



# Construction Environmental Management Plan

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Freemantle Road Culvert Rectification

Prepared for Keech Constructions

September 2023



# Construction Environmental Management Plan, Freemantle Road Culvert Rectification, Eglinton NSW

## Document Verification

Revision	Author/s	QA	Date submitted	Client Review	
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This Construction Environmental Management Plan (CEMP) has been prepared by The Environmental Factor (TEF) at the request of Bathurst Regional Council to outline environmental controls required for the proposed rectification of the Freemantle Road Culvert in Eglinton, NSW (hereafter ‘the Proposal’). This CEMP has been prepared in accordance with the Guideline for the Preparation of Environmental Management Plans (NSW Department of Infrastructure, Planning and Natural Resources, 2004; the EMP Guideline).

It is intended that this document will be used by BRC and Keech Constructions for the purposes of implementing appropriate environmental controls necessary for the works. This document is not intended to be utilised or relied upon by any other persons, nor to be used for any other purpose other than that articulated above. Accordingly, TEF accepts no responsibility in any way whatsoever for the use of this report by any other persons or for any other purpose.

The information, statements, recommendations and commentary (together the “Information”) contained in this CEMP have been prepared by TEF from material provided by BRC and Keech Constructions and the information contained within the REF report prepared by TEF, August 2023. TEF has not sought any independent confirmation of the reliability, accuracy or completeness of this information. It should not be construed that TEF has carried out any form of audit of the information which has been relied upon.

Accordingly, whilst the statements made in this report are given in good faith, TEF accepts no responsibility for any errors or omissions in the information provided by BRC or Keech Constructions, or any other sources utilised, nor the effect of any such errors on the analysis undertaken, suggestions provided, or this report.

Site conditions and legislative context for this proposal may change after the date of this report. TEF does not accept responsibility arising from, or in connection with, any change to the site conditions or changes to legislative requirements after the report is finalised. TEF is also not responsible for updating this report if site / legislative conditions change.



## Table of Contents

1	Background.....	6
1.1	Introduction.....	6
1.2	Context of the CEMP .....	7
1.3	Project Description .....	7
1.3.1	Direct impact area / subject site .....	7
1.3.2	Indirect impact area / study area .....	7
1.3.3	Review of Environmental Factors / Environmental aspects and impacts .....	7
1.3.4	Scope of works.....	8
1.3.5	Assumptions and limitations .....	9
1.4	Project working hours .....	11
1.5	Objectives of the CEMP .....	11
1.6	Emergency Contacts and Response Procedures .....	13
2	Legislation and other Requirements .....	15
2.1	Conditions of Approval .....	15
2.2	Relevant Legislation.....	15
3	Environmental Management.....	19
3.1	Contract Specific Environment Protection Issues .....	19
3.1.1	Erosion and Sediment Control Plans / Landcom Extracts .....	19
3.1.2	Aboriginal and non-Aboriginal Heritage.....	19
3.1.3	Traffic and Transport .....	21
3.1.4	Incident Management and Emergencies.....	21
3.1.5	Construction Noise Management Plan.....	21
3.1.6	Waterways & Hydrology (Groundwater) / Surface Water & Flooding.....	21
3.1.7	Biodiversity / Flora & Fauna .....	22
3.1.8	Air Quality.....	23
3.1.9	Waste Management & Resource Use.....	23
3.1.10	Visual Amenity and Landscape Character .....	24
3.1.11	Management of Asbestos, other Hazardous Materials & Combustible Fuels .....	24
3.1.12	Fire Control .....	25
3.1.13	Restoration and Rehabilitation.....	25
3.1.14	Project Specific Training .....	25
3.2	Environmental Management Structure and Responsibility .....	26
4	Implementation of the CEMP.....	28

4.1	Risk Assessment and Environmental Control Plans.....	28
5	Monitoring, Reporting and Review .....	29
5.1	Environmental Monitoring .....	29
5.2	Auditing .....	30
5.3	Corrective Actions .....	30
5.4	CEMP Review .....	30
6	Environmental Management Sub-plans.....	31
6.1	Biodiversity / Flora and Fauna Sub-plan.....	31
6.2	Soil and Water Management Sub-plan .....	36
6.3	Noise, Air Quality and Waste Management Sub-plan.....	44
6.4	Heritage Management Sub-plan .....	54
6.5	Traffic and Transport Management Sub-plan .....	58
7	References.....	61
8	Appendices .....	62

Appendix A – Fisheries Permit PN23-/401

Appendix B – Risk Assessment

Appendix C – Environmental Control Plan and Final Compliance Checklist

Appendix D – Keech Constructions Environmental Policy

## Figures and Tables

Table 1	Summary of potential impacts from the Freemantle Road Culvert Rectification .....	8
Table 2	Types of works anticipated to be included in construction phase .....	8
Table 3	Standard construction working hours (Interim Construction Noise Guideline 2009).....	11
Table 4	CEMP objectives, targets and responsible person .....	12
Table 5	Emergency Contact List .....	13
Table 6	Legislation relevant to the Project.....	15
Table 7	Proposal staff responsibilities.....	26
Table 8	List of environmental schedules to be used as part of the proposal’s day-to-day management .	28
Table 9	Monitoring checklist .....	29

Figure 1 Subject site and study area.....

Figure 2 Organisational chart for the proposed works .....

## ABBREVIATIONS

Abbreviation	Description
<b>AHIMS</b>	Aboriginal Heritage Information Management System
<b>AOBV</b>	Area of Outstanding Biodiversity Value
<b>ARA</b>	Appropriate Regulatory Authority
<b>BRC or Council</b>	Bathurst Regional Council
<b>BC Act</b>	<i>Biodiversity Conservation Act 2016</i>
<b>BOS</b>	Biodiversity Offsets Scheme
<b>DECC</b>	Department of Energy and Climate Change
<b>CEMP</b>	Construction Environmental Management Plan
<b>DPE</b>	Department of Planning and Environment
<b>ECP</b>	Environmental Construction Plan
<b>EMR</b>	Environmental Management Representative
<b>EPA</b>	Environmental Protection Authority
<b>EPBC Act</b>	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
<b>ERSED</b>	Erosion and Sedimentation
<b>FM Act</b>	<i>Fisheries Management Act 1994</i>
<b>LGA</b>	Local Government Area
<b>MERI</b>	Monitoring Evaluation Reporting and Improvement
<b>Mh</b>	Man hours
<b>MNES</b>	Matters of National Environmental Significance
<b>MSDS</b>	Material Safety Data Sheet
<b>NCR</b>	Non-conformance Record
<b>NP&amp;W Act</b>	<i>National Parks and Wildlife Act 1974</i>
<b>NPWS</b>	National Parks and Wildlife Service
<b>NRAR</b>	Natural Resources Access Regulator (now DPE Water)
<b>NRM</b>	Natural Resource Management

Abbreviation	Description
NSW	New South Wales
OCP	organochlorine pesticides
OPP	organophosphate pesticides
PCT	Plant Community Type
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
RSPCA	Royal Society for the Prevention of Cruelty to Animals
REF	Review of Environmental Factors
SDS	Safety Data Sheets
SR	Site Representative
TISEPP	<i>Transport and Infrastructure SEPP 2021 (Formerly ISEPP)</i>
TMP	Traffic Management Plan
TEF	The Environmental Factor
WIRES	Wildlife Information, Rescue and Education Service Inc.
WM Act	<i>Water Management Act 2000</i>
WoNS	Weed of National Significance

# 1 BACKGROUND

## 1.1 Introduction

The Environmental Factor (TEF) was commissioned by Keech Constructions on behalf of Bathurst Regional Council (BRC or Council) to produce a Construction Environmental Management Plan (CEMP) for the proposed rectification to the Freemantle Road culvert in Eglinton, NSW (hereafter 'the Proposal'). The works will occur within Council owned and managed road reserve and an adjacent private property (Lot 31 DP1147371) on the outskirts of Eglinton, NSW in the Bathurst Regional Council Local Government Area (BRC LGA). (Figure 1).

The Freemantle Road Culvert Rectification Review of Environmental Factors (Project REF) was prepared by TEF in August 2023, which has underpinned preparation of this CEMP.

Construction activities associated with the rectification to the Freemantle Road culvert include the following:

- Site delineation including marking out setbacks for the Kelloshiel Creek Stone Bridge heritage item.
- Establishment of a site office, stockpile area, vehicle washdown facility and erection of security fencing.
- Installation of all Erosion and Sediment (ERSED) control structures.
- Debris removal including the removal of concrete pipe from within the waterway.
- Establishment of a dry works area to allow construction of retaining wall, which would include:
  - Installation of dam area using earth bunds and lined with plastic, concrete and 150mm rock to block flow of waterway upstream of the works area and pump down stream of work area.
  - Creation of a temporary holding dam between the diversion crossing and the existing culvert
  - Installation of a pumping system to allow water to be pumped from the temporary holding dam back into the creek downstream of the dry works area, thus maintaining waterway flows for the duration of works.
- Excavation of the creek bed down to the required design levels.
- Deposition of material including DN 20 and 150 DN rock to bring the site up to design height.
- Installation of new form reinforced footings for headwall and retaining walls.
- Installation of new pipes to reinstate the culvert.
- Installation of fiberglass reinforced polymer (FRP) retaining wall – approximately 68 m in length.
- Deposition of large boulders of minimum DN 1000 (mm) directly downstream of the newly installed culvert to create an energy dissipating rock apron to dissipate flow velocities and reduce risk of erosion and undercutting during future flooding events. Smaller diameter rocks to be placed over the top and in gaps to solidify the rock armouring apron as needed.
- Backfill the retaining wall to reinstate desired road surface level
- Resurface the road as per State and Council requirements and install safety barriers and signage.

- Removal of all ERSED controls, temporary fencing, waste material and vehicle washdown area and site compound.
- Site stabilisation/restoration works as required.
- Removal of sheet piling, temporary holding dam and pump equipment to reinstate natural flows within the creek.

## 1.2 Context of the CEMP

A full assessment of the potential environmental impacts of the rectification to the Freemantle Road culvert is detailed in the Project REF prepared by TEF in August 2023. The potential environmental impacts of the proposed activities outlined within the Project REF were considered unlikely to significantly impact the environment, provided the Environmental Safeguards recommended therein were implemented and maintained.

This CEMP is intended to demonstrate the practical application of the Environmental Safeguards, as recommended in the REF and adapted to meet changing onsite conditions, to ensure environmental compliance under the relevant legislation and to protect the environment from undue harm.

This CEMP is to accompany any site-specific induction materials to be prepared for the Proposal.

## 1.3 Project Description

### 1.3.1 Direct impact area / subject site

The focus of this CEMP is the potential impacts arising from the rectification to the Freemantle Road culvert as shown in Figure 1 Subject site and study area. The area to be directly affected by the Proposal, including earthworks and vegetation clearing includes:

- Total impact area (subject site) of approximately **0.46 ha**. Works to include ground disturbance, excavation, creation of dry works area and holding dam, deposition of large boulders construction of footings, retaining walls and road surface.

### 1.3.2 Indirect impact area / study area

The indirect impact area/study area is defined as the area that includes the direct impact area/subject site (as described above) and any proximal areas that could be potentially directly or indirectly impacted by the Proposal (refer Figure 1 Subject site and study area) (assumed to be restricted to a 50 m buffer surrounding the Subject Site and an extended buffer downstream of 100 m). This equals a total impact area (direct and indirect) of **2.87 ha**.

### 1.3.3 Review of Environmental Factors / Environmental aspects and impacts

The proposed works were subject to a formal REF, completed by TEF in August 2023. This CEMP is not intended to be an impact assessment and all determinations and recommendations have been based on assessments previously undertaken to inform the REF.

A summary of the REF Environmental Safeguards is included in the Project REF and will form part of site-specific inductions.

With due consideration to the Project REF, Table 1 below summarises the expected aspects and potential impacts of the works.



**Table 1 Summary of potential impacts from the Freemantle Road Culvert Rectification**

Factor / Potential Impact Topic	Significant	Moderate	Minor	Negligible
Traffic / Access			X	
Water Quality Impacts and Erosion and Sediment Control including Ground Water		X		
Terrestrial and Aquatic Fauna and Flora / Habitat		X		
Heritage & Archaeological (Including Aboriginal heritage)		X		
Noise and Vibration			X	
Community / Amenity / Visual Impacts / Restoration			X	
Dust / Air Quality / Greenhouse Gases			X	
Utilities and Services			X	
Waste / Refuse			X	
Bushfire			X	

### 1.3.4 Scope of works

The focus of this CEMP is the rectification to the Freemantle Road culvert which involves the creation of a dry works area, construction of a retaining wall, backfilling with material to reestablish the previous road level, reconstruction of the culvert, deposition of large boulders to create an energy dissipating rock apron, reestablishment of a drivable road surface over Kelloshiel Creek and removal of the current diversion route over the heritage listed bridge.

The scope of works listed in Table 2 details the activities and methodology anticipated to be included in the construction phase of the proposal.

**Table 2 Types of works anticipated to be included in construction phase**

Types of works	Comments
<b>Site preparation works</b>	<ul style="list-style-type: none"> <li>• Site delineation including marking out setbacks for the Kelloshiel Creek Stone Bridge heritage item.</li> <li>• Establishment of a site office, stockpile area, vehicle washdown facility and erection of security fencing.</li> <li>• Installation of all Erosion and Sediment (ERSED) control structures.</li> <li>• Debris removal including the removal of concrete pipe from within the waterway.</li> <li>• Establish a dry works area to allow construction of retaining wall, which would include:               <ul style="list-style-type: none"> <li>○ Installation of sheet piling to block flow of waterway upstream of the works area.</li> <li>○ Creation of a temporary holding dam between the diversion crossing and the existing culvert</li> </ul> </li> </ul>

Types of works	Comments
	<ul style="list-style-type: none"> <li>○ Installation of a pumping system to allow water to be pumped from the temporary holding dam back into the creek downstream of the dry works area, thus maintaining waterway flows for the duration of works.</li> </ul>
<b>Construction</b>	<ul style="list-style-type: none"> <li>• Excavation of the creek bed down to the required design levels.</li> <li>• Deposition of material including DN 20 and 150 rock to bring the site up to design height.</li> <li>• Installation of new form reinforced footings for headwall and retaining walls.</li> <li>• Installation of new pipes to reinstate the culvert.</li> <li>• Installation of fiberglass reinforced polymer (FRP) retaining wall – approximately 104 m in length.</li> <li>• Deposition of large boulders of DN 1000 (mm) directly downstream of the newly installed culvert to create a energy dissipating rock apron to dissipate flow velocities and reduce risk of erosion and undercutting during future flooding events. Smaller diameter rocks to be placed over the top and in gaps to solidify the rock armouring apron as needed.</li> <li>• Backfill the retaining wall to reinstate desired road surface level.</li> </ul>
<b>Road Surface and associated structures</b>	Resurface the road as per State and Council requirements and install safety barriers and signage.
<b>Site rehabilitation works</b>	<ul style="list-style-type: none"> <li>• Site stabilisation/restoration works as required.</li> <li>• Removal of sheet piling, temporary holding dam and pump equipment to reinstate natural flows within the creek.</li> <li>• Removal of all ERSED controls, temporary fencing, waste material and vehicle washdown area and site compound.</li> </ul>

An ECP has been prepared to cover the extent of the construction works and is to be used by contractors for the duration of the works (Appendix C).

### 1.3.5 Assumptions and limitations

The phasing of works proposed herein is indicative only. It is assumed that physical works (excavation, construction, site re-establishment replanting / reseeded etc.) will be undertaken as appropriate and in accordance with the prevailing weather conditions on site and in line with BRC's and Keech Construction's own schedule and budgetary constraints.

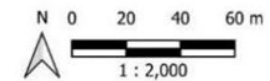
This CEMP does not constitute an environmental impact assessment; rather, a review of the REF (TEF, 2023) and measures from this document have been incorporated herein. It is assumed that the REF will be read in conjunction with this CEMP.



**Keech Constructions Freemantle Road Culvert, Eglington, NSW - Study Area**

**Legend**

- |              |                 |               |              |                                    |                  |       |
|--------------|-----------------|---------------|--------------|------------------------------------|------------------|-------|
| Study Area   | Lot Boundary    | <b>Roads</b>  | Local Road   | Sub Arterial Road                  | <b>Waterways</b> | River |
| Subject Site | Suburb Boundary | Arterial Road | Primary Road | 1st & 2nd order; unnamed waterways | Creek            |       |



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**Figure 1 Subject site and study area**

### 1.4 Project working hours

Hours of work will be within the approved standard construction working hours outlined within the REF and aligned with the Interim Construction Noise Guidelines, 2009. These are shown below in Table 3 with any plant start-up checks to be completed at the commencement of the working day.

Table 3 Standard construction working hours (Interim Construction Noise Guideline 2009).

Days	Work hours
Monday – Friday	7.00 am – 6:00 pm
Saturday	8:00 am – 1:00 pm
Sundays and public holidays	No work

### 1.5 Objectives of the CEMP

The objectives of this CEMP are as follows:

- Provide environmental control measures for environmental issues and risks identified in the REF;
- Comply with relevant statutory and legislative obligations including the Part 7 Fisheries Permit issued by DPI Fisheries to allow instream works to proceed (PN23/401 – provided as Appendix A)
- Define responsibilities for the management, use and review of the CEMP; and
- Outline notification and emergency response procedures in the event of an environmental incident.

Site specific objectives of the CEMP are outlined below. These are provided as a more specific list of what the CEMP is trying to achieve and relate to general site management, special/local site features and best practice environmental management:

- Ensure no impact to Aboriginal heritage and non-Aboriginal objects or places;
- Ensure that no vegetation clearing is undertaken beyond the approved impact footprint;
- Ensure minimal loss of habitat features (hollows, stags, feeding resources) through careful site placement and design, as well as habitat enhancement and post construction revegetation works;
- Ensure no injuries or death to native fauna during construction works;
- Reduce indirect impacts including soil compaction and sediment and erosion migration resulting from excavation works, vehicle and machinery use;
- Implement vehicle and machinery hygiene protocols and vegetation management to ensure weeds are not spread across the site and dust, dirt and debris aren't spread along roads surrounding the subject site;
- Minimise waste production; and
- Avoid existing services and hazards (if assessed as being present within the subject site through Dial Before You Dig process), including:
  - Overhead and underground powerlines
  - Optic fibre connections

- Existing watermains and sewerage lines (as applicable).

**Table 4 CEMP objectives, targets and responsible person**

Objectives	Targets	Resp. Person	Actual Result
<b>ENVIRONMENT</b>			
Meet all legal and regulatory obligations	No EPA or local Council, Client or legislative (such as local electricity authorities) Notices	Council and Keech Constructions	
Eliminate chemical spillages	Zero spillages	Keech Constructions	
Reduce environmental incidents	< 3 incidents per 25,000 mh	Keech Constructions	
Implement Waste Management controls	Implement waste segregation facilities at all sites	Keech Constructions	
	Establish Waste Disposal records (Waste Register and Waste Dockets)	Keech Constructions	
	Recycling of toner cartridges	Keech Constructions	
Non-Conformances	No overdue Environmental related NCRs raised by Client	Keech Constructions	
Avoid impacts to underground services (sewage, electrical, water and communications)	Complete Dial Before You Dig prior to excavation to confirm works will not impact underground services (sewerage, electrical, water and communications).	Keech Constructions	
	If required, comply with SafeWork NSW Guide for Work near underground assets	Keech Constructions	
	If required, ensure any soil excavated in proximity to sewerage pipeline has not been contaminated by leakage. If contaminated soils are discovered, they should not be stockpiled but disposed of appropriately in a licenced facility.	Keech Constructions	

Objectives	Targets	Resp. Person	Actual Result
Avoid impacts to optic fibre connections	Complete Dial Before You Dig prior to excavation to confirm works will not impact optic fibre	Keech Constructions	
	If required, ensure minimum separation distances are adhered to (>700 mm)	Keech Constructions	
Avoid impacts to existing watermains	No collisions with existing watermains	Keech Constructions	
<b>COMMUNITY</b>			
Meet community expectations and behaviour	No community complaints	Council and Keech Constructions	
<b>CUSTOMER SATISFACTION</b>			
Satisfy the agreed contractual and commercial requirements	No client raised notices under the contract	Keech Constructions	
	No NCRS at client audits	Keech Constructions	
Determine level of Customer satisfaction	Carry out at least one Customer Questionnaire per proposal	Council	
	Achieve satisfaction of >70%	Council	

### 1.6 Emergency Contacts and Response Procedures

The Emergency Contact List is provided in Table 5 below. Environmental Emergency Procedures should be available at the site office and should be followed in case of an emergency. Spill containment materials will be kept at strategic locations as well as at the site office.

Table 5 Emergency Contact List

Contact	Phone	Mobile
Police/Fire/Ambulance	000	
EPA Pollution Line	131 555	EPA Pollution Line
WorkCover Hotline Information (WorkSafe)	131 050	WorkCover Hotline Information
Bathurst Regional Council	633 3611	6333 6519

Contact	Phone	Mobile
Contractor: Keech Constructions, Brendan Keech		0429 995 570
BRC Emergency Contact Number (after hours)	Please only use this number for emergencies outside office hours: <b>6334 2795</b>	

## 2 LEGISLATION AND OTHER REQUIREMENTS

### 2.1 Conditions of Approval

As the determining authority for these works, Council has approved the REF for the rectification to the Freemantle Road culvert which has been taken to form the approval document for the proposal. The REF includes Environmental Safeguards which serve as ‘conditions of consent’ for the works, these safeguards have been included as part of the Environmental Control Plans within this CEMP and all Project REF mitigation measures are applicable.

### 2.2 Relevant Legislation

The Proposal is not located on land reserved under the *National Parks and Wildlife Act 1974* and does not affect land or development regulated by *State Environmental Planning Policy No. 14 - Coastal Wetlands* or *State Environmental Planning Policy No. 26 - Littoral Rainforests*.

Other environmental legislation relevant to this CEMP is detailed in Table 6 below.

Table 6 Legislation relevant to the Project

Legislation	Relevance to CEMP
<b>Commonwealth Legislation</b>	
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	<p>The EPBC Act ensures that actions likely to cause a significant impact on Matters of National Environmental Significance (MNES) as well as threatened and migratory species, communities and populations, and heritage places undergo an assessment and approval process.</p> <p>No MNES are likely to be significantly impacted by the Proposal.</p>
<b>NSW State Legislation</b>	
<i>Environmental Planning and Assessment Act 1979</i> (EP&A Act) and the <i>Environmental Planning and Assessment Regulation 2021</i> (EP&A Regulation 2021)	<p>This REF has identified that the Proposal is not likely to significantly affect the environment (Section 6); as such, Council will not need to obtain and consider an Environmental Impact Statement before it carries out the proposal (s 5.7 of the EP&amp;A Act).</p>
<i>Biodiversity Conservation Act 2016</i> (BC Act)	<p>The BC Act provides legal status for biota of conservation significance in NSW. The determining authority must consider the effect of any activity on Areas of Outstanding Biodiversity Value (AOBV) and species, populations or ecological communities, or their habitats and whether there is likely to be a ‘significant effect’ on those species, populations or ecological communities.</p> <p>Surveys and desktop assessments have concluded there to be no potential impacts to threatened biota as a result of the Proposal. No threatened species or TEC’s were recorded during site surveys.</p>



Legislation	Relevance to CEMP
<p><i>Biodiversity Conservation Regulatory Act 2017</i> (BC Regulatory Act)</p>	<p>The BC Regulatory Act provides a number of considerations and practices to be implemented as part of the BC Act, including clearing thresholds for the application of the Biodiversity Offset Scheme (BOS), principles for serious and irreversible impacts to biodiversity, rules for meeting biodiversity offset obligations, and biodiversity certification criteria.</p> <p>As the Proposal was assessed under Division 5.1 of the EP&amp;A Act, the clearing thresholds for native vegetation are not relevant to this Proposal. No listed AOBV occur on site and no significant impacts to threatened species or Threatened Ecological Communities are considered likely as a result of the proposal. Council has opted not to participate in the BOS voluntarily.</p>
<p><i>Fisheries Management Act 1994</i> (FM Act)</p>	<p>The FM Act aims to conserve threatened species, populations and ecological communities of fish and marine vegetation to NSW and to promote ecologically sustainable development, including the conservation of biological diversity. It also aims to reduce the threats faced by native fish and marine vegetation in NSW.</p> <p>The Proposal includes dredging and reclamation works within a 3rd order waterway that is mapped as containing KFH. As such, a Part 7 permit from Fisheries is required. The permit was granted on 4 September 2023 (PN23/401) and includes 14 conditions that must be adhered to. The permit must be kept on site at all times and has been included in this CEMP as Appendix A.</p>
<p><i>Heritage Act 1977</i> (Heritage Act)</p>	<p>Local and NSW State historic heritage registers were consulted as part of preparation of the REF with two (2) listed heritage sites being identified in proximity to the study area including Item No. I121 – Kellosheil Creek Stone Bridge, and Item No. I124 – Kellosheil (residential building). Specific environmental safeguards are included as part of the works for the protection of the Kellosheil Creek Stone Bridge.</p>
<p><i>National Parks and Wildlife Act 1974</i> (NP&amp;W Act)</p>	<p>The NP&amp;W Act provides for the statutory protection of Aboriginal cultural heritage places, objects and features. This legislation aims to protect and preserve Aboriginal heritage values.</p> <p>The ADD undertaken by Apex Archaeology identified that a section of the study area is located within an area of “moderate Archaeological Potential as defined on the Predictive model of Aboriginal heritage sensitivity within the Bathurst Regional LGA Figure 12 (Extent 2017)”. No previously registered archaeological sites are located within the study area or within 500 m of the subject site and no newly identified archaeological material was identified during the site assessment</p>

Legislation	Relevance to CEMP
	<p>completed in July 2023. Notwithstanding the rich Aboriginal heritage in the locality, the ADD determined that the study area was highly disturbed with no potential for sub surface archaeological deposits to occur.</p>
<p><i>Protection of the Environment Operations Act 1997</i> (POEO Act), and  <i>Protection of the Environment Operations (Waste) Regulation 2005</i></p>	<p>The NSW Environment Protection Authority (EPA) is responsible for the administration of the POEO Act. The POEO Act regulates air, noise, land and water pollution. The Proposal does not constitute activities that are likely to generate significant pollution; however, consideration for the prevention of water, air, land and noise pollution is provided herein.</p> <p>The proposed works are considered achievable to carry out without requiring a discharge of pollution, therefore a licence is not required.</p>
<p><i>Water Management Act 2000</i> (WM Act)</p>	<p>Council is exempt from s 91E(1) under the WM Act for proposals approved under Division 5.1 of the EP&amp;A Act, in relation to all controlled activities that it carries out in, on or under waterfront land (cl 41 Water Management (General) Regulation 2018).</p>
<p><i>NSW Biosecurity Act 2015</i> (Biosecurity Act) and Central West Regional Strategic Weed Management Plan 2023-2027</p>	<p>This Act aims to control Priority weeds in NSW.</p> <p>Two (2) Weeds of National Significance (WoNS) with Prohibition of Certain Dealings, including a large Blackberry (<i>Rubus fruticosus</i>) thickets and many mature Willows (<i>Salix sp.</i>), and two (2) are listed as Priority Weeds with Regional Recommended Measures within the Central Tablelands of NSW. It is recommended that all Weeds of National Significance and NSW Priority Weeds should be controlled, and where possible, eradicated to reduce the risk of further spread. Furthermore, environmental controls must be undertaken to ensure that significant weeds are not introduced or spread across the site.</p>
<p>Industrial Noise Policy 2000/Interim Construction Noise Guideline 2009</p>	<p>Applicable to all general construction work. The approved construction hours are:</p> <p style="text-align: center;">Monday to Friday 7:00 am to 6:00 pm</p> <p style="text-align: center;">Saturdays 8:00 am to 1:00 pm</p> <p style="text-align: center;">No work on Sundays or public holidays</p> <p>These guidelines will be followed, and standard operating hours will be observed for the duration of construction works.</p>
<b>State Environmental Planning Policies</b>	
<p><i>Transport and Infrastructure SEPP 2021</i> (TISEPP)</p>	<p>Formerly <i>State Environmental Planning Policy (Infrastructure) 2021</i> (ISEPP).</p>

Legislation	Relevance to CEMP
	<p>The Proposal comprises road works in stream and on land zoned RU1 –and R5. Therefore, the Proposal is characterised as development under the SEPP and as such, the Proposal can be carried out as an activity under Division 5.1 of the EP&amp;A Act without development consent from Council.</p>
<p><i>State Environmental Planning Policy (Biodiversity and Conservation 2021)</i></p>	<p>Chapter 3 of the <i>State Environmental Planning Policy (Biodiversity and Conservation) 2021</i> applies to Koala habitat protection. This chapter of the Biodiversity and Conservation SEPP 2021 only applies to proposals under Part 4 ‘Development’ of the EP&amp;A Act. The Proposal is being assessed under Division 5.1 of the EP&amp;A Act, therefore this chapter of the Biodiversity and Conservation SEPP does not apply to the Proposal and this has not been considered further in preparation of the Project REF.</p> <p>However, the Koala is listed as an Endangered species under the BC Act and EPBC Act, and thus also requires assessment under these Acts. This has been undertaken in the Project REF. The Likelihood of Occurrence Assessment concluded that the risk of impact to this species as a result of the proposed works is low.</p>

## 3 ENVIRONMENTAL MANAGEMENT

### 3.1 Contract Specific Environment Protection Issues

#### 3.1.1 Erosion and Sediment Control Plans / Landcom Extracts

As required by the REF, formal Environmental Management Sub-plans have been prepared for these Works and included in Section 6. These sub-plans detail the contractor's key responsibilities, and the following subheadings provide additional context for the current Proposal.

It is anticipated that construction works will require stripping of topsoil and excavation, movement and stockpiling of soil and rock. The Proposal includes surface soil disturbance, therefore there is the potential for the migration of sediment and other pollutants across the landscape and into adjacent waterways during and after construction, which would constitute a pollution of water which is an offense under s120 of the *Protection of the Environment Operations Act 1997* (POEO Act).

The following Erosion and Sediment (ERSED) Control 'Structures' have been identified as applicable to these Works.

- a) STOCKPILES: Stockpiles are to be constructed (and protected) in accordance with Landcom (formerly NSW Department of Housing) Manual 'Managing Urban Stormwater – Soils and Construction' [4<sup>th</sup> Edition, March 2004] Diagram No. SD 4-1.
- b) STRAW BALE FILTERS: Straw bale filters, certified as weed free and wrapped in filter cloth, are to be installed in accordance with Landcom Manual 'Managing Urban Stormwater – Soils and Construction' [4<sup>th</sup> Edition, March 2004] Diagram No. SD 6-7.
- c) SEDIMENT FENCES: Sediment fences are to be installed in accordance with Landcom Manual 'Managing Urban Stormwater – Soils and Construction' [4<sup>th</sup> Edition, March 2004] Diagram No. SD 6-8.
- d) SEDIMENT TRAPS: (Reinforced Sediment Fence Sections): Where substantial flow is or may be expected, i.e., significant ground depressions, gullies and expected runoff flow concentration points, sediment fences are to be supplemented / reinforced by steel mesh, in accordance with (former) CALM 'Urban Erosion and Sediment Control Field Guide'.
- e) REPLACING TOPSOIL: Topsoil is to be replaced in accordance with Landcom Manual 'Managing Urban Stormwater – Soils and Construction' [4<sup>th</sup> Edition, March 2004] Diagram No. SD 4-2.
- f) SITE STABILISATION: Rehabilitation and site stabilisation works are to be completed and maintained in accordance with Landcom (formerly NSW Department of Housing) Manual 'Managing Urban Stormwater – Soils and Construction' [4<sup>th</sup> Edition, March 2004] Appendix G and RMS, 2015 – Guideline for Batter Surface Stabilisation using vegetation.

Erosion and sediment control devices and earthworks will be carried out in accordance with Appendix C.

#### 3.1.2 Aboriginal and non-Aboriginal Heritage

The ADD undertaken by Apex Archaeology identified that a section of the study area is located within an area of "moderate Archaeological Potential as defined on the Predictive model of Aboriginal heritage sensitivity within the Bathurst Regional LGA". No previously registered archaeological sites

are located within the study area or within 500 m of the subject site and no newly identified archaeological material was identified during the site assessment completed in July 2023. Notwithstanding the rich Aboriginal heritage in the locality, the ADD determined that the study area was highly disturbed with no potential for sub surface archaeological deposits to occur (Apex Archaeology, 2023). It also concluded that although the proposal will have an impact on the ground surface, no Aboriginal objects or intact archaeological deposits are likely to be harmed by the Proposal.

In relation to non-Aboriginal heritage, the Bathurst LEP identified one (1) item, the Kellosiel Creek Stone Bridge within the study area and one (1) item, 'Kellosiel' located 300m to the south-east of the subject site. The Kellosiel heritage building is well outside of the study area and is not expected to be directly impacted by the Proposal as no works are proposed in proximity to this item.

The Kellosiel Creek Stone Bridge is currently providing a detour option for the damaged section of Freemantle Road. It is being used as a single lane crossing over the creek with traffic light controls in place. Upon the closure of the damaged section of Freemantle Road and the subsequent diversion across the Kellosiel Creek Stone Bridge, the surface of the heritage listed bridge was temporarily sealed with bitumen to protect the bridge surface from degradation while in use and provide a suitable driving surface for road users.

Construction works as part of the Proposal have the potential to impact on the Kellosiel Creek Stone Bridge heritage item. Works are being undertaken in close proximity to this item and there is the potential for damage to the bridge structures if strict mitigation measures are not adhered to, particularly related to potential collision with heavy machinery and through vibration doses caused by nearby excavation activities.

It is advised that Council create and maintain photographic records of the external condition of the bridge structure. These can be used to monitor for any signs of visual damage for the duration of the proposal.

In addition, it is noted that the bridge be delineated from the impact area with erection of fencing and flagging. All construction workers will be inducted on-site to ensure they are aware of the sensitivity of this heritage item and the precautions necessary to protect the item from unintended damage.

The use of the bridge as a single lane road under traffic signals will continue throughout the construction phase of the Proposal. Upon completion of the Proposal, Freemantle Road will be re-opened to the public and the diversion route removed; this would include the removal of the temporary bitumen surface and return the stone bridge surface to its previous condition.

However, there remains the potential for unexpected finds of both Aboriginal and non-Aboriginal heritage to occur and as such the precautionary principle applies. As part of the site induction, all workers must be advised of their obligations in relation to heritage under the *National Parks and Wildlife Act 1974* and *Heritage Act 1977*, before construction begins and the guidelines to follow if unanticipated heritage items or deposits are located during construction.

All work must stop in the event of an Aboriginal item or heritage site being found. Works would not recommence until after instruction from BRC Heritage Officer, or qualified heritage consultant regarding the find. If any human remains are found, all works should stop immediately, the site should be secured and NSW Police contacted immediately.

### **3.1.3 Traffic and Transport**

The section of Freemantle Road within the subject site experiences local traffic by rural residents and minor, irregular thoroughfare of farm machinery, trucks and heavy vehicles. There are no private access driveways present in the subject site.

During construction, road users will continue to use the existing temporary traffic diversion arrangements over the Kelloshiel Creek Stone Bridge under a single lane controlled by traffic lights. However, during phases of construction work if / when minor road closure is required, traffic control will be utilised to facilitate the movement of traffic (including pedestrian, bike and vehicular) and allow for safe thoroughfare on the affected section of road. A Traffic Control Plan (TCP) is required to be developed as part of the CEMP, to ensure that vehicular, pedestrian and bicycle movements are safely managed whilst construction is in progress.

### **3.1.4 Incident Management and Emergencies**

In the event an environmental incident occurs, the Council's policy of immediate control, stabilisation and rectification applies. Council is to be alerted to all environmental incidents regardless of the perceived seriousness or otherwise. Keech Constructions is responsible for organising immediate rectification of environmental incidents.

Keech Constructions is responsible for immediately contacting both the NSW EPA as the Appropriate Regulatory Authority (ARA) and Council informing them of the incident.

All environmental incidents will be recorded via Council's online incident management system.

### **3.1.5 Construction Noise Management Plan**

The proposal area occurs in a rural area, with background noise levels typically arising from farming machinery and activities, local traffic, anthropogenic noises, livestock, wildlife and inclement meteorological conditions (rain and wind). The nearest residence is located approximately 150 metres north-east of the subject site with two (2) other residences located within 300m north-west and south east of the subject site.

Noise impacts during construction are anticipated to arise from increased heavy vehicle and plant movements; excavation works; pouring of concrete, rollers and other mechanical equipment including general engine noise and reverse alert beepers are expected as part of the construction phase. The residences may experience temporary noise disturbances, however these are anticipated to be short in duration.

### **3.1.6 Waterways & Hydrology (Groundwater) / Surface Water & Flooding**

The study area occurs along Kelloshiel Creek within the catchment of the Macquarie River - Wambuul, which is mapped as supporting Key Fish Habitat. A roadside drainage line along the southern side of Freemantle Road enters Kelloshiel Creek from the west; the drainage line along with Kelloshiel Creek and its tributaries form an ephemeral catchment which was subject to significant waterflows and erosion during an extreme rain weather event in November 2022. Fish passage through the culvert towards the upper catchment area is currently blocked due to erosion and scouring of the creek bed,

which has resulted in an approximately 1.2m drop from the bottom of the culvert to the waterway below.

The study area is largely flat and there are no wetlands and no property dams mapped as occurring within the study area. The study area and surrounds are not mapped as containing shallow groundwater resources that could be sensitive to trenching and easily contaminated.

Potential impacts arising as a result of the Proposal include the release of sediment and soil into waterways as a result of instream works that includes dredging of the creek bed and banks and deposition of stabilising materials using heavy machinery. There is also potential for spills of fuels, concrete and other contaminants arising from plant and machinery, which could enter surface waters during any works completed in proximity to drainage lines and waterways. To reduce the likelihood and severity of impacts to waterways, a dry works area will be established to allow works to proceed without the flow of water directly adjacent to activities such as creek bed excavation and the pouring of concrete.

### **3.1.7 Biodiversity / Flora & Fauna**

Kelloshiel Creek is a 3rd Order stream which is mapped as Key Fish Habitat (KFH) and was observed to have running clear water flowing during surveys. However, the damage caused during the collapse of the culvert has resulted in a disconnect in fish passage as the culvert is now suspended around 1.2 m above the creek bed. This has subsequently disconnected potential fish passage from the lower sections of Kelloshiel Creek and the Macquarie River - Wambuul, to higher parts of Kelloshiel Creek and its tributary Sandy Creek. To allow dredging and reclamation works to occur within a waterway mapped as containing KFH, a part 7 Fisheries Permit (PN 23/401) has been received for the Proposal. The permit includes conditions of consent that must be adhered to. These have been included as Appendix A.

In addition, Kelloshiel Creek contains good quality frog habitat features with some aquatic and fringing semi-aquatic vegetation.

The subject site occurs in an agricultural landscape which has been historically cleared of canopy and now dominated by exotic vegetation under grazing and pasture management. The roadside vegetation has a small number of juvenile planted locally occurring River Sheoak (*Casuarina cunninghamiana*) trees and some minor occurrences of native ground cover species. Two (2) Weeds of National Significance (WoNS) with Prohibition of Certain Dealings, including a large Blackberry (*Rubus fruticosus*) thickets and many mature Willows (*Salix sp.*) were identified.

The study area supports a limited range of habitat for native wildlife as the vegetation is isolated from other larger tracts of vegetation within the broader locality. This has resulted in limited native fauna biodiversity which is predominantly restricted to more mobile bird species such as Australian Raven (*Corvus coronoides*), Crimson Rosellas (*Platycercus elegans*) and Wedge-tailed Eagle (*Aquila audax*), or bird species able to persist in small patches of highly disturbed vegetation such as Superb Fairywrens (*Malurus cyaneus*).

Construction works shall be undertaken in accordance with the requirements of the Environmental Safeguards listed in the Sub-plans provided in Section 6.2. Furthermore, the Contractor will induct all Site Personnel via the Proposal Specific Site Induction and which will cover environmental safeguards and requirements relating to:

- Limiting vegetation clearing,
- No storage of materials or equipment under the drip line or Tree Protection Zone of any retained trees and excavation not to pass through/over the Structural Root Zone.
- Cover any pits nightly and/ or include a ramp structure to allow fauna to escape hole if they fall in.
- Pits and trenches are to be checked for trapped fauna prior to works commencing daily.
- Hollow Bearing Trees to be protected and fenced off and flagged if necessary.
- Any wildlife that becomes injured or trapped or otherwise affected due to interference caused by works is to be:
  - Safely relocated or allowed to move to safety if not injured
  - Placed into a safe, ventilated box or cloth bag and transported to the closest vet or wildlife carer.

If there are no trained staff onsite who are experienced or confident in handling animals, a vet should be contacted immediately, and advice sought.

### **3.1.8 Air Quality**

The Bathurst region generally enjoys clean air. The primary air pollution emission sources that contribute to ambient air quality in the area are expected to include wind generated dust from exposed areas and agricultural activities, dust entrainment due to vehicle movements along unsealed and sealed town and rural roads, diesel and petrol fuel combustion emissions from road and non-road sources, seasonal emissions from household wood burning and episodic emissions from dust storms and vegetation fires (local and regional).

Potential impacts to air quality may arise from airborne dust particles generated during earthworks, stockpiling and managing topsoil, transport and handling of soils and equipment, as well as the use of construction vehicles emitting exhaust fumes or other particulate matter. The impacts are anticipated to be of short duration and minor in nature and are not expected to have a large or prolonged impact on air quality in the area.

### **3.1.9 Waste Management & Resource Use**

Disturbance levels within the study area are high, due to extensive anthropogenic activity, including high vehicle use of the area and exposure to intensive agriculture and flash flooding events. Some discarded waste was observed on site, in the form of litter discarded by road users. Rubble and materials from the collapsed culvert and flood debris has been deposited within the Kellosiel Creek bed south of Freemantle Road.

Waste products generated by the construction phase of the proposal may include but are not limited to:

- Soil and spoil and, excess civil construction materials.
- Debris removal including concrete, steel and bitumen road surface.
- Cleared vegetation.
- Packaging.



- Domestic and general waste.
- Chemical wastes.

Construction works would likely require:

- DN 20 and DN 150 rock
- Concrete
- Bitumen aggregates
- Select fill (where spoil is not suitable for reuse)
- Fiberglass reinforced polymer (FRP) retaining walls
- Water (likely to be drawn from local Council resources or potable water carted to site).
- Large boulders for the installation of the energy dissipating rock apron below the culvert.

Principles of waste management will be employed, i.e. minimise the amount of waste generated, recycle / reuse waste wherever possible and dispose of the remainder in a responsible and legal manner.

All personnel will be instructed by way of the Proposal Specific Site Induction in effective and correct waste management and what to do in case of a spill.

### **3.1.10 Visual Amenity and Landscape Character**

Freemantle Road is a dual lane local road that provides access into and from the suburbs of Eglington and Bathurst to rural areas such as Mount Rankin and Billywillinga. The area is dominated by a rural landscape predominantly cleared of canopy to facilitate agriculture. The surrounding locality contains some remnant native vegetation in road reserves and also occurring as isolated stands and paddock trees. Kellosiel Creek forms a large proportion of the subject site and is a tributary of the Macquarie River - Wambuul. This creek and its associated riparian zone is in a heavily degraded state.

The current visual amenity of the study area is influenced by the temporary diversion of Freemantle Road away from the damaged road and culvert. This diversion crosses the Kellosiel Creek Stone Bridge, a heritage item which adds aesthetically pleasing heritage visual amenity to the study area. The temporary diversion has resulted in the sealing of the heritage bridge road surface which has detracted from the visual amenity of the study area. Additionally, the collapsed culvert and eroded creek and road edge also detract from visual amenity within the subject site.

Short-term impacts to visual amenity during construction may include the presence of earthworks, removal of vegetation, the presence of construction machinery and equipment, and stockpile and compound sites. Increased large vehicle traffic, temporary infrastructure works and installation of any safety rails and security fencing will also detract from the existing visual environment.

### **3.1.11 Management of Asbestos, other Hazardous Materials & Combustible Fuels**

The management of any hazardous waste materials (e.g., oils, fuel grease, drilling fluid) will be disposed of to a licensed facility by a suitable licensed carrier as per requirements. Likewise, in the unlikely event asbestos is discovered on site it is to be disposed of to a licenced facility as per Council policies and guidelines.

All refueling of machines (mobile plant and small diesel pumps / generators etc.) will take place outside sensitive areas including low lying areas where possible, using a mobile tanker.

### **3.1.12 Fire Control**

With regard to bushfire prevention, the Contractor will restrict the use of combustible fuels, restrict smoking to approved areas within the construction site, as well as being aware of potential ignition risk when conducting hot work (grinding and welding) in or landscaped / vegetated areas, fallen timber or other potential ignition sources.

The study area is not prone to bushfires, however the Contractor will:

- Comply with all regulations in force regarding fire protection and any instructions provided by the Rural Fire Service (RFS)
- Establish suitable procedures for the prevention and warning of fire outbreaks
- Extinguish any fires caused by the execution of the Proposal
- Burning of trees and vegetation and lighting of fires at the site are not permitted
- Fire extinguishers will be available on site at all times
- All personnel will be instructed in Fire Control during the Proposal Specific Site Induction.

### **3.1.13 Restoration and Rehabilitation**

- The site will undergo daily housekeeping to ensure that it is free of rubbish and is maintained in a tidy state
- The disturbed areas shall be restored to a condition similar to (or better than) the condition in which it was received
- Exposed soils will be stabilised following completion of works and a suitable native seed mixture will be applied.
- Initial strike rate / success of seeding will be dependent on the climactic conditions / season prevailing at the time
- Wheel ruts, if present, will be filled and levelled
- Once site has been fully stabilised, all temporary erosion and sediment controls will be removed.

### **3.1.14 Project Specific Training**

All staff, contractors, subcontractors and visitors to construction worksites must attend general induction training (undertaken by BRC/Keesh Constructions) that covers general environmental management requirements, site-wide controls and site-specific and work specific risks and mitigation measures. At a minimum, the inductions cover below information:

- Relevant legislation
- Environmental management requirements
- General environmental duty
- Cultural heritage & cultural heritage duty of care
- Duty to notify of any incidents occurring
- Key sensitive areas
- Environmental No Go Areas (if applicable)
- Water quality requirements
- Air, noise and vibration requirements
- Erosion and sediment control requirements
- Nature conservation and avoidance of potential impacts on flora and fauna

- Contaminated land and hazardous substances
- Spill management procedure
- Waste removal and disposal
- Incidents including definition, management and reporting requirements
- Requirements of other agencies
- Staff code of conduct and behaviour.

Toolbox talks are required to be undertaken as a method of raising awareness and educating personnel on issues related to all aspects of construction including environmental issues. Toolbox talks will be used to ensure environmental awareness continues throughout the construction phase of the proposal.

### 3.2 Environmental Management Structure and Responsibility

Figure 2 below describes the organisational structure of staff involved in the proposed works. Table 7 below provides detail as to the responsibilities of each of the staff outlined in the organisational chart.

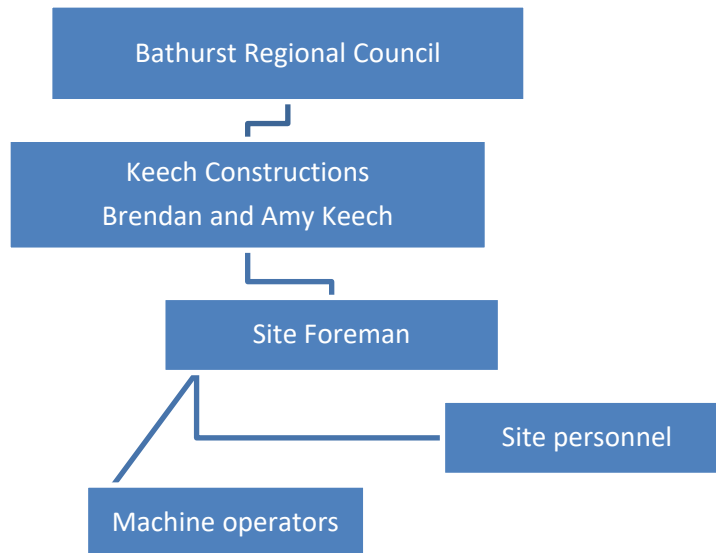


Figure 2 Organisational chart for the proposed works

Table 7 Proposal staff responsibilities

Staff	Responsibilities
<b>Council</b>	<p>Overall responsibility for environmental protection including:</p> <ul style="list-style-type: none"> <li>• Approval and evaluation of Council's environmental controls and this CEMP</li> <li>• Act on corrective/ preventative action notifications concerning environmental protection ensuring they are raised when appropriate and are closed out before the process or equipment is used again</li> <li>• Ensuring Council's response to environmental emergencies plans are established, implemented and maintained</li> <li>• Liaison with regulatory agencies including determining which approvals, licences and permits are required and obtaining them if necessary</li> <li>• Community Relations including addressing Environmental Impacts</li> <li>• Ensuring reporting on environmental issues takes place as required</li> </ul>

Staff	Responsibilities
	<ul style="list-style-type: none"> <li>• Planning environmental controls</li> <li>• Regular evaluation and periodic audits of both staff and subcontractors at worksites</li> <li>• Preparing Site Environmental Checklists</li> <li>• Assisting site staff and subcontractors in their implementation of this CEMP</li> <li>• Delivering environmental induction and training</li> <li>• Keeping environmental records</li> <li>• Being conversant with complaints and pollution incidents and their resolution</li> <li>• Being one of the 24-hour contacts</li> <li>• Maintain the Register of Safety Data Sheets (SDS) as described in the Environmental Emergency Plan</li> <li>• Reviewing and updating this CEMP</li> <li>• Monitoring the environmental performance of staff and subcontractors</li> </ul>
<p><b>Council/Keech Constructions</b></p>	<p>Note - roles may be delegated to other staff members as appropriate and approved by Council:</p> <ul style="list-style-type: none"> <li>• Ensuring environmental hazards and risks are controlled in construction activities and work areas</li> <li>• Ensuring the requirements of approvals, licences and permits are met</li> <li>• Coordinating or conducting environmental site inspections</li> <li>• Monitoring staff and subcontractor behaviour on work sites</li> <li>• Identifying training needs with respect to spills and other environmental incidents and arranging for employees and subcontractors to attend the training</li> <li>• Holding toolbox meetings and team briefings about managing environmental issues, incidents and emergencies</li> <li>• Being one of the 24-hour contacts</li> <li>• Implementing incident and emergency procedures</li> <li>• Investigating, controlling and closing-out environmental non-conformances</li> <li>• Arranging the supply of appropriate environmental incident and emergency equipment</li> <li>• When responding to Environmental Incidents:               <ul style="list-style-type: none"> <li>○ Ensure safety of Council's staff and subcontractors through directing activities in accordance with emergency policies and procedures</li> <li>○ Liaison with on-site Emergency Services Controllers when Site Supervisor is not on site</li> <li>○ Act quickly to prevent/ minimise further environmental degradation/impact</li> </ul> </li> </ul>
<p><b>Keech Construction Personnel / Subcontractors</b></p>	<ul style="list-style-type: none"> <li>• Understanding of environmental controls and following all instructions from senior staff</li> <li>• Ensure compliance with environmental plans and regulations including Keech Construction's Environmental Policy which is provided in Appendix D.</li> <li>• Active participation and implementation of environmental controls</li> <li>• Communicating any environmental incidents or inadequate controls to the Site Supervisor immediately</li> </ul>

## 4 IMPLEMENTATION OF THE CEMP

### 4.1 Risk Assessment and Environmental Control Plans

A general risk assessment of the standard construction activities has been completed to identify environmental risks within the work site (Appendix B). Based on the hazards identified within this risk assessment and the site conditions, specific environmental management actions and controls have been recommended in the ECPs, which are provided as Appendix C).

Table 8 below details the environmental schedules (pro-formas and checklists) relevant to this CEMP and to the safe and environmentally compliant completion of the works as described herein. Many of these forms are provided/ held by BRC and must be provided by Council at the appropriate time or developed by Keech Constructions.

**Table 8 List of environmental schedules to be used as part of the proposal’s day-to-day management**

Environmental Schedule	Location
<b>Induction training register</b>	Physical copy to be kept on site and electronic records filed
<b>Site inspection Checklist</b>	Site inspection form available on site and electronically
<b>Non-compliance and Corrective Action Report</b>	Non-conformance report pro-forma available on site and electronically
<b>Stakeholder Interaction register</b>	Physical copy to be kept on site and electronic records filed
<b>Complaints register</b>	Complaints received during construction works should be directed to the Environmental and Planning and Building Services Department at Council
<b>Council incident notification</b>	Incident notification form available on site and electronically
<b>Council incident investigation</b>	Incident Investigation form available on site and electronically
<b>Environmental Training Register</b>	Physical copy to be kept on site and electronic records filed
<b>Record of Site Attendance</b>	Physical copy to be kept on site and electronic records filed
<b>Waste Register</b>	Physical copy to be kept on site and electronic records filed
<b>Monitoring Checklist</b>	Monitoring Checklist available on site and electronically
<b>Daily Project Journal and Daily Plant Inspection Report</b>	Physical copy to be kept on site
<b>Final Compliance Checklist</b>	Physical copy to be kept on site and available electronically

## 5 MONITORING, REPORTING AND REVIEW

### 5.1 Environmental Monitoring

TEF recommends including the principles of the MERI (Monitoring Evaluation Reporting and Improvement) framework for construction works, as a commitment to continuous improvement and best practice implementation of environmental controls throughout the proposal. Moreover, MERI is a process designed to look at the effectiveness, impact, appropriateness, efficiency and legacy of proposals or programs, including design aspects, budgets, timeframes and socioeconomic factors as well as environmental. Assessing performance and any change over time, against short, medium or long term desired outcomes, is an objective of the MERI framework.

Table 9 below details the recommended monitoring schedule for the proposed works and identifies the frequency and person responsible for undertaking these monitoring activities. A column containing follow-up responses and suggested corrective actions is also provided.

Table 9 Monitoring checklist

Environmental Schedule	Responsibility	Frequency	Corrective Action / Follow-up Response
<b>Observations should be completed for compliance with site safety rules, PPE, safety management plan etc.</b>	Keech Constructions	Daily	Any issues observed should be reported using the Council incident notification form
<b>If contaminated soils are encountered during construction, a site assessment is to be completed in accordance with Schedule A 'Recommended general process for assessment of site contamination' (NEPM 1999)</b>	Council/Keech Constructions	Throughout construction works	If soil is contaminated, it should be disposed of at a licensed facility
<b>Monitoring of environmental controls:</b> <ul style="list-style-type: none"> <li>• Erosion and sediment controls</li> <li>• No-go zones</li> <li>• Dust management</li> <li>• Stockpile stabilization</li> <li>• Traffic / machinery access</li> </ul>	All staff	Daily	If any environmental controls are out of place/have failed/been damaged or removed, immediately notify supervisor and rectify the situation.
<b>Weekly audits - Site inspection form</b>	Council	Weekly	Site inspection form
<b>Corrective action requests</b>	Council/Keech Constructions	As needed	Supervisor to follow-up on requests to ensure corrective action has been taken.
<b>Periodic audit</b>	Council	Periodic / monthly	Any issues observed should be reported using Council incident notification form

## 5.2 Auditing

Control checks should be undertaken prior to and following rain events by Keech Constructions (or the Nominated Environmental Representative) and signed and dated to indicate controls are being regularly checked. Regular observation of controls should be completed as conditions change or prior to any commencement of an activity to ensure adequate controls are in place. This can be executed as part of a quick 'Take 5' or 'Job Safety Analysis' method. Staff should be aware of their surroundings and communicate any potential incidents or risks to the Site Foreman as soon as possible.

Weekly inspections of controls should be undertaken by the Keech Constructions. The results of these inspections must be documented and communicated to Council within 24 hrs.

Achievements and incidents should be discussed during daily pre-start Meetings to ensure the construction crew are kept informed and briefed on the effectiveness of controls and any changes to control implementation.

## 5.3 Corrective Actions

Where there is non-compliance with environmental management controls, an environmental incident or an emergency, corrective action must be undertaken within seven (7) days of the occurrence.

Council is responsible for managing incidents. Any potential non-compliance must be investigated by Council with remedial actions identified and implemented to correct the non-compliance and potential impacts. The conditions and factors contributing to the incident should be identified as part of the investigation and measures implemented to prevent similar incidents from occurring again.

Daily control checks should be undertaken by Keech Constructions and signed and dated to indicate controls are being regularly checked. All staff should be aware of their surroundings and communicate any potential incidents to Council's Site Representative as soon as possible.

Weekly inspections / audits of controls should be undertaken by BRC. The results of these inspections must be documented and communicated to Keech Constructions within 24 hrs.

Achievements and incidents should be discussed during daily 'toolbox talks' to ensure the construction crew are kept informed and briefed on the effectiveness of controls and any changes to control implementation.

## 5.4 CEMP Review

The CEMP will be reviewed prior to, and following construction activities, with the review undertaken by the Council. A review during the construction period may also be considered appropriate based on the progress of the proposal and the inclusion of different methodologies or environmental constraints encountered.

## 6 ENVIRONMENTAL MANAGEMENT SUB-PLANS

### 6.1 Biodiversity / Flora and Fauna Sub-plan

Existing Environment	<p>Kelloshiel Creek is a 3rd Order stream which is mapped as Key Fish Habitat and was observed to have running clear water flowing during surveys. However, the damage caused during the collapse of the culvert has resulted in a disconnect in fish passage as the culvert is now suspended around 1.2 m above the creek bed. This has subsequently disconnected potential fish passage from the lower sections of Kelloshiel Creek and the Macquarie River - Wambuul, to higher parts of Kelloshiel Creek and its tributary Sandy Creek. In addition to KFH, Kelloshiel Creek contains good quality frog habitat features with some aquatic and fringing semi-aquatic vegetation.</p> <p>The subject site occurs in an agricultural landscape which has been historically cleared of canopy and now dominated by exotic vegetation under grazing and pasture management. The roadside vegetation has a small number of juvenile planted locally occurring River Sheoak (<i>Casuarina cunninghamiana</i>) trees and some minor occurrences of native ground cover species. Two (2) Weeds of National Significance (WoNS) with Prohibition of Certain Dealings, including a large Blackberry (<i>Rubus fruticosus</i>) thickets and many mature Willows (<i>Salix sp.</i>) were identified.</p> <p>The study area supports a limited range of habitat for native wildlife as the vegetation is isolated from other larger tracts of vegetation within the broader locality. This has resulted in limited native fauna biodiversity which is predominantly restricted to more mobile bird species such as Australian Raven (<i>Corvus coronoides</i>), Crimson Rosellas (<i>Platycercus elegans</i>) and Wedge-tailed Eagle (<i>Aquila audax</i>), or bird species able to persist in small patches of highly disturbed vegetation such as Superb Fairy-wrens (<i>Malurus cyaneus</i>).</p>		
	<b>Objectives</b>	<b>Potential Impacts</b>	<b>Reference Documents</b>
	<ul style="list-style-type: none"> <li>• Ensure compliance with <i>Biodiversity Conservation Act 2016</i> and the <i>Environment Protection and Biodiversity Conservation Act 1999</i>.</li> <li>• Ensure compliance with Fisheries Permit PN23/401.</li> <li>• No vegetation clearing beyond approved footprint.</li> <li>• Avoid impacts to trees where possible, particularly root zone impacts during excavation.</li> <li>• Ensure minimal loss of habitat features (hollows, stags, feeding resources) through habitat enhancement and revegetation.</li> <li>• Ensure no injuries or death to native fauna during construction works.</li> </ul>	<ul style="list-style-type: none"> <li>• Injury or death to native fauna</li> <li>• Removal of native vegetation</li> <li>• Removal and disturbance to habitats</li> </ul>	<ul style="list-style-type: none"> <li>• ECP (Appendix C)</li> <li>• Project REF (TEF, 2023)</li> <li>• Fisheries Permit PN23/401 provided as Appendix A</li> </ul>



Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
<b>Biodiversity - General</b>						
1. Ensure construction workers are provided with an environmental induction prior to the commencement of works to outline key biodiversity features of the site (Shrubby vegetation and waterway), and the management measures in place to protect biodiversity during construction.	Prior to commencement	Council/Keech Constructions	Throughout the works	Induction undertaken	Provide induction	Daily toolbox
2. Vehicles and machinery to work from the existing road wherever possible and are not to extend beyond the subject site.	Throughout works	Council/Keech Constructions	Throughout the construction works	No impact outside of approved impact area.	Toolbox talk discussion to remind workers of parking, stockpile and storage areas.	Toolbox talk documentation
3. Site is to be kept tidy and free from rubbish at all times, to prevent wastes being blown into adjacent areas of native vegetation or waterways.	Throughout the works	Keech Constructions	Daily observations	Site is free of rubbish	Remove rubbish	Daily toolbox
4. Where additional vegetation removal is proposed, this must first be assessed to consider any additional or cumulative impacts against the approved clearance footprint, and if appropriate, supervised by a qualified ecologist.	Throughout the works	Council	As required	No tree disturbance outside of approved impact footprint resulting from the construction works	Assess any new areas outside of the approved clearance footprint prior to clearing works	Quarterly reports

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
5. Any required revegetation activities will be undertaken using native species sourced from local seed wherever possible. Areas to be re-seeded may be marked in the CEMP or Management Plan as a record of rehabilitation efforts made. Vegetation cover should be returned to the site within a reasonably practicable timeframe post-clearing to reduce soil exposure and loss.	Throughout works	Council/Keech Constructions	Daily observations	Use of native species from local seed	Make enquiries and source local native seed	Record in CEMP or ECP
<b>Biodiversity - Loss of flora species and vegetation communities</b>						
6. Clearly delineate vegetation to be removed/retained and induct all site personnel as to the approved process and extent of clearing.	Prior to commencement and throughout works	Council/Keech Constructions	Throughout the construction works	No flora disturbance outside of approved impact footprint resulting from the construction works	Incident form and review of conditions	Monthly record keeping
7. Where possible, heavy vehicles are not to be parked under tree drip lines/ leaf canopy to avoid compaction of soil, which is damaging to mature native trees and can cause dieback or tree mortality. Existing cleared areas and roadways are to be used for parking as a first priority.	Throughout works	Keech Constructions	Throughout the construction works	No impact to mature trees	Toolbox talk discussion to remind workers of parking / storage areas.	Toolbox talk documentation, monthly record keeping
<b>Biodiversity - Loss of flora species and vegetation communities</b>						
8. Prior to commencement of works, a site survey should be undertaken including inspection for native fauna, threatened species and habitat features (i.e nests, rock pools) to confirm	Throughout the works	Council/Keech Constructions	As required	No disturbance to native fauna from the	Assess any fauna habitat prior to clearing works	Quarterly reports

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
occupation by fauna. Care should be taken to identify nests and/or roosting sites. If fauna habitat is present, the appointed contractor would contact the proposal ecologist for further advice prior to clearing.				construction works		
9. Compliance with the conditions listed in the Part 7 of the Fisheries Management Act Permit No. PN23/401 which is provided in Appendix A.	Prior to and throughout the works	Council/Keech Constructions	Throughout works	Compliance with all conditions	Review of construction methodology and consultation with DPI Fisheries.	Quarterly reports
10. The introduction of an upstream dam and subsequent diversion of water flows to establish a dry works area, must be carried out at a minimum of 48hrs prior to entering the waterway and beginning construction of the instream pad, to allow adequate time for aquatic fauna to relocate up or downstream.	Prior to instream works commencing	Keech Constructions	As required	Reduce the impact to aquatic fauna	As above- copy down	Daily toolbox
<b>Biodiversity - Invasion and spread of weeds and pests</b>						
11. Develop and implement an active weed and pest management plan prior to construction commencing, to reduce the risk of weed spread and safety issues arising from pest and weed presence (e.g. WoNS and NSW Priority Weeds).	Prior to commencement	Council/Keech Constructions	Throughout the construction works	Reduce the spread of weeds and pests	Incident form and review of conditions	Monthly record keeping
12. Declared weeds within the subject site must be managed according to requirements under the Biosecurity Act 2015. It is recommended that all Weeds of National Significance and NSW Priority	Throughout works	Council/Keech Constructions	Daily	No new weed encroachments	Conduct follow up treatment where required for any new weeds, or if	Quarterly reports following inspection

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
Weeds should be controlled, and where possible, eradicated to reduce the risk of further spread.					any major infestations occur	
13. Strict hygiene protocols must be followed. If weeds are accidentally transported to site, or identified during construction activities, all weed material should be immediately contained and removed from site.	Throughout works	Keech Constructions	Monthly monitoring and daily observations of machinery. native vegetation	No new weed encroachments	Weed management and replanting of native vegetation consistent with community	Photo point documentation and daily plant inspection.
14. All machinery and vehicles are to be clean and inspected prior to arriving on-site to reduce the spread of weeds and disease (e.g. Phytophthora cinnamomi) to the site.	Throughout works	Keech Constructions	Monthly monitoring and daily observations of machinery. native vegetation	No new weed encroachments	Weed management and replanting of native vegetation consistent with community	Photo point documentation and daily plant inspection.

## 6.2 Soil and Water Management Sub-plan

Existing Environment

**Soil:** The rainfall event on 14 November 2022 resulted in heavy erosion along the banks of both sides of Kelloshiel Creek below the culvert; debris such as concrete pipe, foundation rubble, fencing material and an exposed telephone cable were deposited within the riparian zone. Additionally, there is evidence of livestock accessing Kelloshiel Creek within the study area resulting in erosion and further degradation of the banks of the waterway. However, outside of the waterway, vegetation cover over soils was generally good, and subsequently soils were identified as stable and intact.

**Water:** The study area occurs along Kelloshiel Creek within the catchment of the Macquarie River - Wambuul, which is mapped as supporting Key Fish Habitat. A roadside drainage line along the southern side of Freemantle Road enters Kelloshiel Creek from the west; the drainage line along with Kelloshiel Creek and its tributaries form an ephemeral catchment which was subject to significant waterflows and erosion during an extreme rain weather event in November 2022. Fish passage through the culvert towards the upper catchment area is currently blocked due to erosion and scouring of the creek bed, which has resulted in an approximately 1.2m drop from the bottom of the culvert to the waterway below.

The study area is largely flat and there are no wetlands and no property dams mapped as occurring within the study area. The study area and surrounds are not mapped as containing shallow groundwater resources that could be sensitive to trenching and easily contaminated.

Objectives	Potential Impacts	Reference Documents
<ul style="list-style-type: none"> <li>• Ensure compliance with <i>Protection of the Environment Operations Act 1997</i>, <i>Water Management Act 2000</i> and the <i>Biosecurity Act 2015</i>.</li> <li>• Ensure compliance with Fisheries Permit PN23/401</li> <li>• Management of sites in accordance with: <i>Managing Urban Stormwater: Soils and Construction, 4th Edition</i> (Landcom, 2004)</li> <li>• No vegetation clearing beyond approved footprint.</li> <li>• Reduce indirect compaction of soil, sediment and erosion migration impacts resulting from vehicle and machinery use.</li> <li>• No spread of noxious and listed priority weeds post construction</li> <li>• Implement hygiene protocols and vegetation management to ensure weeds are not spread across the site.</li> </ul>	<ul style="list-style-type: none"> <li>• Dust settling on vegetation and inhibiting growth.</li> <li>• Sediment laden water leaving site and entering existing stormwater system.</li> <li>• Movement of plant and equipment during construction may spread weeds or create exposed areas susceptible to weed invasion.</li> </ul>	<ul style="list-style-type: none"> <li>• ECP</li> <li>• Project REF (TEF, 2023)</li> <li>• Landcom 2004 Blue Book</li> <li>• Fisheries Permit PN23/401 as provided in Appendix A</li> </ul>

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
<b>Soil and Sedimentation - Construction</b>						
1. No vegetation outside the approved direct impact footprint is to be impacted or removed; vegetation that is not approved for clearance is to be protected to ensure soils are not exposed unnecessarily.	Prior to construction, throughout works	Keech Constructions	Throughout the construction works	No impact outside of approved footprint	Toolbox talk discussion to remind workers of approved footprint.	Toolbox talk documentation
2. Minimize the length of time that soils are exposed by stabilising as soon as practical by seeding, spreading mulch or installing erosion control blanket as appropriate.	Throughout works, following completion	Keech Constructions	Monthly review following re-seeding	Successful re-seeding/turfing and minimal soil exposure	Where re-seeding is unsuccessful, re-seeding is required	Monthly record keeping
3. All areas where groundcovers/vegetation are required to be removed will require careful management during construction due to the higher erosion risks, including: <ul style="list-style-type: none"> <li>• Erosion and sediment (ERSED) control measures are to be implemented and maintained to: <ul style="list-style-type: none"> <li>○ prevent sediment moving off-site and sediment laden water entering any drainage lines, drain inlets, or dams; and</li> <li>○ reduce water velocity and capture sediment on site.</li> </ul> </li> <li>• ERSED controls are to be installed prior to the commencement of works and checked and maintained on a regular basis (including clearing of sediment from behind barriers).</li> </ul>	Prior to commencing and throughout works	Keech Constructions	Daily observations	No migration of sediment offsite	Implementation of correct ERSED controls as per the ECP	Daily toolbox / Monthly reporting. Mark ERSED controls on the ECP; report all incidents

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
<ul style="list-style-type: none"> <li>ERSED control measures are not to be removed until the works are complete, and areas are stabilised.</li> </ul>						
<p>4. Monitoring and response actions with regard to ERSED controls will be incorporated within the Construction Environmental Management Plan (CEMP) for the Proposal, to be enforced by the appointed Contractor.</p>	<p>Prior to construction, throughout works</p>	<p>Council/Keech Constructions</p>	<p>Throughout the construction works</p>	<p>No impact outside of approved footprint</p>	<p>Toolbox talk discussion to remind workers of ERSED controls</p>	<p>Toolbox talk documentation</p>
<p>5. The maintenance of established stockpile sites during construction is to be in accordance with the Landcom/Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines (the Blue Book) (Landcom 2004), including:</p> <ul style="list-style-type: none"> <li>Stockpiles are recommended to be formed in accordance with the Blue Book Standard Drawing 4-1, and offsite/away from waterbodies.</li> <li>Topsoil and subsoil are to be separated and protected from degradation, erosion or mixing with fill or waste. Materials are to be reused onsite where appropriate for infilling works, including re-spreading of topsoil as appropriate to enable rapid rehabilitation. Where onsite reuse cannot be accommodated, soil materials should be put to beneficial reuse elsewhere.</li> </ul>	<p>Prior to commencing, throughout works</p>	<p>Keech Constructions</p>	<p>Daily observations</p>	<p>No migration of sediment of site</p>	<p>Implementation of correct ERSED controls</p>	<p>Daily toolbox / Monthly reporting. Mark ERSED controls on the ECP; report all incidents</p>

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
6. If contaminated soils are encountered during construction, a site assessment is to be completed in accordance with Schedule A 'Recommended general process for assessment of site contamination' (NEPM 1999).	Prior to commencement of Proposal and as encountered	Council/Keech Constructions	As required	Assessment completed	Assess any contaminated soils	Quarterly reports
7. If contaminated soils are encountered, they will be managed (and if necessary excavated, contained, treated and disposed of) in accordance with the law and relevant EPA and Council guidance.	Throughout works	Council/Keech Constructions	Chain of custody / receipts kept for appropriate disposal	All contaminated soils encountered disposed of appropriately	Clean up contaminants missed; toolbox talk	Report any contaminate soils encountered ; record receipts for disposal
8. All chemical usage and storage during construction is to be in line with legislated requirements, to prevent Pollution of Land, which is prohibited under Section 142 A of the POEO Act.	Throughout works	All personnel	Daily	No chemicals present outside of appropriate bunding / storage systems	Incident report; Relocate chemicals to a suitable location	Daily toolbox
<b>Soil and Sedimentation - Operation</b>						
9. Monitoring of the site is to be undertaken to ensure ERSED controls remain in place until the site is re-stabilised, and to ensure no sediment is washed into any waterways following construction and before site stabilisation works are completed.	After completion of construction works	Council/Keech Constructions	Daily observations and after rainfall event	No migration of sediment offsite	Repair / reinstate sediment controls as required	Daily toolbox meetings; quarterly reporting



Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
10. Maintenance of vegetative cover on all exposed surfaces (not to be covered by road base/seal) to be undertaken to ensure the stability of soils on site into the future.	After completion of construction works	Council	After completion of construction works	Area is successfully revegetated	Infill planting if required.	Quarterly report
11. Infill planting or additional spreading of appropriate native grass mixture and/or groundcover species to be undertaken until the entire site is stabilised.	After completion of construction works	Council	After completion of construction works	Area is successfully revegetated	Replant if required.	Quarterly report
<b>Surface and Groundwater - Construction</b>						
12. If 'dirty' site water is collected from within the direct impact footprint, it is to be redirected to filtration devices to trap sediments and other pollutants, and dissipate flow velocities, prior to discharging to the surrounding environment. Drainage and runoff should be controlled in such a way that no foreign substrates or materials leave the site.	Throughout works	Keech Constructions	Daily observations	No migration of foreign substrates or materials offsite	Implementation of correct ERSED controls as per the ECP	Daily toolbox / Monthly reporting. Mark ERSED controls on the ECP; report all incidents
13. 'Clean' water from outside the study area is to be diverted around the site, to avoid contamination and to prevent scour/erosion of the site during rainfall events during construction.	Prior to commencing, throughout works	Keech Constructions	Daily observations and after rainfall event	No 'clean' water from outside the study area entering the site	Implementation of correct ERSED controls as per the ECP	Daily toolbox / Monthly reporting.
14. Works to be completed in dry times (i.e. times of no current or predicted rainfall) to reduce the risk of pollutants and	Throughout works	Council/Keech Constructions	Daily weather	No construction	Cease construction	Daily toolbox meetings;

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
sediments being washed into nearby waterways or other surface waters.			forecast, and daily observations	work during heavy rainfall events	during heavy rainfall events	quarterly reporting
15. Appropriate erosion and sediment (ERSED) controls are to be installed and maintained during construction, to ensure sediment and pollutant laden surface water runoff does not enter adjacent waterways/drainage lines. 16.	Prior to works, throughout works	Keech Constructions	Daily observations	No migration sediment off site	Implementation of correct ERSED controls as per the ECP	Daily toolbox / Monthly reporting. Mark ERSED controls on the ECP; report all incidents
17. All litter, including cigarette butts and food wrappers, is to be collected in a suitable receptacle and disposed of appropriately throughout the construction phase to ensure these do not end up polluting waters of aquatic environments.	Throughout works	All personnel	Daily observations	No litter polluting site or adjacent environment including waterways	Implementation of correct waste handling practices	Daily toolbox / Monthly reporting.
18. Re-fuelling of plant and equipment is to occur offsite, or in impervious bunded areas located a minimum of 40 metres from the waterway. 19.	Throughout works	All personnel	Daily observations	No spills on site	Incident report; Relocate refuelling to a suitable location	Daily toolbox
20. Vehicle wash-down and/or cement truck washout (if required) is to occur offsite unless it forms part of sediment control, where it is to occur in a suitably bunded area with	Throughout works	All personnel	Daily observations		Incident report; Relocate wash down to a	Daily toolbox

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
controlled run-off and located a minimum of 40 metres from the waterway.					suitable location	
21. Monitoring of water quality is to be undertaken within culverts/waterways downstream of the site during and immediately following rainfall events, to identify if ERSED controls are functioning as intended. Visual inspections should be undertaken by an appropriately qualified person/s to determine if water is turbid, or if there is evidence of petrochemicals or other pollutants present as a consequence of construction activities.	Throughout works	Council/Keech Constructions	Daily observations and after rainfall event	No migration of sediment offsite	Repair / reinstate sediment controls as required	Daily toolbox meetings; quarterly reporting
22. Segregate and stockpile topsoil removed from the area a minimum of 40 m from any waterway and on a flat, stable area. Use measures such as silt fences and holding ponds to prevent stockpile runoff from entering waterways.	Prior to works	Keech Constructions	Daily throughout works	Stockpiles to be located in approved areas on site	Approvals gained for alternative locations	Quarterly reports following inspections and daily plant inspection report.
23. Biosecurity and water health protection measures should be implemented throughout the construction phase, including: <ul style="list-style-type: none"> <li>• Machinery should arrive on site in a clean, washed condition, free of fluid leaks, pests and/or weeds/spores;</li> <li>• Regular weed control should be undertaken in disturbed areas throughout the construction period to</li> </ul>	Throughout works	Council/Keech Constructions	Daily	No spills or new weed encroachments	Conduct follow up treatment where required for any new weeds, or if	Quarterly reports following inspection

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
<p>prevent weed spread into waterways, if notifiable/listed weed material is present; and</p> <ul style="list-style-type: none"> <li>Ensure all pesticide/herbicides used are registered for use within a waterway, as per NSW DPI guidelines. Alternatively, opt to remove weeds mechanically where possible.</li> </ul>					any major infestations occur	
24. Spill response protocols for plant, equipment and chemicals used or stored on site during construction are to be available and accessible at all times to prevent and minimise potential for Pollution of Waters (s120 POEO Act).	Throughout works	Council/Keech Constructions	Daily	No chemicals present outside of appropriate bunding / storage systems	Incident report; Relocate chemicals to a suitable location	Daily toolbox
<b>Surface and Groundwater - Operation</b>						
25. Continue to undertake a water quality monitoring program in line with Council's requirements until the site is completely stabilized.	After completion of construction works	Council	In accordance with Council's requirements	Results reported	Inspect and fix any ERSED controls	Quarterly report
26. Subject site rehabilitation/stabilisation, including removal of weeds and revegetation using appropriate native species is recommended to be undertaken to ensure soil stability and prevention of sediment runoff from the site into the future.	After completion of construction works	Council	After completion of construction works	Area is successfully revegetated	Infill planting if required.	Quarterly report

### 6.3 Noise, Air Quality and Waste Management Sub-plan

Existing Environment	<p><b>Noise:</b> The study area occurs in a rural area, with background noise levels typically arising from farming machinery and activities, local traffic, anthropogenic noises, livestock, wildlife and inclement meteorological conditions (rain and wind). The nearest residence is located approximately 150 metres north-east of the subject site with two (2) other residences located within 300m north-west and south east of the subject site.</p> <p><b>Air Quality:</b> The Bathurst region generally enjoys clean air. The primary air pollution emission sources that contribute to ambient air quality in the area are expected to include wind generated dust from exposed areas and agricultural activities, dust entrainment due to vehicle movements along unsealed and sealed town and rural roads, diesel and petrol fuel combustion emissions from road and non-road sources, seasonal emissions from household wood burning and episodic emissions from dust storms and vegetation fires (local and regional).</p> <p><b>Waste:</b> Disturbance levels within the study area are high, due to extensive anthropogenic activity, including high vehicle use of the area and exposure to intensive agriculture and flash flooding events. Some discarded waste was observed on site, in the form of litter discarded by road users. Rubble and materials from the collapsed culvert and flood debris has been deposited within the Kelloshiel Creek bed south of Freemantle Road.</p>		
	Objectives	Potential Impacts	Reference Documents
<ul style="list-style-type: none"> <li>• Ensure compliance with <i>Protection of the Environment Operations Act 1997</i>, and the Interim Construction Noise Guideline (ICNG)</li> <li>• Management of sites in accordance with: <i>Managing Urban Stormwater: Soils and Construction, 4th Edition</i> (Landcom, 2004)</li> <li>• Minimise impacts to neighbours, sensitive receivers and the wider community.</li> <li>• Minimise waste production.</li> <li>• Maximise beneficial reuse of materials.</li> </ul>	<ul style="list-style-type: none"> <li>• Disturbance to nearby residents from noisy machinery/plant and equipment</li> <li>• Dust and vehicle/plant emissions contributing to degradation of air quality</li> <li>• Usage and waste of finite resources</li> <li>• Production of wastes including soil and spoil, excess civil construction materials, cleared vegetation, packaging, domestic and general waste and chemical wastes.</li> </ul>	<ul style="list-style-type: none"> <li>• ECP</li> <li>• Project REF (TEF, 2023)</li> <li>• Landcom 2004 Blue Book</li> </ul>	

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
<b>Noise and Vibration</b>						
1. Noise impacts to the local community will be limited to recommended standard working hours as	Daily	All personnel	Throughout works	No work completed	Investigate any and all noise	Daily start-up meetings

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
<p>detailed in the Interim Construction Noise Guideline 2009 (ICNG). All activities and Proposal works, including the arrival and departure of vehicles delivering or removing materials to or from the site, shall be carried out between the hours of:</p> <ul style="list-style-type: none"> <li>• 7:00am to 6:00pm Monday to Friday,</li> <li>• 8:00am to 1:00pm Saturdays, and</li> <li>• No work Sunday and Public Holiday</li> </ul>				outside approved working hours	complaints. Ensure all personnel aware of working hours.	
<p>2. Communication of intentions and timeframes to neighbouring properties will be undertaken in order to minimise misconceptions, uncertainty and negative reactions to noise. The site supervisor should supply a Council contact number to aid in community liaison.</p>	Prior to works commencing	Council	Throughout works	All landholders and neighbours notified of works		Weekly reporting to Council
<p>3. All noise and vibration complaints are to be handled in a timely manner in accordance with requirements under the POEO Act.</p>	Daily	Council/Keech Constructions	Throughout works	24 hour timeframe/turn around.	Complaints effectively handled	Weekly reporting to Council and complaints register.
<p>4. The appointed contractor will incorporate Noise and Vibration Management strategies in the CEMP, and suitably induct all staff operating machinery on the site to ensure the standard working hours are adhered to, and that machinery movement (revving, reverse beepers) is kept to a minimum. This</p>	Prior to commencement and daily throughout	Keech Constructions	Prior to and throughout the works	No noise or vibration complaints from sensitive receivers	Toolbox talk	Daily start-up meetings, weekly reporting to Council and

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
management plan must include the general noise and vibration management practices (AS 2436-2010).						complaints register
5. Plant deliveries and site access will occur quietly and efficiently, with parking allowed only within designated areas located away from nearby sensitive receivers.	Daily throughout	Keech Constructions	Throughout works	No noise or vibration complaints from sensitive receivers	Toolbox talk	Daily start-up meetings, weekly reporting to Council and complaints register
6. Simultaneous operation of high-level noise generating machinery should be avoided by operating at contrasting times or increasing the distance between the plant and the nearest identified receiver.	Daily throughout	Keech Constructions	Throughout works	No noise or vibration complaints from sensitive receivers	Stagger operation, relocate noisy plant and equipment where practical	Daily start-up meetings, weekly reporting to Council and complaints register
7. High noise generating activities, such as jack hammering, should be carried out in continuous blocks, not exceeding three (3) hours with a minimum respite period between blocks of one (1) hour.	Daily throughout	Keech Constructions	Throughout works	No noise or vibration complaints from sensitive receivers	Review and correct high noise generating activities	Daily start-up meetings, weekly reporting to Council and complaints register

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
8. Low-pitch tonal beepers should be installed where possible and reversing minimised on site.	Daily throughout	Keech Constructions	Throughout works	No noise or vibration complaints from sensitive receivers	Review and correct tonal beepers as required	Daily start-up meetings, weekly reporting to Council and complaints register
9. Where possible, high noise generating activities such as loading and unloading and material dumps should be located as far as possible from the nearest receptors.	Daily throughout	Keech Constructions	Throughout works	No noise or vibration complaints from sensitive receivers	Review and correct high noise generating activities	Daily start-up meetings, weekly reporting to Council and complaints register
10. All engine covers are to be closed and machines that are not in use, shut down.	Daily	All personnel	Throughout works		Investigate any and all noise complaints. Ensure all personnel aware of working hours.	Daily start-up meetings.
<b>Air Quality - Construction</b>						
1. Daily visual construction dust monitoring should occur, with works to cease if dust plumes are occurring that have potential to impact areas outside the direct impact footprint.	Throughout works	Keech Constructions	Daily	No visible dust plumes	Cease work if plumes are visible, remedy with wetting or other appropriate action	Daily start-up meetings, weekly reporting to Council and complaints register



Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
2. Speed limits of 40 km / hr or slower are to be enforced on access tracks and across the site during dry weather to keep dust to a minimum.	Throughout works	All personnel	Daily	No visible dust plumes	Cease work if plumes are visible, remedy with wetting or other appropriate action	Daily start-up meetings, weekly reporting to Council
3. An adequate water supply is to be provided on the construction site for effective dust/particulate matter suppression/mitigation. If synthetic dust suppressants are used, they must be biodegradable in nature and non-toxic for waterways.	Daily throughout works	Keech Constructions	Daily	Water available for dust suppressing on site	Cease works if wind results in visible dust plumes	Daily start-up meetings
4. Earthworks and exposed areas/soil stockpiles are to be revegetated using appropriate native species to stabilise surfaces as soon as practicable to reduce risk of dust emissions from wind erosion.	Throughout works	Keech Constructions	Monthly review following re-seeding	Successful re-seeding/turfing and minimal soil exposure	Where re-seeding is unsuccessful, re-seeding is required	Monthly record keeping
5. Only vegetation that has been approved for removal may be removed or otherwise impacted; intact vegetation stabilises soils and keeps dust to a minimum.	Daily	Keech Constructions	Throughout the construction works	No impact outside of approved footprint	Toolbox talk discussion to remind workers of approved footprint.	Toolbox talk documentation
6. Vegetation and other materials are not to be burnt on site, unless the vegetation material is a weed that prohibits transportation and disposal by other means.	Daily	All personnel	Throughout works	Visible smoke avoided / mitigated immediately		Daily start-up meetings

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
7. Vehicles transporting waste or other materials that may produce odours or dust are to be covered during transit.	Daily	All personnel	Throughout works	Waste, odour or dust observed during transit	Cease transit and cover effectively	Daily start-up meeting
8. Tracking of machinery carrying soil/spoil through nearby townships is to be avoided where possible.	Daily	Keech Constructions	Daily	Observation of machinery in townships	Select alternative route	Daily start-up meetings
9. Stockpiles or areas that may generate dust are to be managed to suppress dust emissions.	Daily	Keech Constructions	Daily	No visible dust plumes	Cease work if plumes are visible, remedy with wetting or other appropriate action	Daily start-up meetings, weekly reporting to Council
10. Dampening of exposed soils will be undertaken during weather conditions conducive to visible dust formation.	Daily	Keech Constructions	Daily	No visible dust plumes	Cease work if plumes are visible, remedy with wetting or other appropriate action	Daily start-up meetings, weekly reporting to Council
11. Construction plant and equipment will be maintained in a good working condition in order to limit impacts on air quality through vehicle emissions.	Daily	Keech Constructions	Daily	No excessive visible emissions	Cease work if plumes are visible excessive and arrange for service	Daily start-up meetings, weekly reporting to Council
12. Fuel operated plant and equipment will not be left idle when not in use.	Daily	Keech Constructions	Daily	No excessive visible emissions	Plant turned off if idling	Toolbox talk

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
13. Regular site inspections will be undertaken as part of air quality monitoring, and inspection results recorded by Council's Principal Contractor.	Throughout works	Keech Constructions	Periodically throughout works	No breaches of Council or EPA rules	Incident form and review conditions	Incident form; Quarterly reports following inspections
14. Any dust complaints received during construction will be duly investigated in accordance with Council's requirements under the POEO Act.	Daily	Council/Keech Constructions	Throughout works	Positive community feedback	Complaints effectively handled	Weekly reporting to Council
15. Any exceptional incidents that cause dust and/or air emissions, either on or off site, will be recorded, and the action taken to resolve the situation recorded in the site management logbook.	Daily	Keech Constructions	Throughout works		Complaints effectively handled	Weekly reporting to Council
<b>Air Quality - Operation</b>						
16. Council is to conduct regular road maintenance activities to ensure the road surface doesn't deteriorate, resulting in emissions to air.	After completion of construction works	Council	After completion of construction works	Road is maintained	Maintenance works undertaken as necessary	Council works reports
17. Any exposed areas revegetated during construction are to be monitored and maintained until the areas are fully stabilised to reduce risk of erosion and dust emissions, as well as dust settling on nearby native vegetation.	After completion of construction works	Council	After completion of construction works	Area is successfully revegetated	Infill planting if required.	Quarterly report

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
<b>Waste and Resource Use</b>						
1. Resource management hierarchy principles are to be followed; namely, the avoidance, reduction, reuse and recycling of resources.	Throughout works	All site personnel	Daily	Rubbish and materials placed in correct bins/disposed of at the correct facility	Ensure all staff are familiar with recycling program	Toolbox talks/quarterly review and waste register
2. If stockpile or laydown sites are required in locations that have not been considered as occurring within the impact footprint as part of this REF, additional approval/assessment may need to be sought prior to any vegetation clearing taking place.	Prior to commencing, during and post construction	Council/Keech Constructions	Throughout works	Stockpiles to be located in approved areas on site	Approvals gained for alternative locations	Quarterly reports following inspections
3. Requirements under the Landcom (2004) stockpile management procedure must be observed, including correct placement of earth banks (with sedimentation ponds) to divert water around stockpiles if placed on a slope, and/or filter fences erected below stockpiles to capture any sediment moving offsite.	Prior to commencing, throughout works	Keech Constructions	Daily observations	No migration of sediment of site	Implementation of correct ERSED controls	Daily toolbox / Monthly reporting. Mark ERSED controls on the ECP; report all incidents
4. Bulk proposal waste (e.g. clean virgin excavated natural material or clean fill) sent to a site not owned by Council (excluding DPE licensed landfills) for land disposal is to have prior formal written approval from the landowner.	As required	Council/Keech Constructions	Throughout works	No movement of sediment off site	Implementation of correct sediment controls	Quarterly reports following inspections

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
5. Waste is not to be burnt on site and all general waste will be contained and disposed of at suitable waste facilities.	Daily	Keech Constructions	Throughout works	Waste is disposed of as per Council and EPA regulations	Extinguish fire and dispose of waste as per Council and EPA regulations	Toolbox talks
6. Where possible, materials with recycled content will be sourced, and minimum quantities ordered to reduce wastage.	Throughout works	Keech Constructions	Daily	Waste Produced	Adjust ordering as required, return / reuse excess	Quarterly review
7. If contamination is encountered during construction, a site assessment must be undertaken in accordance with the Protection of the Environment Operations Act 1997 (POEO Act).	As required	Council/Keech Constructions	Chain of custody / receipts kept for appropriate disposal	All contaminated soils encountered disposed of appropriately	Clean up contaminants missed; toolbox talk	Report any contaminate soils encountered; record receipts for disposal
8. Toilets will be provided for construction workers for the duration of the works to prevent human wastes entering the waterway.	Prior to proposal commencing	Keech Constructions	Daily	No traces of human presence in surrounding bushland	Remind personnel of location of facilities	In response to non-use
9. Waste management for construction projects should be undertaken in accordance with the <i>NSW Waste Avoidance and Resource Recovery Act 2001</i> .	Throughout	All site personnel	Daily	Rubbish and materials placed in correct bins / disposed of at the correct facility	Ensure all staff are familiar with recycling program	Tool-box talks / quarterly review

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
10. Don't over-order	Throughout Proposal	All site personnel	Daily	Waste Produced	Adjust ordering as required, return / reuse excess	Quarterly review

### 6.4 Heritage Management Sub-plan

Existing Environment	<p><b>Non-Aboriginal Heritage:</b> The Bathurst LEP identified one (1) item, the Kelloshiel Creek Stone Bridge within the study area and one (1) item, ‘Kelloshiel’ located 300m to the south-east of the subject site.</p> <p><b>Aboriginal Heritage:</b> No previously registered archaeological sites are located within the study area or within 500 m of the subject site and no newly identified archaeological material was identified during the site assessment completed in July 2023. The ADD determined that the study area was highly disturbed with no potential for sub surface archaeological deposits to occur.</p>		
	Objectives	Potential Impacts	Reference Documents
	<ul style="list-style-type: none"> <li>Ensure compliance with <i>Heritage Act 1977</i>, and <i>National Parkes and Wildlife Act 1974</i></li> <li>Minimise impact to potential unknown and known heritage items</li> </ul>	<ul style="list-style-type: none"> <li>Impact to known and unknown heritage items (both Aboriginal and non-Aboriginal)</li> </ul>	<ul style="list-style-type: none"> <li>Project REF (TEF 2023)</li> </ul>

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
<b>Aboriginal Heritage</b>						
1. All land / ground disturbance activities must be confined to within the study area, as this will eliminate the risk of harm to potential Aboriginal objects in adjacent landforms. Should the parameters of the Proposal extend beyond the assessed area (Figure 1) then further archaeological assessment will be required before works can proceed.	Throughout works / as required	Council/Keech Constructions	As required	Work only within subject site area	Assess any new areas prior to construction	Quarterly reports
2. All staff and contractors involved in the proposed work should be made aware of the legislative protection requirements for all Aboriginal sites and objects.	Daily	Council/Keech Constructions	Daily / as required	All staff and contractors are aware and understand Aboriginal	Immediately induct staff or contractors as required	Daily toolbox

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
				Heritage obligations		
3. Should unanticipated archaeological material be encountered during site works, all work must cease and an archaeologist contacted to make an assessment of the find. Further archaeological assessment and Aboriginal community consultation may be required prior to the recommencement of works. Any objects confirmed to be Aboriginal in origin must be reported to Heritage NSW.	Daily	Council/Keech Constructions	Daily / as required		Immediately cease work if archaeological material is encountered. Contact and communicate Council and Heritage NSW.	Quarterly reports
4. If any human remains are found, all works should stop immediately, the site should be secured and NSW police contacted immediately.	Daily	Council/Keech Constructions	Daily/as required	Works stop and Police contacted		Quarterly
5. The information in the ADD meets the requirements of the Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales. It should be retained as shelf documentation for five (5) years as it may be used to support a defense against prosecution in the event of unanticipated harm to Aboriginal objects.	Prior to and following construction	Council		ADD retained for a minimum of 5 years		Quarterly
<b>Non-Aboriginal Heritage</b>						
1. The proposed works must be contained to the subject site area assessed during the construction (Figure 1). If the proposed location is amended, further heritage assessment may be necessary to determine if the proposed works will impact on heritage items(s).	Throughout works / as required	Council/Keech Constructions	As required	Work only within subject site area	Assess any new areas prior to construction	Quarterly reports



Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
2. It is recommended that Council create and maintain photographic records of the external condition of the Kelloshiel Creek Stone Bridge structure to be used to monitor for any signs of visual damage for the duration of the Proposal.	Prior to commencement and throughout works as required	Council	As required	Photographs taken	Assess any damage identified by an appropriately quality person	Quarterly reports
3. If archaeological remains or items defined as relics under the NSW Heritage Act 1977 are uncovered during the works, all works must cease in the vicinity of the material/find and Council's Manager Strategic Planning and Environmental Officer are to be contacted immediately.	Daily	Council/Keech Constructions	Daily / as required	All staff and contractors are aware and understand Heritage obligations	Immediately induct staff or contractors as required	Daily toolbox
4. Council and contract staff must be made aware of the heritage sites and places that occur within the area and all care must be taken to avoid interference with and damage to these sites.	Daily	Council/Keech Constructions	Daily / as required	All staff and contractors are aware and understand Heritage obligations	Immediately induct and staff or contractors as required	Daily toolbox
5. The Kelloshiel Creek Stone Bridge must be clearly fenced and flagged with removable flagging or other temporary means to delineate its presence and to prevent the item being harmed during the construction process.	Prior to the commencement of works and throughout works	Keech Constructions	Daily	The Kelloshiel Creek Stone Bridge is protected	Re-establish fencing and flagging if required. Review safeguards to ensure they are considered	Daily toolbox

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
					adequate to minimize risks.	
6. Any movement of heavy machinery within 5m of the Kellosiel Creek Stone Bridge must be supervised by a trained signaller.	Throughout works	Keech Constructions	Daily	Trained signaller is used	Cease work until trained signaller is in place. Review safeguards to ensure they are considered adequate to minimize risks.	Daily toolbox

### 6.5 Traffic and Transport Management Sub-plan

Existing Environment	<p><b>Traffic:</b> The section of Freemantle Road within the subject site experiences local traffic by rural residents and minor, irregular thoroughfare of farm machinery, trucks and heavy vehicles. There are no private access driveways present in the subject site.</p>		
Objectives	Potential Impacts	Reference Documents	
<ul style="list-style-type: none"> <li>Roads Act 1993</li> <li>Compliance with the TfNSW Guide to Signs and Markings; Australian Standards AS1742 and AS1743; and the Australian Roads Guide to Traffic Management.</li> </ul>	<ul style="list-style-type: none"> <li>The presence of construction works and vehicles which may affect travel times.</li> </ul>	<ul style="list-style-type: none"> <li>ECP</li> <li>Project REF (TEF, 2023)</li> <li>TfNSW Guide to Signs and Markings</li> <li>Australian Standards AS1742 and AS1743</li> <li>The Australian Roads Guide to Traffic Management</li> </ul>	

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
<b>Traffic and Transport - Construction</b>						
1. Prior notice shall be given to landowners along Freemantle Road to notify residents of the works to be completed, their timing and duration.	Prior to works commencing	Council/Keech Constructions	Throughout works	All landholders and neighbours notified of works	Complaints effectively handled	Weekly reporting to Council
2. Consider the location of designated parking areas, stockpile locations, construction laydown sites, site offices,	Prior to works commencing	Keech Constructions	Throughout works	No complaints received	Complaints effectively handled	Weekly reporting to Council

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
and access routes carefully such that unnecessary inconveniences to local residents are avoided.						
3. Works are to minimise impacts to residents/landholders by maintaining vehicular access along Freemantle Road using a temporary diversion and traffic control as appropriate.	Daily	Council/Keech Constructions	Throughout works	No complaints received	Complaints effectively handled	Weekly reporting to Council
4. A Traffic Control Plan (TCP) is to be developed in accordance with Australian Standards (AS 1742.3 – Traffic Control Devices for Works on Roads) and Roads and Maritime Traffic Control at Worksites manual to identify appropriate signage (and location) to advise motorist of upcoming changes in the road network. Any variation to the layout of the TCP on site is to be recorded and certified by accredited Roads and Maritime personnel.	Prior to works commencing	Keech Constructions	Prior to works	TCP is completed	Completion and implementation of the TCP	Weekly reporting to Council
5. All road signs and marking will be in accordance with the TfNSW Guide to Signs and Markings; Australian Standards	Daily	Keech Constructions	Throughout works	Compliance with standards and guides	Replace incorrect signage.	Weekly reporting to Council

Environmental Safeguards	Timing	Responsibility	Monitoring	Performance	Corrective Action	Reporting
AS1742 and AS1743; and the Australian Roads Guide to Traffic Management.						
6. Traffic and transport complaints are to be monitored and addressed promptly where practicable.	Daily	Council/Keech Constructions	Throughout works		Complaints effectively handled	Weekly reporting to Council.

## 7 REFERENCES

Australian Government, Monitoring, evaluation, reporting and improvement tool,  
<http://nrm.gov.au/my-project/monitoring-and-reporting-plan/merit>

Department of Conservation and Land Management (CALM), 1992, Urban Erosion and Sediment Control.

Department of Environment and Climate Change NSW, Interim Construction Noise Guideline, 2009,  
<https://www.epa.nsw.gov.au/~media/EPA/Corporate%20Site/resources/noise/09265cng.ashx>

Managing Urban Stormwater: Soils and Construction Volumes 1-5, 4<sup>th</sup> Edition, Landcom, NSW Government 2004

NEPC, Recommended general process for assessment of site contamination, 1999,  
<http://nepc.gov.au/system/files/resources/93ae0e77-e697-e494-656f-afaaf9fb4277/files/2-general-process-assessment-site-contamination.pdf>

NSW DPI Weed Wise database <http://weeds.dpi.nsw.gov.au/>

Apex Archaeology 2023 – Aboriginal Due Diligence Assessment Report, Freemantle Road, Eglington

TEF 2023, Freemantle Road Culvert Rectification REF

## 8 APPENDICES

Item	Name
Appendix A	Fisheries Permit PN23-/401
Appendix B	Risk Assessment
Appendix C	Environmental Control Plan
Appendix D	Keech Constructions Environmental Policy

## Appendix A – Fisheries Permit PN23-/401

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FE23/896

Permit PN23/401



4 September 2023

The General Manager  
Bathurst Regional Council  
Private Mailbag 17  
BATHURST, NSW, 2795

Attention: Peter Benson

Dear Mr Benson

**Re: Permit PN23/401 for Dredging & Reclamation associated with Pipe Culvert Replacement, Concrete Apron, Rock Dissipation and Retaining Wall, Adjacent Lot 31 DP 1147371, Kelloshiel Creek, Freemantle Road, Eglinton**

I refer to your application dated 30<sup>th</sup> August 2023 under Part 7 of the *Fisheries Management Act 1994*. DPI Fisheries assess applications for dredging and reclamation in accordance with Part 7 of the *Fisheries Management Act 1994* and the Policy and Guidelines for Fish Habitat Conservation and Management (Update 2013).

An invoice has been prepared and sent to Bathurst Regional Council for the statutory minimum assessment fee of \$358.

Please find enclosed a permit under Part 7 of the *Fisheries Management Act 1994* for dredging and reclamation associated with pipe culvert replacement, concrete apron, rock dissipation and retaining wall, adjacent Lot 31 DP 1147371, Kelloshiel Creek, Freemantle Road, Eglinton.

**Please carefully read and note the conditions included in the permit.** If you agree that all the conditions are reasonable, appropriate and achievable, you must sign and date the attached sheet (Acceptance of Conditions) and return it to the Contact Officer as soon as possible. If you believe that you cannot comply with all the conditions then you must not commence work. **Instead, you should contact the Contact Officer listed on the first page of the permit so that your concerns can be considered.**

If you intend to have the work undertaken by a contractor, please ensure that the contractor receives a full copy of the permit and understands the importance of abiding by the conditions. As the permit holder and proponent of the works, Council is responsible for ensuring that all conditions are fully adhered to. **Breaching a condition of a permit can incur an on-the-spot fine of up to \$500 or up to \$11,000 through the local court pursuant to clause 225 of the *Fisheries Management (General) Regulation 2019*.**

The extent of work is to be restricted to that outlined in the application and plans submitted to the Unit. **If for any reason, other works are required, or the works need to be extended to other areas, you must seek specific approval beforehand.** DPI Fisheries will require justification for these variations and may charge additional assessment fees as outlined in

the permit application. Similarly, **please note the expiry date on the permit**. If the works are not completed by the expiry date you will need to obtain an extension. **Requests for an extension after the expiry date will incur the \$179 permit application fee. Requests for an extension before the expiry date will not incur an application fee.**

DPI Fisheries places particular importance upon the need to minimise the harm to the natural environment both at the work site and downstream/adjacent waters. We expect implementation of Best Management Practice with respect to erosion and sediment control and aquatic vegetation management. This includes aspects of:

- work scheduling (eg installation of protective measures before earthworks commence, suspension of works during rain etc);
- deployment of protective measures (eg silt curtains, site drainage, separation of “clean” and “dirty” water, silt stop fencing, check dams, sediment traps etc); and,
- constant maintenance of those measures (eg replacing torn silt-stop fencing, replacing silt-stop fencing which has fallen down or been knocked over, removing accumulated sediment etc).

Please refer to the publication “Managing Urban Stormwater: Soils and Construction” (4<sup>th</sup> Edition Landcom, 2004), commonly referred to as “The Blue Book” for guidance.

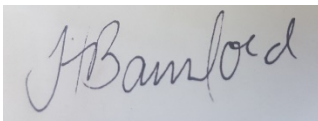
<http://www.environment.nsw.gov.au/resources/water/BlueBookVol1.pdf>

DPI Fisheries highlight that the Infrastructure SEPP requires that exempt developments, complying developments and emergency works are carried out in accordance with all applicable requirements of The Blue Book: “*Managing Urban Stormwater: Soils and Construction*” (4<sup>th</sup> Edition Landcom, 2004).

In addition to complying with the conditions of the permit, DPI Fisheries recommends that laminated copies of the permit be included on the site security signage and/or other high visibility areas of the works compound.

If you have any queries please call David Ward, Fisheries Manager (Tamworth) on 0429 908 856.

Yours sincerely



Heleena Bamford  
**Senior Fisheries Manager, Murray-Darling Unit**  
Authorised delegate of the Minister for Primary Industries

## Part 7 of the FISHERIES MANAGEMENT ACT 1994

- Permit Number:** [permit number: PN23/401]
- Permit Holder:** Bathurst Regional Council  
Private Mailbag 17  
Bathurst, NSW, 2795  
Phone 6333 6519  
Email: [peter.benson@bathurst.nsw.gov.au](mailto:peter.benson@bathurst.nsw.gov.au)  
Email: [brendan@keechconstructions.com.au](mailto:brendan@keechconstructions.com.au)
- Permit Area:** Adjacent Lot 31 DP 1147371, Kellosheil Creek, Freemantle Road, Eglinton.
- Permit Activity:** Dredging and reclamation associated with 4 x 3600mm pipe culvert replacement, concrete apron, rock dissipation and retaining wall as proposed in your application dated on the 30<sup>th</sup> August 2023.
- Contact Officer:** David Ward  
Tamworth Agricultural Institute  
4 Marsden Park Road  
Calala, NSW 2340  
ph : 6763 1255  
Mobile: 0429 908 856  
[david.ward@dpi.nsw.gov.au](mailto:david.ward@dpi.nsw.gov.au)

Unless cancelled or suspended sooner, this permit shall remain in force until: 30<sup>th</sup> August 2025.

This permit is subject to the following conditions:

### ADMINISTRATIVE CONDITIONS

1. The **Acceptance of Conditions** form (attached) must be completed and returned to the nominated Contact Officer before any works authorised by this permit commence.  
*Reason - To remove any doubt that the Permit Holder understands and accepts the Conditions before work commences.*
2. The **Commence Works Notification** form (attached) must be completed and sent to the District Fisheries Officer (email [fisheries.compliance@dpi.nsw.gov.au](mailto:fisheries.compliance@dpi.nsw.gov.au)), and the Contact Officer (contact details listed above) are both to be notified at least three (3) days **BEFORE the commencement of works.**  
*Reason - To ensure that local Department of Primary Industries (DPI) staff are aware that works are about to commence.*
3. The permit holder must ensure that all works authorised by this permit are restricted to the permit area and are undertaken in a manner consistent with those described in the

application made to DPI Fisheries dated 30<sup>th</sup> August 2023. Other works, which have not been described, are not to be undertaken.

*Reason – This permit has been granted following an assessment of the potential impacts of the described works upon the aquatic and neighbouring environments. Other works, which were not described in the application have not been assessed and may have significant adverse impacts.*

4. This permit (or a true copy) must be carried by the permit holder or sub-contractor operating on-site at all times during work activity in the permit area.

*Reason – A DPI Fisheries Officer may wish to check compliance of works with imposed conditions.*

## CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

5. A detailed Construction Environmental Management Plan detailing provisions relating to the items listed in this section below, is to be prepared **and submitted to the Contact Officer listed above for approval one week prior to any instream works taking place**. The EWMS should consist of simple statements and **diagrams** of how each of the factors will be managed on site to achieve the stated aim.
  - a. Site delineation and marking of “no go” areas (with the aim of keeping the impacted area to a minimum),
  - b. **Sediment and erosion control plan** (with the aim of achieving an outcome of “no visible turbid plumes reaching the waterway”, for any rainfall event up to a 1 in 2 year ARI event),
  - c. Instream works, dewatering, and coffer damming
  - d. Use of temporary access works or work platforms (with the aim of keeping the impacted area to a minimum),
  - e. Material storage and stockpiling (with the aim of keeping the impacted area to a minimum),
  - f. Site restoration and clean up (with the aim of ensuring that the impacted area recovers as soon as possible),
  - g. Site rehabilitation and revegetation (with the aim of ensuring that there are no long-term impacts after works are completed).

All works undertaken are to be consistent with this statement.

*Reason – To ensure that appropriate strategies for preventing sediment input to downstream waterways and rehabilitation of aquatic habitats and the riparian zone are proposed and carried out.*

## TIMING OF WORKS FOR LOW FLOWS

6. Works are to be undertaken during low flows within Kelloshiel Creek and when Bureau of Metrological forecast for the Bathurst region indicates several days of clear, dry weather.

*Reason – Timing the works for appropriate conditions can reduce delays and minimise impacts on the aquatic environment.*

## DEWATERING

7. Dewatering at the worksite is to be undertaken consistent with accepted Best Management Practice (i.e. Landcom [2004], *Managing Urban Stormwater: Soils and Construction* [4<sup>th</sup> Edition]). In addition, mitigation controls such as a sediment fence between the sump water release outlet and the waterway are to be employed to ensure that downstream water quality is not adversely affected.

*Reason – Minimise turbidity impacts from the site on downstream waters.*

## WORK IN WATERS

8. Machinery is not to enter or work from the waterway unless in accordance with works proposed in your application for the permit and the requirements of this permit.  
*Reason – To ensure minimal risk of water pollution from oil or petroleum products and to minimise disturbance to the streambed substrate.*
9. Only clean rock is to be used in construction of works authorised by this permit.  
*Reason – To avoid fines, clay and other sediment un-necessarily entering the waterway and potentially impacting on aquatic habitats.*
10. Prior to use at the site and / or entry into the waterway, machinery is to be appropriately cleaned, degreased and serviced. Spill kits are to be available on site at all times during works.  
*Reason – To reduce the threat of an unintended pollution incident impacting upon the aquatic environment.*
11. Geotextile fabric is to be used to underlay rock used for energy dissipation.  
*Reason – Consistent with best management practice and reduce potential for erosion undermining the rock dissipation.*

## AVOIDING MOVING OR HARMING SNAGS, RIPARIAN AND AQUATIC VEGETATION

12. When working near aquatic vegetation<sup>1</sup> on water land<sup>2</sup> these areas need to be identified and appropriately delineated as “No Go” areas (with the aim of avoiding harm to these areas). Removing, moving or harming aquatic vegetation on water land outside the work footprint approved under the authority of this permit is not permitted. Such removal, harm or movement caused to aquatic vegetation is to be documented and reported to the contact officer who may direct that the removed, harmed or damaged aquatic vegetation on water land be restored.  
*Reason – To ensure that impacts on aquatic habitats and the riparian zone are minimised.*
13. Material storage and stockpiling is not to be undertaken on water land, or riparian and aquatic vegetation. Stockpiling must be undertaken in a manner to avoid harm to these types of vegetation or water land. Stockpiles should also be located away from adjacent water land. Stockpiles and/or dewatering areas should be appropriately controlled by sediment fencing or other materials prescribed in the “Blue Book” to ensure sediments do not enter the waterway.  
*Reason – To ensure that impacts on aquatic habitats and the riparian zone are minimised. “Degradation of native riparian vegetation along NSW water courses” is listed as a Key Threatening Process under the provisions of the FM Act.*

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<sup>1</sup> “Aquatic vegetation” is a term used to describe native vegetation that inhabits freshwater but does not include noxious weeds within the meaning of the *Noxious Weeds Act 1993*

<sup>2</sup> “Water land” means land submerged by water:

- a) whether permanently or intermittently, or
- b) whether forming an artificial or natural body of water,

and includes wetlands and any other land prescribed by the regulations.

*Wetlands* include marshes, mangroves, swamps, or other areas that form a shallow body of water when inundated intermittently or permanently with fresh, brackish or salt water, and where the inundation determines the type and productivity of the soils and the plant and animal communities.

<sup>3</sup> “Snags” is a term used to describe **large woody debris** from trees and shrubs, including whole fallen trees, broken branches and exposed roots that have fallen or washed into a waterway and are now wholly or partially submerged by water. Snags also includes submerged large rocks (of greater than 500 mm in two dimensions).

14. On completion of the works the site is to be rehabilitated and stabilised including:
- Surplus construction materials and temporary structures (other than silt fences and other erosion and sediment control devices) installed during the course of the works are to be removed.
- Reason – To ensure that habitats are restored as quickly as possible, public safety is not compromised, aesthetic values are not degraded and sediment inputs into the waterway are reduced.*

#### IMPORTANT NOTE:

##### INCONSISTENCY BETWEEN DOCUMENTS

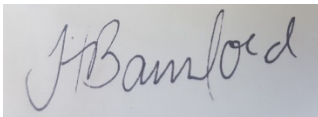
In the event of any inconsistency between the conditions of this approval and:

- the drawings / documents referred to above, the conditions of this approval prevail to the extent of the inconsistency;
- any Government publication referred in this permit, the most recent document, shall prevail to the extent of the inconsistency; and
- the proponent's mitigation measures outlined in the application, the conditions of this approval prevail to the extent of the inconsistency.

##### STOP WORK ORDERS

A Fisheries Officer or other appropriate delegate who has reasonable cause to suspect that the conditions of this permit have not been complied with, **may order the work to stop immediately**. The order may be given to the permit holder or any person who informs the officer that they are acting in any capacity on behalf of the permit holder. Any damage caused to the habitat outside the specified permit area, or the carrying out of works not in accordance with the conditions specified in this permit and/or the application and that were accepted by the permit holder, could result in a breach of the *Fisheries Management Act 1994* or *Regulations*, and penalties of up to \$220,000 may apply. Orders may also be made requiring work to rectify any damage caused by unauthorised works. Failure to abide by permit conditions may incur a \$500 on-the-spot fine per breach pursuant to clause 225 of the *Fisheries Management (General) Regulations 2019*.

Authorised



Heleena Bamford

**Senior Fisheries Manager, Murray-Darling Unit**

Authorised delegate of the Minister for Primary Industries

## Acceptance of Conditions specified in Permit No. PN23/401 issued under Part 7 of the *Fisheries Management Act 1994*

PLEASE COPY THIS PAGE AND RETURN TO NSW DPI

In reference to Permit No. PN23/401 to undertake dredging and reclamation works as a  
consequence of works to be undertaken at Freemantle Road, Eglinton.

I the undersigned, acknowledge that I have read and understood and agree to comply with  
the conditions specified. I understand that penalties can be imposed for non-compliance  
with conditions.

Permit Holder's name: \_\_\_\_\_

Permit Holder's signature: \_\_\_\_\_

Date: \_\_\_\_\_

Please **COPY AND SIGN** this page and email to:

David Ward, Fisheries Manager  
Fisheries Aquatic Environment  
NSW DPI  
4 Marsden Park Road  
CALALA, NSW 2340  
[david.ward@dpi.nsw.gov.au](mailto:david.ward@dpi.nsw.gov.au)

## Permit under Part 7 of the Fisheries Management Act 1994

In reference to Permit No. PN23/401 to undertake dredging and reclamation works as a consequence of works to be undertaken at Freemantle Road, Eglinton.

### Commence Works Notification Form

(Note: to be completed and returned 3 days before commencement of works)

Permit Holder's Name: \_\_\_\_\_

Site Location: \_\_\_\_\_

Works \_\_\_\_\_

Commencement Date: \_\_\_\_\_

Comments:

Please **COPY AND SIGN** this page and email to **BOTH**:

David Ward, Fisheries Manager  
Fisheries Freshwater Environment  
NSW DPI  
4 Marsden Park Road  
CALALA, NSW 2340  
[david.ward@dpi.nsw.gov.au](mailto:david.ward@dpi.nsw.gov.au)

and

District Fisheries Officer  
[fisheries.compliance@dpi.nsw.gov.au](mailto:fisheries.compliance@dpi.nsw.gov.au)



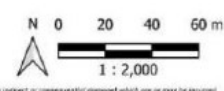
Figure 1: Location of Works



**Keach Constructions Freemantle Road Culvert, Eglinton, NSW - Study Area**

**Legend**

- |  |   |   |  |   |  |   |
|--|---|---|--|---|--|---|
|  Study Area   |  Lot Boundary    | <b>Roads</b>  |  Local Road   |  Sub Arterial Road | <b>Waterways</b>   |  River |
|  Subject Site |  Suburb Boundary |  Arterial Road |  Primary Road |  Creek             |  1st & 2nd order; unnamed waterways |   |



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study area and subject site

## Appendix B – Risk Assessment

### Risk Assessment Methodology – Risk Matrix

1. SEVERITY How severe could the consequences be?	2. LIKELIHOOD How likely is it to occur?			
	Very likely Could happen any time	Likely Could happen some time	Unlikely Could happen, but very rarely	Very unlikely Could happen, but probably never will
Irreparable environmental damage	1	1	2	3
Potential environmental prosecution \$50K+	1	2	3	4
Medium environmental impact – report to OEH / DPI	2	3	4	5
Minor environmental impact – resolution through minimal cost conservation measures	3	4	5	6
1 = Very high 2 = High 3 = High - Moderate 4 = Moderate 5 = Low 6 = Very low	The numbers dictate the required action:  <b>1-3</b> top priority: This is an unacceptable level of risk. Additional controls must be put in place prior to commencing work.  <b>4-6</b> low priority: This level of risk is acceptable.			

**Identification of hazards and control measures**

Hazard	Initial Risk Rating	Controls in place	Current Risk Rating
Excavation / construction vehicle movement– dust generation affecting health of vegetation	Moderate	Reduce traffic speeds on site, water cart available on site and used for dust suppression as needed, daily monitoring of weather conditions and controls in place to ensure no visible plumes of dust and dust settling on vegetation. No work during strong wind or forecast heavy rains, no burning of vegetative material.	Low
Excavation / construction vehicle movement– dust generation impacts to water run-off	Moderate	Sediment and erosion controls installed and maintained, daily monitoring of weather conditions and controls in place to ensure no visible turbidity in downstream receiving waters. No work during wet weather.	Low
Vegetation removal – impact to native species	Moderate	No-go zones demarcated and checked daily. Induct all staff on the location of no-go zones and extent of approved clearing.	Low

Hazard	Initial Risk Rating	Controls in place	Current Risk Rating
Weed incursion and/or spread due to importation and/or movement of construction machinery and ground disturbing activities.	Moderate	Vehicle washdown, checks and inspection prior to arriving onsite. Weed management appropriate to the target weed species.	Low
Fauna trapped, injured or killed during construction	Moderate	Check pit and work areas prior to work starting in the mornings and install wildlife exit points if trenches remain open overnight. Relocate fauna to adjacent woodland if not injured / Injured wildlife to be treated by vet / wildlife carer. No work during wet weather.	Low
Contamination of soil and water - Accidental spill of fuel, construction	Moderate	Spill kits available on site. All fuel and chemicals to be appropriately stored and contained. All staff to be inducted on the location and use of the spill kits. All spills to be contained and reported on immediately.	Low

Hazard	Initial Risk Rating	Controls in place	Current Risk Rating
material or chemicals			
Archaeological or Aboriginal matter	Moderate	If archaeological or Aboriginal items are uncovered during the works, all works must be ceased and contact Council immediately.	Low
Waste	Low	All excess spoil material (unless contaminated) is to be disposed of at an approved Council facility. Site rehabilitation following construction must include spreading of native seed mixture to stabilize all exposed soils.	Low

## Appendix C – Environmental Control Plan and Final Compliance Checklist

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## BRC Freemantle Road Culvert Rectification Project

**Keech Constructions/ Contact: Brendan Keech - 0429 995 570**

### Final Compliance Checklist for works

<b>Project Description</b>	The Project proposes rectification works to the Freemantle Road culvert in Eglinton, NSW. The works will occur within Council owned and managed road reserve and an adjacent private property (Lot 31 DP1147371) on the outskirts of Eglinton, NSW in the Bathurst Regional Council Local Government Area (LGA).	
<b>Objectives</b>	<b>Reference Documents</b>	
<p>The objectives of this final compliance checklist are to ensure the objectives of the CEMP have been achieved:</p> <ul style="list-style-type: none"> <li>• Aboriginal heritage items are not damaged or destroyed</li> <li>• Environments within the study areas are appropriately stabilised and rehabilitated at completion of works</li> <li>• All temporary controls in place are removed once site stabilisation has been achieved</li> <li>• The ongoing success of stabilisation/rehabilitation techniques employed throughout Council’s nominated maintenance period</li> <li>• Appropriate regulatory triggers are observed as needed.</li> </ul>	<p>Freemantle Road Rectification CEMP (TEF, 2023)</p> <p>Freemantle Road Rectification REF (TEF, 2023)</p>	

	Action	Responsibility	Comments / Timing	✓ / ✗
<b>Ecological</b>	All site stabilization and the spreading of native seed mixture to rehabilitate exposed soils, has been completed	Keech Constructions		
	Habitat offsets completed, e.g. hollow augmentation, revegetation, nest box placement (if required)	BRC		
	Compliance with the Fisheries Permit PN23/401 which is provided in Appendix A of the CEMP.	BRC & Keech Constructions	Prior to and throughout works	
	All permanent ERSED controls are in place and functioning as intended	BRC		

## BRC Freemantle Road Culvert Rectification Project

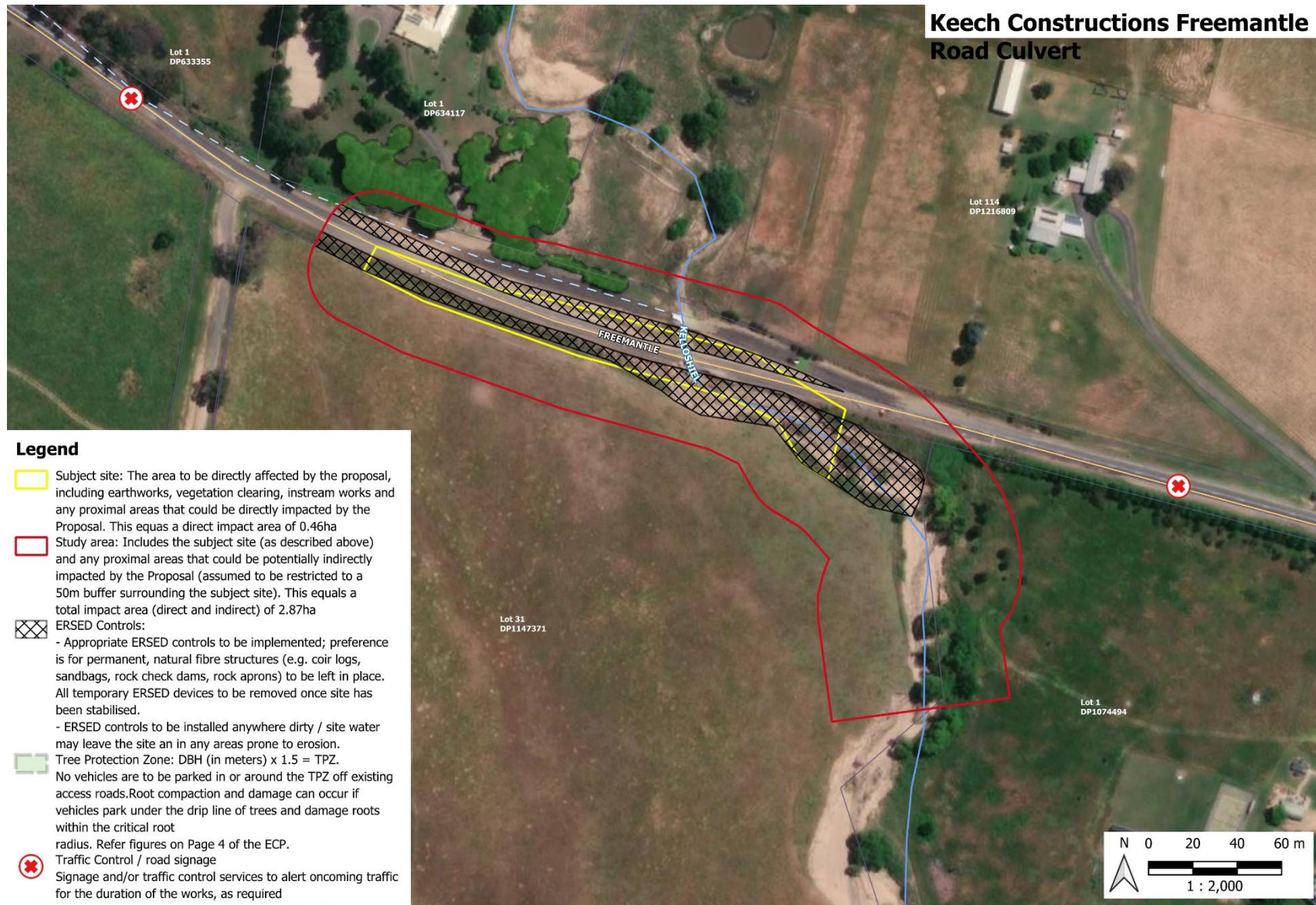
**Keech Constructions/ Contact: Brendan Keech - 0429 995 570**

	<b>Action</b>	<b>Responsibility</b>	<b>Comments / Timing</b>	<b>✓ / ✗</b>
	All temporary ERSED controls have been removed	Keech Constructions	Only to be undertaken once stabilised and no longer required	
<b>Heritage</b>	Aboriginal Due Diligence (ADD) completed prior to ground disturbance and induction process completed.	BRC	Prior to works commencing	
<b>Waste Management</b>	Ensure all waste receptacles are removed from site and ensure the entire site is left in a clean and tidy manner, free of rubbish.	Keech Constructions	Throughout and at completion of works	
	If a pollution incident occurs, ensure the Project manager/Principal contractor is contacted immediately.	Keech Constructions	If a pollution incident occurs	
<b>Other</b>	Ensure all structures (eg access roads, fences, gates, entrances) are returned to their original condition and upgrade any structures damaged due to works.	Keech Constructions		



# BRC Freemantle Road Culvert Rectification Project

Keech Constructions/ Contact: Brendan Keech - 0429 995 570



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# Freemantle Road Culvert Rectification Environmental Control Plan

The following environmental requirements are based on the local site conditions. These are not exhaustive and should be reviewed regularly to ensure the controls in place are appropriate and adequate to address each environmental risk. All staff and contractors should be inducted to site and made aware of these site requirements.

## Relevant ERSED Control Standard Drawings (the Blue Book)

**ENERGY DISSIPATER SD 5-8**

**Construction Notes**

1. Compact the subgrade fill to the density of the surrounding undisturbed material.
2. Prepare a smooth, even foundation for the structure that will ensure that the needle-punched geotextile does not sustain serious damage when covered with rock.
3. Should any minor damage to the geotextile occur, repair it before spreading any aggregate. For repairs, patch one piece of fabric over the damage, making sure that all joints and patches overlap more than 300 mm.
4. Lay rock following the drawing, according to Table 5.2 of Landcom (2004) and with a minimum diameter of 75 mm.
5. Ensure that any concrete or riprap used for the energy dissipater or the outlet protection conforms to the grading limits specified on the SWMP.

**STABILISED SITE ACCESS SD 6-14**

**Construction Notes**

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

**ROCK CHECK DAM SD 5-4**

**Construction Notes**

1. Check dams can be built with various materials, including rocks, logs, sandbags and straw bales. The maintenance program should ensure their integrity is retained, especially where constructed with straw bales. In the case of bales, this might require their replacement each two to four months.
2. Trench the check dam 200 mm into the ground across its whole width. Where rock is used, fill the trenches to at least 100 mm above the ground surface to reduce the risk of undercutting.
3. Normally, their maximum height should not exceed 600 mm above the gully floor. The centre should act as a spillway, being at least 150 mm lower than the outer edges.
4. Space the dams so the toe of the upstream dam is level with the spillway of the next downstream dam.

**STOCKPILES SD 4-1**

**Construction Notes**

1. Place stockpiles more than 2 (preferably 5) metres from existing vegetation, concentrated water flow, roads and hazard areas.
2. Construct on the contour as low, flat, elongated mounds.
3. Where there is sufficient area, topsoil stockpiles shall be less than 2 metres in height.
4. Where they are to be in place for more than 10 days, stabilise following the approved ESCP or SWMP to reduce the C-factor to less than 0.10.
5. Construct earth banks (Standard Drawing 5-5) on the upslope side to divert water around stockpiles and sediment fences (Standard Drawing 6-8) 1 to 2 metres downslope.

**SEEDBED PREPARATION SD 7-1**

**Construction Notes**

1. Loosen compacted soil before sowing any seed. If necessary, rip the soil to a depth of 300 mm. Avoid rotary hoe cultivation.
2. Work the ground only as much as necessary to achieve the desired till and prepare a good seedbed.
3. Avoid cultivation in very wet or very dry conditions.
4. Cultivate on or close to the contour where possible, not up and down the slope.

**SEDIMENT FENCE SD 6-8**

**Construction Notes**

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

**TYPICAL MEDIAN/TABLE DRAIN APPLICATION**



Figure 1 Tree dripline



Figure 2 Tree dripline – view from above

**Emergency Services (Police, Ambulance and Fire Brigade): 000 (or 112)**

**Nearest Hospital:** Bathurst Base Hospital, Howick Street, Bathurst

**Bathurst Regional Council: Emergency Phone (after hours) 6334 2795**

**Environment Line: 131 555**

Name	Company	Position	Phone No
Peter Benson	BRC	Acting Manager Works	6333 6519
Contractor: Brendan Keech	Keech Constructions	Director	0429 995 570



## Appendix D – Keech Constructions Environmental Policy

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## Environmental Policy

Keech Constructions embraces the principle of sustainable development, that is development which meets the needs of the present without compromising the ability of future generations to meet their own needs. Keech Constructions believes this principle is fundamental to its continued success and growth, this is the commitment of management.

Specifically Keech Constructions is committed to:

- Complying with environmental legislation, regulations, standards and codes of practice relevant to our industry as the absolute minimum requirement in each of the communities in which we operate;
- Conducting operations to minimise and, wherever practicable, eliminate adverse environmental impacts through risk identification, assessment and control;
- Continual improvement of our environmental performance including regular review and the setting of environmental objectives and quantified targets (particularly with regard to the efficient use of energy and materials, the minimisation of waste and the prevention of pollution); and
- Conducting business with suppliers and contractors who also have a commitment to a responsible environmental policy;

To support this commitment, Keech Constructions will implement and maintain an environmental management plan for its business.

Through communication and training, all employees and contractors will be encouraged and assisted to enhance Keech Constructions environmental awareness and performance.

The goals for all Keech Constructions contracts is:

- Zero environmental incidents



Brendan Keech  
Managing Director