability Manager include, but are not limited to:</p> <ul style="list-style-type: none"> <li>Be an emergency contact and available to be contacted by EPA and RMS Representative on a 24 hour basis;</li> <li>Notify WCX M5 Pty Ltd, Environmental Representative and agencies as required in response to environmental incidents and potential incidents;</li> <li>Act as the main point of contact for the Environmental Representative, RMS Environmental Representative and approval authorities.</li> <li>Identify and maintain a register of relevant legal, CDS-JV EMS requirements and other requirements;</li> <li>Obtain all necessary approvals prior to commencing relevant works;</li> <li>Ensure the project induction includes appropriate training;</li> <li>Ensure identified risks are analysed and evaluated according to agreed criteria.</li> <li>Regularly review identified risks and controls and maintain a risk register;</li> <li>Ensure regular inspections, observations, monitoring and audits are conducted to check the effectiveness of controls and that compliance is maintained;</li> <li>Identify, assess and leverage opportunities to achieve sustainability outcomes;</li> <li>Review subcontractors' performance and compliance with CDS-JV environmental requirements;</li> <li>Enter and close out all incidents in the HSE Reporting System (Synergy);</li> <li>Identify and implement corrective and preventative actions after incidents and share lessons learned within the CDS-JV team or other projects, as applicable; and</li> <li>Provide input to the monthly project progress report.</li> </ul>
<b>CDS-JV Environment Advisor</b>	<p>The environmental responsibilities of the CDS-JV Environment Advisor include, but are not limited to:</p> <ul style="list-style-type: none"> <li>Act as the first source of environmental advice and information for the CDS-JV design and construction teams;</li> <li>Conduct regular inspections and monitoring in accordance with this CEMP and sub-plans;</li> <li>Respond to incidents and manage investigations as directed by the Environment and Sustainability Manager;</li> <li>Assist in the development and/or delivery of environmental training and awareness, e.g. project inductions, toolbox talks, pre-start, etc.;</li> <li>Undertake inspections, observations, monitoring and audits as required; and</li> <li>Maintain regular communication with the Environment and Sustainability Manager regarding environmental performance and conformance.</li> </ul> <p>The CDS-JV Environmental Advisor is also known as the Environmental Representative in the Unanticipated Finds Procedure (Annex A in the GGBF Plan of Management).</p>
<b>Environmental Representative</b>	<p>The Environmental Representative acts independently of the Project Company, RMS, CDS-JV and any CDS-JV subcontractors. CDS-JV will nominate an Environmental Representative for the approval of the Secretary prior to commencement of construction. The environmental responsibilities of the Environmental Representative include, but are not limited to:</p> <ul style="list-style-type: none"> <li>Advise RMS and the Project Company upon achievement of the outcomes contemplated in the Infrastructure Approval;</li> <li>Advise RMS on the Project Company's and CDS-JV's compliance with the Infrastructure Approval;</li> <li>Approve minor changes to the CEMP;</li> <li>Review / endorse Consistency Assessments;</li> <li>Approve minor changes to previously approved ancillary facilities;</li> <li>Approve new minor ancillary facilities;</li> <li>Communicate regularly (monthly reports) with the Secretary regarding actions and decisions on matter specified in condition D1 for the preceding month; and</li> </ul>

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Role	Responsibilities
	<ul style="list-style-type: none"> <li>• Report to the Secretary at the Environmental Representative's discretion and/or at the request of the Secretary.</li> </ul> <p>Principally, in accordance with CoA D1, the ER shall:</p> <ul style="list-style-type: none"> <li>• Be the principal point of advice in relation to the environmental performance of the project;</li> <li>• Monitor the implementation of environmental management plans and monitoring programs required under this approval and advise the Proponent upon the achievement of these plans/programs;</li> <li>• Have responsibility for considering and advising the Proponent on matters specified in the conditions of this approval, and other licences and approvals related to the environmental performance and impacts of the project;</li> <li>• Ensure that environmental auditing is undertaken in accordance with the Proponent's Environmental Management System(s);</li> <li>• Be given the authority to approve/reject minor amendments to the Construction Environmental Management Plan. What constitutes a 'minor' amendment shall be clearly explained in the Construction Environmental Management Plan</li> <li>• Be given the authority and independence to require reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts; and</li> <li>• Be consulted in responding to the community concerning the environmental performance of the project where the resolution of points of conflict between the Proponent and the community is required.</li> </ul>
<b>Community Relations Manager</b>	<ul style="list-style-type: none"> <li>• Ensure environmental complaints and enquiries regarding the establishment of ancillary facilities are recorded and responded to appropriately.</li> <li>• Identify residential and/or commercial stakeholders who are adjacent to or adjoin the ancillary facilities and consult them prior to ancillary facilities establishment.</li> </ul>
<b>RMS Herpetologist</b>	<p>The RMS Herpetologist will be appointed by RMS for the duration of the New M5 Main Works to provide expert advice regarding GGBF management including the development of this Sub-Plan. All reasonable assistance and access to the Construction Site will be provided to the RMS Herpetologist in relation to the GGBF habitat management infrastructure and inspections and monitoring.</p> <p>Prior to the commencement of pre-construction activities for the New M5 Main Works at Kogarah Golf Course, the RMS Herpetologist must provide written advice that the Construction Site in this area is sufficiently clear of GGBF and exclusion controls and other mitigation measures are adequately installed.</p> <p>Prior to commissioning the GGBF habitat management infrastructure, RMS Herpetologist must provide written certification that the GGBF habitat management infrastructure has been constructed in accordance with the relevant requirements.</p>
<b>Project Herpetologist</b>	<p>Appointed by SMC, the Project Herpetologist will provide expert advice regarding GGBF management throughout the project including the development of this Sub-Plan. The Project Herpetologist prepared the habitat creation and captive breeding plan and will assist with implementation.</p> <p>Specific activities of the Project Herpetologist include: the provision of training and information on GGBF; GGBF survey and salvage during the preconstruction phase; facilitation of the salvage of GGBF (unexpected finds) from the construction area and transfer of the GGBF as appropriate; ongoing survey, monitoring and reporting of the Arncliffe population of GGBF. All GGBF encountered during preconstruction and construction phases will be referred to the Project Herpetologist</p> <p>The Project Herpetologist is also known as the Project Ecologist in the Unanticipated Finds Procedure (Annex A in the GGBF Plan of Management).</p>
<b>Project Ecologist</b>	<p>Appointed by CDS-JV, the project ecologist will provide expert advice for flora and fauna issues generally. The Project Ecologist is responsible for completing pre-clearing surveys and salvage of fauna (apart from GGBF).</p>

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## 2. Environmental Planning Requirements

### 2.1 Conditions of Approval

Table 2 below is an extract of conditions D58 and D59 of the Infrastructure Approval SSI 6788. A reference to the relevant section of this plan is provided.

Table 2 Extract from CoA

Reference	Relevant Condition	Where addressed
<b>D58</b>	The Ancillary Facilities Management Plan must include an Arncliffe Construction Compound Sub-plan, prepared in consultation with OEH, which includes the following:	Section 2.2
	(a) The management measures as specified in rows 4-12 of Table 1 of the Green and Golden Bell Frog Plan of Management presented in Appendix K of Appendix S, Volume 2H of the document referred to in condition A2(b) and any additional measures included in the updated management plan required by condition B14;	
	(b) Procedures for decommissioning of the surface water bodies within the construction compound; and	Section 3.2 and 3.3
	(c) A stop-work procedure in the event that a Green and Golden Bell Frogs are identified on site.	Section 3.5
	The management measures should specifically describe:	Section 3.4
	(a) What information would be included in the site inductions, who would be inducted and the timing and responsibilities for inductions;	
	(b) The location and type of erosion and sediment controls to be implemented;	Section 3.6
	(c) The methods for dust suppression;	Section 3.8
	(d) Acid sulfate soil management procedures; and	Section 3.10
	(e) Hygiene protocol to minimize the potential for the introduction and spread of Chytrid Fungus by plant, equipment, construction vehicles, construction works and materials.	Section 3.13
	The Proponent is not required to consult with the relevant council on the Arncliffe Construction Compound Sub-plan.	Section 1.1

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Reference	Relevant Condition	Where addressed
<b>D59</b>	Prior to the establishing the Arncliffe construction compound (C7), the Proponent must implement the following management measures as specified in the first three rows of Table 1 of the Green and Golden Bell Frog Plan of Management presented in Appendix K of Appendix S, Volume 2H of the document referred to in condition A2(b):	Section 3.1
	(a) Define the construction clearing area;	
	(b) Establish a frog exclusion zone; and	Section 3.2
	(c) Undertake pre-clearance survey and salvage activities (i.e. frog collection).	Section 3.3
	The Proponent must also establish a procedure for the collection of Green and Golden Bell Frogs tadpoles from the existing surface waterbodies at the Kogarah Golf Course that will be impacted by the Arncliffe construction compound, and implement the procedure if tadpoles are present prior to decommissioning of waterbodies. Any salvaged frogs and tadpoles must be either relocated to the RTA ponds or an appropriate holding facility which is staffed by appropriately trained and experience frog specialists.	Section 3.2 and 3.3
	No site establishment or construction –related activities or works are permitted at the proposed Arncliffe construction compound site until such time that the above management measures have been implemented and written notice to this effect has been provided to the Secretary by a suitably qualified and experienced frog specialist.	Section 3.2 and 3.3
	The management measures specified in (a) to (c) and above and tadpole collection may be undertaken prior to the Proponent implementing any actions that are required by the conditions set out in Parts B, C, D and E of this approval.	N/A

## 2.2 Green and Golden Bell Frog Plan of Management

Table 3 below is an extract of rows 1 – 12 of Table 2 of the Green and Golden Bell Frog Plan of Management (Revision 22, dated April 2018). The measures contained in rows R1 to R3 must be undertaken prior to the commencement of establishment works at the Arncliffe Construction Compound. The measures contained in rows R3 to R12 must be undertaken as part of establishment activities at the site.

Table 4 provides a description of how this Sub-plan will comply with each mitigation measure and refers to the specific section in this Sub-plan where the mitigation measures are addressed.



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Table 3 Extract from the Green and Golden Bell Frog Plan of Management

Reference to Row #	Mitigation Measures	Description
R1	<b>Define the construction clearing areas</b>	<p>Clear delineation of the construction boundary. Areas to be cleared be marked and checked with surveyor pegs and equipment to ensure that the minimum area of take is adopted.</p> <p>Clearing should only occur within these areas. Once areas are cleared, the area of take should be calculated to ensure that no additional areas have been cleared.</p> <p>The distance between the RTA ponds and the edge of the clearing required for construction zone is expected to be at least 32 metres.</p>
R2	<b>Establish a Frog Exclusion Zone</b>	<p>Establishment of the physical barrier, using frog exclusion fencing between all construction works, existing RTA Ponds and remainder of the Golf Course.</p> <p>This frog fencing should be designed in consultation with a person who has had at least five years' experience in the management of Green and Golden Bell Frogs.</p> <p>There should be a section of fence directly adjacent to the RTA ponds which will:</p> <ul style="list-style-type: none"> <li>• Reduce sound and dust</li> <li>• Not exclude daylight</li> <li>• Exclude frogs</li> <li>• Exclude construction activities to clearly separate frog habitat to be retained from construction zone.</li> </ul> <p>This section of fence is to be inspected daily. Any breaches of the fence are to be raised with the Contractor for remediation.</p> <p>The remainder of the construction zone should be fenced to clearly separate frog habitat from the construction zone (marked in Figure 1 as frog exclusion fence and black dots). The frog noise wall will be constructed between the RTA pond site and the adjoining works compound. The wall is intended to reduce the amount of noise and dust that might otherwise reach the RTA ponds. To be effective the wall needs to be 4 metres high and 28 metres long. Because the wall is so high and is located on the NW side of the RTA ponds, it risks overshadowing the ponds. To alleviate this, the top 2m of the wall will be constructed of transparent plastic. The noise wall will be continuous with perimeter frog fences and will form part of the barrier between the RTA ponds and the frog habitat in the Frog Enhancement Area and the work site.</p> <p>This fence should:</p> <ul style="list-style-type: none"> <li>• Exclude humans from entering the construction zone</li> <li>• Exclude frogs from the construction zone</li> </ul>

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Reference to Row #	Mitigation Measures	Description
		The remaining section of fence is to be inspected weekly. Any breaches of the fence are to be raised with the Contractor for remediation.
R3	<b>Undertake pre-clearance survey and salvage activities</b>	<p>Conduct a pre-clearance survey within the construction zone immediately prior to construction works being undertaken.</p> <p>An ecologist with a minimum of five years' experience in the management of frogs is to conduct the pre-clearing survey.</p> <p>The survey will include:</p> <ul style="list-style-type: none"> <li>• One nocturnal search of the area and one diurnal search along the frog fence alignment immediately prior to installation of the frog fence;</li> <li>• One nocturnal and one diurnal search of the area after installation of the frog fence and prior to commencement of the work.</li> </ul> <p><b>Winter to spring encounters:</b></p> <p>If Green and Golden Bell Frogs are encountered sheltering underneath rock, rubble or wood they need to be assessed for an over wintering position or torpor. Then the frogs are to be collected in accordance with the following protocol:</p> <ul style="list-style-type: none"> <li>• Place in a clean, plastic holding container with a small amount of purified water</li> <li>• Frogs should be micro-chipped if not already tagged</li> <li>• Adult frogs should be sexed, snout-vent length measured, weight recorded, condition of frog, date and location of collection</li> <li>• Transported to a suitable over-winter location in consultation with the project ecologist and based on the advice of an independent expert</li> <li>• If frogs are injured, they are to be taken to a vet or suitably experienced frog keeper and euthanised</li> <li>• If frogs are not in torpor, the procedure for spring to autumn encounters applies.</li> </ul> <p><b>Spring to autumn encounters:</b></p> <p>If active frogs are encountered during the pre-clearance surveys or daily checks, then they are to be collected in accordance with the following protocol:</p> <ul style="list-style-type: none"> <li>• Place in a clean, plastic holding container with a small amount of purified water</li> <li>• Frogs should be micro-chipped if not already tagged</li> <li>• Adult frogs should be sexed, snout-vent length measured, weight recorded, condition of frog, date and location of collection</li> <li>• Relocate to Symbio, the artificial habitat created at Marsh Street or the RTA ponds</li> </ul>

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Reference to Row #	Mitigation Measures	Description
		<p>based on the advice of the Project Ecologist</p> <p>Prior to works commencing, a number of water bodies within the construction zone will need to be decommissioned. Dam decommissioning needs to be done in the presence of a suitably qualified and experienced ecologist. Any frogs encountered will need to be collected as per above.</p> <p>Pre-clearance surveys should include searching for tadpoles. Tadpoles should be netted and then identified using Anstis (2013). Green and Golden Bell Frog tadpoles should be collected and handled as above, apart from tagging. Tadpoles encountered between autumn and spring should not be released but should be kept in a suitable over-wintering facility. Tadpoles encountered from spring to autumn should be released into the RTA Ponds, artificial habitat at Marsh Street or relocated to Symbio, based on the advice of the Project Ecologist.</p> <p>If tadpoles are not Green and Golden Bell Frogs, these should be released into ponds other than the RTA Ponds on the golf course.</p>
R4	<b>Site Inductions</b>	<p>Site inductions should contain a relevant section on the Green and Golden Bell Frog. The induction should incorporate:</p> <ul style="list-style-type: none"> <li>• What to do in the event of unexpected finds of frogs within the construction zone.</li> <li>• Highlighting the enhance frog habitat area and why this is a 'no-go' zone.</li> </ul>
R5	<b>Stop work procedure</b>	<p>Implement a stop work or unanticipated find procedure for when Green and Golden Bell Frogs are observed within the construction zone (Appendix A). The procedure will include a process to notify the construction environmental manager and suitably qualified ecologist, a relocation procedure and when it is okay to re-commence works.</p>
R6	<b>Sediment and erosion control</b>	<p>Establish appropriate sediment and erosion control to prevent silt, sediments, spills and other contaminants from reducing water quality in frog habitat. These controls should be regularly inspected, particularly after heavy rain events.</p>
R7	<b>Light spill management</b>	<p>Directional lighting should be used in the vicinity of the transparent frog exclusion fence. Directional lighting should aim to reduce night time light spill onto the RTA ponds.</p>
R8	<b>Dust suppression</b>	<p>Dust from heavy vehicle haulage, dumping and storing of spoil and general vehicle movements will need to be minimized. Dust may reduce water quality in the RTA ponds.</p> <p>Bulk water carriers and sprayers should apply recycled water, where available, to reduce dust*.</p>

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Reference to Row #	Mitigation Measures	Description
		Slurry run-off should be managed in accordance with the sediment and erosion control measures.
<b>R9</b>	<b>Contaminated lands management</b>	Develop appropriate procedures to manage contaminated fill that may occur in the surround soils during the construction works and any habitat enhancement, if applicable.
<b>R10</b>	<b>Acid Sulfate Soils management</b>	Develop appropriate procedures to manage acid sulfate soils during construction and operation if applicable. Management of acid sulfate soils should be carried out in accordance with the Roads and Maritime guideline or approved procedure. Relevant documents include: <ul style="list-style-type: none"> <li>• RMS Guidelines for the Management of Acid Sulfate Materials, April 2005</li> <li>• NSW Acid Sulfate Soils Manual (ASSMC, 1998)</li> <li>• NSW EPA publication "Assessing and Managing Acid Sulfate Soils"</li> </ul>
<b>R11</b>	<b>Use of herbicides and other chemicals</b>	Herbicides should not be used near the RTA ponds and within the enhanced frog habitat area. If herbicides are to be used with in the construction zone, spray drift must not be able to reach aquatic habitat. This applies to herbicides in solution in surface water run-off.
<b>R12</b>	<b>Habitat re-instatement</b>	Re-instate all habitat that was temporarily impacted from construction activities within the Arncliffe surface works area. Habitat reinstatement should be conducted in accordance with relevant guidelines and policies and be conducted in consultation with the Kogarah Golf Course and the Rockdale City Council.

\* Revision 22 of the GGBF PoM (DP&E approval obtained 18/09/18) permits the reuse of rainwater and tunnel water on site.

### 3. Management Measures

Table 4 identifies the management measures described in the Green and Golden Bell Frog Plan of Management (refer to Table 3) and outlines the specific mitigation measures to be implemented to address CoA D58 and D59 (refer to Table 2).

Table 4 CDS-JV Management Measures Matrix

Management Measures GGBF PoM Reference (Table 2)	CDS-JV Mitigation Measures	Document Number	Associated Procedures*	Procedure Document Number	CoA Reference (Table 1)	Relevant Section of this document
<b>R1 - Define the construction clearing areas</b>	Vegetation Clearing Flowchart	M5N-ES-FLC-PWD-0011	Manage Flora and Fauna	M5N-ES-PRC-PWD-0042	D59	Section 3.1
<b>R2 - Establish a Frog Exclusion Zone</b>	Arncliffe Establishment Layout Decommissioning of Ponds Flowchart	Appendix B M5N-ES-FLC-ARN-0001	Manage Flora and Fauna	M5N-ES-PRC-PWD-0042		Section 3.2
<b>R3 - Undertake pre-clearance survey and salvage activities</b>	Decommissioning of Ponds Flowchart Permit to Clear Land and Vegetation	M5N-ES-FLC-ARN-0001 MSID-4-363	Manage Flora and Fauna	M5N-ES-PRC-PWD-0042		Section 3.3
<b>R4 - Site Inductions</b>	Induction and training as outlined in the Ancillary Facilities Management Plan	M5N-ES-PLN-PWD-0026	N/A	N/A	D58	Section 3.4
<b>R5 - Stop work procedure</b>	GGBF Stop Work Flowchart	M5N-ES-FLC-ARN-0002	Manage Flora and Fauna	M5N-ES-PRC-PWD-0042		Section 3.5
<b>R6 - Sediment and erosion control</b>	Erosion and Sediment Control Plan	Appendix E	Manage Soil and Water	M5N-ES-PRC-PWD-0035		Section 3.6
<b>R7 - Light spill management</b>	Out of Hours Work Approval Form	M5N-ES-FRM-PWD-0008	Management of Environmental Noise Issues	M5N-ES-PRC-PWD-0043		Section 3.7
<b>R8 - Hoarding realignment procedure</b>	Procedures from Sections 3.1-3.7	N/A	Manage Flora and Fauna	M5N-ES-PRC-PWD-0042		Section 3.8
<b>R9 - Dust suppression</b>	Air Quality Flowchart	M5N-ES-FLC-PWD-0010	Manage Air Quality	M5N-ES-PRC-PWD-0040		Section 3.9
<b>R10 - Contaminated lands management</b>	Arncliffe Soil Contamination Report	N/A	Manage Contaminated Land	M5N-ES-PRC-PWD-0036		Section 3.10
<b>R11 - Acid Sulfate Soils management</b>	Acid Sulfate Soils Management Sub-plan	M5N-ES-PLN-PWD-0031	Manage Acid Sulfate Soils	M5N-ES-PRC-PWD-0038		Section 3.11
<b>R12 - Use of herbicides and other chemicals</b>	Spill Response Flowchart	M5N-ES-FLC-PWD-0003	Manage Hazardous Substances	M5N-ES-PRC-PWD-0041		Section 3.12
<b>R13 - Habitat re-instatement</b>	Habitat Creation and Captive Breeding Plan	N/A	N/A	N/A		Section 3.13
<b>Other</b>	Arncliffe Compound Frog Hygiene Flowchart	M5N-ES-FLC-ARN-0004	Manage Flora and Fauna	M5N-ES-PRC-PWD-0042	Section 3.14	

\*all procedures were sent with to DP&E on the 4/05/16.

## 3.1 Defining the construction clearing areas

The construction clearing boundary will be defined by ATF fencing which will be installed inside the frog fence. All clearing activities will occur within this boundary and these activities cannot commence until a written and signed GGBF Clearance Certificate from the Project Herpetologist has been issued to the Secretary of the Department of Planning and Environment. This notice must outline that the mitigation measures detailed in Sections 3.1, 3.2 and 3.3.

When clearing activities have authorisation to take place, the CDS-JV Manage Flora and Fauna Procedure, including the Vegetation Clearing Flowchart will be followed. This procedure includes two Hold Points:

1. Approval for a Permit to Clear Land or Vegetation,
2. Completion of the Pre-clearing Checklist.

The first Hold Point is the Permit to Clear Land or Vegetation, which describes the details of the clearing activity, provides permit conditions and requires sign off from the Environmental Advisor or Manager, the Client Representative and Area Supervisor. Equipment Operators are also required to understand the permit conditions and sign on to the Permit. A copy of the GGBF Clearance Certificate from the Project Herpetologist will also be attached to this Permit. Once completed, communicated and approval has been issued, this Hold Point is released and permit conditions can be implemented on site.

The second Hold Point is the Pre-clearing Checklist which must be completed two hours prior to the commencement of clearing activities. This Checklist requires the inspection of controls installed as per the Permit to Clear Land or Vegetation and needs to be signed off by the Environmental Advisor or Manager. The Permit to Clear Land or Vegetation and the Pre-clearing Checklist are found in the CDS-JV Manage Flora and Fauna Procedure.

## 3.2 Establishing Frog Exclusion Zone

Prior to any activities on site, CDS-JV will establish a Frog Exclusion Zone through the installation of a Frog Fence. This is outlined in the Commissioning of Work Area Flowchart (Appendix A). The frog fence and No-Go Zone around the RTA Ponds are also illustrated in the Arncliffe Site Environment Plan (Appendix B).

Throughout the duration of the Project, the frog fence will be inspected daily by a nominated person who has attended the Frog Induction and where required, repaired immediately. All areas outside the Arncliffe Construction Compound boundary will be identified as "No-Go Zones". Access to No-Go Zones is restricted and entry (for inspection of frog fencing, or as required during noise wall construction etc.) will be controlled through a permit system. On the Arncliffe Establishment Layout, the RTA Ponds and State Heritage listed SWSOOS are illustrated as a "No-Go Zone" to highlight their location and significance. The noise wall in the location between the compound and the RTA ponds will be designed to the specifications described in Table 3 (or better). The final design will also incorporate input from the acoustic report and the CDS-JV design team to ensure broader conditions (e.g. noise mitigation for other sensitive receivers) are also addressed.

## 3.3 Pre-clearance and salvaging activities

Pre-clearance and salvaging activities for the Green and Golden Bell Frog will commence at the completion of establishing the frog exclusion zone (i.e. following installation of the frog fence). The Project Herpetologist will undertake pre-clearance and salvaging activities by conducting surveys outlined in Table 3.

Survey and salvage for other fauna may be undertaken concurrently with GGBF survey and salvaging activities, in consultation with the Project Herpetologist. Final GGBF survey and salvage will need to be completed prior to further activities being undertaken within the frog exclusion area (i.e. a GGBF clearance certificate from the Project Herpetologist is required prior to conducting further site establishment activities including vegetation clearing).

Pre-construction activities, which include vegetation clearing, cannot commence until a written and signed GGBF Clearance Certificate from the Project Herpetologist has been issued to the Secretary of the Department of Planning and Environment. This GGBF Clearance Certificate must outline that the mitigation measures detailed in Sections 3.1, 3.2 and 3.3 have been implemented on site.

# Arncliffe Construction Compound Sub-Plan



## 3.4 Site specific induction and training

CDS-JV will ensure that Project personnel can competently perform their duties and meet environmental obligations. Toolbox/pre-start talks are to include limits of clearing, clearing procedures, weed identification and control measures and fauna handling protocols where relevant. All personnel present on site during pre-construction activities will undertake the Green and Golden Bell Frog Induction which will be facilitated by the Project Herpetologist. CDS-JV will ensure all Supervisors and Foreman on site have attended the GGBF Induction.

All personnel, including employees, contractors and sub-contractors, are required to complete a project induction containing relevant environmental information before they are authorised to work on the Project. Site specific inductions will be undertaken for all personnel working at the Arncliffe Construction Compound and will be presented by the Arncliffe site management team or nominated delegates. Information regarding the GGBF and the Green and Golden Bell Frog Stop Work Flowchart (Appendix D) will be detailed in this induction. In addition to GGBF information, this induction will include relevant aspects such as (but not limited to) contamination, flora and fauna, erosion and sediment control, Aboriginal and non-Aboriginal heritage, sensitive noise, vibration and air quality receivers (refer to the Ancillary Facilities Management Plan for management measures related to inductions and training).

## 3.5 Green and Golden Bell Frog Stop Work Flowchart

In the event that a GGBF is found in the Arncliffe Construction Compound, the Green and Golden Bell Frog Stop Work Flowchart (Appendix D) must be followed. This Flowchart features a Hold Point which can only be released once:

- The Environmental Advisor or Manager has been contacted,
- The Project Herpetologist has been notified,
- The GGBF has been removed by Environmental Advisor or nominated person (who has attended the GGBF Induction) in accordance with the instructions listed in the Flowchart, and
- The Environmental Representative has directed works to re-commence.

This flowchart will be applied as soon as the Project Herpetologist has provided the clearance certificate and will apply during general fauna salvage and all other activities. The Project Herpetologist will be responsible for the identification, assessment and appropriate release or relocation of any/all frogs salvaged. All frogs will be relocated by the Project Herpetologist to the designated release area (RTA ponds for GGBF).

## 3.6 Erosion and Sediment Control Plan

The Arncliffe Erosion and Sediment Control Plan (Appendix E) was developed by the Project's Soil Conservationist for initial site establishment works. This Plan will be updated regularly as works progress to ensure that the controls deployed are appropriate for the works taking place. All controls will be progressively installed and will be inspected weekly or after heavy rainfall events. The soil conservationist will also undertake inspections, particularly during site establishment activities and active surface works.

## 3.7 Light spill management

General site lighting will be oriented away from the existing RTA frog ponds to minimise light spill to this sensitive area. Light spill will be assessed during the installation period of any new lighting to minimise light spill toward the frog ponds. Temporary lighting will be assessed through the Out of Hours Work Approval Form (refer to CDS-JV Manage Environmental Noise Issues Procedure), which features a section on the management of light when conducting works outside of normal construction hours. Mitigation measures include:

- Lighting to be minimised if safe to do so,
- Orienting light sources away from any nearby residences, and
- Orienting lighting away from adjacent vegetation.

The completion and sign-off of this form is a Hold Point prior to night works. Sign-off includes the approval from the Environmental Advisor or Manager, the Community Representative and the Project Manager.

# Arncliffe Construction Compound Sub-Plan



## 3.8 Hoarding realignment procedure

To facilitate the construction of a retaining wall along the south-western boundary of the Arncliffe Construction Compound, the current hoarding alignment (identified as NBO4 in the Arncliffe Temporary Noise Barrier Strategy) is required to be decommissioned, offset and reinstated to provide necessary access for plant and personnel to construct a new retaining wall as part of the Motorway Operations Complex (MOC) 3 design. The retaining wall is required to provide necessary ground stabilisation/integrity to the MOC3 complex situated directly to the north-east.

As the design of the retaining wall and hoarding are projected to encroach into an established “No Go Zone” and within thirty-two metres of the RTA Frog Habitat (Appendix B), the procedures outlined within Sections 3.1-3.7 would be incorporated into the design and construction procedure (see Appendix A).

As a summary, construction of the retaining wall is proposed to occur in the stages listed below:

- Frog fence to be established around the proposed construction area in accordance with design guidelines outlined in Section 4.4.1, Table 2 of Green and Gold Bell Frog Plan of Management – Arncliffe, dated 6th April 2018 (Ref: 14SYD-349, 16WOL-5965, Version 22) (Eco Logical Australia, 2017);
- Surveys (diurnal and nocturnal) are to be conducted by the Project Herpetologist to confirm the absence of any GGBF from the work area and provide a clearance certificate prior to decommissioning the hoarding directly impacted by the retaining wall works;
- Temporary fencing is to be installed within the frog exclusion zone to establish the construction area prior to subsequent surface clearing;
- Any tree clearing or pruning to be undertaken only in accordance with an approved Tree Report under CoA B63, ensuring the minimum amount of trees are impacted wherever feasible;
- Existing noise wall/hoarding will be decommissioned then reinstated 10m southwest of the previous alignment and will extend approximately ninety-four metres south-east from the Marsh Street pedestrian footpath and extend to a height of five metres;
- Erosion and sediment controls (ESC) outlined in the Appendix E of the Arncliffe Construction Compound Sub-Plan are to be implemented around the work area and tie into the existing ESC; and
- Construction activities may commence once the work area is established.

Note: Construction of the retaining wall works will not be undertaken at night

The redesigned hoarding (Appendix G) is proposed to extend approximately ninety-four metres south-east from the Marsh Street pedestrian footpath, extend to a height of five metres with a lateral offset of ten metres from the previous alignment. The dates of work are proposed to commence from early January 2019 with completion anticipated around early April 2019.

On completion of the retaining wall works the noise wall will be de-commissioned and the frog fencing / frog exclusion zone would be reinstated to the previous/original site boundary. The area would be re-established to its pre-work condition i.e. open grassland.

## 3.9 Air quality management

Inspections will be undertaken regularly to ensure that dust suppression and management is being appropriately implemented in accordance with the CDS-JV Manage Air Quality Procedure.

In the event that visible dust is leaving site, works must cease to prevent dust leaving site and implement further controls as appropriate. The Hold Point can only be released when:

- An Environmental Inspection has been conducted,
- Mitigation measures will be actioned and will be implemented by the Site Supervisor.

The effectiveness of these mitigation measures will be monitored and where deemed unsatisfactory, the construction team will be consulted and measures reviewed.

Recycled rain and tunnel water should be used where available for dust suppression within the Construction Compound (as approved by DP&E letter dated 15/02/17).

## 3.10 Contaminated land management

CDS-JV has conducted a Phase Two Contamination Survey and all activities will be undertaken in accordance with the Contamination Report produced from the analysis of this assessment. Refer to



# Arncliffe Construction Compound Sub-Plan



the Ancillary Facilities Management Plan for further information relating to contamination management on site. This includes references to Manage Contaminated Land Procedure.

### 3.11 Acid Sulfate Soils management

A Phase 2 Contamination Survey was undertaken at the Arncliffe Construction Compound in April 2016. Preliminary results indicate the construction compound contains soils that are classified as Potential Acid Sulfate Soils (PASS) or Actual Acid Sulfate Soils (ASS).

The areas of site that will generate PASS/ASS materials are detailed in Table 5.

Table 5 Estimated excavation volumes

Excavation activities	Approximate volume (m <sup>3</sup> )*
<b>Construction</b>	
Piling for hoarding realignment and retaining wall	10
Excavation around piling pad and retaining wall footprint	350
<b>Total estimated volume</b>	<b>360</b>

\*volumes are based on detailed designs

The material to be excavated is unlikely to be saturated due to the water table being approximately 1m below surface level. As material will be water logged, it is unlikely the excavated material will rapidly oxidise.

The CDS-JV Acid Sulfate Soils Management Sub-plan (M5N-ES-PLN-PWD-0031) and the CDS-JV Manage Acid Sulfate Soils Procedure details how CDS-JV will manage PASS/ASS as encountered during excavation works associated with the retaining wall construction and hoarding realignment.

### 3.12 Use of herbicides and other chemicals

Before the use of any herbicides or chemicals which have the potential to travel off site, the Project Herpetologist will be consulted. In the event a spill occurs on site, the Spill Response Flowchart (M5N-ES-FLC-PWD-0003) will be implemented. The controls outlined in the Flowchart will minimise the spread of chemicals on site and the subsequent risk of residue run-off into frog habitat areas. This document is located in the CDS-JV Manage Hazardous Substances Procedure.

All fuels and chemicals will be stored securely within bunded areas in accordance with Australian Standards and the Manage Hazardous Substances Procedure. Detailed design of site layout, including flood modelling, will minimise potential risks from bunded storage areas during flood events.

### 3.13 Habitat Creation and Captive Breeding Plan

As outlined in B15 of the CoA, a Habitat Creation and Captive Breeding Plan will be developed by Sydney Motorway Corporation (SMC) in consultation with OEH. This Plan will be submitted to DP&E and implemented by CDS-JV within 12 months of the commencement of construction, unless otherwise agreed by the Secretary.

### 3.14 Arncliffe Compound Frog Hygiene Flowchart

The Arncliffe Frog Hygiene Flowchart is a document designed to inform CDS-JV Staff, Workforce and Sub-contractors on the impacts of Chytrid Fungus on frog populations (in particular the Green and Golden Bell Frog) and the mitigation measures CDS-JV will have in place to reduce the spread of the fungus at the Arncliffe Construction Compound.

These mitigation measures will be implemented by:

- The CDS-JV Environmental Advisor is to inspect quarries to identify wet areas and assess the potential risk for transfer of Chytrid Fungus to site.
- Subcontractors must clean earthmoving machinery and equipment prior to it coming to site and provide a completed hygiene Certificate/s at the Arncliffe Construction Compound entrance.
- Progressively installing erosion and sediment controls and permanent drainage to direct run-off water away from frog habitats.

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## Arncliffe Construction Compound Sub-Plan



- Ensuring boots and gumboots are clean and disinfected with a mild bleach solution, consisting of domestic bleach and water (1:50 ratio), prior to undertaking inspections on the frog fences.
- Making it a contractual requirement that the Project Ecologist will follow the *Hygiene protocols for the control of disease in Australian frogs* when salvaging fauna from the ponds.

Refer to the CDS-JV Manage Flora and Fauna Procedure for further detail.

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# Arncliffe Construction Compound Sub-Plan



## Appendix A Commissioning of Work Area Flowchart

# Commissioning of Work Area Flowchart



Pre-clearance surveys for the Green Golden Bell Frog (GGBF) will be undertaken by the Project Herpetologist (PH). These surveys will include:

- One nocturnal search of the area and one diurnal search along the frog fence immediately prior to installation of the frog fence; and
- One nocturnal and one diurnal search of the area should be undertaken after installation of the frog fence and prior to commencement of the work.

The surveys will be undertaken before the written GGBF Clearance Certificate is issued by the PH. The GGBF Clearance Certificate will confirm the Frog Exclusion Zone is free of GGBF and must be submitted to the Secretary before further activities can take place. This process may be undertaken progressively with frog exclusion fence delineating 'GGBF cleared sections' and sign off required from the PH for each section.

Works to be undertaken involve the construction of a retaining wall along the current perimeter fenceline which will require incursion into the existing frog exclusion zone. Commissioning of the work area will be undertaken progressively as detailed in the flow chart below.

## MANAGEMENT

## RESPONSIBILITY

All personnel (CDS-JV and sub-contractors), specifically supervisors and foremen, must complete a GGBF induction from the PH prior to commencing works within the designated "No Go Zone".

Project Engineer  
Site Supervisor  
Project Herpetologist

The designated representative from Kogarah Golf Club should be notified of the scope of works; work hours/days; and the projected timeline of works, prior to commencing activities within the property boundary of Kogarah Golf Club.

Project Engineer  
Community Team

A designated frog fence will be established with an offset of at least 1.0 m from the work area boundary and should be tied into the existing hoarding design. Temporary construction fencing should be established within the boundary of the frog fence prior to the area being inspected by the PH.

Site Supervisor  
Environment Advisor  
Project Herpetologist

The PH will complete a series of surveys (as detailed above i.e. one nocturnal and one diurnal search prior to installation of the frog fence, after installation of the frog fence and prior to commencement of works) in order to deem the work area clear from GGBF.

Project Herpetologist

Receive GGBF Certificate from PH. Clearance to commence decommissioning works of the existing hoarding will be documented on the GGBF Clearance Certificate issued by PH.

Project Herpetologist

Note: any required tree clearance / pruning is to be in accordance with an approved Tree Report.

Construction activities to commence once the new hoarding has been erected such that a continuous boundary around the Arncliffe Construction Compound is restored.

Site Supervisor  
Project Ecologist

Note: Perimeter hoarding / frog fence will be restored to the original alignment on completion of the works. Area will be re-instated to its original condition i.e. open grassland.

Site Supervisor

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# Arncliffe Construction Compound Sub-Plan

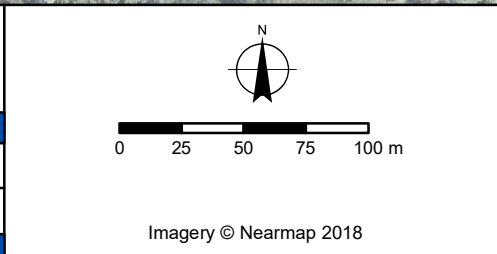


## Appendix B Arncliffe Site Environmental Plan



Key Contacts		
Role	Name	Contact Number
Project Manager	Andrew Morley	0439 920 579
Superintendent	Glenn Day	0419 988 537
Senior Community Relations Advisor	Toni Ford	0447 252 732
Environment Area Coordinator	Roger Posgate	0437 291 354
Community Hotline: 1300 660 248		

<b>WestConnex</b>			
Prepared By:	Name	Initial	Date
Approved By:			



For Information Only - NOT FOR CONSTRUCTION			
Original Size	A3	Drawn By	PB
Coordinate System	MGA ZONE 56	Requested By	RP
Height Datum	AHD	Date Printed	8/11/2018
Filename:	SEP - Arncliffe Rev L.mxd		

WestConnex New M5

**WESTCONNEX New M5**

**Site Environment Plan  
Arncliffe Compound**

DOCUMENT NUMBER  
**M5N -- ES -- SEP -- ARN -- 0002 -- 07**

# WESTCONNEX NEW M5 PROJECT - Site Environmental Plan (SEP)

Document Number: M5N-ES-SEP-ARN-0002-07

SEP Scope and Timeframe
<p><b>This SEP covers mandatory environmental management measures relevant to activities which will be undertaken during Westconnex New M5. Construction activities includes:</b></p> <ul style="list-style-type: none"> <li>• Connection to services,</li> <li>• Treatment of PASS and stabilisation of stockpile,</li> <li>• Excavation of permanent supply shafts,</li> <li>• Excavation and benching of mainline tunnel from temporary shaft,</li> <li>• Excavation and benching of mainline tunnel from temporary decline,</li> <li>• Haulage of spoil from temporary decline and shaft sheds,</li> <li>• WTP, store, mechanical and electrical support activities,</li> <li>• MOC03 building activities,</li> <li>• MOC03 retaining wall installation.</li> </ul>

Key Potential Environmental Impacts
<ul style="list-style-type: none"> <li>• Impact on the community from noise and vibration</li> <li>• Increased dust and poor air quality</li> <li>• Impact to water from erosion, sedimentation or unapproved discharge</li> <li>• Impact to protected flora/fauna in No-Go Zones</li> </ul>
<ul style="list-style-type: none"> <li>• Import of weeds, pests and pathogens</li> <li>• Incorrect waste disposal</li> <li>• Ineffective use or storage of dangerous goods and hazardous substances.</li> </ul>

General Control Measures	Who
Refer to the CDS-JV Procedures listed in the heading of each table. These Procedures are available online in the CPB Our Management System, on Incite or through Teambinder.	
No clearing or earthworks without a Permit to Clear Land or Vegetation (MSID-4-363)	Superintendent
Adhere to construction boundary and do not access Environmental "No-Go" Zones without Permit to Enter No Go Zone (MSID-4-199)	Superintendent
No discharge of water without Permit to Dewater (MSID-4-198)	Superintendent Foreman

Soil and Water	
Refer to Manage Soil and Water Procedure (M5N-ES-PRC-PWD-0035)	
Key Management Measures	Who
The <b>Arnccliffe Erosion and Sediment Control Plan</b> must be progressively implemented upon the commencement of site establishment activities.	Senior Project Engineer (SPE), Superintendent
Cleared areas must be kept to a minimum and be progressively rehabilitated as they become available.	SPE Superintendent
All materials must be stockpiled away from water flow paths.	Superintendent Foreman
No transfer/discharge will be made without a <b>Permit To Dewater</b> (MSID-4-198) approved by the Environmental Advisor.	Superintendent Foreman
An adequate number of concrete washout facilities must be maintained at all times. The washout facilities will be bunded and lined.	Foreman

Waste	
Refer to Manage Waste Procedure (M5N-ES-PRC-PWD-0044)	
Key Management Measures	Who
All wastes need to be classified, stored, tracked, transported and treated in accordance with contractual and regulatory requirements, including the use of licensed transporters and receiving facilities. See the Waste Management Flowchart (M5N-ES-FLC-PWD-0009) for further information.	Superintendent Foreman
Storage containers (bins, skips, tanks, etc) are provided at each work area in sufficient numbers to facilitate segregation of waste at the source of generation. The correct bin type must be used to avoid contamination.	Superintendent Foreman
Excess concrete and concrete washout is not to be discharged to land or storm water; a concrete washout facility must always be used.	Superintendent Foreman

Air Quality & Dust	
Refer to Manage Air Quality Procedure (M5N-ES-PRC-PWD-0040)	
Key Management Measures	Who
If visible dust is seen leaving site, all dust generating activities must cease. Refer to the Air Quality Flowchart for further information (M5N-ES-FLC-PWD-0010)	Superintendent Foreman
Disturbed areas must be treated with dust suppressants (e.g. water trucks or chemical suppressants) especially in high risk areas and/or during high risk days.	Superintendent Foreman
Stabilised access, rumble grids, wash bays or similar must be established for the site exits to minimise mud on public roads. Sweepers shall be used periodically to clean public roads where mud has been deposited.	Superintendent Foreman
Burning of any materials is prohibited onsite.	Superintendent

Noise & Vibration	
Refer to Manage Environmental Noise Issues Procedure (M5N-ES-PRC-PWD-0043)	
Key Management Measures	Who
Undertake construction activities within the nominated hours of work to comply with contractual and legal requirements.	Superintendent Foreman
Any works that need to occur outside these hours must be approved by the Environmental Advisor. Refer to the Out of Hours Work Approval Flowchart (M5N-ES-FLC-PWD-0006) for further information.	Superintendent SPE
Haulage of material from site OOH will only occur from the acoustic sheds.	SPE
Blasting will be undertaken in accordance with the New M5 Blast Management Strategy (M5N-ES-PLN-PWD-0041-02).	SPE

Hours of Work	
Refer to Manage Environmental Noise Issues Procedure (M5N-ES-PRC-PWD-0043)	
<p><b>24 hour, 7 day a week operations to be underway for tunnelling. 24 hour, 6 day a week operation to be underway for permanent shaft excavation. Hammering in tunnels to be undertaken in standard construction hours or if approved under an OOH Permit</b></p>	
<p><b>Construction Works (other than tunnelling and excavation of permanent shafts):</b></p>	
Monday to Friday	7am to 6pm
Saturday	8 am to 1pm
<p>No work shall be carried out on any Sunday and public holidays. High impact noise works may be undertaken between 8am and 6pm and in continuous blocks not exceeding 3 hours with a minimum respite of 1 hour between each block.</p>	
<p>Approval must be issued by the Environmental Team for work outside of these hours. Refer to the Out of Hours Approval Flowchart (M5N-ES-FLC-PWD-0006).</p>	

Flora, Fauna and Weeds	
Refer to Manage Flora and Fauna Procedure (M5N-ES-PRC-PWD-0042)	
Key Management Measures	Who
The frog fence which borders the site boundary must be inspected weekly. Ensure hygiene measures are abided by before conducting inspection (cleaning boots/gumboots of soil and spray with disinfectant solution).	Supervisor GGBF Inducted frog fence inspector
If a Green and Golden Bell Frog is located within the construction compound, <b>stop works immediately</b> and contact the Environmental Advisor immediately. For further information refer to the Green and Golden Bell Frog Stop Work Flowchart (M5N-ES-FLC-ARN-0002).	All Personnel
Hygiene controls outlined in the Arnccliffe Frog Hygiene Flowchart (M5N-ES-FLC-ARN-0004) must be followed to mitigate the spread of the Chytrid Fungus spreading on site.	All Personnel
If a threat to an animal is evident onsite you must contact your supervisor and the Environmental Advisor immediately. Works may need to cease if the animal is in danger or harmed until it has been relocated. Refer to the Fauna Handling Flowchart (M5N-ES-FLC-PWD-0004)	Superintendent Foreman
The site speed limits must be obeyed at all times.	Superintendent Foreman
All plant should remain on haul roads and hardstand areas where possible.	Superintendent Foreman
No disturbance of vegetation will occur outside of the project boundary walls unless the vegetation has been inspected and reported on by the nominated Project Arboriculturist.	All Personnel

Hazardous Materials	
Refer to Manage Hazardous Substances Procedure (M5N-ES-PRC-PWD-0041)	
Key Management Measures	Who
Storage and handling of hazardous substances must be in strict accordance with the applicable Standards and SDS.	Foreman
Hazardous substances must be stored in a bunded area with a minimum holding capacity of 110% of the largest container within the bund or 25% of the total capacity of all containers within it, whichever is the greatest.	Foreman
Spill kits must be located adjacent to all hazardous substance storage units, in refuelling and maintenance areas and at designated locations as per the Site Environment Plan (SEP).	Foreman
Refuelling must not occur within 30m of a waterway (without appropriate controls in place).	Superintendent Foreman
In the event of a spill, the Spill Response Flowchart should be followed. After insuring the areas is safe, bund and stop the source of the spill, contact your supervisor and clean up.	All Personnel

Heritage	
Refer to Manage Cultural Heritage Procedure (M5N-ES-PRC-PWD-0039)	
Key Management Measures	Who
All cultural heritage items and places to be preserved will be fenced/flagged and sign posted as No-Go Zones and shown on relevant site plan. These No-Go Zones must be observed at all times until a Permit to Enter No-Go Zone has been authorised. A No-Go Zone has been established in the western end of the Kogarah Golf Course. This area is outside of the CDS-JV sit e boundary but No-Go Zone restrictions must be observed.	Superintendent Foreman
The Unexpected Discovery of Heritage Item Flowchart (M5N-ES-FLC-PWD-0002) will be executed in the event that a heritage object is discovered that may be a suspected heritage item. Work must cease immediately and notify the Supervisor and Environmental Advisor.	Project Manager Superintendent

Contaminated Land	
Refer to Manage Contaminated Land Procedure (M5N-ES-PRC-PWD-0039)	
Key Management Measures	Who
The Unexpected Discovery of Contaminated Land Flowchart (M5N-ES-FLC-PWD-0001) will be executed in the event that contaminated materials are discovered or suspected.	Superintendent Foreman
Contaminated land will need to be handled, stockpiled, reused and/or disposed of as per the Contaminated Land Management Strategy.	Foreman
The movement of materials must be tracked via the Materials Tracking Form.	Project Engineer
Water runoff from contaminated land and stockpiles must be contained, treated or disposed to ensure there is no pollution of land or waterways.	Foreman

Acid Sulphate Soils (ASS)	
Refer to Manage Acid Sulfate Soils Procedure (M5N-ES-PRC-PWD-0038)	
Key Management Measures	Who
The Unexpected Discovery of Contaminated Land Flowchart (M5N-ES-FLC-PWD-0001) will be executed in the event that contaminated materials are discovered or suspected. Works must cease and the Supervisor and Environmental Advisor must notified immediately.	Superintendent Foreman
Soils within the construction boundary have been identified as PASS. The handling, storage and disposal of all PASS must be undertaken in accordance with the Arnccliffe Acid Sulfate Soil Management Plan.	Environmental Advisor
Disturbance of surface and subsurface soils in potential ASS/PASS must be minimised.	Project Manager Superintendent
The movement of ASS/PASS materials must be tracked via the Materials Tracking Form.	Site Engineer
Water runoff from ASS/PASS stockpiles must be contained, treated or disposed to ensure there is no pollution of land or waterways.	Superintendent Foreman
A spill of ASS/PASS material outside the ASS/PASS storage and/or treatment areas or evidence of impacts on waterways must be reported to the supervisor and Environmental Advisor immediately.	Superintendent Foreman

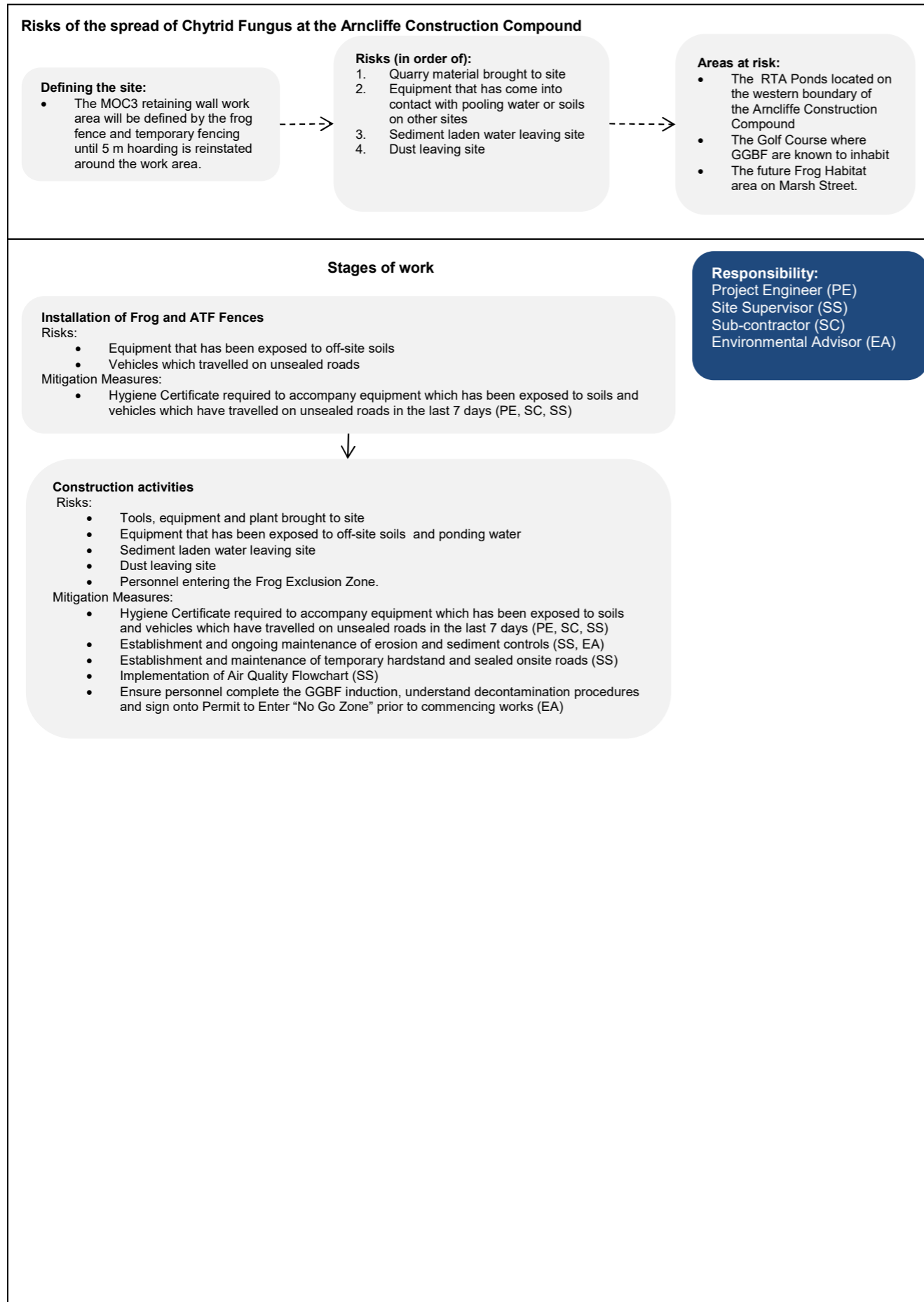
Licences and Approvals	
Approval	Details
Infrastructure Approval	SSI 6788 Issued by the Department of Planning and Environment
Environmental Protection Licence	EPL # 20772 Issued by the Environmental Protection Authority M5N-ES-LIC-PWD-0001

Evaluating Performance	Who
Daily, inspect the condition of protection and control measures and arrange maintenance, as required.	Foreman
Weekly site inspections.	Foreman, Superintendent and Environmental Advisor
Event triggered inspections	Foreman, Superintendent and Environmental Advisor
Weekly inspection of the Frog Fence	GGBF Inducted Frog Fence Inspector
Weekly Inspections of Habitat Enhancement Ponds	GGBF Inducted Frog Inspector



**Appendix C Arncliffe Frog Hygiene Management Flowchart**





## Objective

The purpose of this document is to provide information to CDS-JV Staff, Workforce and Sub-contractors on the impacts of Chytrid Fungus on frog populations (in particular the Green and Golden Bell Frog) and the mitigation measures in place to reduce the spread of the fungus at the Arncliffe Construction Compound.

## Amphibian Chytrid Fungus (*Batrachochytrium dendrobatidis*)

- Research evidence indicates that Chytrid Fungus is responsible for the rapid decline in frog populations across the world.
- It is a water-borne fungal pathogen.
- Fungi spores can also survive in soil.
- It can be found in every type of environment and is present at the Kogarah Golf Course.
- In some populations, Chytrid Fungus can have a 100% mortality rate.

## How it impacts frog populations

- Frog's skin is thin, moist and permeable which allows frogs to absorb oxygen from water and air. Where the skin needs to be tougher (around frogs' legs), a protein called Keratin grows.
- Chytrid Fungus attacks and eats the keratin protein levels in the frogs' skin. This creates cavities which blood builds up in. These cavities can burst which then lead to infections and eventually death.
- Chytrid Fungus can infect frogs and tadpoles.
- The fungus is sensitive to temperature, salinity, water pH, light and dissolved oxygen.
- This fungus has the potential to decimate the Green and Golden Bell Frog at the Kogarah Golf Course if it is not managed. Currently management strategies include flushing the RTA Ponds (located west of the Arncliffe Construction Compound) with saline water.

## Mitigation measures for the Arncliffe Construction Compound

The mitigation measures outlined in the flowchart are based on restricting the movement of materials potentially contaminated with Chytrid Fungus spores and isolating frog habitat areas from run-off from the construction compound. This will be achieved through:

- Not transporting quarry materials, earth moving machinery and equipment (pumps, hoses etc.) to site which are potentially contaminated with Chytrid Fungus spores.
- Re-directing water run-off away from frog habitats through the progressive installation of erosion and sediment controls and the permanent drainage system.

## Quarry Inspection

CDS-JV will conduct an inspection at quarries where materials are sourced to assess the potential for Chytrid Fungus transfer.

## Hygiene Certificate

Subcontractors delivering earthmoving machinery and equipment to site will be required to present a Hygiene Certificate at the entrance of the Arncliffe Construction Compound. Access to site will be denied if:

- Soil is present on machinery or equipment (regardless of whether a Hygiene Certificate is presented).
- Hygiene Certificate is not presented or available.

As the site is established the risk of soil and sediment laden water is reduced and the Hygiene Certificate will not be required following the progressive installation of hardstands and drainage. The spread of Chytrid Fungus via vehicles is low according to the *Hygiene protocols for the control of disease in Australian frogs*. As the construction compound is located in an urban area with limited access to unsealed roads, entry to site will be allowed unless soil is visible on the vehicle.

## Frog Fence inspections

Personnel undertaking inspections of the Frog Fence will be required to clean and spray boots and gumboots with a disinfectant solution before conducting inspection.

## Fauna Salvage Activities

When carrying out fauna salvage activities, the Project Ecologist must carry out hygiene practices which are outlined in the *Hygiene protocols for the control of disease in Australian frogs*. This includes disinfecting salvaging equipment before use and identification of any fauna infected with Chytrid Fungus.

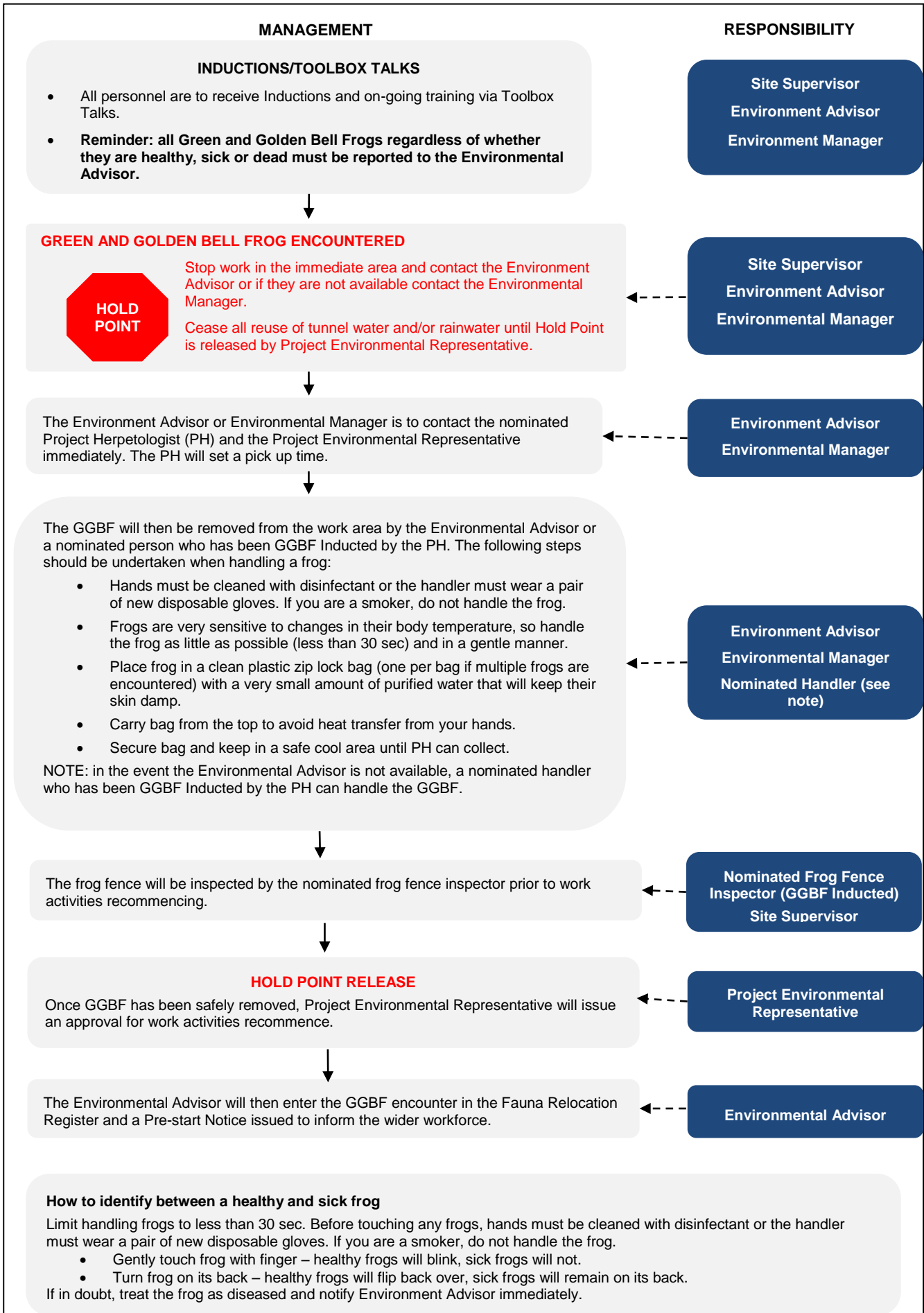


Figure 1 Frogs infected with Chytrid Fungus



## Appendix D Green and Golden Bell Frog Stop Work Flowchart

# Green and Golden Bell Frog Stop Work Flowchart

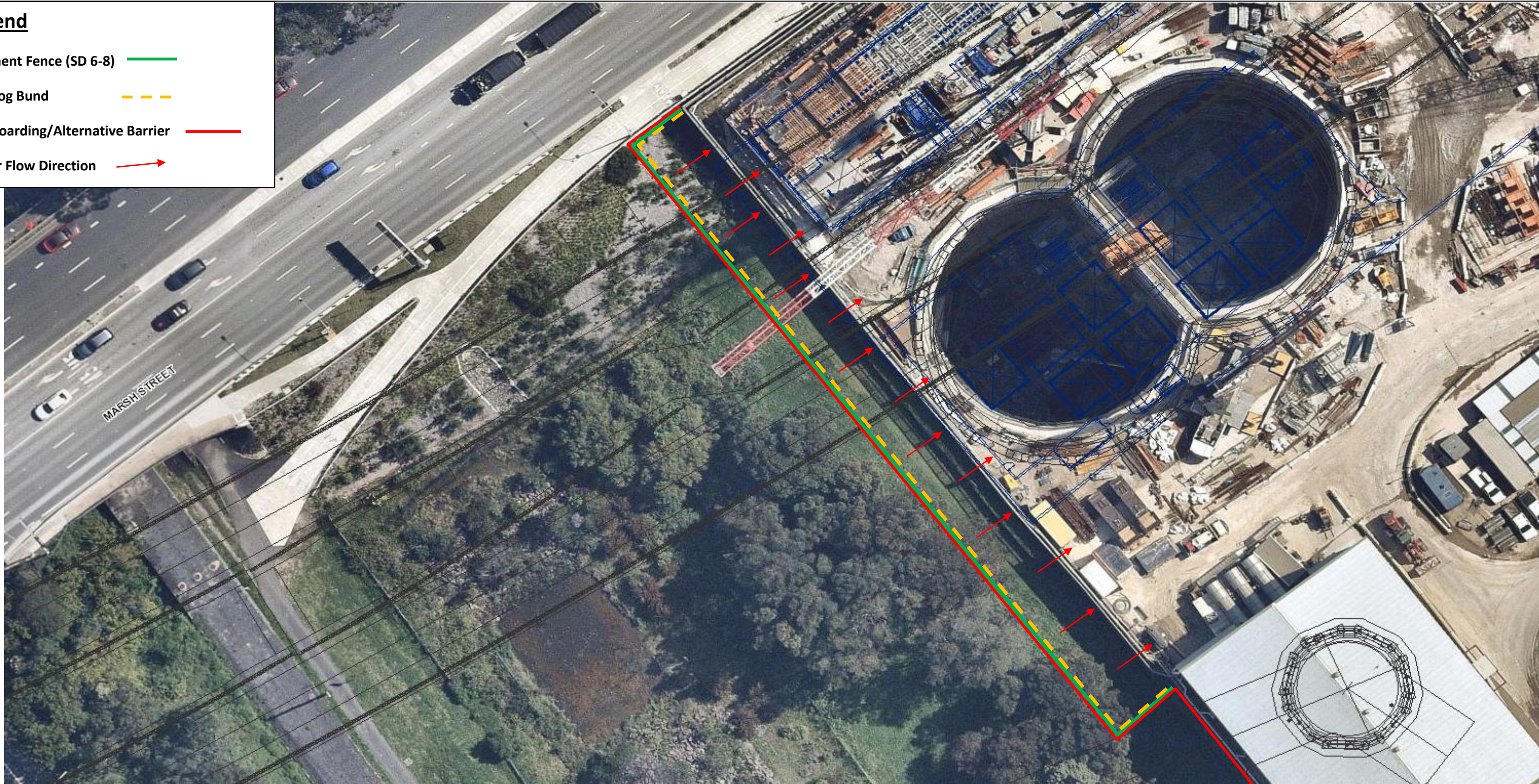




## Appendix E Arncliffe Erosion and Sediment Control Plan

## Legend

- Sediment Fence (SD 6-8) —
- Coir Log Bund - - -
- 5 m Hoarding/Alternative Barrier —
- Water Flow Direction →



### Hold Point for Erosion and Sediment Control

Erosion and Sediment Control Plans (ESCP) will be developed/ reviewed for each work area prior to the start of construction works and on recommencement of works after a shutdown period. These will be signed off by the Environment Officer and Site Supervisor.

### Hold Point for Reuse and/or Discharge

Discharge of water and reuse to be undertaken in accordance with the Water Discharge Flowchart (M5N-ES-FLC-PWD-0008). No water will be discharged from the site without the written approval of the Environmental Officer (see Permit to Discharge MSID-4-198). All water will be tested (and treated if required) prior to discharge from the site to ensure compliance with the parameters of the EPL.

### ERSED Principles

- The implementation of temporary erosion and sediment controls will be progressive and continual.
- Minimal disturbance at all times and "No Disturbance Zones" are to be enforced where practical.
- Sediment control measures will be designed so that they are as close as possible to the potential source of sediment.
- Any temporary controls (e.g. slope breaks, cross drains) will be reinstated at the end of each day.
- All ESC must be inspected by Environmental Officer after a significant rainfall event (>20mm/24hrs).

Description of Works: MOC3 Retaining Wall Works	Version: 01
Location: Arncliffe Construction Compound	Date: 16/11/2018
Site Supervisor: [REDACTED]	Signature:
Project Engineer: [REDACTED]	Signature:
Environment Officer: [REDACTED]	Signature:

# INSTRUCTIONS

## BACKGROUND

This Erosion and Sediment Control Plan (ESCP) has been prepared in accordance with best-practice principles, generally following the guidelines contained in the Blue Book Volumes 1 and 2D (Landcom, 2004 and DECC, 2008).

Erosion Hazard Assessment:

RUSLE = R x K x LS x P x C

- R = Rainfall factor (3,430)
- K = Soil erodibility factor (0.02 for Warriewood Soil Landscape) xSee SOILS section below.
- LS = Slope length and gradient factor (0.41, using 2% and 80m)
- P = Conservation practices (1.3; hard and compacted)
- C = Ground cover (1.0, no cover).

At this site, RUSLE gives 36 t/ha/yr (Soil Loss Class 1; very low erosion hazard).

## SOILS

The site is mapped as Disturbed Terrain in Chapman and Murphy (1989) but is derived from sediments of the adjacent Warriewood Soil Landscape. Soils were observed to be consistent with the Warriewood Soil Landscape and, as such, K-factors consistent with that Soil Landscape have been adopted. Soils were observed to be relatively sandy Acid Peats, Podsoles and Siliceous Sands, with a sandy loam topsoil as a result of golf course improvements. Soils are unlikely to be dispersible at this site. Soils have high natural infiltration although relatively shallow groundwater presents a limiting layer for infiltrating larger storms.

## OTHER DESIGN ASSUMPTIONS

The overall disturbance footprint is approximately 6.3ha. As such, under clause 6.3.2 (d) in Landcom (2004) (The Blue Book), a sediment basin (or basins) should be installed. However, sediment basins are not feasible at this site because it is near-level and has no natural outlet due to it sitting as the lowest point in the local landscape. However, as a result of this, water will naturally accumulate in the work area and this water will be managed in a similar manner to a sediment basin.

## INSTRUCTIONS

Initial earthworks and site establishment works (e.g. installation of main perimeter erosion and sediment controls) have been completed. Refer to REV 01 for instructions, requirements and details regarding this stage.

The following requirements apply at all times as works progress:

- Stockpile areas are to be as specified by the site manager and in accordance with the 'Stockpiling' notes below. Current location is shown on the plan.
- Acid sulphate soil treatment is to be undertaken in accordance with the relevant 'Acid Sulphate Soil Treatment' plans and requirements. Details are not shown on this plan - refer to plan/s by others.
- Dust suppression to be carried out as required. Refer to the 'Dust Suppression' notes.
- Treatment of dirty water is to be carried out as necessary in accordance with the 'Dirty Water Treatment and Discharge Requirements' notes below. Note that the site might accumulate significant volumes of water at times and the water will need to be treated prior to discharge.
- Monitoring, maintenance and inspections are to be carried out regularly as required, in accordance with the 'Site Inspection and Monitoring' notes below.
- Undertake progressive stabilisation of lands (e.g. hardstand, concrete, landscaping) as final earthworks are complete in each area (rather than waiting until the completion of all works).

## ACCESS CONTROL

- Install barrier fences, flagging, tape or other administrative controls to define the project works and clearing limits.
- Barrier and/or sediment fencing are to be used to ensure the only vehicle entry and egress points are as designated.
- Barrier fencing is to be used to delineate all 'no-go' areas.

## SITE ENTRY AND EXIT POINTS

- Establish stabilised site access points anywhere where construction vehicles enter or exit a work area from a sealed, public road. Refer to Standard Drawing SD 6-14 from Landcom (2004). Note that a stabilised access might be required at the interface of this site with Marsh St works being conducted by VBAJV.
- Ensure that all vehicles entering and leaving work areas pass over a stable access point to minimise bogginess in these areas and to minimise mud tracking onto public roads.
- Sediment or rocks tracked from the site will be removed from public roads as soon as possible (e.g. with street sweepers).

## STOCKPILING

- Ideally, strip topsoil when it is moist, not too wet or too dry. This preserves topsoil structure.
- Stockpile areas are to be established as specified by the site manager. They must:
  - Be within the catchment area for the sediment sumps;
  - Be at least 5m away from possible concentrated flows of water (including street gutters);
  - Be at least 2m from the driplines of retained native vegetation;
  - Be at least 4.0m away from natural waterways (unless this is not feasible).
- Wherever possible, stockpiles are to be established and maintained in accordance with Standard Drawing SD 4-1 (Landcom, 2004).
- As much as is feasible, mulched vegetation, topsoil and spoil are to be stockpiled separately.
- Sediment fencing is to be installed around the lower edge of stockpiles as per Standard Drawing SD 4-1, unless the stockpile is immediately adjacent to a suitable alternative control such as a sediment basin.
- Inactive stockpile faces are to be provided with at least 60% cover (i.e. RUSLE C-factor of 0.1) within 10 days of formation. This can be achieved with geofabric, hydromulch or soil binder such as Vital Stonewall.
- If high winds or heavy rainfall is forecast, stockpiles are to be covered to at least 60% (see above) regardless of the time they have been in place.
- Stockpiles of topsoil or mulch should be constructed to no more than 2 meters in height wherever possible (note this only applies to topsoil and mulch).
- Stockpiles should be formed to be no steeper than 2:1 (H:V) wherever possible.

## SEDIMENT FENCING

- Install all sediment fencing in accordance with Standard Drawing SD 6-8.
- Sediment fences must be firmly trenched into the ground for their entire length.
- Sediment fences must include small 'returns' at maximum 20m intervals (see Standard Drawing 6-8) to minimise the risk of water flowing along them rather than through them. Returns can be made from sandbags (3 high, hard up against fence) where space is limited.
- Mulch filter berms/bunds can be used instead of sediment fences but only on slopes less than 10% and in locations where flooding is not likely. They are to be at least 0.5m high and include returns as per the above instruction.

## DIRTY WATER TREATMENT AND DISCHARGE REQUIREMENTS

- Water accumulating in sumps, excavations or in any other low points onsite can either be:
  - Pumped into a tank, truck or other holding area for later treatment; or
  - Treated (if required) and tested in situ, then released off site once it meets the required water quality discharge criteria (see below); or
  - Spread out and infiltrated onto well vegetated lands within the site boundary at least 50m away from any waterway, swale or drainage line. Ensure water is applied slowly and in a manner to avoid concentrated surface runoff and/or erosion; or
  - Treated within the onsite water treatment plant.
- Any active discharge of water from the project (i.e. where water is moved offsite via direct action such as pumping rather than flowing off the project as a result of heavy rainfall) is to achieve:
  - 50mg/L or less TSS (Total Suspended Sediment); and
  - pH 6.5 to 8.5; and
  - <10mg/L oil and grease and no visible trace.
- As an alternative to the water treatment plant, adequate water quality can be achieved by using gypsum at a rate of approximately 30kg per 100m<sup>3</sup> of stormwater. Alternative flocculating agents can only be used if the regulating authority has granted approval. Refer to manufacturer's guidelines and the project EPL for dosage details.
- Spread and mix the treatment agent thoroughly with detained water.
- These de-watering requirements apply to dirty water accumulating in any sort of excavation, sump, or other ponded water body on the project.

## DUST SUPPRESSION

- Dust suppression is to be carried out whenever necessary to minimise sediments becoming air borne.
- An appropriate water source for dust suppression and/or dust suppressant management system (e.g. Vital HR/stonewall, dustex, dustguard or equivalent) must be identified prior to starting any works.
- Temporary stabilisers (e.g. Vital Stonewall, geotextile, jute matting, black plastic or equivalent) can be used in non-trafficable areas to assist with dust control.
- Access running surfaces can be stabilised with crushed rock, aggregate, roadbase, a heavy duty trafficable soil stabiliser (e.g. Vital HR or Stonewall) or equivalent to assist with dust control.

## SITE INSPECTION, MONITORING AND MAINTENANCE






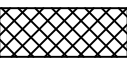


- Prior to forecast rainfall of 5mm or more over 24 hours the site environment manager (or their representative) is to inspect the condition of all erosion and sediment controls and action any urgent repair, maintenance or improvement works. They are to keep a record all findings (including details of actions and their close outs).
- Regular site inspections are to be conducted by the site environment manager (or their representative):
  - At least weekly during normal construction hours; and
  - Prior to forecast rainfall (see above); and
  - Daily during rain events (if safe to do so); and
  - Within 24 hours of the cessation of a rain event that causes runoff.
- Additional erosion and sediment controls will be installed as necessary to ensure satisfactory outcomes in keeping with project conditions and best-practice Blue Book guidelines.
- This ESCP will be updated and/or additional ESCPs prepared as required.
- Sediment or rocks tracked from the site will be removed from public roads as soon as possible (e.g. with street sweepers).
- After rainfall, sediment accumulated in trapping devices (e.g. sumps, sediment fence) will be removed to a secure location where it can't wash or blow offsite (preferably to an active stockpile).
- Weather conditions will be monitored onsite and daily rainfall will be recorded. A rainfall gauge will be installed at the site compound.
- Safe storage areas for wastes, fuels, excess concrete and other potential contaminants are to be delineated by the site manager.
- Adequate supplies of erosion control measures (e.g. geofabric rolls, jute matting, hydraulic soil binders or similar) are to be maintained in the site compound for rapid deployment as required.
- If required, water treatment chemical(s) and equipment are to be maintained onsite.
- Dust suppression is to be undertaken as required to minimise the risk of offsite dust impacts. Existing site water of any kind cannot be re-used on site for dust suppression. Town water must be used for dust suppression in all cases.

REV	DATE	DES.	DRN.	APP.	REVISION DETAILS	DRAWING STATUS		North	CLIENT	PROJECT TITLE	DRAWING TITLE			
					DESIGN BY	A.M.	EROSION AND SEDIMENT CONTROL PLAN GENERAL NOTES AND BACKGROUND DATA							
						DESIGN BY	A.M.			WESTCONNEX STAGE 2 ARNCLIFFE SITE	PROJECT NO.	SUB-PR NO.	DRAWING NO.	REV
						DRAWN BY	N.L.				15000367	P04	ESCP01	02
						FINAL APPROVAL	A.M.							
02	13/12/16	A.J.T.	A.J.T.	A.M.	PROGRESSIVE ESCP TO REFLECT CURRENT WORKS	SCALE: (on A3 Original) N/A								
01	19/05/16	N.L.	N.L.	A.B.	FINAL - MINOR AMENDMENTS	<b>PROGRESSIVE</b>								
00	28/04/16	A.M.	N.L.	A.M.	FINAL REVISION									
B	22/03/16	A.M.	N.L.	A.M.	MINOR AMENDMENTS									
A	15/03/16	A.M.	N.L.	A.M.	DRAFT ISSUE - FOR CONSULTATION									



REFER TO THE INSTRUCTIONS ON THE PRECEDING PAGE FOR DETAILS REGARDING THIS ESCP.

### LEGEND

-  SEDIMENT FENCE (SD 6-8)
-  HOARDING/ALTERNATIVE BARRIER WALL (GAPS UNDERNEATH FILLED IN) OR STABILISED EARTH BUND
-  STABILISED SITE ACCESS /WHEEL BATH
-  POTENTIAL OFF-SITE WATER FLOWS
-  WATER FLOW DIRECTION
-  STOCKPILE AREA AND ACID SULPHATE SOIL TREATMENT PAD
-  DECLINE WORKS
-  COIR LOG BUND

JET GROUTING WORKS - TRENCH TO CAPTURE AND DIRECT GROUT INTO DECLINE. SITE FENCES AND CONTAINERS HAVE BEEN INSTALLED AND THE BASE OF THE SITE HOARDING HAS BEEN SEALED WITH BLACK PLASTIC TO CAPTURE ANY ADDITIONAL GROUT RUNOFF AND BACKSPRAY. AS MUCH AS POSSIBLE MINIMISE MATERIALS SPRAYING INTO THE AIR DURING THE WORKS. TEMPORARY CONTROLS (E.G. SANDBAG BUNDS OR SIMILAR) ARE TO BE IMPLEMENTED AS REQUIRED TO CONTROL MATERIAL SPRAY/RUNOFF THAT MAY RESULT.

MAINTAIN A STABILISED SITE ENTRY/EXIT POINT (STANDARD DRAWING SD 6-14 OR RUMBLE GRIDS OR WHEEL BATH) AT THE SITE ENTRY POINT (INTERFACE WITH VBAJV WORKS). THIS MIGHT NEED TO BE MODIFIED PROGRESSIVELY TO ALLOW FOR CONSTRUCTION WORKS.

COIR LOG BUND INSTALLED IN-BETWEEN NOISE WALL AND SEDIMENT FENCE AS ADDITIONAL SEDIMENT CONTROL.

SHEET PILING IS PROVIDED AROUND THE ENTIRE EXTENT OF THE DECLINE EXCAVATION TO PREVENT SURFACE FLOWS ENTERING THE EXCAVATION.

THE NOISE WALL/BARRIER IS TO BE SET INTO THE GROUND OR PLUGGED TO CONTAIN ONSITE WATER.

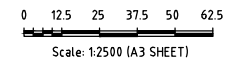
SEDIMENT FENCE MAINTAINED AROUND THE LOWER PERIMETER OF THE WORKS. IN LOW POINTS WHERE WATER MAY BUILD UP AND POND ONTO THE GOLF COURSE COIR LOG BUNDS ARE TO BE USED IN ADDITION TO THE SEDIMENT FENCE.

UNSEALED SURFACES (E.G. EARTH, DGB OR ROAD BASE SURFACES ETC.) ARE TO BE REGULARLY STABILISED WITH A POLYMER DUST SUPPRESSANT AND EROSION CONTROL AGENT (E.G. VITAL HR). REPEAT APPLICATIONS WILL BE REQUIRED AS SURFACES DETERIORATE AND/OR SEDIMENT OR DUST GENERATION STARTS TO OCCUR (APPROX. EVERY 2 WEEKS).

THE NOISE WALL/BARRIER IS TO BE SET INTO THE GROUND OR A COVERED PERIMETER EARTH BUND INSTALLED IN LOCATIONS WHERE CLEAN WATER RUN-ON/FLOWS AND PONDING MAY BE LIKELY.

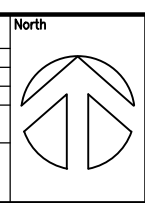
GENERAL STOCKPILING AND STOCKPILING OF TREATED ACID SULPHATE SOILS IS TO BE UNDERTAKEN IN ACCORDANCE WITH THE STOCKPILING NOTES ON ESCP01. SURFACES ARE TO BE STABILISED PROGRESSIVELY AND TEMPORARILY STABILISED PRIOR TO SITE SHUTDOWN PERIODS AS MUCH AS POSSIBLE. GENERAL STOCKPILES ARE TO BE MAINTAINED SEPARATELY FROM POTENTIAL ACID SULPHATE SOILS TO AVOID CONTAMINATION.

POTENTIAL ACID SULPHATE SOILS ARE TO BE MANAGED IN ACCORDANCE WITH AN APPROPRIATE 'ACID SULPHATE SOIL TREATMENT PLAN'. ACID SULPHATE SOILS ARE TO BE MAINTAINED AND TREATED WITHIN AN ACID SULPHATE SOIL TREATMENT PAD. DETAILS ARE NOT PROVIDED ON THIS PLAN. REFER TO PLAN/S BY OTHERS FOR ALL ACID SULPHATE SOIL TREATMENT DETAILS.



REV	DATE	DES.	DRN.	APP.	REVISION DETAILS
02	13/12/16	A.J.T.	A.J.T.	A.M.	PROGRESSIVE ESCP TO REFLECT CURRENT WORKS
01	19/05/16	N.L.	N.L.	A.B.	FINAL - MINOR AMENDMENTS
00	28/04/16	A.M.	N.L.	A.M.	FINAL REVISION
B	22/03/16	A.M.	N.L.	A.M.	MINOR AMENDMENTS
A	15/03/16	A.M.	N.L.	A.M.	DRAFT ISSUE - FOR CONSULTATION

DRAWING STATUS	
DESIGN BY	A.M.
DRAWN BY	N.L.
FINAL APPROVAL	A.M.
SCALE:	1 : 2500
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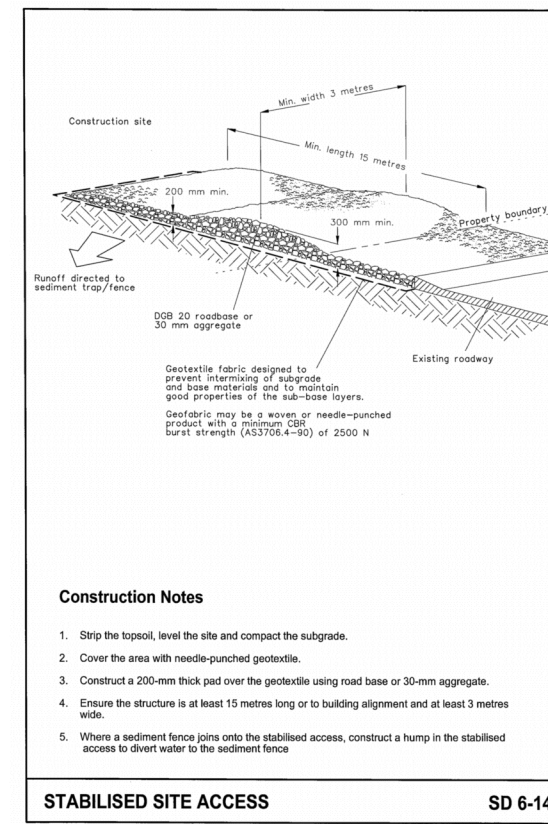
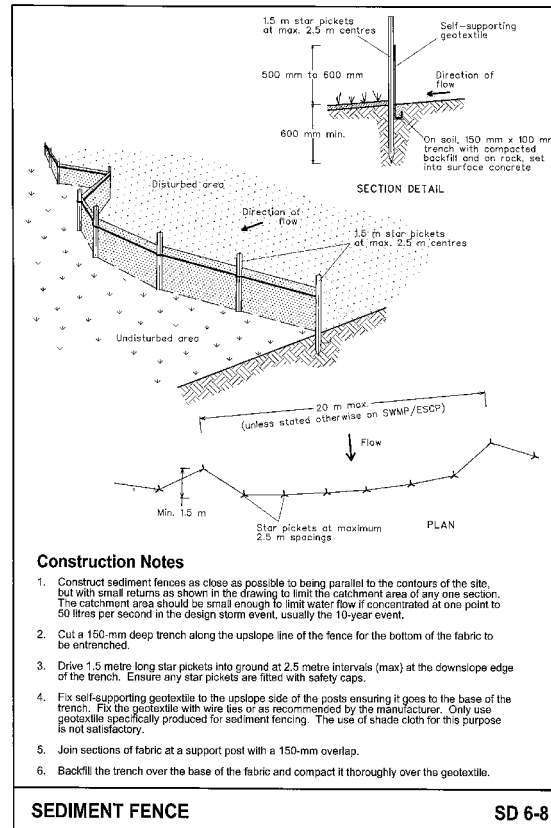
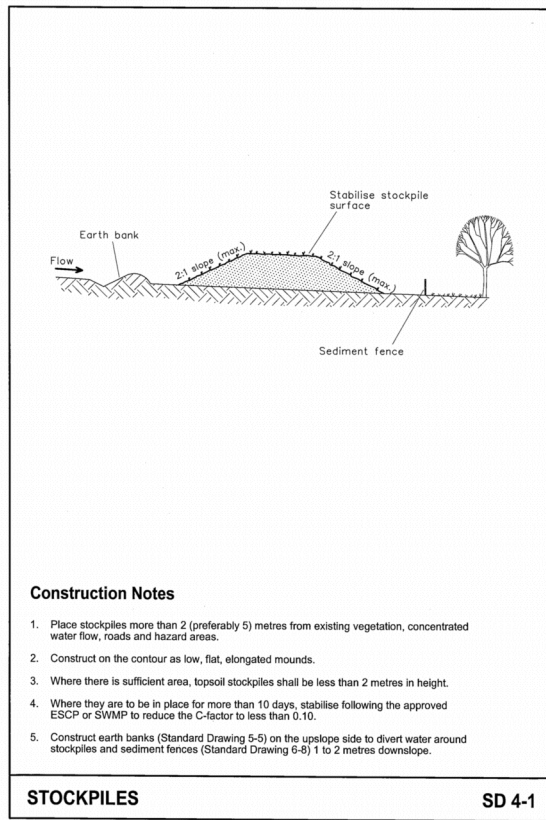
CLIENT
[Redacted]



PROJECT TITLE
WESTCONNEX STAGE 2 ARNCLIFFE SITE

DRAWING TITLE			
EROSION AND SEDIMENT CONTROL PLAN SITE LAYOUT			
PROJECT NO.	SUB-PR NO.	DRAWING NO.	REV
15000367	P04	ESCP02	02

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**STANDARD DRAWINGS SD 4-1, 6-8, 6-12 AND 6-14 ARE FROM LANDCOM (2004).**

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02	13/12/16	A.J.T.	A.J.T.	A.M.	PROGRESSIVE ESCP TO REFLECT CURRENT WORKS
01	19/05/16	N.L.	N.L.	A.B.	FINAL - MINOR AMENDMENTS
00	28/04/16	A.M.	N.L.	A.M.	FINAL REVISION
B	22/03/16	A.M.	N.L.	A.M.	MINOR AMENDMENTS
A	15/03/16	A.M.	N.L.	A.M.	DRAFT ISSUE - FOR CONSULTATION

DRAWING STATUS	
DESIGN BY	A.M.
DRAWN BY	N.L.
FINAL APPROVAL	A.M.
SCALE:	N.T.S.
(on A3 Original)	
<b>PROGRESSIVE</b>	

North

CLIENT

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WWW.SEEC.COM.AU

PROJECT TITLE  
**WESTCONNEX STAGE 2  
ARNCLIFFE SITE**

DRAWING TITLE			
<b>EROSION AND SEDIMENT CONTROL PLAN STANDARD DRAWINGS</b>			
PROJECT NO.	SUB-PR NO.	DRAWING NO.	REV
15000367	P04	ESCP03	02





**Appendix F Green and Golden Bell Frog Plan of Management DP&E approval letter**



Mr Paul Hitchings  
Director Project Delivery  
New M5  
Roads and Maritime Services  
Locked Bag 928  
North Sydney NSW 2059

Dear Mr Hitchings

**WestConnex Stage 2 – New M5 (SSI 6788) – Updated Green and Golden Bell Frog Plan of Management (condition B14)**

I refer to the updated Green and Golden Bell Frog Plan of Management (the plan) submitted on 11 June 2018 (Version 22 dated April 2018) under condition B14 for WestConnex Stage 2 – New M5 Project (SSI 6788).

You advise the plan has been updated resulting from:


1. Removal of the RTA ponds from the plan, as there is an existing management plan for this area approved under the previous M5 East project, which RMS is solely responsible for maintaining.
2. Reviewing the monitoring results required by the plan itself under condition B14(c) between July and September 2017 in consultation with RMS, Sydney Motorway Corporation, Office of Environment and Heritage, [REDACTED] (consultant) and specialists including Professor [REDACTED] (Taronga Zoo) and [REDACTED] (Project Herpetologist).
3. The Department's approval of the Habitat Breeding Plan under B15 (1 November 2017), which required an update to the plan to ensure consistency.

The Department has carefully reviewed the amendments to the plan, including updates in response to review comments. I also note the monitoring methodology has been revised based on advice provided by Dr [REDACTED] and endorsed by Prof [REDACTED] to ensure it is consistent with the Habitat Creation and Captive Breeding Program.

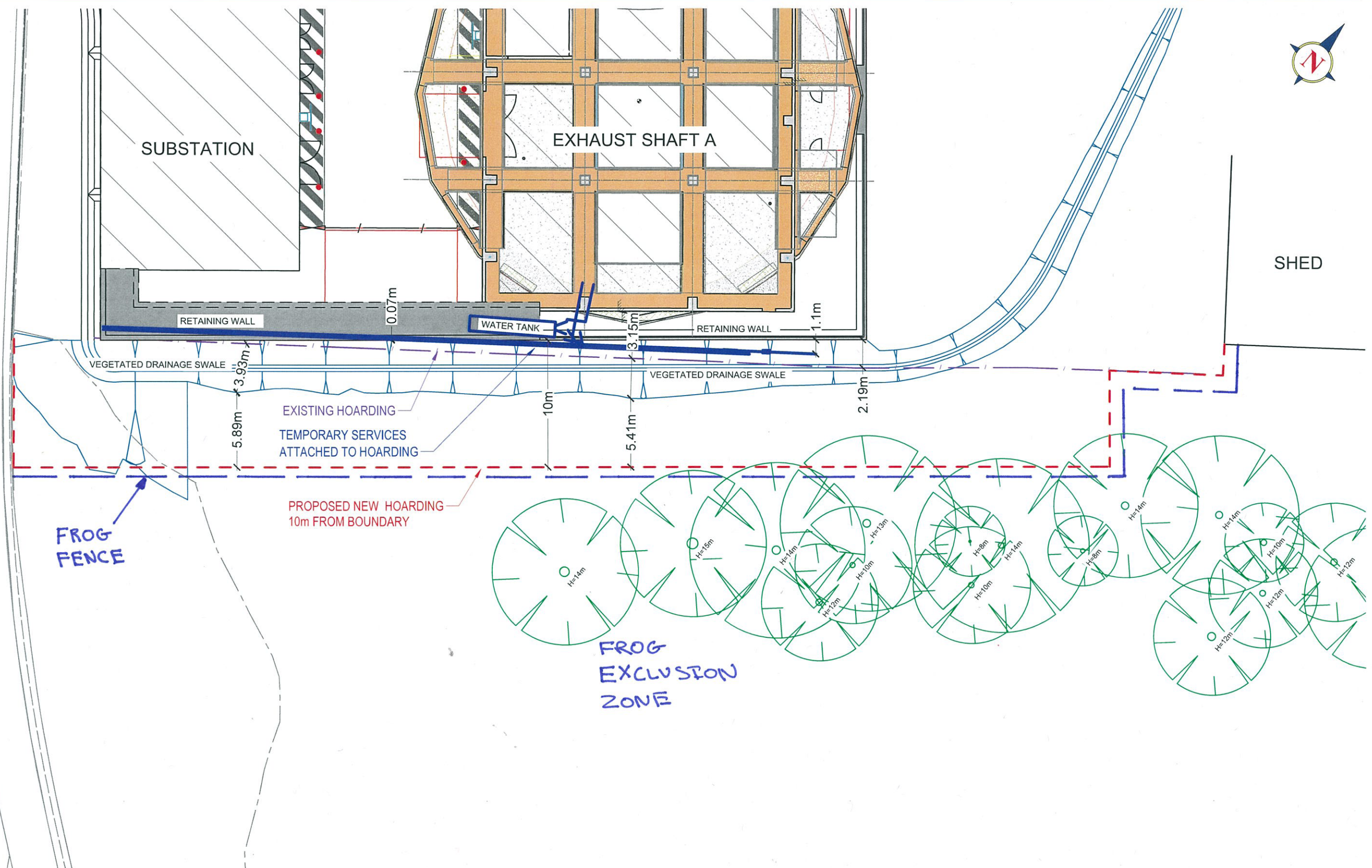
Following the Department's review, I am satisfied the updated Green and Golden Bell Frog Plan of Management meets the requirements of condition B14. Accordingly, I approve the updated Green and Golden Bell Frog Plan of Management (Version 22, dated April 2018). I also consider the updated plan addresses the requirements from the Department's approval letter dated 1 November 2017 for the Habitat Breeding Plan.

If you have any queries regarding this matter, please contact Joanne Glass on 8289 6221 or [joanne.glass@planning.nsw.gov.au](mailto:joanne.glass@planning.nsw.gov.au)

Yours sincerely

 18-9-18  
Stacy Warren  
**Director, Infrastructure Management**  
As delegate of the Secretary

**Appendix G Retaining Wall and Hoarding Realignment Design**



REV	DESCRIPTION	DRN	DATE	APP

SURVEYED BY:  
 SURVEYED ON:  
 DRAWN BY:  
 DRAWN ON:  
 APPROVED BY:  
 HOR DATUM: MGA  
 VER DATUM: AHD

SCALE @ A3:

PROPOSED NEW HOARDING

CLIENT: **WestConnex New HS**

JOB No.	PLAN	DRG	REV	SHEET
-	-	-	A	1 OF 1

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# Arncliffe Construction Compound Sub-Plan

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Arncliffe Construction Compound  
Sub-Plan

**Appendix H MOC3 Hoarding realignment DP&E approval letter**