



**mainroads**  
WESTERN AUSTRALIA

# Widgiemooltha Pits

## Preliminary Clearing Impact Assessment and Vegetation Management Plan

July 2017

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# Amendments

Report Compilation & Review	Name and Position	Document Revision	Date
Author:	Environment Officer	Draft v1	21/7/2017
Reviewer:	Senior Environment Officer	Rev 0	24/7/2017
Author:	Environment Officer	Rev 1	24/7/2017

# 1 SUMMARY

## 1.1 Project Information

**Project Title:** Widgiemooltha Pits

**Project location(s):** This project occurs off Cave Hill North Road 63.22 SLK within the Shire of Coolgardie.

**Project purpose / components:** This project involves the creation of four new material pits and expansion of an access track to source material for future projects.

**Area proposed to be cleared:** 34.03 hectares (ha).

**Temporary clearing required:** Yes, 34.03ha.

A Preliminary Clearing Impact Assessment (PCIA) of the project was undertaken. The PCIA outlined the key activities associated with the road project, the existing environment and an assessment of native vegetation clearing. This assessment provided an evaluation of the vegetation clearing impacts associated with the project using the ten clearing principles and strategies used to manage vegetation clearing. Key clearing impact assessment points are listed below.

## 1.2 Key Clearing Impact Assessment Aspects

- The main native vegetation clearing impacts of this project is the temporary removal of 34.03ha of native vegetation.
- This project is not likely to be at variance to any of the 10 Clearing Principles.
- Up to 2235 *Diocirea acutifolia* (P3) plants will be removed as part of this project.
- A DWER approved revegetation plan will be obtained for this project.

The PCIA identified one environmental constraints associated with the proposed project activities. Further environmental approvals, permits or licences are needed for implementation of the project.

## 1.3 Key Vegetation Management Actions

Project specific environmental management actions have been developed to manage all clearing impacts and these are outlined in the Vegetation Management Plan (VMP) provided in Appendix C.

Standard vegetation clearing management actions (For example, record keeping and monitoring project implementation) will be implemented for the project. Refer to the VMP for further details.

Main Roads State-wide Purpose Clearing Permit CPS 818 will be used to undertake native vegetation clearing for the project. Project clearing will be undertaken in accordance with the conditions of CPS 818 and detailed records of native vegetation clearing will be maintained as required under the permit.

## **2 ASSESSMENT SCOPE**

This preliminary assessment involved a desktop analysis of environmental aspects and impacts, a site investigation and an assessment of native vegetation clearing impacts. The study area is confined to a local area of a 40 km radius. This preliminary assessment determined whether further Clearing Impact Assessment (CIA) is necessary, the need to seek submissions and develop and obtain approvals from the Department of Environment Regulation (DER) for revegetation plans, vegetation management plans, dieback management plans or offset proposals.

### 3 PROJECT DESCRIPTION

This project involves the creation of four material pits and access track off Cave Hill North Road 63.22 SLK within the Shire of Coolgardie. These pits will be used to source material for future projects.

- This clearing involved in this project include:
- Pit 1 (closest to road)=4.04ha
- Pit 2=10.25ha
- Pit 3=6.15ha
- Pit 4=9.59ha
- Access track=4ha

Total=34.03ha

#### 3.1 Project Location

The project area is located on Cave Hill North Road 63.22 SLK within the Shire of Coolgardie (Figure 1.). The location and boundaries of the study area (40 km radius) for the project are shown in Figure 2.:

Pit 1

Latitude: -31.5853

Longitude: 121.4619

Pit 2

Latitude: -31.5908

Longitude: 121.4662

Pit 3

Latitude: -31.597

Longitude: 121.4682

Pit 4

Latitude: -31.6114

Longitude: 121.4474



The project area is shown in Figure 1:

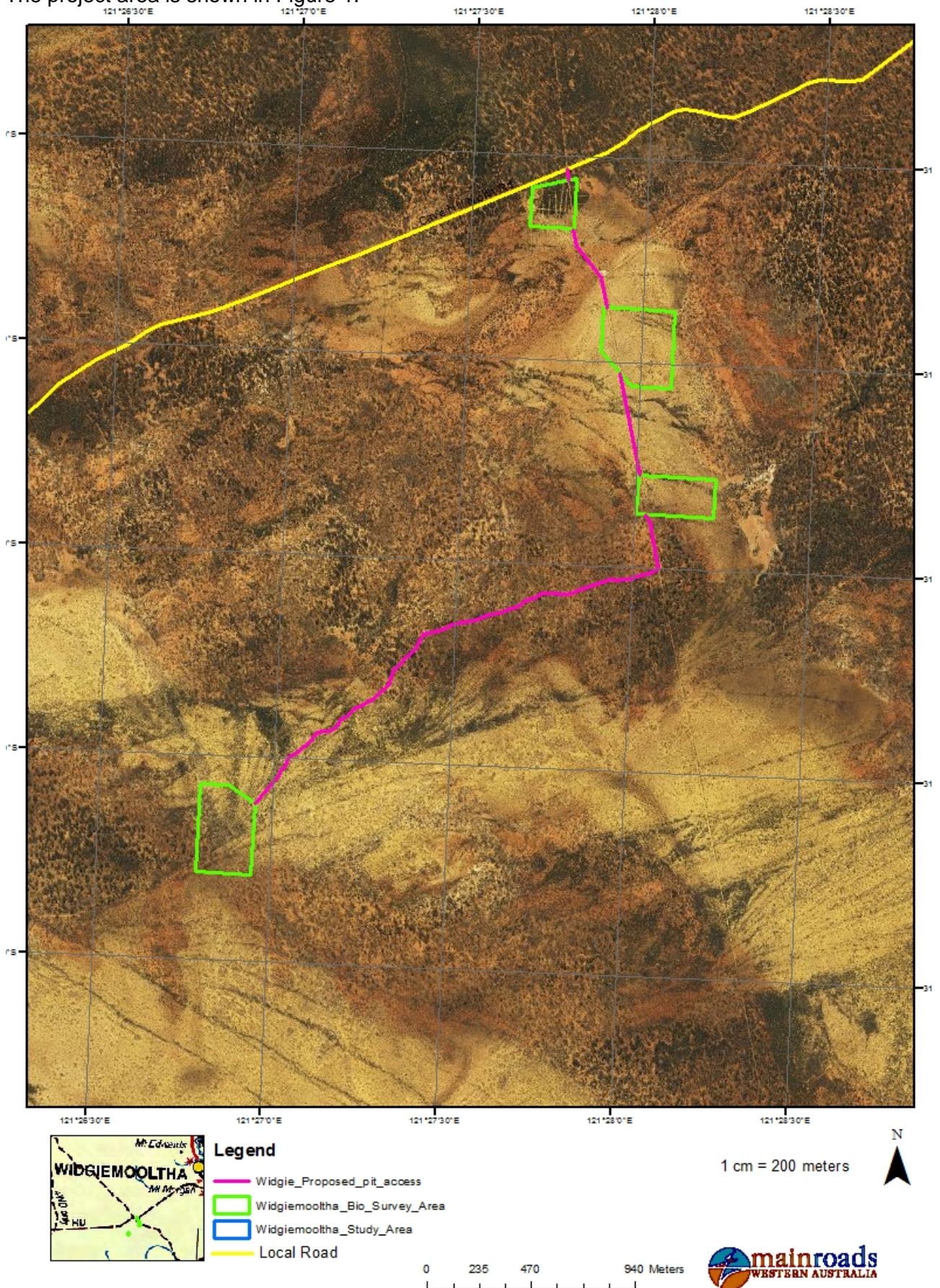


Figure 1. Project Area



The location and boundaries of the study area (40 km radius) for the project are shown in Figure 2:

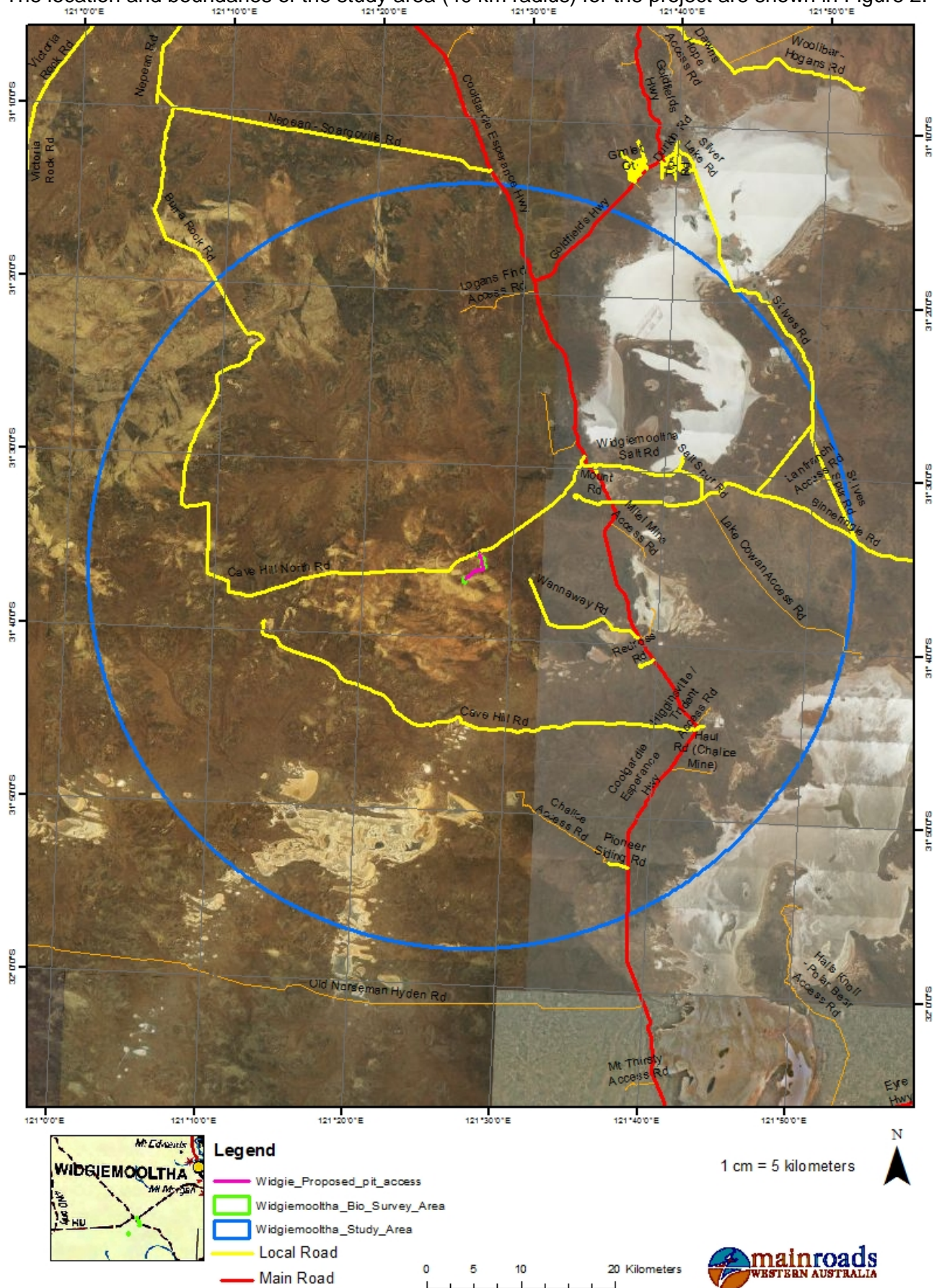


Figure 2. Project Location and Study Area



## **4 METHODOLOGY**

### **4.1 Preliminary Desktop Study**

A preliminary assessment of the project area and an assessment of native vegetation clearing was undertaken by reviewing a number of government agency managed databases, viewing GIS shapefiles and consulting with relevant stakeholders where necessary. Results from searches can be found in the relevant Appendix.

GIS layer viewing and mapping is done using ArcMap and / or Main Roads Integrated Mapping System (IMS) and referencing of the GIS layers accessed is done under the relevant methodology section of each clearing principle. All Government managed databases that were searched to locate additional info (i.e. further info on Contaminated Sites such as Basic summary of records). Where these databases are searched references are supplied in the reference list with the date accessed.

## 5 CLEARING OF NATIVE VEGETATION

Native vegetation describes all indigenous aquatic and terrestrial vegetation (living or dead). The term does not include vegetation that was intentionally sown, planted or propagated unless it was required under a statutory condition.

Apart from activities that are exempt under the clearing regulation (Section 5 – Prescribed Clearing), all native vegetation clearing completed by Main Roads WA will be undertaken using a permit.

### 5.1 Measures to Avoid and Minimise Clearing

Justification for how project design was chosen.

- Materials testing identified that there are appropriate road building materials in these areas.

Explain how the clearing impacts have been avoided and minimised.

- Smallest possible area will be cleared.
- Pre-existing access tracks will be utilised as much as possible.
- Clearing will be rehabilitated once pits are decommissioned.

### 5.2 Existing Vegetation Details

#### 5.2.1 Project Site Vegetation Description

The project area consists of two vegetation types with the Mallee woodlands being dominate with small areas of Eucalypt woodlands.

#### Eucalypt Woodlands

Open woodland of *Eucalyptus salmonophloia* over open shrubland of *Eremophila scoparia* and shrubland of *Diocirea acutifolia*/ *Scaevola spinescens* on clay-loam plain.

#### Mallee Woodlands and Shrublands

Open mallee woodland of *Eucalyptus horistes* over woodland of *Acacia lasiocalyx*/ open shrubland of *Acacia assimilis* and open hummock grassland of *Triodia scariosa* on rocky plain

For a full description of the existing vegetation, refer to the Biological Survey Report in D17#18109.

**Table 1: Summary of Project Area's Mapped Pre-European Vegetation Associations**

Pre-European Vegetation Association(s)	Clearing Description	Vegetation Condition	Comments
Vegetation Association 522 described as a Medium woodland; redwood ( <i>Eucalyptus transcontinentalis</i> ) & merritt ( <i>E. floctoniae</i> ) and Vegetation Association 1413 described as Shrublands; acacia, casuarina & melaleuca thicket (Government of Western Australia, 2017)	Clearing of up to 34.03ha ha for the creation of material pits of Cave Hill North Road, Coolgardie.	Excellent to very good (EPA 2016), majority in very good condition.	Vegetation description and condition determined from Main Roads site visit on 28/10/2015, Botanica Biological Survey and aerial imagery.

**Table 2: Pre-European Vegetation Representation**

Pre-European Vegetation Association(s) in:	Pre-European (ha)	Current Extent (ha)	% Remaining	% Remaining in DPaW reserves
<b>IBRA Region</b> Coolgardie	12,912,204.38	12,648,491.43	97.96	16.72
<b>Statewide</b> Veg Assoc No. 522	709,715.02	709,228.27	99.93	5.55
<b>IBRA region</b> Veg Assoc No. 522 in the IBRA	688,407.03	687,920.27	99.93	5.72

**Table 2: Pre-European Vegetation Representation**

Coolgardie region				
<b>Statewide</b> Veg Assoc No. 1413	1,679,917.00	1,286,966.98	76.61	17.25
<b>IBRA region</b> Veg Assoc No. 1413 in the IBRA Coolgardie region	1,061,213.00	1,042,554.48	98.24	18.50
<b>Local Government Authority</b> Shire of Coolgardie	3,029,750.64	3,017,765.24	99.60	13.73

### 5.3 Assessment against the Ten Clearing Principles

In assessing whether the project's proposed clearing is likely to have a significant impact on the environment, the project was assessed against the Ten Clearing Principles (EP Act, Schedule 5).

The proposed clearing is not likely to be at variance with the 10 Clearing Principles.

#### (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments	Proposed clearing is not likely to be at variance to this Principle
	<p>This project involves the temporary removal of up to 34.03ha ha of native vegetation. The vegetation consists of predominately Mallee woodlands with small areas of Eucalypt woodlands. The area is in excellent to very good (EPA, 2016) condition with the majority in very good condition. This area is mapped as Vegetation Association 522 described as a Medium woodland; redwood (<i>Eucalyptus transcontinentalis</i>) &amp; merrit (<i>E. floctoniae</i>) and Vegetation Association 1413 described as Shrublands; acacia, casuarina &amp; melaleuca thicket (Government of Western Australia, 2017)</p> <p>Within the study area there are records of one declared rare flora (DRF) and 20 priority species. These are:</p> <ul style="list-style-type: none"> <li>• <i>Tetratheca spenceri</i>-DRF</li> <li>• <i>Austrostipa sp. Carlingup Road</i>-P1</li> <li>• <i>Calandrinia sp. Widgiemooltha</i>-P1</li> <li>• <i>Grevillea phillipsiana</i>-P1</li> <li>• <i>Lepidosperma sp. Parker Range</i>-P1</li> <li>• <i>Prostanthera splendens</i>-P1</li> <li>• <i>Ptilotus rigidus</i>-P1</li> <li>• <i>Senecio microbasis</i>-P1</li> <li>• <i>Tecticornia flabelliformis</i>-P1</li> <li>• <i>Acacia kerryana</i>-P2</li> <li>• <i>Phebalium clavatum</i>-P2</li> <li>• <i>Philothea apiculata</i>-P2</li> <li>• <i>Allocasuarina eriochlamys subsp. grossa</i>-P3</li> <li>• <i>Austrostipa blackii</i>-P3</li> <li>• <i>Diocirea acutifolia</i>-P3</li> <li>• <i>Eremophila annosocaulis</i>-P3</li> <li>• <i>Leucopogon sp. Kambalda</i>-P3</li> <li>• <i>Melaleuca coccinea</i>-P3</li> <li>• <i>Phlegmatospermum ermaeum</i>-P3</li> <li>• <i>Pityrodia scabra subsp. dendrotricha</i>-P3</li> <li>• <i>Myriophyllum petraeum</i>-P4</li> </ul> <p>The biological survey identified no DRF and only one priority flora, <i>Diocirea acutifolia</i> (P3) within the project area. Within the material pits there are 5 plants at within Pit 4. The access track between Pit 3 and 4 also includes this species and 2230 plants were recorded along this proposed access track. Some of these plants will be removed by this project, however as there is already an existing track at this location it is unlikely that all these plants will be removed. Given the uniform nature of the landscape this species is</p>

	<p>likely to be present elsewhere in the area and the removal of the plants required for this project are unlikely to significantly impact this species population.</p> <p>No conservation status fauna were identified within the biological survey. The project area is within a very uniform landscape that is highly vegetated and it is unlikely that the temporary removal of vegetation required for this project will impact any fauna species.</p> <p>Within the study area there are no known records of threatened ecological communities (TECs) or priority ecological communities (PECs). The nearest PEC occurs over 82 km to the north east of the project area. Given the distance and minor nature of the works it is unlikely that any PECs or TECs will be impacted by this project.</p> <p>Given the above it is unlikely that the project area represents an area of high biological diversity. The priority flora to be taken will not affect the conservation status significantly, nor impact the local or regional distribution of the species. Therefore this project clearing is not likely to be at variance to this Principle.</p>
<b>Methodology</b>	<p>MRWA Site Inspection (28/10/2015)</p> <p>DPAW shapefiles</p> <p>MRWA GIS Shapefiles</p> <p>EPA (2016)</p> <p>Government of WA (2017)</p> <p>Botanica biological survey (2017)</p>

**(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.**

<b>Comments</b>	<b>Proposed clearing is not likely to be at variance to this Principle</b>
	<p>Within the study area there are known records of six fauna species. These are:</p> <ul style="list-style-type: none"> <li>• <i>Falco hypoleucos</i> (Grey Falcon)-Vulnerable</li> <li>• <i>Leipoa ocellata</i> (Malleefowl)-Threatened</li> <li>• <i>Merops ornatus</i> (Rainbow Bee-eater)-Protected under International Agreement</li> <li>• <i>Falco peregrinus</i> (Peregrine Falcon)–Specially Protected</li> <li>• <i>Branchinella basispina</i> (Fairy Shrimp)-P1</li> <li>• <i>Platycercus icterotis subsp. xanthogenys</i> (Western Rosella)-P1</li> </ul> <p>The Grey Falcon prefers lightly timbered and untimbered lowland plains that are crossed by tree-lined watercourses, but frequents other habitats including grassland and sand dune habitats. As this habitat is not present in the project area this species is unlikely to be impacted by the project activities.</p> <p>Malleefowl inhabit mallee vegetation with dense leaf litter. No evidence of this species was identified within the project area though it may be a transient visitor. Given the large amount of similar habitat in the surrounding area, the lack of mounds and the temporary nature of this clearing this species is unlikely to be impacted by the project area.</p> <p>The Rainbow Bee-eater can inhabit a wide variety of habitats. It is a highly mobile species and given the uniform nature of the surrounding landscape it is unlikely that this species will be significantly impacted by the project activities.</p> <p>The Peregrine Falcon nests in Eucalypts. This species is highly mobile and while it may be a transient visitor is unlikely to be impacted by the project activities.</p> <p>As there are no waterbodies within the project area the Fairy Shrimp is unlikely to be impacted by this project.</p> <p>The Western Rosella would be unlikely to occur within the project area as this species is rarely recorded this far north/east.</p>



	<p>The large amount of surrounding vegetation means that ecological functionality and linkages of the area are unlikely to be significantly impacted by the temporarily removal of this vegetation. The habitat that surrounds the area is similar in type and condition so the removal of the vegetation for this project does not represent an area of significant habitat.</p> <p>Given the above this project clearing is unlikely that this project will be at variance to this Principle.</p>
<b>Methodology</b>	<p>DPAW Shapefiles DPAW website EPA (2016) MRWA Site Inspection (28/10/2015)</p>

**(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.**

<b>Comments</b>	<b>Proposal is not likely to be at variance to this Principle</b>
	<p>Within the study area there are known records of one declared rare flora species (DRF), <i>Tetratheca spenceri</i>. This DRF occurs over 33km to the north of the project area. The biological survey completed by Botanica identified no DRF within the project area.</p> <p>Given the above this project clearing is not likely to be at variance to this Principle.</p>
<b>Methodology</b>	<p>DPAW shapefiles Botanica biological survey (2017) MRWA Site Inspection (28/10/2015)</p>

**(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.**

<b>Comments</b>	<b>Proposed clearing is not likely to be at variance to this Principle</b>
	<p>Within the study area there are no known records of threatened ecological communities (TECs). The nearest TEC occurs over 171km to the south of the project area. Given the distance to the nearest TEC and the minor nature of the works it is unlikely that this project will impact any TECs.</p> <p>Therefore this project clearing is not likely to be at variance to this Principle.</p>
<b>Methodology</b>	<p>DPAW shapefiles MRWA Site Inspection (28/10/2015)</p>

**(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.**

<b>Comments</b>	<b>Proposed clearing is not likely to be at variance to this Principle</b>
	<p>The vegetation in the area is mapped as Vegetation Association 522 described as a Medium woodland; redwood (<i>Eucalyptus transcontinentalis</i>) &amp; merrit (<i>E. floctoniae</i>) and Vegetation Association 1413 described as Shrublands; acacia, casuarina &amp; melaleuca thicket (Government of Western Australia, 2017). The vegetation within the project area ranges from excellent to very good with the majority in very good (EPA, 2016) condition.</p>

	<b>Pre-European Vegetation Association(s) in:</b>	<b>Pre-European (ha)</b>	<b>Current Extent (ha)</b>	<b>% Remaining</b>	<b>% Remaining in DPaW reserves</b>
	<b>IBRA Region</b> Coolgardie	12,912,204.38	12,648,491.43	97.96	16.72
	<b>Statewide</b> Veg Assoc No. 522	709,715.02	709,228.27	99.93	5.55
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	<b>Statewide</b> Veg Assoc No. 1413	1,679,917.00	1,286,966.98	76.61	17.25
	<b>IBRA region</b> Veg Assoc No. 1413 in the IBRA Coolgardie region	1,061,213.00	1,042,554.48	98.24	18.50
	<b>Local Government Authority</b> Shire of Coolgardie	3,029,750.64	3,017,765.24	99.60	13.73
	<p>It is evident from the table above that the vegetation in the local area is well represented with 99.93 and 98.24% vegetation remaining respectively. As a result this area does not represent an area that has been extensively cleared.</p> <p>The vegetation to be temporarily cleared does not represent an area that is significant as a remnant. There is a large amount of vegetation surrounding the project area which is similar in type and composition but is in better condition. Since the vegetation will only be temporarily removed from a highly vegetated uniform landscape it is unlikely that the removal of this vegetation will reduce ecological functioning or is an area that provides essential linkages.</p> <p>Given the above this project clearing is not likely to be at variance to this Principle.</p>				
<b>Methodology</b>	EPA (2016) MRWA Site Inspection (28/10/2015) Government of Western Australia (2017) Aerial photography				

**(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.**

<b>Comments</b>	<b>Proposed clearing is not likely to be at variance to this Principle</b>
	<p>There are multiple minor non-perennial watercourses within the study area; the nearest occurs over 66m to the east of the project area. The nearest lake occurs over 11.2km to the south of the project area.</p> <p>The project area is mapped as Vegetation Association 522 described as a Medium woodland; redwood (<i>Eucalyptus transcontinentalis</i>) &amp; merrit (<i>E. floctoniae</i>) and Vegetation Association 1413 described as Shrublands; acacia, casuarina &amp; melaleuca thicket (Government of Western Australia, 2017), which does not include any riparian vegetation. During the site investigation no water bodies were identified nor was there any evidence of riparian vegetation present within the project area.</p> <p>Given the projects mapped vegetation type, that no riparian vegetation was identified during the site investigation and the projects distance to the nearest watercourse and wetlands it is considered unlikely that the native vegetation proposed to be cleared is growing in or in association with a watercourse or wetland. Therefore this project clearing is considered not likely to be at variance to this Principle.</p>

<b>Methodology</b>	DoW and DPAW shapefiles MRWA Site Inspection (28/10/2015)
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**(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.**

<b>Comments</b>	<b>Proposed clearing is not likely to be at variance to this Principle</b>
	<p>This area is composed of sandy gravel soils. As such the area will be able to drain away excess water. This will mean that the chances of water erosion or waterlogging will be moderate. It is unlikely that water erosion will be a significant issue given the low rainfall of the area (270.7mm average rainfall a year). Since the rainfall is low it is unlikely that water erosion or waterlogging will be significantly increased due to the clearing. As the area is surrounded by vegetation the chances of wind erosion will be fairly low. As there is no dewatering or excavation below the water table it is unlikely acid sulphate soils will become a risk.</p> <p>Given that the area is in a highly vegetated area, will only be temporarily cleared and the soil characteristics it is unlikely that clearing this vegetation will increase land degradation. Therefore this project is not likely to be at variance to this Principle.</p>
<b>Methodology</b>	MRWA Site Inspection (28/10/2015) Botanica Biological Survey (2017)

**(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.**

<b>Comments</b>	<b>Proposed clearing is not likely to be at variance to this Principle</b>
	<p>Within the study area there are 6 reserves or conservation areas. These are:</p> <ul style="list-style-type: none"> <li>• Unnamed reserve-located 20.3km west</li> <li>• Unnamed reserve-located 38.5km south</li> <li>• Binaronca Nature Reserve-located 22.7km to the south east</li> <li>• Burra Conservation Park-located 31.3km north west</li> <li>• Dordie Rocks Nature Reserve-located 11.5km east</li> <li>• Kambalda Nature/Timber Reserve-Located over 35.8km to the north east</li> </ul> <p>Given the distance to the nearest conservation area and the localised nature of the project impacts it is unlikely that this project will impact any reserves or conservation areas.</p> <p>Given the above this project clearing is not likely to be at variance to this Principle.</p>
<b>Methodology</b>	DPAW shapefiles

**(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.**

<b>Comments</b>	<b>Proposed clearing is not likely to be at variance to this Principle</b>
	<p>The project does not occur on any Surface Water Irrigation Areas or Public Drinking Water Source Areas. As no surface water will be taken for this project and due to the nature of the works it is unlikely that there will be a significant impact on the water quality of these areas.</p> <p>The project overlies the Goldfields Groundwater Area, however as no dewatering or drainage modifications are required no impact to groundwater level or quality is expected.</p> <p>There are multiple minor non-perennial watercourses within the study area; the nearest occurs over 66m to the east of the project area. No water will be taken from any of these systems and due to the minor nature of the works is not likely the project will cause</p>

	<p>detrimental impacts to the water quality.</p> <p>Given the above this project clearing is not likely to be at variance to this Principle.</p>
<b>Methodology</b>	<p>DoW and DPAW shapefiles EPA (2016)</p>

**(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.**

<b>Comments</b>	<b>Proposed clearing is not likely to be at variance to this Principle</b>
	<p>The project is in a low rainfall area with an average annual rainfall of 270.7mm (BoM, 2017). The project involves only temporary clearing of vegetation and a large amount of vegetation will remain in the surrounding landscape. As such it is unlikely that the incidence or intensity of flooding in the area will be impacted by this clearing.</p> <p>Therefore this project clearing is not likely to be at variance to this Principle.</p>
<b>Methodology</b>	<p>MRWA Site Inspection 28/10/2015) BoM (2017) Aerial imagery</p>



## 6 ADDITIONAL ACTIONS REQUIRED

The following table summarises what further clearing impact assessment and vegetation management is required in accordance with Main Roads State-wide vegetation Clearing Permit CPS 818.

**Table 3: Summary of Additional Management Actions Required by Permit CPS 818**

Impact of Clearing	Yes/No or NA	Further Action Required
1. The PCIA indicates that the clearing is 'Seriously at Variance', 'At Variance' or 'May be at Variance' with one or more of the clearing principles.	No	No further action required.
2. The PCIA indicates that the clearing is at variance or may be at variance with clearing principle (g) land degradation, (i) surface or underground water quality or (j) the incidence of flooding.	No	No further action required.
3. The project involves clearing for temporary works (as defined by the permit under Condition 11 of CPS 818).	Yes	A Revegetation Plan (RP) must be approved by DER prior to clearing the area to which the RP is related <u>unless</u> it is; -not located in an ESA and -not at variance or not likely to be at variance with all of the clearing principles, and -0.5 hectares or less.
4a. The project is in part of a region that has annual rainfall greater than 400mm and is south of the 26 <sup>th</sup> parallel of latitude.  4b. The project will require movement of soil in conditions other than dry conditions.	No	4a. No further action required.  4b. No further action required.
5. The proposal requires referral to either the WA EPA or the Commonwealth DoEE.	No	No further action required.

## **7 VEGETATION MANAGEMENT**

Main Roads will avoid clearing native vegetation where possible. Where clearing cannot be avoided then this clearing is kept to a minimum. A Vegetation Management Plan has been developed to manage and minimise vegetation clearing for the project (refer Appendix C).

## **8 STAKEHOLDER CONSULTATION**

No stakeholder consultation was required for this project.

## 9 REFERENCES

- Beeston, G.R., Hopkins, A.J.M. and Shepherd, D.P. (2002). Land-use and vegetation in Western Australia. Department of Agriculture, Western Australia, Resource Management Technical Report 250.
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- Environmental Protection Authority (2016). *Technical Guide – Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment* (eds. K Freeman, G Stack, S Thomas and N Woolfrey). Perth, Western Australia.
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## 10 APPENDICES

Appendix	Title
<b>Appendix A</b>	Site Inspection Report
<b>Appendix B</b>	DPaW Threatened Flora and Fauna Database Searches
<b>Appendix C</b>	Vegetation Management Plan

## Appendix A: Site Inspection Report

Pit 1 Site Investigation Report. For other pits refer to the Biological Survey.

PROJECT NAME: Coolgardie Esperance Hwy Widgiemooltha Materials Investigation  
DATE: 28/10/2015

### ATTENDEES

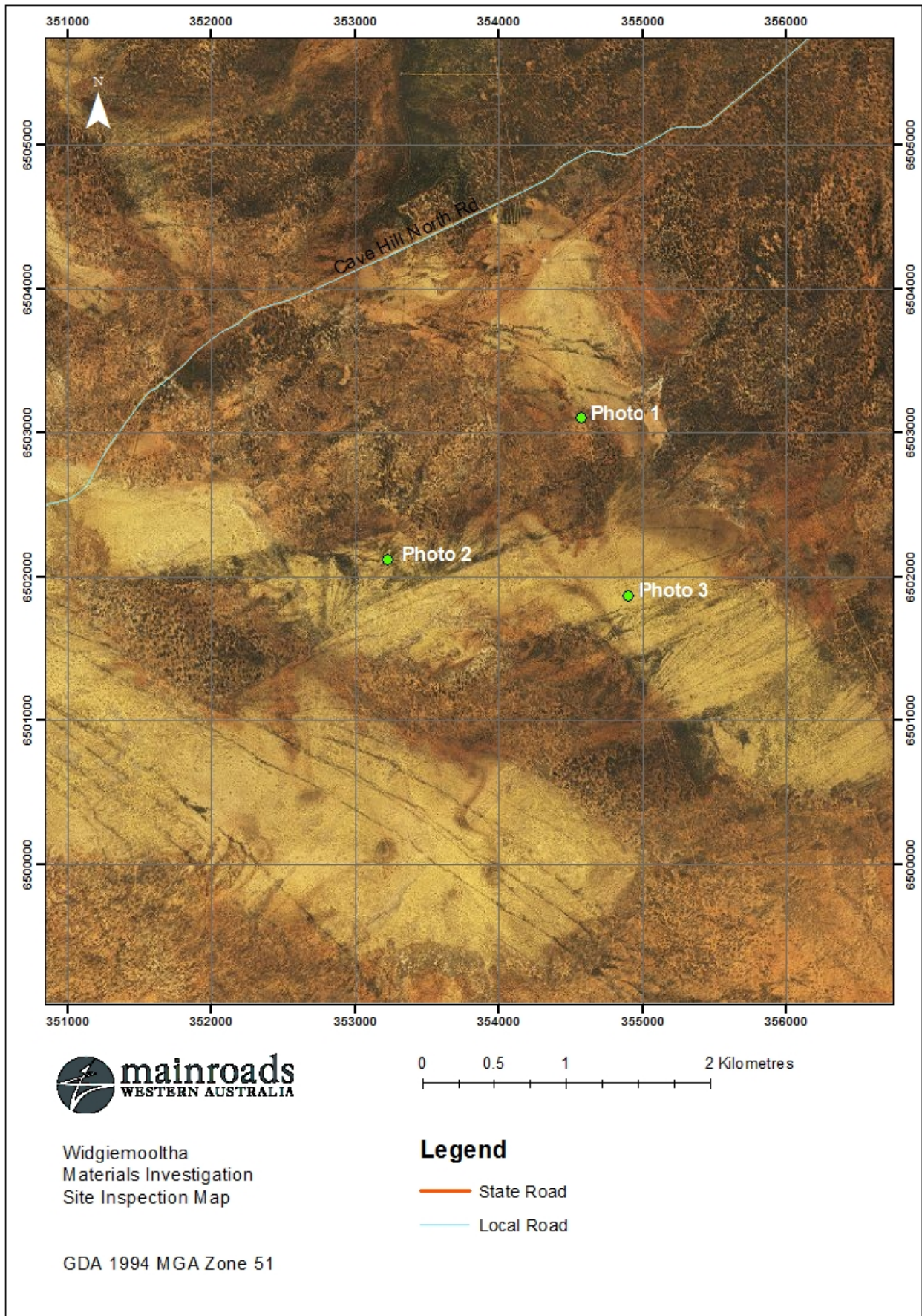
Ant Harris (MRWA EO)

### ACTIONS UNDERTAKEN

- Inspected project area by vehicle and on foot.
- Took representative site photos.
- Recorded vegetation and other features.

### EXISTING ENVIRONMENT & INFORMATION

Map 1. Site Inspection Map








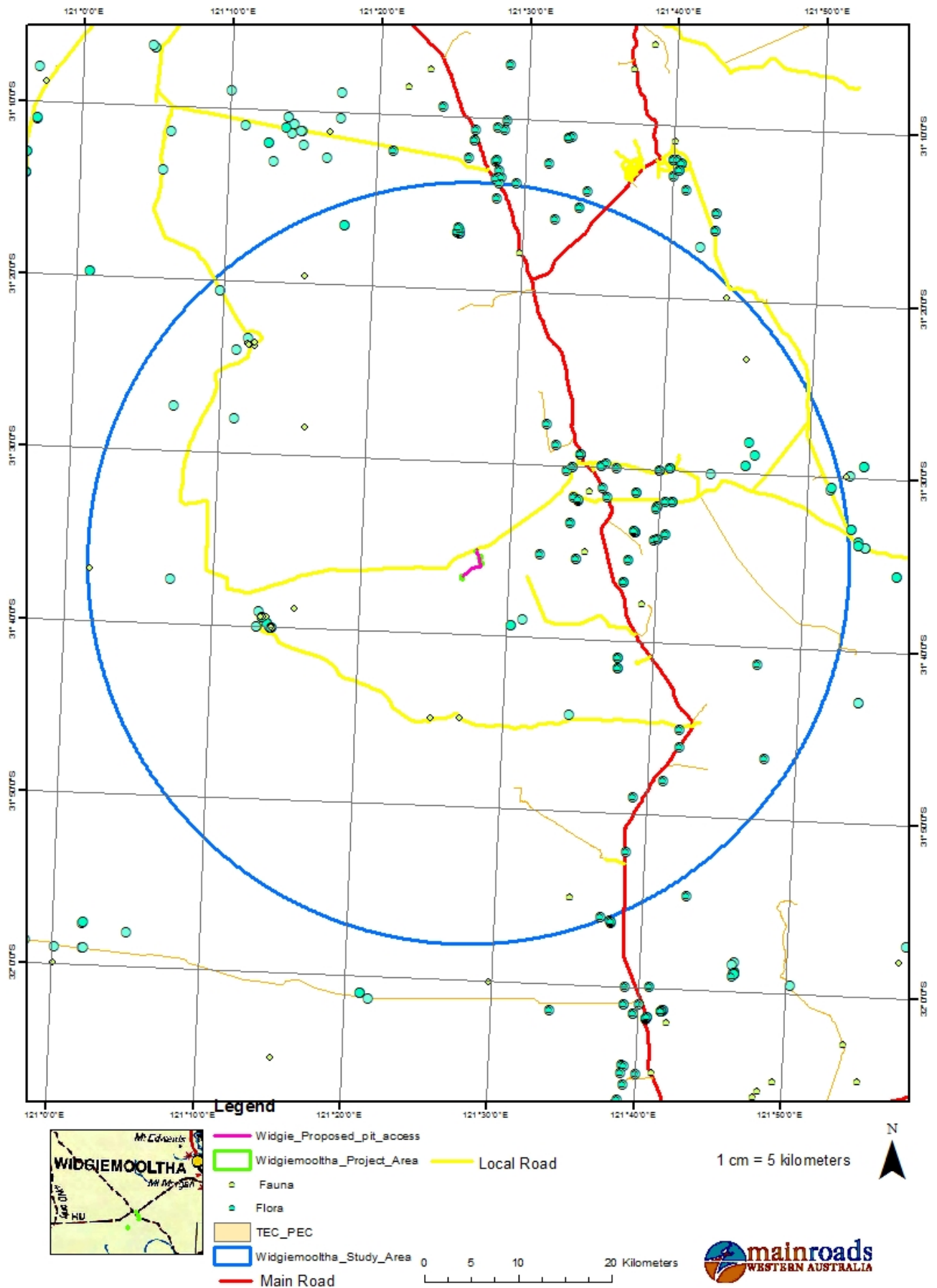
**SITE DESCRIPTION**

Vegetation condition (Keighery, 1994) varied from Good to Excellent comprising mixed shrublands of *Acacia*, *Eremophila* and *Grevillea* with scattered *Eucalypts*. Evidence of past fires with large number of vegetation deaths. Topography was low gently undulating sandy gravel plains. Area appears to have limited past disturbance except for some previous minerals exploration. No terrestrial fauna was observed during the site visit though bird species were observed traversing the area.

**SITE PHOTOS**

	
<p>Photo 1. Looking southwest at mixed shrubland with scattered <i>Eucalypts</i>. Site representative of vegetation in local area which is a plain with sandy gravel soils. Vegetation Good to Excellent (Keighery, 1994).</p>	<p>Photo 2. Looking south into mixed shrubland of <i>Acacia</i>, <i>Eremophila</i> and <i>Grevillea</i> species in Good condition (Keighery, 1994). Lots of vegetation death due to previous fires. Site representative of vegetation in local area which is a plain with sandy gravel soils.</p>
	
<p>Photo 3. Looking south into mixed shrubland of <i>Acacia</i>, <i>Eremophila</i> and <i>Grevillea</i> species in Good condition (Keighery, 1994). Lots of vegetation death due to previous fires. Site representative of vegetation in local area which is a plain with sandy gravel soils.</p>	

## Appendix B: DPaW Threatened Flora and Fauna Database Searches



## Appendix C: Vegetation Management Plan

### WIDGIEMOOLTHA PITS

#### Introduction

This Vegetation Management Plan (VMP) has been prepared by Main Roads for the purpose of managing native vegetation clearing impacts associated with the project. In specified circumstances, Main Roads VMP is required to be approved by DER as a condition of Main Roads Statewide Clearing Permit CPS 818.

#### Scope of the Vegetation Management Plan

The VMP highlights the key project management issues and provides actions required to be undertaken by Main Roads before, during and following project completion. The aim of the VMP is to provide actions to manage the clearing impacts, to allocate areas of responsibility required for the implementation of management actions identified and to provide mechanisms to report on compliance with those actions. Timeframes for the completion of actions and monitoring are also provided.

When preparing the VMP an emphasis has been placed on management actions regarding the native vegetation clearing impacts, being determined by the variance level to the clearing principles ('Seriously at Variance', 'At Variance' and 'May be at Variance').

The VMP actions will be incorporated into the project specific Environmental Management Plan (EMP). Construction contractors are also required to comply with Main Roads' standard environmental management contract specifications (required for Type C and D projects).

Vegetation clearing activities are required to be undertaken in accordance with the environmental management measures detailed in Main Roads Specifications 204 (Environment), 301 (Clearing) and 302 (Earthworks), 304 (Revegetation and Landscaping). All revegetation activities should be completed in accordance with Main Roads *Environmental Guideline Revegetation Planning and Techniques*. Topsoil will also be managed according to Main Roads *Topsoil Management Guideline*.

#### Scope of the Project Activities

This project involves the creation of four material pits and access track off Cave Hill North Road 63.22 SLK within the Shire of Coolgardie. These pits will be used to source material for future projects.

#### Communication

Native vegetation clearing and vegetation management will be communicated at induction, toolbox and/or contract meetings. Information located in the VMP will be communicated to all project and construction personnel, (including sub-contractors) prior to the commencement of project activities and during all phases of project implementation. Where necessary, Main Roads will liaise with the DER to obtain further advice regarding vegetation management

#### VMP Accountability

Name	Role	Contact Details
GS	Project Manager	9080 1434 gregory.sutherland@mainroads.wa.gov.au
AH	Environment Officer	9323 5434 antony.harris@mainroads.wa.gov.au



## VEGETATION MANAGEMENT PLAN

Project Component	Management Action	Monitoring/Maintenance Program	Responsible Person	Completion Timeframe
<b>Standard Vegetation Clearing and Fauna Management</b>				
<b>Avoid and manage project clearing</b>	<ul style="list-style-type: none"> <li>Minimise vegetation clearing within the approved clearing envelope where possible and by utilising existing cleared area where possible.</li> </ul>	<ul style="list-style-type: none"> <li>Extent of clearing for project is recorded within one week and entered in CERR or EOS, once it is available.</li> </ul>	Environment Officer	Within one week once clearing has been completed
	<ul style="list-style-type: none"> <li>At the pre-start meeting (or equivalent) – Provide clear maps (and spatial data) indicating the areas approved to be cleared (limited to the project area described in the ECD) to the crew undertaking the clearing works.</li> </ul>	<ul style="list-style-type: none"> <li>One compliance inspection will occur prior to clearing. Record sheet will be signed at the pre-start meeting by all personnel and emailed to the Environment Officer.</li> </ul>	Project Manager	Prior to clearing commencing
	<ul style="list-style-type: none"> <li>Have on site a copy of the VMP/ECD and complete the management actions within</li> </ul>	<ul style="list-style-type: none"> <li>One compliance inspection will occur prior to clearing.</li> </ul>	Project Manager / Environment Officer	Prior to clearing commencing
	<ul style="list-style-type: none"> <li>Vegetation shall be conserved as far as practicable, and shall not be disturbed for such temporary works as side tracks, access tracks, temporary storage areas, campsites, spoil areas or site offices.</li> </ul>	<ul style="list-style-type: none"> <li>One compliance inspection will occur within two weeks once clearing has been completed. The project area will be driven/walked to ensure the extent of clearing was not exceeded and where possible/safe mature trees retained.</li> </ul>	Project Manager / Environment Officer	Within two weeks once clearing has been completed
	<ul style="list-style-type: none"> <li>Any over clearing shall be recorded and reported immediately to Environment Branch.</li> <li>Any damage caused (beyond the extent of approvals) during the construction to vegetation, landforms, or fauna habitat shall be rehabilitated to the pre-clearing condition in consultation with the Environment Officer.</li> </ul>	<ul style="list-style-type: none"> <li>One compliance inspection will occur within one week once clearing has been completed. The project area will be driven to ensure no damage to vegetation, landforms or habitats occurred during construction.</li> </ul>	Project Manager / Environment Officer	Within one week once clearing has been completed
	<ul style="list-style-type: none"> <li>Burning of cleared vegetative materials or burning within the road reserve will not be permitted under any circumstances.</li> <li>Cleared vegetation will be used during any rehabilitation activities and either mulched or respread according to the Revegetation Plan.</li> </ul>	<ul style="list-style-type: none"> <li>One compliance inspection will occur within two weeks once clearing has been completed. The project area will be driven to ensure the extent of clearing was not exceeded.</li> </ul>	Project Manager / Environment Officer	Within two weeks once clearing has been completed
	<ul style="list-style-type: none"> <li>Clearing activities must be completed in accordance with Main Roads Specifications: 204 (Environment), 301 (Clearing). Specifications are available from iRoads link.</li> </ul>	<ul style="list-style-type: none"> <li>One compliance inspection will occur within one week of the commencement of clearing. The project area will be examined to ensure clearing activities comply with MRWA specifications.</li> </ul>	Project Manager / Environment Officer	Within two weeks once clearing has been completed

### VEGETATION MANAGEMENT PLAN

Project Component	Management Action	Monitoring/Maintenance Program	Responsible Person	Completion Timeframe
<b>Avoid and manage impacts to fauna.</b>	<ul style="list-style-type: none"> <li>• Commence clearing in such a way as to allow fauna to move out of the clearing area if possible</li> <li>• Conduct inspection of potential cockatoo breeding trees prior to clearing</li> <li>• No pets, traps or firearms are allowed within the project area.</li> <li>• Fauna are not to be fed or intentionally harmed or killed.</li> <li>• In the event that sick, injured or orphaned native wildlife are located on the project site, the WILDCARE Helpline ((08) 9474 9055) will be contacted for assistance.</li> </ul>	<ul style="list-style-type: none"> <li>• Monitoring will be undertaken through the corporate audit process and remedial actions managed through Main Roads internal incident management process.</li> </ul>	<p>Management Action - Project Manager</p> <p>Monitoring Program – Environment Branch</p>	Project lifespan/ongoing
<b>Weed management.</b>	<ul style="list-style-type: none"> <li>• Clean earth-moving machinery of soil and vegetation prior to entry.</li> <li>• Ensure no weed affected soil, mulch, fill or other material is brought into the area cleared.</li> <li>• Restrict movement of machines and other vehicles to the limits of the areas cleared.</li> <li>• Remove or kill any serious environmental weeds growing in project area that are likely to spread and result in environmental harm to adjacent areas of native vegetation that are in good or better condition.</li> </ul>	<ul style="list-style-type: none"> <li>• One annual compliance inspection undertaken to manage spread of weeds.</li> </ul>	Project Manager	Project lifespan/ongoing
<b><i>Standard Record Keeping Management</i></b>				
<b>Record Keeping - Clearing</b>	<p>Maintain the following records for the areas cleared:</p> <ul style="list-style-type: none"> <li>• a map and an ESRI Shapefile showing the location of the areas cleared (clearing of 0.5 hectares or less will only require a single GPS coordinate);</li> <li>• the size of the area cleared (in hectares); and</li> <li>• the dates on which the clearing was done in day/month/year format.</li> </ul>	<ul style="list-style-type: none"> <li>• Monitoring will be undertaken through the corporate audit process and remedial actions managed through Main Roads internal incident management process.</li> </ul>	Environment Officer	Records maintained during construction and finalised within 4 weeks of the completion of clearing.
<b>Record Keeping - Revegetation</b>	<p>Maintain the following records for the area revegetated and rehabilitated:</p> <ul style="list-style-type: none"> <li>• a map and an ESRI Shapefile showing the location of the areas revegetated and rehabilitated;</li> <li>• a description of the revegetation and rehabilitation activities undertaken (including dates of actions); and</li> <li>• the size of the area revegetated and rehabilitated (in hectares).</li> </ul>	<ul style="list-style-type: none"> <li>• Monitoring will be undertaken through the corporate audit process and remedial actions managed through Main Roads internal incident management process.</li> </ul>	Environment Officer	Records maintained during revegetation activities and finalised within 4 weeks of revegetation successful completion