

1. Summary/Purpose of Activity

The purpose of this CMS is for construction within sensitive areas. Works will be undertaken as detailed in the Construction method table below and will involve ERSED control installation and Works near Sensitive Areas.

2. Objectives of this CMS

The objectives of this CMS are to identify the exact construction method, process and activities that are required to carry out the construction works and to assess the potential environmental hazards associated with each activity. Following that, environmental controls will be identified to mitigate the potential hazards.

This CMS will then be communicated to all personnel undertaking the activity to ensure all mitigation measures are implemented for the relevant duration of the works.

3. Area/Location of Activity/Site:

The works will occur within the project alignment. Marked up location plans will be reviewed against sensitive area plans and tool boxed to personnel prior to activities.

4. Timing of works/Expected duration:

The expected commencement of all activities will be around April 2011, and will be continuous throughout the duration of the project

5. Approvals Required

The works are permitted under Abigroup CEMP. Consultation with DII (Fisheries) and DECCW is also required.

6. Consultation Requirements:

The proposed works will take place within the approved construction Boundaries.

7. Incident Response

In the event of an incident such as unauthorised access to or impacts to threatened vegetation/sensitive areas, the Site Supervisor will give directions to stop work and will contact the Environmental Manager immediately.

8. Risk Assessment

The below risk assessment framework shall be used to determine risks associated with each of the activities in the Construction Method Table

9. Related Documents attached:

Location plans of structures along the planned Hunter Expressway, SAP, Vehicle Movement Plan/Location plans.

10. Relevant References:

The information included in this CMS has been drawn from the Construction EMP and the relevant Sub Plans. For additional information related to this CMS refer to the following documents:

- Ministers Conditions of Approval 30, for the project;
- Construction Environmental Management Plan; and Sub Plans
- Soil and Erosion Control Plan
- Fish passage guide, where applicable.

Level	Likelihood	Description
A	Almost certain	Is expected to occur during the project, 90% or > probability
B	Likely	Will probably occur during the project, ~50% probability
C	Moderate	Might occur at sometime during the project, ~10% probability
D	Unlikely	Could occur at some time during the project, ~1% probability
E	Rare	Only occur in exceptional circumstances, < 1% probability

Level	Consequence	Description
1	Insignificant	Negligible Discharge
2	Minor	Uncontrolled Discharges in Minor Quantities
3	Moderate	Moderate Breach of Environmental Statutes
4	Major	Major Breach of Environmental Statutes
5	Severe	Shutdown of Project Due to Environmental Breach

Likelihood	Consequences				
	1 Insignificant	2 Minor	3 Moderate	4 Major	5 Severe
A (Almost Certain)	Medium	Significant	High	High	Extreme
B (Likely)	Medium	Medium	Significant	High	Extreme
C (Moderate)	Low	Medium	Significant	High	High
D (Unlikely)	Low	Low	Medium	Significant	High
E (Rare)	Low	Low	Low	Medium	Significant

Construction Method and Risk Assessment

#	Sequence of Work Activities (How will work be done?)	Potential Hazards (What harm can occur?)	Risk	Safeguards/controls (How can the risk be minimised?)	Responsibility (Who will direct works to ensure compliance?)
Prior to commencement of works					
1	Obtain required approvals to commence activity	Unsafe work practices	High	SWMS for work activity to be completed, reviewed and approved. (HOLD POINT RELEASE)	Engineer/Foreman
2	Undertake any required community consultation	Community unaware of activities. Potential complaints	Medium	Ensure all community consultation has been undertaken in accordance with the RTA Communications Strategy and that the RTA Communications Manager or Abigroup Community Relations Manager is aware of the proposed works well in advance. Hotline number: 1800 001 267	Project Manager / Community Relations Manager
3	Provide training to personnel and sub-contractors involved	Non-compliance with work methods	High	Toolbox field operators on the requirements of this CMS. Ensure all personnel undertaking Structures works have signed onto this CMS and understand the risks and mitigation controls required to be implemented.	Engineer/Foreman
4	Erosion and Sediment Control	Pollution of waterway	High	Develop and implement Erosion and Sediment Control Plan Prior to works.	Engineer / Foreman / Environmental Manager
Establishment Works - Preliminary					
5	Access site and commence works	Impacts to residents / Noise	Medium	Ensure works are undertaken between 7am and 6pm Monday to Friday and 8am to 1pm Saturday Ensure gates are left as they were found (either closed or open)	Engineer/Foreman, All
		Non-compliance with MCoA	High		
		Impact to sensitive areas	High	Ensure vehicles stay on existing access tracks, Haul rd or within construction boundaries. No vegetation clearing, grass cutting or other impacts without approval of Environmental Manager and EMR where required	All

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		Pollution of waterways	Low	Access to site is to occur along the existing track. Vehicles / equipment are not to cross any waterways which do not have an existing established crossing point. Ensure equipment / vehicles are serviced. If machinery is to be stored on site, all potential for accidental spillage or leakage of fluids must be mitigated by placement of catchments devices or barriers. No fuel is to be stored on site overnight, unless stored in a designated area Spill kit to be onsite during working hours Report any spills to the EM and clean up immediately	All
		Pollution of Local Roads	Low	Wheels of vehicles leaving the project site will be clean in order to minimise mud tracking onto public roads. Measures such as rumble grids, stabilisation of roads with aggregate etc will be used where appropriate. Vehicle movements from site will be minimised during wet weather if the tracking of mud may become an issue.	All
				Sediment tracked onto public roads from the construction site will be removed by sweeper trucks, brooms or other equipment.	Foreman
		Injury to fauna	Medium	Report any injured or killed fauna to the wildlife specialist.	All
6	Community	Noise causing annoyance to local residents.	Medium	Works are only to occur 7:00am to 6:00pm Monday – Friday and 8am to 1pm Saturday Ensure plant / equipment is fitted with appropriate silencers and is maintained in an efficient condition	All Foreman / Engineer
		Irate community, poor relations	Low	Ensure all residents are notified when accessing their properties	Foreman / Engineer
		Unaddressed Complaints	Low	All community complaints to be recorded and actioned.	All, Project Manager / Community Relations Manager
		Traffic congestion	Medium	Approved TCP to be utilised during deliveries.	Engineer
		Risk to public safety.	High	Work area to be demarcated from public when required	Foreman / Engineer
8	Working within the approved areas	Damage to flora, fauna, threatened species, EEC, heritage items or work outside of project boundary	High	No works to be conducted outside the approved area	Foreman / Project Engineer
				Ensure all works stay outside of any EEC vegetation. These areas are to be fenced/delineate and sign posted prior to commencing works. Note: Some works may be approved by the EM and EMR to be constructed in mapped EEC vegetation areas if site inspections demonstrate that the actual EEC vegetation remains protected.	Foreman / All
				No clearing is to be performed unless separate approval from the EM and EMR has been obtained.	Foreman / Engineer / All
				Work extents (i.e. location) are not to be relocated/modified without the approval of the Project Engineer and EM.	Foreman / All
9	Disturbance of ground during works	Pollution of waterways due to ground disturbance from the works.	Low	Provide ERSED protection measures around site establishment works to ensure pollution of waterways does not occur from any disturbed ground created by the works.	Foreman / All
10	Chemical Spills	Pollution of waterways and soil due to spills/leaks	High	Ensure equipment / vehicles are serviced.	Foreman / All
				If machinery is to be stored on site, all potential for accidental spillage or leakage of fluids must be mitigated by placement of catchments devices or barriers.	Foreman / All
				No fuel is to be stored on site overnight, unless in suitably bunded area.	Foreman / All
				Spill kit to be onsite during works.	Foreman
				Report any spills to the EM and clean up.	Foreman / All
11	Material Deliveries	Delivery to wrong location, using wrong points of access, impacting EEC LHCCREMS or heritage areas	High	Communicate correct delivery instructions to delivery drivers Only access site via existing access tracks or approved access routes Ensure radio control between delivery vehicles and/or site vehicles must be maintained at all times.	Foreman / All
Works Near Sensitive Areas					
12	Clearing	Damage to Heritage artefacts, flora and fauna	High	Ensure Sensitive & Heritage areas are properly marked with flagging prior beginning works. When works are required within Sensitive & Heritage areas, ensure that approvals have been obtained prior to construction start.	Foreman / All
				If during the course of construction previously unknown historical archaeological material or heritage items are discovered, all work in the area of the item(s) shall cease and the process outlined in HEx-CEMP-AnnexureB5-HHMP-Rev2_Appendix B will be implemented	
				Aboriginal Heritage Red and Purple zones within the Project boundary will be surrounded by temporary fence, clearly marked with signs that read as "Do Not Enter, Exclusion Zone, Environmentally Sensitive Area and that persons damaging the site may be prosecuted under the National Parks and Wildlife Act 1974	
				No vegetation clearance or revegetation works that cause ground disturbance to any sites/areas of Aboriginal cultural sensitivity beyond the route alignment or in any fenced area that conserves a site/area of Aboriginal cultural sensitivity.	
				The locations of the following heritage items to be protected will be mapped on construction drawings and Sensitive Area Plans to be used by site workers prior to	

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				<p>construction commencement.</p> <ul style="list-style-type: none"> · Brick and stone culverts associated with the Main Northern Railway · Old Shop on Camp Road · Greta Army Camps Firing Range Stop Butt · Invertay Farmstead 	
13	Excavation/ Drilling through sensitive areas	Exposure of human remains	Medium	If any human / possible human skeletal material is uncovered during works or by natural erosion processes, all work likely to affect the site(s) shall cease immediately and the process detailed in HEX-CEMP-AnnexureB4-AHMP-Rev2_Appendix C will be implemented	Foreman / All
		Retaining Excavated material	Medium	Within Aboriginal Heritage Red management zones, material required to be removed during excavations for culvert or bridge piers will be spread back across the site	Foreman / All
14	Vibration during construction activities	Damage to Heritage listed areas	Medium	Further specialist advice and assessment for potential impacts from vibration will be obtained from a qualified vibration consultant prior to works commencing near the brick and sandstone culvert associated with the Main Northern Railway. If deemed necessary, mitigation measures (including vibration monitoring) will be included in the Noise and Vibration Management Plan (NVMP)	Foreman / All
15	General Construction activities within cleared areas	Pollution of Sensitive areas	Low	<p>ERSED controls to be implemented to protect and maintain clean water flow route past works</p> <p>ERSED controls to be implemented to control and re-direct dirty water flow</p> <p>Ensure ERSED controls are maintained during works and at end of shift</p> <p>Ensure all personnel is aware of sensitive areas location to prevent confusion</p>	Foreman / All
				<p>Erosion control works within Red and Purple Management Zones will be reviewed that have the potential to impact sites/ areas of Aboriginal cultural sensitivity. No erosion control works will be permitted in these sites that cause disturbance to the original ground surface. Erosion control works required to prevent further degradation of a known site may be undertaken manually following DECCW consultation and will be restricted to practices that do not impact the ground surface.</p>	

Toolbox

See also Abigroup standard toolboxes ABI-ENV-CR-TB007 Working Hours, ABI-ENV-CR-TB016 Refueling on site
ABI-ENV-CR-TB014 Noise Control

- Sensitive areas are to be marked/flagged and sign posted so we don't impact them during construction, therefore we must also stay outside of these areas
- Check attached Sensitive Area Plans (SAPs) to ensure we don't drive through or go into sensitive areas
- No vehicle access through waterway / Creeks without prior approval
- Check spill kits and locations
 - **Critically important not to drive through or damage sensitive areas (risk of prosecution)**
- Permits to Dig/Excavate (PTEs) to be obtained prior to undertaking works
- Conditions of Permit to Excavate and Permit to Works under Powerlines to be tool boxed
- Hours of operation for construction activities are as follows:
 - 7:00am to 6:00pm Monday to Friday;
 - 8:00am to 1:00pm Saturday; and
 - At no time on Sundays and Public Holidays.
- Works outside the hours specified above will not be conducted unless approval in writing has been granted by the relevant Environmental Officer or Environmental Manager.
- The following noise mitigation measures should be implemented at all times, and especially during Out of Hours Works:
 - Turn vehicle / plant and equipment off when not in use;
 - Minimise radio noise, yelling, rowdy behaviour etc when near potentially affected receivers;
 - Plan works and design vehicle accesses to minimise reversing beepers;
- If an injured animal is found, advise the EM immediately.
- Prevent pollution of waterways due to spills/leaks. Report and clean up all spills to the EM.
- Ensure Project Ecologist is present during minor clearing to assess/relocate any Flora / Fauna as required.
- No new haul roads, access tracks to be created without prior approval from the EM and EMR.
- Report any complaints to Environmental Manager / Community Manager

CMS Approval

Revision Number	Approved By	Name	Signature	Date
0	Originator (Engineer)	Adam Tyrrell		
0	General Superintendent	Robby Curtis		
0	Project Manager/Engineering Manager	Ben Greentree		