

**PRELIMINARY ENVIRONMENTAL IMPACT ASSESSMENT &
ENVIRONMENTAL MANAGEMENT PLAN (MINOR PROJECTS)**

**SHIRE OF MURRAY
FURNISSDALE**

PINJARRA ROAD (M23)

**HUSBAND AND RONLYN ROAD
INTERSECTION UPGRADE**



NOVEMBER 2010

CONTENTS

1	PROJECT DESCRIPTION & BACKGROUND	3
2	PROJECT LOCATION	3
3	METHODOLOGY	6
3.1	PRELIMINARY DESKTOP STUDY	6
3.2	SITE INVESTIGATION	6
4	EXISTING ENVIRONMENT	6
4.1	DESCRIPTION	6
4.2	VEGETATION EXTENT	7
5	CLEARING OF NATIVE VEGETATION	9
5.1	ASSESSMENT AGAINST CLEARING PRINCIPLES	9
5.2	ENVIRONMENTALLY SENSITIVE AREA (ESA)	9
6	DECISION TO REFER.....	11
7	ENVIRONMENTAL MANAGEMENT PLAN	12
7.1	COMMUNICATION PLAN	12
8.2	EXTERNAL COMMUNICATION AND COMPLAINTS.....	12
8	STAKEHOLDER CONSULTATION.....	12
9	CONTINGENCY MEASURES	15
10	REFERENCES.....	15
12	APPENDIXES	15
	APPENDIX A LOW IMPACT ENVIRONMENTAL SCREENING CHECKLIST	16
	APPENDIX B MAIN ROADS DATABASE SEARCH.....	18
	APPENDIX C DEPARTMENT OF INDIGENOUS AFFAIRS DATABASE SEARCH	20
	APPENDIX D BLACK COCKATOO HABITAT ADVICE	22
	APPENDIX E RESULTS FROM ACID SULPHATE FIELD SURVEY	24
	APPENDIX F SITE PHOTOS.....	27
	APPENDIX G EPBC ACT PROTECTED MATTERS REPORT	30
	APPENDIX H VEGETATION CLEARING ASSESSMENT REPORT	35

PRELIMINARY ENVIRONMENTAL IMPACT ASSESSMENT & ENVIRONMENTAL MANAGEMENT PLAN

Pinjarra Road: Husband Road Ronlyn Road intersection upgrade

1 PROJECT DESCRIPTION & BACKGROUND

The intersection of Pinjarra Road, Husband Road and Ronlyn Road, in the shire of Murray (locality of Furnissdale), is planned to be upgraded with the installation of traffic lights and roadside improvements. Main Roads South West Region plan to use Southern Road Services undertake these works at the end of the summer construction period.

The work consists of the construction of roadside drainage and a retention basin to address drainage issues at the intersection. It is planned to place thick lift asphalt over the entire intersection to correct the existing crossfalls. The project also includes the construction of a new entry lane from Pinjarra Road into Husband Road and exit lane from Husband Road on to Pinjarra Road; this is carried out with existing and imported material. There will also be the construction of a DUP.

As per Main Roads' Environmental Assessment and Approval process, the Low Impact Environmental Screening Checklist has been completed for the proposal, refer to Appendix A. As the proposed works involve clearing of native vegetation outside of the maintenance zone, the preparation of a project specific Preliminary Environmental Impact Assessment (PEIA) and Environmental Management Plan (EMP) are required. This report fulfils this requirement.

2 PROJECT LOCATION

The location and boundaries of the study area are shown on Figure 1 and the project plan drawing, Figure 2.



Figure 1 locality map showing project area

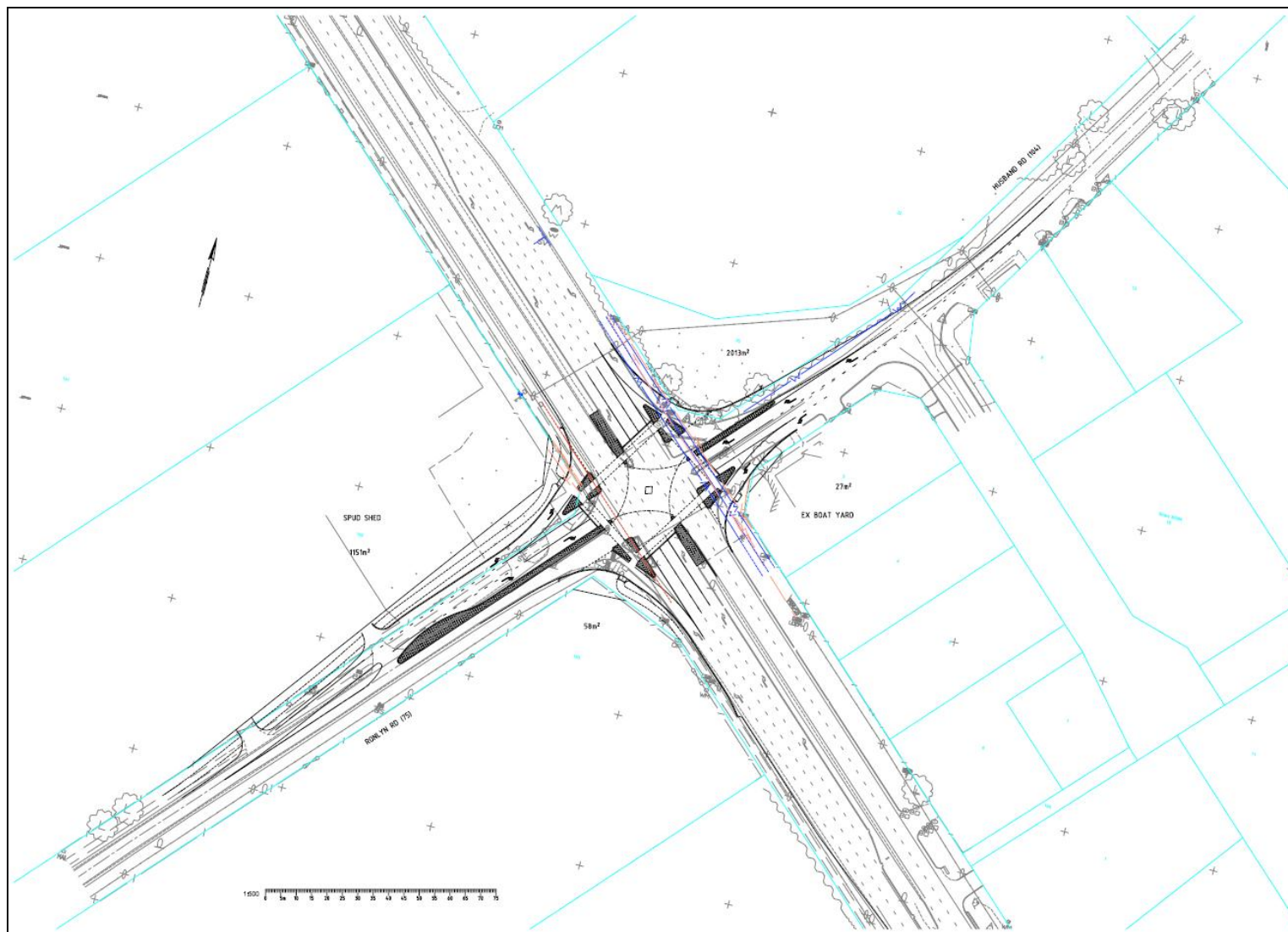


Figure 2 Project plan drawing

3 METHODOLOGY

3.1 Preliminary Desktop Study

A preliminary assessment of the project area and its potential constraints was undertaken by reviewing Main Roads' GIS database (see Appendix B) which is regularly updated with relevant government agencies' database information. Additionally, the Department of Indigenous Affairs Database was searched for Aboriginal heritage sites (Appendix C).

3.2 Site Investigation

A site visit was carried out by Project Manager Frank Lombardo 16 August 2010 and 28 October 2010 to examine the general features of the area. The broad vegetation types in the vicinity of the project area were identified. Other issues that were considered included topography, the proximity to creek lines, property access and the potential for noise and vibration impacts.

Site photos were taken and are included in Appendix F.

4 EXISTING ENVIRONMENT

4.1 Description

The area of native vegetation to be cleared is approximately 845 m².

The project area contains vegetation that has a Vegetation Condition Rating of 5 "Degraded" (Keighery, 1994) as it has multiple weeds throughout the area and also a cleared easement for a water pipe. The adjacent landuse consists of light commercial industry on the north east and south west corners of the intersection. Immediately adjacent the project area is freehold land, containing native vegetation. The area also may contain dieback, as evidenced by the dead jarrah tree.

4.2 Vegetation extent

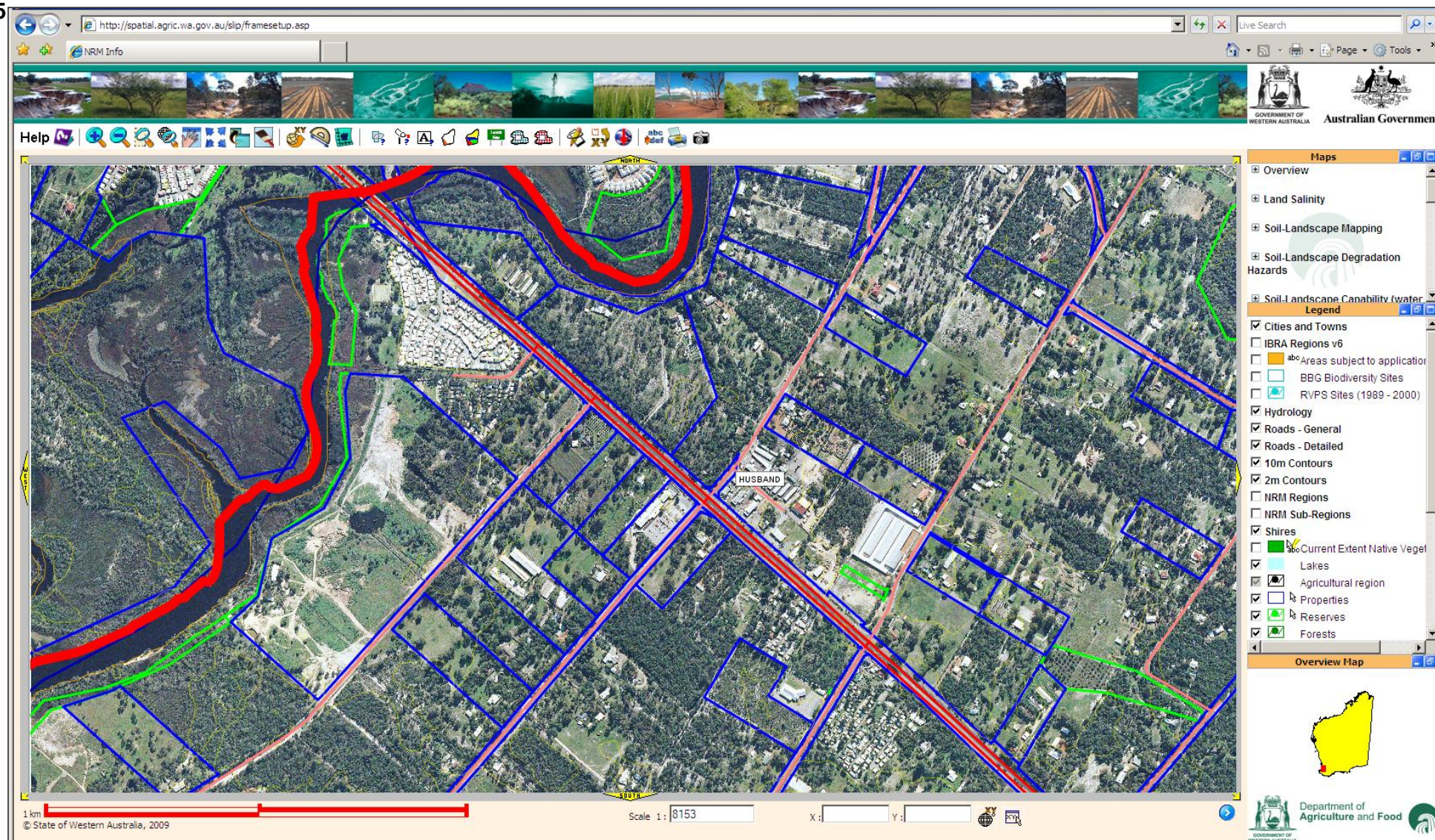
Vegetation Map Unit						
Map Unit Number: 80101339 Spatial Mix: mosaic Number of Vegetation Types: 3						
Vegetation Types						
Type	Type Description Number	Description	Environmental Descriptor	NVIS Lv2 Structural Formation	NVIS Lv3 - Broad Floristic Formation	
1531	1	Mosaic: Medium forest; jarrah-marri / Low woodland; banksia / Low forest; teatree (Melaleuca spp.)	GENERAL - Medium forest	Open forest	Eucalyptus open forest	
1532	2	Mosaic: Medium forest; jarrah-marri / Low woodland; banksia / Low forest; teatree (Melaleuca spp.)	GENERAL - Low woodland	Woodland	Banksia woodland	
1533	3	Mosaic: Medium forest; jarrah-marri / Low woodland; banksia / Low forest; teatree (Melaleuca spp.)	GENERAL - Low forest	Open forest	Melaleuca open forest	

The vegetation type to be cleared is 1000 – Mosaic: Medium forest; jarrah-marri / Low woodland; banksia / Low forest; teatree (Melaleuca spp.) and has the following amounts remaining, compared with the Pre-European extents:

Vegetation Association	Pre-European Extent	Current Extent	% Remaining
1000	99,835.86	28877.006567269	28.92

Site Investigation	Description/Comment
Total area (ha) of <u>native vegetation</u> to be cleared	0.08ha
Total area (ha) of other vegetation, including regrowth, landscape areas, to be cleared	0.04 ha
Weeds present	Some weeds (grasses) present
Drainage areas or wetlands present	The Murray River is 470m from the closest point of the road and will not be impacted
Adjacent land uses	Residential (including “bush blocks”, commercial,

5



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 regulations, such as clearing vegetation that is less than 10 years old for maintenance, typically all Main Roads clearing will be undertaken using its Statewide Project Purpose Permit.

5.1 Assessment against Clearing Principles

In assessing whether the project is likely to have a significant impact on the environment, the project has been assessed against the DEC's 10 principles of clearing, refer to Appendix G.

The project is NOT at variance with the DEC's 10 clearing principles.

5.2 Environmentally Sensitive Area (ESA)

Clearing within an Environmentally Sensitive Area (ESA)	Yes/ No	Comments
Does the area to be cleared occur within an ESA where the vegetation is in good or better condition?	No	

Assessment of Aspects and Impacts

Table 1: Aspects and Impacts – **Pinjarra Road: Husband and Ronlyn Roads intersection upgrade**

Aspect	Evaluation of Potential Impacts
Air quality	Not relevant to the proposed works.
Dust	Likely to be a minor issue during earthworks.
Fauna	No significant fauna issues associated with any of the proposed upgrade works. There was one dead jarrah tree containing a hollow but it was deemed to be too small for bkacj cockatoos.
Vegetation – clearing	<ul style="list-style-type: none"> 0.08 ha of native vegetation will be cleared. The condition of the native vegetation to be cleared is Degraded The native vegetation will be cleared is not well represented regionally (i.e. it possesses less than 30% of its pre-European extent – 28.92%). The native vegetation to be cleared does not occur within an ESA. The native vegetation to be cleared will be done so using the purpose permit.
Vegetation – TECs/DRF	None present in the proposed works areas.
Vegetation – weeds	Common weed species occur throughout the proposed works area. The risk of spreading these weeds species as part of the proposed work should be minimised.
Vegetation – dieback	Given the degraded nature and high disturbance of the vegetation and the presence of a dead jarrah in the project area it is suspected that <i>P. cinnamomi</i> is present. Dieback hygiene measures will be followed – ie clean machinery upon entry and exit.
Reserves / Conservation areas	There is C Class Nature Reserve 1.6 km away for the Purpose of the Conservation of Flora and Fauna vested with the Conservation Commission of WA.
Heritage (non-indigenous)	The WA Heritage Council database was checked for any European Heritage Sites and none were found to occur within the project area.
Aboriginal heritage	A search of Indigenous Affairs database indicated that there are no Registered Aboriginal Heritage sites in the project area. Refer Appendix C.
Surface water/drainage	The proposed works will not disturb or interrupt any natural drainage and surface run-off patterns.
Wetlands	There are no wetlands within or directly adjacent to the project area.
Groundwater	No dewatering required, hence no change to groundwater level or quality.
Noise and vibration	No major sensitive local receivers.
Visual amenity	The proposed works will result in minor visual impacts during and after construction.
Public safety and risk	Provided traffic management and signage to Main Roads standards is employed, none of the proposed works present any significant hazards to public safety.
Hazardous substances	Not relevant to the proposed works.
Contamination	Given the relatively superficial nature of the required earthworks, and noting previous land use (ie native vegetation) there appears to be a low risk of any significant contamination issues. Also no sites were noted on the DEC Contaminated Sites Database.
Salinity	Given the nature and small scale of the project the impact is not relevant.
Acid Sulphate Soils	It is noted that the project area is in a location of Class 1: High to moderate risk of Acid Sulphate Soils (ASS) occurring within 3m of the natural soil surface. However as the drainage pipes will be installed with the micro tunnelling technique and the excavation will be less than 1000m ³ it is unlikely that ASS will be impacted. Also ASS and PASS testing was undertaken (Refer Appendix E). Results indicated that it is not present in the project area. See EMP for precautionary measures for management of ASS/PASS.
Statutory Land Use Planning	As the proposed works will be entirely within the existing road reserve (ie once the land is finally acquired from a private land owner for the exit lane out off Ronlyn Road and also from the Shire of Murray for the lane into Husband Road), an (omnibus) amendment will be required to the Peel Region Scheme.

6 DECISION TO REFER

Given the scale of the project (ie only 0.08 Ha native vegetation to be cleared, in a Degraded (Keighery Condition Level 5) condition), the low significance of its impacts to the surrounding environment and the environmental management measures proposed, the project does not require referral to the WA Environmental Protection Authority or the Commonwealth Department of Sustainability, Environment, Water Resources, Population and Communities.

The project area is also severed by a cleared easement for a water utility and located at the intersection of Pinjarra, Husband and Ronlyn Roads making it unlikely to impact matters of state or national environmental significance.

7 ENVIRONMENTAL MANAGEMENT PLAN

This section of the report has been developed to provide an Environmental Management Plan (EMP) for the project area following the completion of the above sections. The EMP will only address the actions already listed as well as any site-specific issues that were identified during the PEIA.

The project specific management measures identified within this EMP are in addition to the standard specifications used for Category 2 projects. The environmental management measures/conditions in Main Road's Specifications 203, 204, 301, 302 and 304 are still to be followed where applicable.

7.1 Communication Plan

Environmental issues specific to the project will be communicated as follows:

Method	Frequency	Participants	Reference	Record
Project Site				
Induction	Prior to Work	All personnel and subcontractors	EMP and Contractor Environmental Policy	Induction Meeting
Toolbox Meetings	Weekly	Project Personnel	Contractor Safety Plan	Minutes of Meeting

8.2 External Communication and Complaints

A complaints register shall be maintained by the contractor. All complaints received shall be forwarded to the Main Roads' Project Manager for action. Serious complaints shall be investigated within 24 hours of the complaint being received.

8 STAKEHOLDER CONSULTATION

Name	Agency	Date	Comments
Brett Dunn Senior Natural Resource	Department of Water Management Officer Kwinana Peel Region	8/10/10	No there are no water issues in that area I can foresee in that area that would impact on an upgrade of the intersection.
Paul Tholen Nature Conservation Officer Fauna and Land Planning	Department of Environment & Conservation Perth Hills District	28/10/10	<p>I have briefly had a look at this one and this time the program falls into the Swan Coastal District.</p> <p>The closest area of DEC estate is Reserve 35283 approximately 1.5 km to the north east.</p> <p>Threatened fauna species approx 600 m to the west: Vulnerable mammal Id No: 1048 and a Priority 4 bird Id: 5758 – Amy Mutton can give further details by request.</p> <p>Threatened flora approx 1 km to the north west: P3 spp.: <i>Dillwynia dillwyniodes</i> close to the Serpentine river.</p>

ENVIRONMENTAL MANAGEMENT PLAN					
Timing	Topic	Objective	Action	Responsible Party	Advice
All phases of Construction	Vegetation Clearing - Record-keeping	All projects should maintain the required records relating to clearing native vegetation under the purpose permit.	Clearing: <ul style="list-style-type: none"> a copy of the PEIA & EMP (Minor projects) for small projects; a map showing the location where the clearing occurred; the size of the area cleared (in hectares); and the dates on which the clearing was done. 	Project Manager	DEC
Pre-Construction	Vegetation - Clearing	Ensure that the overall objectives of the alignment and construction works are compatible with maintaining and, where possible, enhancing the biological integrity of the surrounding environment and minimising vegetation loss and degradation; and Ensure the retention of as many habitat trees, shrubs and vegetated corridors for fauna as possible.	Selection of designs/locations that minimise adverse impacts on the biological environment.	Project Manager	Main Roads
			The contractor shall chip the vegetation and store in a suitable area for future use.	Contractor	Main Roads
Construction	Noise, Vibration and Dust	Ensure that the construction of the proposal does not become a nuisance to the public.	Access to private property and appropriate traffic management measures should be planned and implemented prior to the construction of works.	Contractor	Main Roads
			Public access should be maintained along the reserve at all times.	Contractor	Main Roads
			Any complaints regarding dust will be attended to as soon as possible.	Contractor/Project Manager	Main Roads
			Where it is found that trucks leaving the site are carrying excessive material onto sealed surfaces, these areas will be swept to reduce dust generation and maintain traffic safety.	Contractor	Main Roads
	Pollution and Litter	Ensure that the construction of the proposal is managed to a standard that minimises any adverse impacts on the environment.	The designated servicing area will be bunded to contain any spills or leaks and shall not be located in an area adjacent to any drainage areas or watercourses or will drain into a temporary sump.	Contractor	Main Roads
			Emergency cleanup procedures shall be implemented in the case of any spillage. These will include control of spilled material and removal of contaminated soil to an approved site. The contractor shall ensure appropriate equipment is available at all times and shall notify the Superintendent's Representative of a spill.	Contractor	Main Roads
			All waste oil will be collected for recycling and any empty fuel/oil containers, used filters and waste hydraulic parts to be collected and stored in an allocated area then removed to an approved site.	Contractor	Main Roads
			Dumping or temporary storage of bitumen, asphalt, concrete or aggregate should only occur at designated depots or controlled hardstands.	Contractor	Main Roads

ENVIRONMENTAL MANAGEMENT PLAN					
Timing	Topic	Objective	Action	Responsible Party	Advice
			The project areas, including hardstand areas, will be kept in a tidy manner at all times.	Contractor	Main Roads
	Fire	Ensure that the fire risk associated with the construction of the proposal is minimised.	No fires shall be lit within the project area.	Contractor	Main Roads
			Machinery will be fitted with approved spark arresting mufflers.	Contractor	Main Roads
			A water tanker will be on site at all times.	Contractor	Main Roads
	Dieback	Ensure dieback is not spread into adjoining vegetation	Sand for sub base prep using existing site material and limestone for sub base and base course; Ensure machinery is clean on entry.	Contractor	Main Roads
	Acid Sulphate Soils	Ensure ASS or PASS are not disturbed during construction.	Even though tests indicated that there was no presence of ASS or PASS in the project area (Refer Appendix E) there will be tests undertaken during excavation to ensure none are present (i.e. as the project is in a location of Class 1: High to moderate risk of Acid Sulphate Soils (ASS) occurring within 3m of the natural soil surface) . Material (eg lime) will be made available nearby in case ASS and PASS are identified.		
	Site Management	Ensure that the site is managed to ensure that construction of the proposal will have minimal impact upon the surrounding environment.	Site office and materials storage areas will be located on previously disturbed/ designated area.	Contractor	Main Roads
Post-Construction	Rehabilitation	Leave the project area free from debris	All waste materials from the development are to be completely removed from the site upon completion of the development. Final clean-up shall be to the satisfaction of the Project Manager and the Site Superintendent.	Contractor	Main Roads

9 CONTINGENCY MEASURES

Given the scale and nature of the project, no contingency, monitoring or auditing measures are identified as the inherent environmental risks are small.

10 REFERENCES

Keighery BJ 1994, *Bushland Plant Survey. A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc.), Nedlands.

Department of Environment and Conservation Florabase <http://florabase.calm.wa.gov.au/>

Department of Environment and Conservation Contaminated Sites database
<https://secure.dec.wa.gov.au/idelve/css/>

WA Atlas – Shared Land Information Platform -
<https://www2.landgate.wa.gov.au/bmvf/app/waatlas/#>

12 APPENDIXES

Appendix A

Low Impact Environmental Screening Checklist

Checklist - Low Impact Environmental Screening

The Low Impact Environmental Screening Checklist is part of the environmental assessment and approval process, and in the procedures. It should be noted that the checklist does not address Aboriginal heritage issues. Please refer to Main Roads guideline *Aboriginal Heritage* for the heritage assessment process.

All projects are to be screened to identify those that are Low Impact, ie that will have a low impact on the environment and that can be adequately managed through standard contract clauses.

Projects that have "No" to **all** items are classed as Low Impact and should be implemented using standard contract clauses in the Tender Document Process.

Projects that have "Yes" to **any** item will require further environmental assessment and will be implemented using an Environmental Management Plan. Tick "Yes" or "No" for every item. Circle the relevant part of the item.

Project Name: **Intersection Upgrade of Pinjarra Road Husband/Ronlyn Road for the Installation of Traffic Signals**

ITEM NO.	ITEM	Y	N
1	New road or road reserve to be created or expansion of existing road reserve.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Works require ground disturbance or clearing of native vegetation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	New, or expansion of existing, pits or quarries. (non-commercial sources)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Adjoining sensitive land use. eg residential or hospital or education centre	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Passes over, adjoins or drains directly into a wetland or sensitive watercourse.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	Local natural drainage regime / hydrology will be changed.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7	Within/immediately adjacent to surface/underground Public Drinking Water Source Area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	Dewatering, or a new water bore.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9	Known potential source of hazardous materials within or adjoining the road reserve. e.g. Acid Sulphate Soils, existing petrol station, industrial site or waste disposal site (landfill)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10	Buildings will require demolition.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

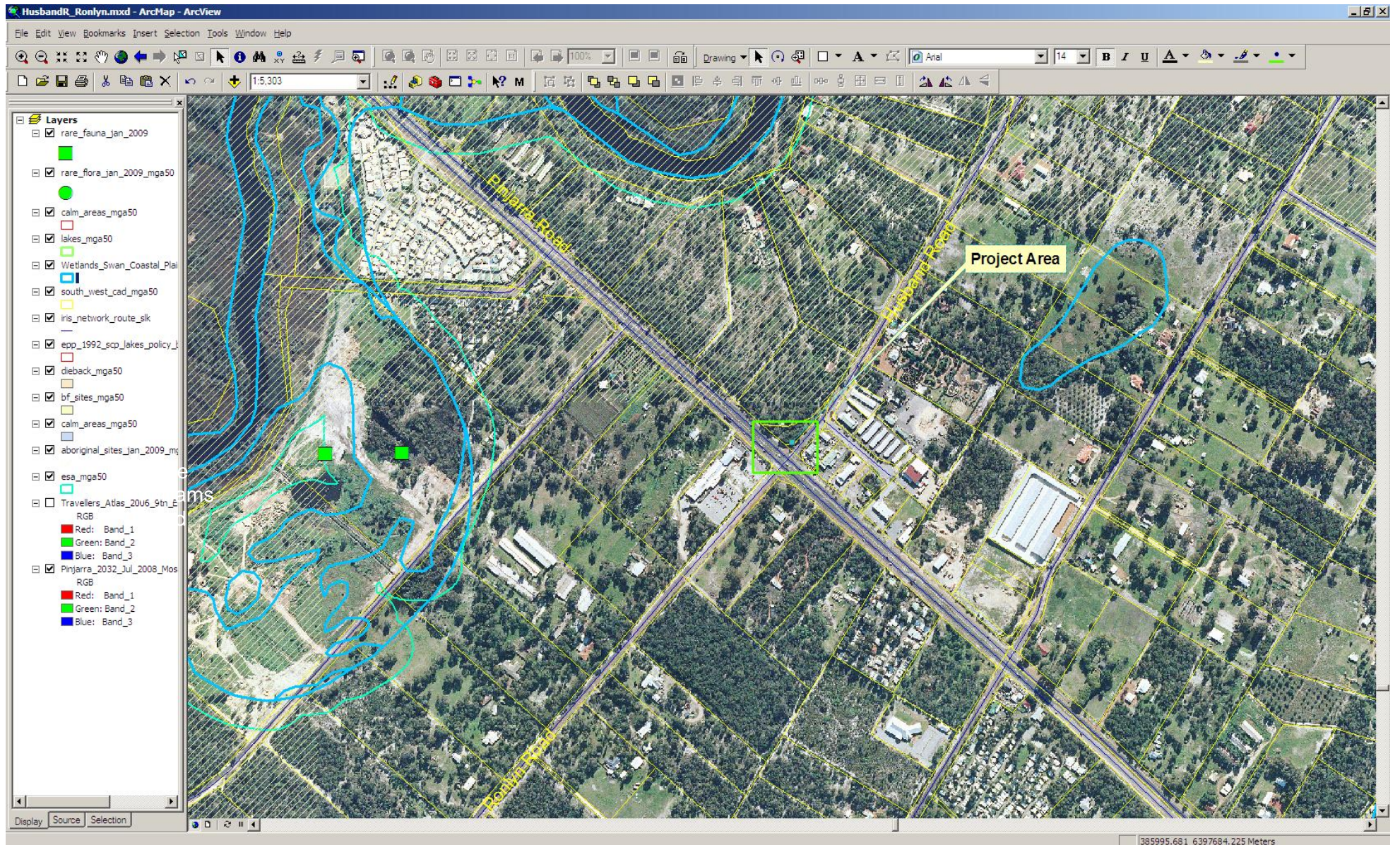
Completed By: Signature Frank Lombardo Date 5/8/2010
Name Frank Lombardo Title A/PM

To be reviewed by Signature Della Bona Date 25/8/10
a Main Roads Name Jeanette Della-Bona Title EO
Environment Officer

Comments: PEIA is required

Appendix B

Main Roads Database Search



Appendix C

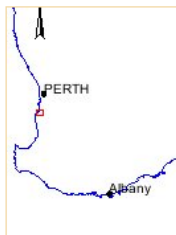
Department of Indigenous Affairs Database Search



What do you want to do?

Search for Sites in... : ...

show legend



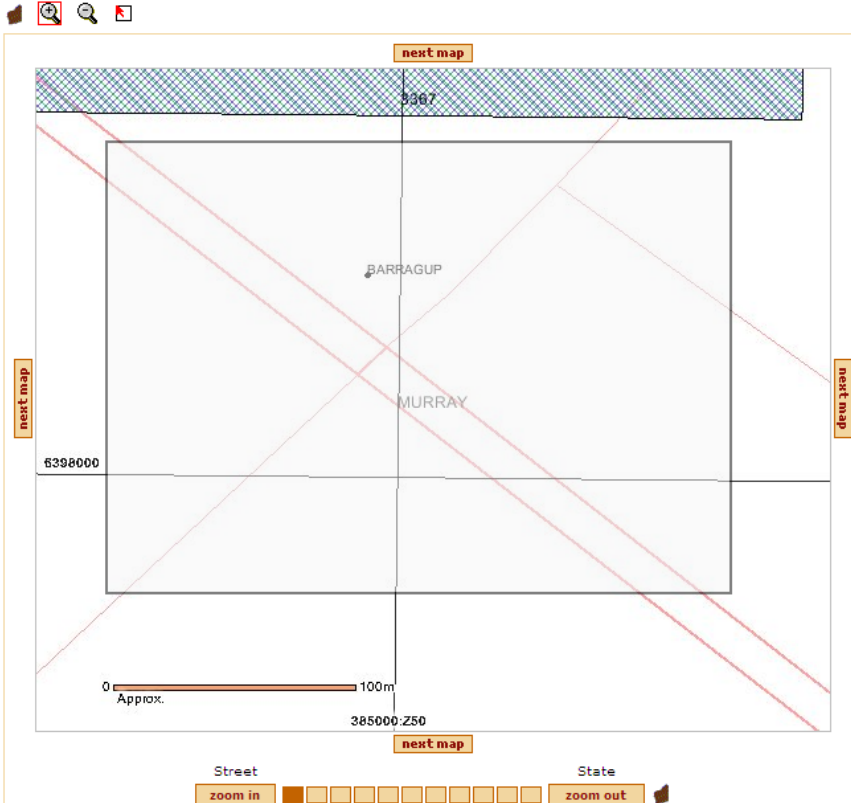
Show on map

- ☒ Aboriginal Sites
☐ Heritage Surveys

refresh more

Map size

- ☐ Small
☐ Medium
☒ Large



Geographic (non projected) map. Datum: GDA94. Scalebar is indicative only.

Latitude: -32°32'59" Longitude: 115°46'35"
Northing: 6397953 Easting: 385117 Zone: 50
Map Sheet: PINJARRA (S15002)

- Topographic image data copyright © Commonwealth of Australia, Geoscience Australia (2010).
- Cadastre boundary data copyright © the State of Western Australia (DLI) (2010.10). Licence No. PA197-2005.
- Mining tenement boundary data copyright © the State of Western Australia (DoIR) (2010.10).

Appendix D

Black cockatoo habitat advice

You replied on 29/10/2010 4:25 PM.

From: Greg Harewood [gharewood@inet.net.au]
To: DELLA BONA Jeanette (EO)
Cc:
Subject: RE: Jarrah tree along Pinjarra Road

Sent: Fri 29/10/2010 4:22 PM

Hi

Looks too small for black cockatoos. The minimum size of the entrance hole required is about 15cm...but typically they use hollows with an entrance of at least 20+ centimetres. The hollow must also enter a suitable sized branch/trunk – looks marginal/unsuitable as well. Also shows no sign of chew marks.

So can't see a problem in this case.

Regards
Greg Harewood
Environmental Scientist/Zoologist
PO Box 755, BUNBURY, WA 6231
T/F: 08 9725 0982 M: 0402 141 197



From: DELLA BONA Jeanette (EO) [mailto:jeanette.dellabona@mainroads.wa.gov.au]
Sent: Friday, 29 October 2010 15:52
To: Greg Harewood
Subject: jarrah tree along Pinjarra Road

Hi Greg,

How are you?

Just chasing some advice. We are installing a left turn lane along Pinjarra Road into Ronlyn Road and traffic lights at the intersection of Pinjarra Road and Husband and Ronlyn Roads. It is a degraded banksia jarrah woodland, we require approx 800m2 of clearing of native vegetation. (ie the north west corner of the intersection)

There is a jarrah tree that is dead, located near the corner of the intersection. It looks like it has a small hollow in it (see attached). What are your thoughts in terms of black cockatoo breeding potential?

Thanks again!

Kind regards

Jeanette Della-Bona
Environment Officer South West



Telephone: (08) 9725 5661 Fax: (08) 9725 5666
Email: jeanette.dellabona@mainroads.wa.gov.au
www.mainroads.wa.gov.au

Appendix E

Results from Acid Sulphate field Survey

**South West Chemical Services**

Unit 5, 4 Mummy Cres.,
Bunbury, WA, 6230
ABN 71 111 052 218
Phone/Fax 08 9721 7170
Mobile 0417 149 645

Email admin@swchemservices.com.au

P/O 1019376

INV. 2635

Certificate of Analysis

Client Name:	Mainroads Western Australia	Attn: Frank Lombardo
Address:	PO Box 5010, Bunbury, WA, 6231	
Phone No:	9725 5677	Email: frank.lombardo@mainroads.wa.gov.au
Lab No:	5319	Order No:
Date samples received:	15/12/10	Report date: 16/12/10

Sample details: 14 Soil samples labelled 10BY 551 were received on ice from a hole near Pinjarra Rd Furnissdale WA.
The site is in a high to moderate risk area of finding ASS within 3m of the soil surface
A portion of the sample was removed for Field pH (pH_f) and oxidised Field pH (pH_{fox}), the remainder has been preserved by freezing

Scope of Work: Acid Sulphate Soils Field Tests pH_f , pH_{fox} , Reaction rating, Fizz test
Preservation of retained samples, Interpretation of results.

Test Methods: Acid Sulphate Soils Laboratory Methods Guidelines Version 2.1 Section H:Field Tests June 2004, Queensland Government, Natural Resources, Mines and Energy.
Identification & Investigation of Acid Sulphate Soils and Acidic Landscapes, prepared by Contaminated Sites Branch, Environmental Regulation Division, DEC, WA May 2009
pH tested using Eutech WP pHScan BNC with Ionode Intermediate Junction pH combination electrode IJ48F calibrated according to manufacturer's instructions.

Test Results:

The field test results were assessed using the following criteria

- a) pH_f less than 4
- b) pH_{fox} less than 4 and /or
- c) the change in pH was greater than 2 (where the resultant pH_{fox} was less than 4) and/or
- d) there was a strong reaction following addition of hydrogen peroxide

Of the 14 samples tested, there were no samples where the pH_f was 4.0 or less

Of the 14 samples there were no samples where the pH_{fox} was 4 or less

Of the 14 samples there were 7 samples that gave a change in pH > 2 units but in no cases was the pH_{fox} less than 4

There were no samples which gave any reaction.

All samples have been frozen pending further instruction

There appears to be no indication of the presence of Actual or Potential Acid Sulphate soils at the levels sampled.

David Dodds

Dip.App.Chem. A.G.Inst.Tech

Lab No: 5319
Hole No: Bore Hole 1 10BY 551
Hole Depth: 3.50 metre

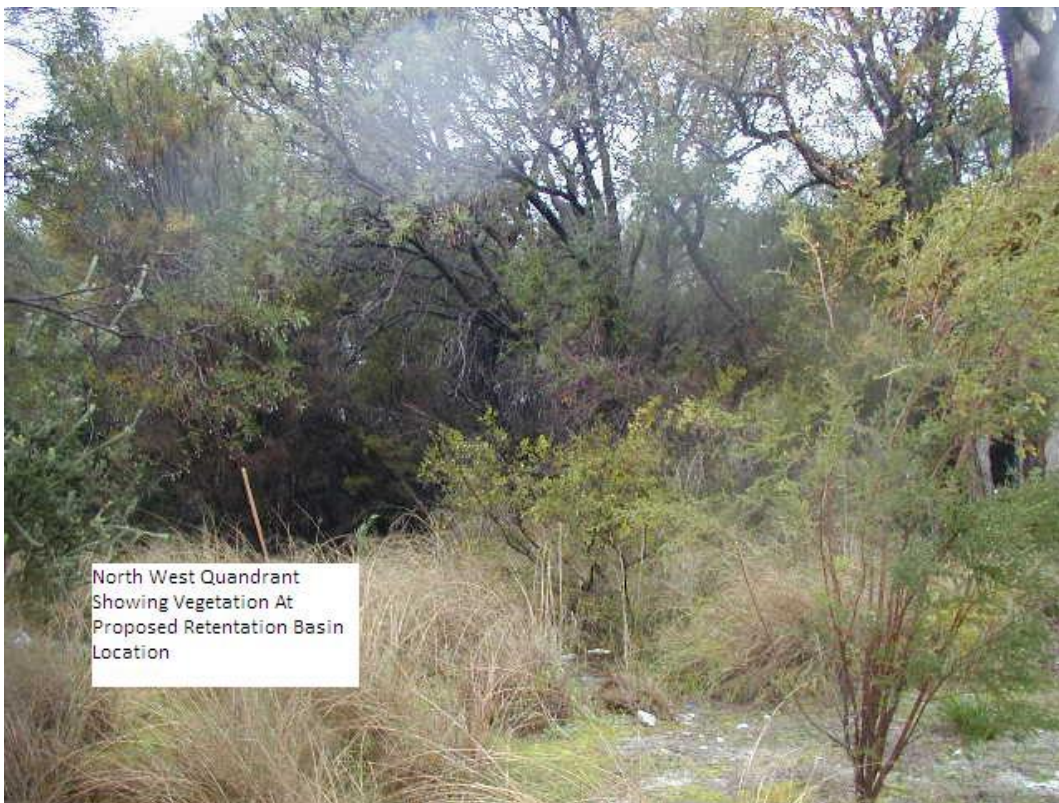
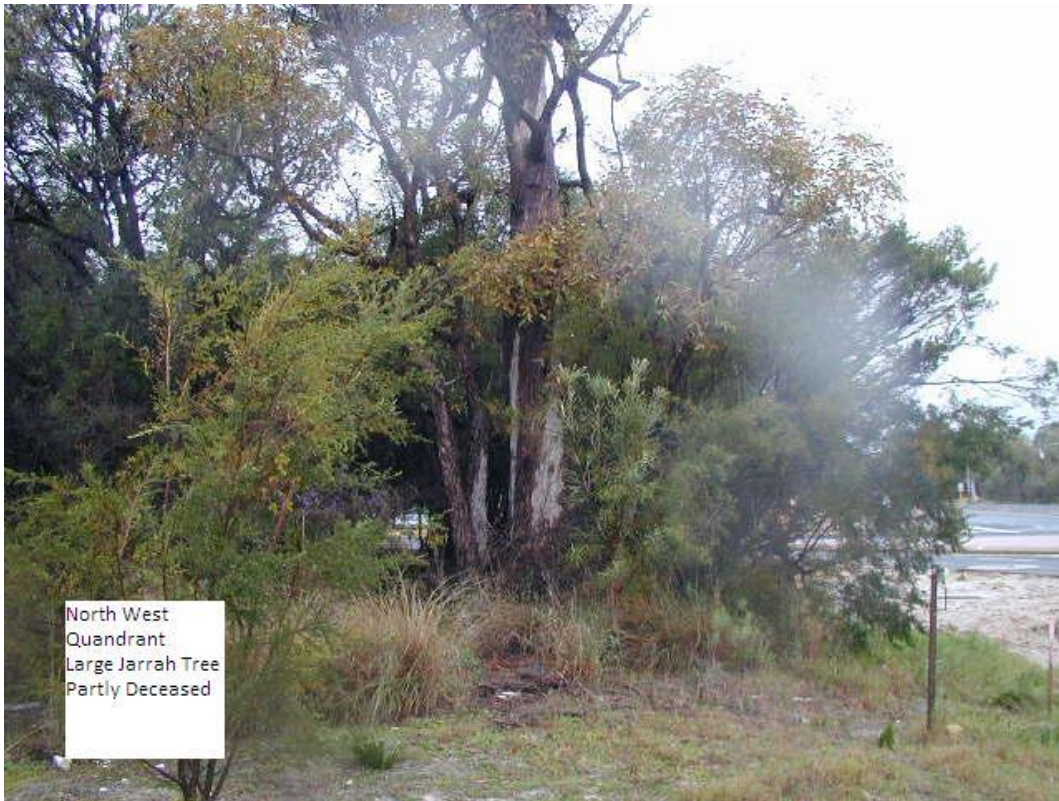
Date Sampled: 15/12/10
Location:

Hole ID	Depth m	Soil Texture	pHf	pHfox	pHf - pHfox	Reaction	Fizz Test
				pH _{H2O2} =5.15			
1	0.25	grey sandy top soil	8.00	5.40	2.60	N	N
	0.50	light grey sand	8.05	5.50	2.55	N	N
	0.75	light grey/white sand	7.95	5.45	2.50	N	N
	1.00	light grey/white sand	8.00	5.50	2.50	N	N
	1.25	light grey/white sand	7.85	5.40	2.45	N	N
	1.50	light grey/white sand + coffee rock	7.75	5.70	2.05	N	N
	1.75	brown sand + coffee rock	7.75	5.65	2.10	N	N
	2.00	mid-brown sand	7.80	5.85	1.95	N	N
	2.25	yellow sand	7.80	5.95	1.85	N	N
	2.50	yellow sand	7.70	6.10	1.60	N	N
	2.75	white sand damp	7.45	6.25	1.20	N	N
	3.00	white/yellow sand wet	7.30	6.35	0.95	N	N
	3.25	white/yellow sand wet	7.30	6.20	1.10	N	N
	3.50	white/yellow sand wet	7.05	5.95	1.10	N	N

Reaction Rating N = none L = low M = medium H = high X = extreme V = volcanic
N= no visible reaction on addition of HCl

Appendix F

Site Photos





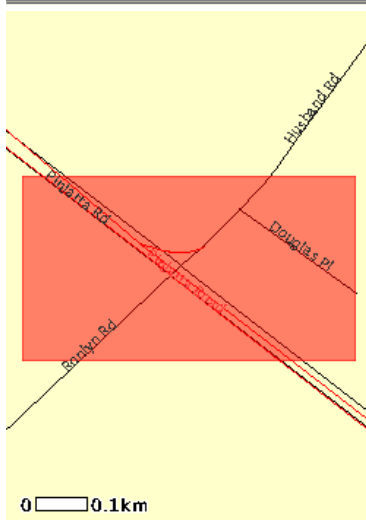
Appendix G

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Information on the coverage of this report and qualifications on data supporting this report are contained in the [caveat](#) at the end of the report.

You may wish to print this report for reference before moving to other pages or websites.

The Australian Natural Resources Atlas at <http://www.environment.gov.au/atlas> may provide further environmental information relevant to your selected area. Information about the EPBC Act including significance guidelines, forms and application process details can be found at <http://www.environment.gov.au/epbc/assessmentsapprovals/index.html>



This map may contain data which are
© Commonwealth of Australia
(Geoscience Australia)
© PSMA Australia Limited

Search Type: Area

Buffer: 0 km

Coordinates: -32.547996,115.773453, -32.549958,115.773453, -32.549958,115.776989, -32.547996,115.776989



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance - see

<http://www.environment.gov.au/epbc/assessmentsapprovals/guidelines/index.html>.

World Heritage Properties:	None
National Heritage Places:	None
<u>Wetlands of International Significance:</u> (Ramsar Sites)	3
Commonwealth Marine Areas:	None
Threatened Ecological Communities:	None
<u>Threatened Species:</u>	12
<u>Migratory Species:</u>	7

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate.

Information on the new heritage laws can be found at

<http://www.environment.gov.au/heritage/index.html>.

Please note that the current dataset on Commonwealth land is not complete. Further information on Commonwealth land would need to be obtained from relevant sources including Commonwealth agencies, local agencies, and land tenure maps.

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species. Information on EPBC Act permit requirements and application forms can be found at

<http://www.environment.gov.au/epbc/permits/index.html>.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Places on the RNE:	None
<u>Listed Marine Species:</u>	5
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	None
Other Commonwealth Reserves:	None

Regional Forest Agreements:

None

Details**Matters of National Environmental Significance**Wetlands of International Significance [[Dataset Information](#)]
(Ramsar Sites)**BECHER POINT WETLANDS**

Within same catchment as Ramsar site

FORRESTDAL & THOMSONS LAKES

Within same catchment as Ramsar site

PEEL-YALGORUP SYSTEM

Within 10 km of Ramsar site

Threatened Species [[Dataset Information](#)]**Status****Type of Presence****Birds*****Calyptorhynchus banksii naso***

Forest Red-tailed Black-Cockatoo

Vulnerable

Species or species habitat may occur within area

Calyptorhynchus baudinii

Baudin's Black-Cockatoo, Long-billed Black-Cockatoo

Vulnerable

Species or species habitat likely to occur within area

Calyptorhynchus latirostris

Carnaby's Black-Cockatoo, Short-billed Black-Cockatoo

Endangered

Species or species habitat likely to occur within area

Insects***Synemon gratiosa***

Graceful Sun Moth

Endangered

Species or species habitat may occur within area

Mammals***Dasyurus geoffroii***

Chuditch, Western Quoll

Vulnerable

Species or species habitat likely to occur within area

Phascogale calura

Red-tailed Phascogale

Endangered

Species or species habitat may occur within area

Setonix brachyurus

Quokka

Vulnerable

Species or species habitat may occur within area

Plants***Andersonia gracilis***

Slender Andersonia

Endangered

Species or species habitat may occur within area

Caladenia huegelii

King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid

Endangered

Species or species habitat likely to occur within area

Centrolepis caespitosa

Endangered

Species or species habitat may occur within area

Darwinia foetida

Mucnea Bell

Critically
Endangered

Species or species habitat likely to occur within area

***Synaphea* sp. Fairbridge Farm (*D.Papenfus* 696)**

Selena's Synaphea

Critically
Endangered

Species or species habitat may occur within area

Migratory Species [[Dataset Information](#)]**Status****Type of Presence**

Migratory Terrestrial Species

Birds

<i>Haliaeetus leucogaster</i> White-bellied Sea-Eagle	Migratory	Species or species habitat likely to occur within area
--	-----------	--

<i>Merops ornatus</i> Rainbow Bee-eater	Migratory	Species or species habitat may occur within area
--	-----------	--

Migratory Wetland Species

Birds

<i>Ardea alba</i> Great Egret, White Egret	Migratory	Species or species habitat may occur within area
---	-----------	--

<i>Ardea ibis</i> Cattle Egret	Migratory	Species or species habitat may occur within area
---	-----------	--

Migratory Marine Birds

<i>Apus pacificus</i> Fork-tailed Swift	Migratory	Species or species habitat may occur within area
--	-----------	--

<i>Ardea alba</i> Great Egret, White Egret	Migratory	Species or species habitat may occur within area
---	-----------	--

<i>Ardea ibis</i> Cattle Egret	Migratory	Species or species habitat may occur within area
---	-----------	--

Other Matters Protected by the EPBC Act

Listed Marine Species [Dataset Information]	Status	Type of Presence
---	--------	------------------

Birds

<i>Apus pacificus</i> Fork-tailed Swift	Listed - overfly marine area	Species or species habitat may occur within area
--	------------------------------	--

<i>Ardea alba</i> Great Egret, White Egret	Listed - overfly marine area	Species or species habitat may occur within area
---	------------------------------	--

<i>Ardea ibis</i> Cattle Egret	Listed - overfly marine area	Species or species habitat may occur within area
---	------------------------------	--

<i>Haliaeetus leucogaster</i> White-bellied Sea-Eagle	Listed	Species or species habitat likely to occur within area
--	--------	--

<i>Merops ornatus</i> Rainbow Bee-eater	Listed - overfly marine area	Species or species habitat may occur within area
--	------------------------------	--

Appendix H

Vegetation Clearing Assessment Report

MRWA Vegetation Clearing Assessment Report

This report has been prepared to assist MRWA in addressing condition 7 "Assessment of Clearing Impacts" under Clearing Permit CPS 818/3.

For guidance on how to complete the form, refer to DEC completed reports (active permits) at http://203.20.251.100/cps_reports/.

AREA UNDER ASSESSMENT DETAILS

Proponent details

Proponent's name:

MRWA

Contacts:

Name: Jeanette Della-Bona

Phone: 9725 5661

Fax: 9725 5666

Email: jeanette.dellabona@mainroads.wa.gov.au

Property details

Property:

Pinjarra Road Husband Road Ronlyn Road intersection

Colloquial name:

Area under assessment

Clearing Area (ha)

0.08

No. Trees

Method of Clearing

Excavator modified
for clearing

For the purpose of:

Road widening and
catchment basin
construction

Site Plan Attached

☐ Yes ☒ No

Avoidance/Minimise clearing

How have the clearing impacts been minimised?

Use of an excavator minimises impact to surrounding vegetation.

BACKGROUND

Existing environment and information

Description of the native vegetation under application

(suggestion: To determine Vegetation Condition use - Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.)

Site Visit Undertaken	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fauna / Flora Survey Undertaken	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Site Report Attached	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Fauna / Flora Survey Report Attached	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Site Photos Attached	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Other Relevant References Attached	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Vegetation Complex	Clearing Description	Vegetation Condition	Comment
	Isolated species on fringing roadside verge	Degraded	

ASSESSMENT OF APPLICATION AGAINST CLEARING PRINCIPLES

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

Comments

Proposal is NOT at variance to this Principle

Approximately 0.08 Ha of native vegetation is proposed to be cleared. The vegetation proposed for clearing does not comprise a high level of biodiversity as it is classified as Keighery Condition Rating (5) – Degraded (ie multiple disturbances, clearing for water easement through project area and many weeds / edge effects from being at an intersection)

(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.

Comments

Proposal is NOT at variance to this Principle

Most of the trees to be cleared are not old enough to provide suitable habitat for nesting fauna. One medium sized dead jarrah tree containing a small hollow was noted in the project area and the fauna consultant advised that this tree would not be suitable black cockatoo habitat (Refer Appendix D).

There are a number of fauna species listed on the department of Sustainability, Environment, Water, Population and Communities website (refer Appendix F) that are threatened species; however given the degraded and minor nature of the clearing involved, and the location of the project area – at the intersection of Pinjarra and Husband Roads, the area is considered to be unsuitable habitat for these species, and therefore the proposal not considered to be at variance to this principle.

Methodology Site inspection Environmental Officer (October, 2010)
Black cockatoo habitat advice, Greg Harewood, (29/10/10) refer Appendix D

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

Comments **Proposal is NOT likely to be at variance to this Principle**
According to DEC databases, there are no known rare or priority flora known to occur within the project area.

However, DEC advised that the P3 flora *Dillwynia dillwyniodes* has been found close to the Serpentine River, approximately 1km away from the project area. According to DEC's Flora Base, this species occurs in sandy soils and winter wet depressions. Therefore as the project area does not occur in a winter wet depression area this species is unlikely to be found at this location.

Methodology Main Roads GIS data base search Appendix B
Consultation with DEC (Perth Hills District) – Section 9

(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.

Comments **Proposal is NOT at variance to this Principle**
There are no TECs in the project area.

Methodology Main Roads GIS data base search Appendix B

(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.

Comments **Proposal is NOT likely to be at variance to this Principle**
The vegetation complex of the vegetation proposed to be removed (Medium forest; jarrah-marri / Low woodland; banksia / Low forest; teatree (*Melaleuca* spp.)) is represented by 28.92% of pre-European settlement, which is just below the 30% trigger point.

However given the small scale of the clearing required (0.08 Ha) its existing degraded nature (Keighery Vegetation Condition 5), severed by a water easement and its proximity adjacent to Pinjarra Road and Husband Roads, it is considered not likely to be at variance to this Principle.

Methodology SLIP NRM database & Main Roads file “*Native Vegetation in Western Australia - Extent, Type and Status*” (*car_reserve_analysis_2007.xls*)

Site inspection Environmental Officer (October, 2010)

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

Comments **Proposal is NOT at variance to this Principle**
The nearest wetland is over 400m away from the project area, at the closest point and will not be impacted by the proposed clearing.

Methodology Site inspection Environmental Officer (October, 2010)
Main Roads GIS data base search Appendix B

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments **Proposal is NOT at variance to this Principle**
The limited extent of proposed clearing will not cause land degradation.

Methodology Site inspection Environmental Officer (October, 2010)

(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.

Comments **Proposal is NOT at variance to this Principle**

The closest conservation area is approximately 1.6km away from the project area.

Methodology Main Roads GIS data base search Appendix B
Consultation with DEC (Refer Section 9, Stakeholder Consultation)

(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.

Comments **Proposal is NOT at variance to this Principle**

The limited extent of proposed clearing will not cause deterioration of surface or groundwater.

Methodology Site inspection Environmental Officer (October, 2010)

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

Comments **Proposal is NOT at variance to this Principle**

The limited extent of proposed clearing and the sandy nature of the soils within the project area will not cause flooding.

Methodology Site inspection Environmental Officer (October, 2010)

Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

Comments Not applicable

Methodology

SUBMISSIONS

If required have submissions been requested and addressed

Submission Requested from	Request Sent (Date)	Submission Received (Date)	Issues Raised / Comments Made
---------------------------	---------------------	----------------------------	-------------------------------

ASSESSOR'S RECOMMENDATIONS

List of Principles seriously at variance, at variance or maybe at variance
N/A

Recommendation: The proposal is NOT at variance to the Clearing Principles, therefore the clearing can be undertaken using the Purpose Permit CPS 818/4.

References

OFFICER PREPARING REPORT

Jeanette Della-Bona

Position: Title: Environment Officer
South West Region
Main Roads Western Australia

Date: 2 November 2010