



**ENVIRONMENTAL IMPACT ASSESSMENT AND  
ENVIRONMENTAL MANAGEMENT PLAN**

**Pinjarra Williams Road M053**

**Construct climbing lane  
SLK 26.80-27.72**

**September 2011**

**Compiled by:**  
Peter Swanson  
Environment Officer SWR

Revision	Prepared by	Date	Amendments
1	Peter Swanson	15/09/11	Inclusions to EMP re: vegetation clearing, public relations and Aboriginal Heritage (pre-construction)

## CONTENTS

<b>1. SUMMARY .....</b>	<b>3</b>
<b>2. BACKGROUND.....</b>	<b>4</b>
<b>3. DESCRIPTION OF THE PROJECT.....</b>	<b>5</b>
3.1 PROJECT LOCATION.....	5
<b>4. METHODOLOGY .....</b>	<b>6</b>
4.1 PRELIMINARY DESKTOP STUDY .....	6
4.2 COMMONWEALTH REFERRAL.....	7
4.3 STATE REFERRAL.....	7
<b>5. EXISTING ENVIRONMENT .....</b>	<b>8</b>
5.1 DESCRIPTION .....	8
5.2 SITE INVESTIGATION .....	8
<b>6. CLEARING OF NATIVE VEGETATION .....</b>	<b>8</b>
6.1 DETAILS OF VEGETATION ASSOCIATIONS TO BE CLEARED .....	8
6.2 ASSESSMENT AGAINST CLEARING PRINCIPLES .....	9
<b>7. ASSESSMENT OF ASPECTS AND IMPACTS .....</b>	<b>12</b>
<b>8. DECISION TO REFER.....</b>	<b>14</b>
8.1 REFERRAL TO THE DEPARTMENT OF SUSTAINABILITY, ENVIRONMENT, WATER, POPULATION AND COMMUNITIES.....	14
8.2 REFERRAL TO THE ENVIRONMENTAL PROTECTION AUTHORITY .....	14
<b>9. STAKEHOLDER CONSULTATION.....</b>	<b>14</b>
<b>10. OTHER APPROVALS/PERMITS/LICENCES .....</b>	<b>14</b>
<b>11. REFERENCES.....</b>	<b>14</b>
<b>APPENDIX A LOW IMPACT ENVIRONMENTAL SCREENING CHECKLIST .....</b>	<b>16</b>
<b>APPENDIX B MAIN ROADS GIS DATA SEARCH.....</b>	<b>17</b>
<b>APPENDIX C DEC DRF &amp; PF DATA SEARCH.....</b>	<b>19</b>
<b>APPENDIX D FAUNA SURVEY RESULTS.....</b>	<b>20</b>
<b>APPENDIX E AUSTRALIAN HERITAGE PLACES INVENTORY, HERITAGE COUNCIL OF WESTERN AUSTRALIA DATABASE SEARCH AND THE SHIRE OF MURRAY HERITAGE ADVICE .....</b>	<b>21</b>
<b>APPENDIX F DEPARTMENT OF INDIGENOUS AFFAIRS DATABASE SEARCH.....</b>	<b>23</b>
<b>APPENDIX G DOW GEOGRAPHIC DATA ATLAS DATABASE SEARCH.....</b>	<b>24</b>
<b>APPENDIX H DEC NATIVE VEGETATION MAP VIEWER DATABASE SEARCH.....</b>	<b>25</b>
<b>APPENDIX I DEPARTMENT OF AGRICULTURE &amp; FOOD ADVICE ON DECLARED WEEDS.....</b>	<b>26</b>
<b>APPENDIX J DIEBACK INTERPRETATION MAP, EXTRACTS FROM GLEVAN REPORT &amp; HYGIENE MANAGEMENT PLAN .....</b>	<b>28</b>
<b>APPENDIX K DEC CONTAMINATED SITES DATABASE SEARCH .....</b>	<b>32</b>
<b>APPENDIX L ACID SULFATE SOILS MAPPING .....</b>	<b>33</b>
<b>APPENDIX M DSEWPC DATABASE SEARCH.....</b>	<b>34</b>
<b>APPENDIX N SITE PHOTOS .....</b>	<b>40</b>
<b>APPENDIX O ENVIRONMENTAL MANAGEMENT PLAN.....</b>	<b>43</b>
11.1 INTRODUCTION.....	43
11.2 COMMUNICATION PLAN.....	43
11.3 EXTERNAL COMMUNICATION AND COMPLAINTS .....	44
11.4 MONITORING.....	44
11.5 CONTINGENCY MEASURES.....	44
11.6 AUDITING.....	44

## 1. SUMMARY

The project is to construct a climbing lane / overtaking lane on Pinjarra Williams Road between SLK 26.80 and 27.72 in the Shire of Murray.

The clearing for the project has been assessed against the Clearing Principles and is considered **not likely to be at variance**.

This environmental impact assessment determined the **project will not require referral** to the Commonwealth Department of Sustainability, Environment, Water, Population and Communities or the WA Environmental Protection Authority.

A **dieback** survey has been undertaken and the entire site is considered **Infested and Unprotectable**. A **Hygiene Management Plan** developed in consultation with DEC determined that the primary management requirement is to **clean machinery and equipment when entering and leaving the site**.

The Department of Agriculture and Food advise that there are **minor infestations of Narrow Leafed Cotton Bush** along the proposed road works area that should be removed or treated prior to and after works.

An **Aboriginal Heritage** survey has been undertaken and did not identify any sites in the vicinity.

# PRELIMINARY ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN

## PINJARRA WILLIAMS ROAD M053 SLK 26.80-27.72

### 2. BACKGROUND

The Pinjarra Williams Road is a primary distributor road, 125.53 km long linking Williams in the east to Pinjarra in the west. The route also passes to the south of Boddington (where the gold mine is situated) and through Dwellingup. On this section of Pinjarra Williams Road in the Shire of Murray the road falls from west to east. The current road has a 6% vertical grade and heavy vehicles slow down to below 40 km/h while travelling up this steep section of road into Dwellingup, and there are no opportunities for overtaking. Heavy vehicle movements have increased with the expansion of gold mining operations at Boddington as well as alumina transport from Worsley and log carting. This type of road environment increases the crash risk for road users.

Previous work has occurred (08/4302) to construct a passing bay and parking bays in this section (SLK 26.75, 27.02).. A PEIA & EMP (B08#14988) was conducted in 2008 for the installation of these bays.

In 2007, it was noted that heavy vehicles were pulling on to the gravel shoulder between SLK 27.56 – 27.70 to enable cars to pass. This was creating a dust hazard, so Main Roads sealed the shoulder to create a short overtaking opportunity.

The demand for heavy truck movements has increased with the expansion of the Boddington gold mining operations, Worsley Alumina and other industry requiring heavy haulage. The passing bay has become outdated as the safe gaps for heavy vehicles to return to the through lane have reduced, making for more risky and unsafe manoeuvres.

In recent times the operators of heavy vehicles have noted that up to five or six cars are attempting to pass on the short passing lane / pull of bay. When heavy vehicles pull back out in to the through lane, some cars are being forced on to the east bound lane. The short passing lane / pull off bay is prior to a crest, so those vehicles being forced in to the opposite lane are creating a severe traffic hazard.

The speed limit for this section of the Pinjarra Williams Road is 110km/h. Austroads states that it is warranted to install a climbing lane at a point where trucks slow down to 40km/hr. The recorded location where B-Double ore trucks travelling east to west slow down to 40km/hr occurs at approximately SLK 28.12 with the slope continuing east past 26.80.

The existing cross section has 3.5m wide lanes; 0.5m sealed shoulder; 0.5m unsealed shoulder with a clear zone ~ 4.0m from either edge line. The road has recently been resealed and has new white lines.

The soil consists of gravelly loam with large boulders. The slope falls slightly across the road from the south to the north. The drainage comprises of sheet flow into shallow surface gutter channels on either side of the road which dissipates into the State medium forest.

The majority of the road reserve passes through State forest of Jarrah regrowth that was established in 1940. The road reserve width on the southern side is less than 9 metres from the existing edge line.

Following Main Roads' corporate Environmental Assessment and Approval process, an initial 'Low Impact Environmental Screening Checklist' was completed for the proposal. The checklist determined the project required further environmental assessment as the

project involves the clearing of native vegetation outside of the maintenance zone. Therefore the preparation of a project specific Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) are required.

The environmental assessment will involve a preliminary desktop analysis of environmental aspects and impacts, a site investigation, an assessment of native vegetation clearing and consideration of necessary environmental management. Supplemented by appropriate surveys, this preliminary assessment will develop as an Environmental Impact Assessment (EIA) to determine if referral to State and/or Commonwealth authorities is required.

### 3. DESCRIPTION OF THE PROJECT

Main Roads South West Region proposes to construct a climbing lane / overtaking lane on Pinjarra Williams Road between SLK 26.80 and 27.72 in the Shire of Murray. The road in this section descends steeply (6%) in a west east direction, so the additional lane will be constructed on the south side of the road with clearing required approx 4m wide to the road reserve boundary for the length of the project.

The lane will be in total 920m long including a 240m merging taper at the top of the hill and a 120m diverge taper at the start of the climbing lane. The ultimate carriageway will comprise of three \* 3.5m wide lanes with 1m sealed and 0.5m unsealed shoulders plus 3m for drainage. Two culvert extensions are expected with at least one additional culvert crossing to be added.

The estimated clearing area is approximately 0.405 hectare. It is proposed for works to commence in September 2011.

#### 3.1 Project Location

The location and boundaries of the study area for the project are shown in Figure 1.



Figure 1 – Project Location and Study Area

## **4. METHODOLOGY**

### **4.1 Preliminary Desktop Study**

A preliminary assessment of the project area and potential constraints of the proposal was undertaken by reviewing a number of government agency managed databases, viewing GIS shape files and consulting with relevant stakeholders where necessary.

#### **4.1.1 Threatened Flora, Fauna & Communities, Conservation Reserves and ESAs**

Current GIS shape files provided to Main Roads by the DEC were examined for known populations of threatened flora, fauna, Threatened Ecological Communities (TECs) or conservation areas located within the vicinity of the works, refer to Appendices C & D.

#### **4.1.2 Heritage**

Non-indigenous heritage was examined utilising the Australian Heritage Places Inventory (<http://www.environment.gov.au/heritage/places/wa/index.html>), Heritage Council of Western Australia Places Database (<http://register.heritage.wa.gov.au/>) and the Shire of Harvey's local heritage list (previously known as the Municipal Heritage Inventory), refer to Appendix E.

#### **4.1.3 Aboriginal Heritage**

A search of the Department of Indigenous Affairs' (DIA's) (<http://dia.wa.gov.au/AHIS/>) database was undertaken to determine whether the project area contains any sites of Aboriginal Heritage, refer to Appendix F.

#### **4.1.4 Sensitive Water Resources**

A search of the Department of Water's (DoW's) database was undertaken (<http://www.water.wa.gov.au/idelve/dowdataext/index.jsp>) to determine whether the project area contains any sensitive water resources (including Public Drinking Water Source Areas or Water Pollution Control Areas) or was adjacent to any significant lakes, rivers, wetlands or proclaimed areas, refer to Appendix G.

#### **4.1.5 Wetlands**

The locations of any wetlands within the project area was determined using the Department of Environment and Conservation (DEC) "Native Vegetation Map Viewer" mapping tool <http://maps.dec.wa.gov.au/idelve/nv/index.jsp> and viewing current GIS shape files, refer to Appendix H.

#### **4.1.6 Weeds**

Consultation was undertaken with the Department of Agriculture and Food to determine whether there are any known populations of declared plants or significant weeds in or adjacent to the project area, refer to Appendix I.

#### **4.1.7 Dieback**

As the project site receives >400 mm of annual rainfall and is located within the vulnerable areas of the south western parts of Western Australia, a dieback survey was undertaken, refer to Appendix J.

#### **4.1.8 Contaminated Sites**

A search of the DEC's contaminated sites database was undertaken (<https://secure.dec.wa.gov.au/idelve/css/>) to determine whether the project area contains or is adjacent to any contaminated sites, refer to Appendix K.

#### **4.1.9 Acid Sulfate Soils**

The DEC's acid sulfate soils maps were reviewed on the Shared Land Information Platform (SLIP - <https://uat2.landgate.wa.gov.au/bmvf/app/waatlas/>) to determine the level of risk the project is exposed to, refer to Appendix L.

#### **4.1.10 Air Quality**

The need for a local air quality assessment was determined using the criteria outlined in the MRWA Environmental Guideline, Air Quality.

### **4.2 Commonwealth Referral**

The decision whether to refer the project to the Commonwealth DSEWPC was based upon whether the project would impact Commonwealth land, or may have a significant impact upon matters of national significance, which are protected under the EPBC Act. These are World Heritage properties, National Heritage places, wetlands of international importance (listed under the Ramsar convention), Commonwealth Marine Areas, migratory species protected under international agreements, nuclear actions, nationally threatened species and ecological communities.

The DSEWPC protected matters search tool was used to determine if the project will impact upon any matters of national significance: (<http://www.environment.gov.au/erin/ert/epbc/index.html>) refer to Appendix I for the results of this search and Section 7 for a discussion on the findings.

### **4.3 State Referral**

The decision whether to refer the project to the State's EPA was based on whether the project would impact on environmental factors significantly enough to require referral under section 38 of the *Environmental Protection Act 1986*.

## 5. EXISTING ENVIRONMENT

### 5.1 Description

Vegetation along this section of Pinjarra Williams Road is Medium Forest Jarrah Marri which has substantial pre-European extents remaining (Table 1 & 2). The project area consists of fringing road side vegetation in Good condition (Keighery 1994) adjoining substantial areas of timber reserve on both sides of the road. The adjacent land use is State forest.

Good (4): Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it.

### 5.2 Site Investigation

A site visit was carried out by Environment Officer Peter Swanson (PS) and Project Manager Jonathon Haylock (JH) on 3<sup>rd</sup> March 2011 to examine the general features of the area. A further visit was undertaken on 8<sup>th</sup> June 2011 to identify clearing extents. An additional meeting was held with DEC representatives on 19<sup>th</sup> August to discuss the possibility of clearing in the timber reserve to provide safe lateral clearance. The broad vegetation types and condition in the vicinity of the project area were identified. Other issues that were considered included topography, impacts on drainage, property access, dieback management and if further studies are required for noise and vibration impacts (dilapidation). Site photos were taken and are included in [Appendix N](#).

## 6. 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), typically all Main Roads clearing will be undertaken using a permit. The clearing of native vegetation will be undertaken using CPS818.

### 6.1 Details of Vegetation Associations to be Cleared

In order to assess the significance of the vegetation proposed to be cleared the vegetation type, condition and percent of pre-European Extent remaining has been identified. Table 1 describes the location and condition of vegetation associations within the project area while Table 2 provides further information regarding each vegetation association's representativeness.

**Table 1: Vegetation Description, Condition and Percent Remaining**

No.	Description	Start & End SLK	Side of Road (L- left, R - right, B – both, RBM - road building materials)	Condition (Keighery 1994)	Pre-European Extent Remaining (%)	Area to be cleared (ha)
3	Medium Forest; Jarrah Marri	26.80 - 27.72	B	Good	70.00	0.405
<b>Total Area (ha)</b>						<b>0.405</b>

**Table 2: Vegetation Percent Remaining**

Pre-European Extent Remaining: Vegetation Association No. 3 Medium Forest: Jarrah Marri		
Regional Context	Location	Pre-European Extent Remaining (%)
State-wide	N/A	70.00
Bioregional (IBRA Region)	Jarrah forest (JF)	31.81
Bioregional (IBRA Sub-Region)	Northern Jarrah forest (JF1)	82.06
LGA	Shire of Murray	86.68



## 6.2 Assessment against Clearing Principles

In assessing whether the project is likely to have a significant impact on the environment, the project was assessed against the ten clearing principles (EP Act 1986 Schedule 5) in accordance with the DEC's Guide to the Assessment of Applications to Clear Native Vegetation.

The project is **not likely to be at variance** with the 10 clearing principles.

<b>(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.</b>	
ASSESSMENT	<p>The vegetation proposed to be cleared comprises of Jarrah Marri medium forest that is well represented in the surrounding area with 70% remaining from pre-European settlement. The extent remaining in both the IBRA sub-region and LGA are also quite substantial (Table 2). The expansiveness of this vegetation association indicates that it would not be considered as a Threatened Ecological Community.</p> <p>The vegetation of the project area consists of fringing road side vegetation in Good condition (Keighery 1994) adjoining substantial areas of timber reserve on both sides of the road.</p> <p>There is no registered Priority flora in the vicinity and the vegetation association (Jarrah Marri medium forest) is not regarded as an ecosystem that is prevalent with threatened flora species (Pers. Com. Mark Humble DEC A/District Manager 19/08/2011). DEC has also offered to undertake a field survey to identify the possibility of DRF/PF/TEC and any fauna issues.</p>
METHODOLOGY & REFERENCES	<p>Site inspection Keighery, B. J. 1994. <i>Bushland Plant Survey: A Guide to Plant Community Survey for the Community</i>. Wildflower Society of WA (Inc). Nedlands, Western Australia.</p> <p>GIS shape files provided to Main Roads by the DEC</p>
Proposal is not likely to be at variance to this Principle.	

<b>(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>	
ASSESSMENT	<p>Conservation significant fauna known to occur within the local area (10 kilometre radius) include <i>Dasyurus geoffroii</i> (Chuditch) (Vulnerable), <i>Setonix brachyurus</i> (Quokka) (Vulnerable), <i>Pseudocheirus occidentalis</i> (Western Ring Tail Possum) (Vulnerable), <i>Bettongia penicillata ogilbyi</i> (Woylie) (Endangered), <i>Macropus irma</i> (Western Brush Tail Possum) (P2), <i>Isodon obesulus fusciventer</i> (Quenda) (P5) and <i>Pachysaga munggai</i> (Insect Cricket) (P3).</p> <p>The vegetation proposed to be cleared is regrowth medium forest that was established in 1940. It does not consist of trees of sufficient size to provide nesting hollows large enough to accommodate cockatoos. An inspection of the trees did not reveal any hollows or nesting habitats. There are limited groundcover plants to provide habitat or shelter and there are substantial areas of better condition forest adjoining to allow movement of disturbed animals.</p> <p>The fauna survey indicates that there is only one potential habitat tree in the vicinity of project area. It is located south of the project area at SLK 28.88 so will not be impacted.</p>
METHODOLOGY & REFERENCES	<p>Keighery, B. J. 1994. <i>Bushland Plant Survey: A Guide to Plant Community Survey for the Community</i>. Wildflower Society of WA (Inc). Nedlands, Western Australia.</p> <p>Site inspection Harewood, G. August 2011. <i>Fauna Assessment – Pinjarra Williams Road (SLK 14 – 67) Dwellingup</i>, report for Main Roads WA.</p>
Proposal is not likely to be at variance to this Principle.	

<b>(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.</b>	
ASSESSMENT	The closest registered rare flora site is 3km NW of the western extent of the project on the outskirts of Dwellingup. The District Manager of DEC at Dwellingup is of the opinion that this vegetation association (Jarrah Marri Medium forest) is not conducive to threatened flora species.
METHODOLOGY & REFERENCES	GIS shapefiles provided to Main Roads by the DEC Pers. Com. Mark Humble A/District Manager DEC 19/08/2011
Proposal is not likely to be at variance to this Principle.	

<b>(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>	
ASSESSMENT	The closest TEC site is 5.5km south west of the project site. It is not likely that the vegetation proposed to be cleared would constitute or impact a TEC.
METHODOLOGY & REFERENCES	GIS shapefiles provided to Main Roads by the DEC
Proposal is not likely to be at variance to this Principle.	

<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.</b>	
ASSESSMENT	The vegetation association of the project area is Jarrah Marri medium forest that is well represented in the surrounding area with 70% remaining from pre-European settlement. The extent remaining in both the IBRA sub-region and LGA are also quite substantial (Table 2).  The proposed clearing is primarily of a linear nature of approximately 4m width alongside the road plus some isolated specimens. The overall condition of the vegetation throughout the project length is Good, as is the adjoining expansive timber reserve medium forest.
METHODOLOGY & REFERENCES	Keighery, B. J. 1994. <i>Bushland Plant Survey: A Guide to Plant Community Survey for the Community</i> . Wildflower Society of WA (Inc). Nedlands, Western Australia. GIS shapefiles provided to Main Roads by the DEC
Proposal is not likely to be at variance to this Principle.	

<b>(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>	
ASSESSMENT	Davies Brook at SLK 29.24 is the closest water body and is over a kilometre outside of the eastern extent of the project.
METHODOLOGY & REFERENCES	Department of Environment and Conservation (DEC) "Native Vegetation Map Viewer" mapping tool GIS shapefiles provided to Main Roads by the DEC
Proposal is not likely to be at variance to this Principle.	

<b>(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.</b>	
ASSESSMENT	The SLIP database indicates that there is a low risk of ASS occurring. Additionally, there is no dewatering or excavation below the water table planned.
METHODOLOGY & REFERENCES	SLIP - <a href="https://uat2.landgate.wa.gov.au/bmvf/app/waatlas/">https://uat2.landgate.wa.gov.au/bmvf/app/waatlas/</a>
Proposal is not likely to be at variance to this Principle.	

<b>(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>	
ASSESSMENT	The project is located in the Jarrah forest National Park (proposed) which is an Indicative Property.  Taking into account the minimal extent of vegetation proposed to be cleared and the extensive distribution of this vegetation association (Jarrah Marri medium forest) within the local area, the clearing is unlikely to have an impact

	on ecological linkages in adjacent vegetation.
METHODOLOGY & REFERENCES	Department of Environment and Conservation (DEC) "Native Vegetation Map Viewer" mapping tool GIS shapefiles provided to Main Roads by the DEC
Proposal is not likely to be at variance to this Principle.	

<b>(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>	
ASSESSMENT	The project is in the Murray River Water Reserve. There is no dewatering or excavation below the water table planned. Drainage will be restored and improved.
METHODOLOGY & REFERENCES	Department of Water's (DoW's) database ( <a href="http://www.water.wa.gov.au/idelve/dowdataext/index.jsp">http://www.water.wa.gov.au/idelve/dowdataext/index.jsp</a> )
Proposal is not likely to be at variance to this Principle.	

<b>(j) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.</b>	
ASSESSMENT	Due to the scale and location of the clearing being mainly on a ridge line, it is unlikely that it will influence flooding. Given the extent and distribution of the vegetation through the length of the road reserve, it is considered unlikely that the proposed clearing would exacerbate the incidence of flooding in the local area, or impact on peak flood height or duration.
METHODOLOGY & REFERENCES	Site inspection
Proposal is not likely to be at variance to this Principle.	

The following table summarizes what further assessment and management is required in accordance with MRWA State-wide vegetation Clearing Permit (CPS 818).

**Table 3: Summary of Additional Management Actions**

Impact of Clearing	Yes/No or NA	Further Action Required
1. Does the assessment indicate that the clearing may be at variance or is at variance with one or more of the principles for clearing?	No	No
2. Does the assessment indicate that the clearing is at variance with one or more of the principles for clearing?	No	No
3. Does the assessment indicate that the clearing is at variance with clearing principle (g) land degradation, (i) surface or underground water quality or (j) the incidence of flooding?	No	No
4. Will the project involve clearing for purposes considered temporary in nature under Condition 13 of CPS818?	No	No

## 7. ASSESSMENT OF ASPECTS AND IMPACTS

**Table 4: Aspects and Impacts**

<b>Aspect</b>	<b>Evaluation of Potential Impacts</b>
Vegetation – clearing	<p>The estimated area of clearing of native vegetation for the project is 0.405 hectare.</p> <p>The condition overall of the vegetation to be cleared was assessed as Good (4) using the Keighery scale (1994). See Section 4.1.</p> <p>The vegetation is medium forest: Jarrah Marri which has 70% representation of pre-European extent remaining.</p> <p>No temporary clearing is proposed.</p>
Vegetation – TECs/DRF	<p>None present in the proposed works areas. No significant vegetation types or threatened flora have been recorded within the road reserve. DEC has offered to undertake a field survey to identify potential DRF/PF/TEC and any fauna issues.</p> <p>No Matters of National Environmental Significance as protected under EPBC Act (1999) will be impacted (see Table 5).</p>
Vegetation – weeds	<p>There are numerous common weed species that occur throughout the proposed works areas. These species are likely to be widespread within the reserve and general area.</p> <p>The Department of Agriculture and Food advise that there are minor infestations of Narrow Leafed Cotton Bush along the proposed road works area and should be removed or treated prior to and after works.</p>
Vegetation – dieback	<p>Advice from the dieback survey indicates that the entire project site is Infested and can be treated as dieback Unprotectable.</p>
Fauna	<p>No significant fauna issues associated with the proposed works. The clearing is of a limited linear nature of immature Marri and Jarrah trees in an area that is extensively forested with similar or better vegetation.</p> <p>No Matters of National Environmental Significance as protected under the EPBC Act (1999) will be impacted (see Table 5).</p>
Heritage (non-indigenous)	<p>There are no known sites of heritage significance within the vicinity of the project area.</p> <p>No Matters of National Environmental Significance as protected under EPBC Act (1999) will be impacted (see Table 5).</p>
Aboriginal heritage	<p>A search of the DIA's database/Heritage survey identified no known sites of Aboriginal heritage significance within the vicinity of the project area.</p> <p>An Aboriginal Heritage survey also determined there are no sites of significance.</p>
Wetlands	<p>There are no wetlands within the vicinity of the project area. Davies Brook is outside of the eastern extent of the project (29.24 SLK).</p> <p>No Matters of National Environmental Significance as protected under EPBC Act (1999) will be impacted (see Table 5).</p>
Surface water/drainage	<p>The slope falls slightly across the road from the north to south. The drainage comprises of sheet flow into shallow surface gutter channels on either side of the road which dissipates into the state forest. Two existing culvert crossings will need to be extended.</p>
Groundwater	<p>No dewatering is required, hence no change to groundwater level or quality.</p>
Reserves / Conservation areas	<p>The project is located in the Jarrah forest National Park (proposed) which is an Indicative Property.</p>
Air quality	<p>Not relevant to the proposed works. Local air quality assessment is not required for the project since as the predicted traffic flow is less than 15,000 vehicles per day in rural areas.</p>

**Table 4: Aspects and Impacts**

<b>Aspect</b>	<b>Evaluation of Potential Impacts</b>
Dust	Likely to be a minor issue during earthworks. No major sensitive receivers adjacent to the proposed works.
Noise and vibration	No major sensitive local receivers. Construction works are not expected to significantly contribute to noise levels provided works are limited to normal working hours.
Visual amenity	The proposed works will result in minor and short-term visual impacts during 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. The proposed works will serve to enhance public safety by improving local road conditions.
Hazardous substances	Not relevant to the proposed works, the project requires no hazardous substances to be used.
Contamination	The works are within the road reserve and no known previous land use activities on or adjacent to the project area have had the potential to create contamination, e.g. petrol station. A search of the DEC's contaminated sites database indicates there are no identified contaminated sites within the project area.
Salinity	There were no visual signs of salinity observed in the project area. Given the nature and scale of the project the impact is considered not relevant.
Acid Sulfate Soils	The SLIP database indicates that there is a low risk of ASS occurring. Additionally, there is no dewatering or excavation below the water table planned.
Statutory Land Use Planning	As the proposed works are entirely within the existing road reserve no planning scheme amendments are required.

**Table 5: Commonwealth Aspects and Impacts**

<b>Aspect</b>	<b>Evaluation of Potential Impacts</b>
World Heritage properties	The project will not impact any World Heritage properties.
National Heritage places	A search of the Australian Heritage Places Inventory Database located no sites within the vicinity of the project.
Wetlands of international importance (Ramsar)	A search of the Department of Sustainability, Environment, Water, Population and Communities Protected Matters Search Tool located one Ramsar Wetland within the vicinity of the project. The Peel-Yalgorup System, located adjacent to the City of Mandurah in Western Australia, is a large and diverse system of shallow estuaries, coastal saline lakes and freshwater marshes. The site includes the Peel Inlet, Harvey Estuary, Lake McLarty, Lake Mealup and ten Yalgorup National Park wetlands; the closest being more than 30 kilometers from the project site.
Nationally threatened species or ecological communities	A search of the Department of Sustainability, Environment, Water, Population and Communities Protected Matters Search Tool located no threatened ecological communities, 9 threatened species and 5 listed marine species within the vicinity of the project. The project activities are unlikely to have a significant impact on these species.
Migratory species protected under international agreements	A search of the Department of Sustainability, Environment, Water, Population and Communities Protected Matters Search Tool located 7 migratory species within the vicinity of the project. The project activities are unlikely to have a significant impact on these species as the vegetation present is unlikely to be habitat for these species.
Commonwealth marine areas	The project will not impact any Commonwealth marine area or marine protected area.
Commonwealth lands	The project is located in the Jarrah Medium forest National Park (proposed) which is an Indicative Property.
Nuclear Actions	Not relevant to the proposed works.

## 8. DECISION TO REFER

### 8.1 Referral to the Department of Sustainability, Environment, Water, Population and Communities

The preliminary impact assessment determined the project will not have a significant impact on Matters of National Environmental Significance or impact Commonwealth land as outlined in Table 5 of this report. For this reason the project does not require referral to the Commonwealth Department of Sustainability, Environment, Water, Population and Communities.

### 8.2 Referral to the Environmental Protection Authority

Due to the small scale of the project, the low significance of its impacts to the surrounding environment and that it is unlikely the project will generate significant public interest; the project does not require referral to the WA Environmental Protection Authority.

## 9. STAKEHOLDER CONSULTATION

Table 6: Project Consultation

Name	Agency	Date	Comments
Lindsay Strange	Department of Agriculture & Food	06/05/11	Advice on Declared Weeds
Joshua Gilovitz	DEC Species and Communities Branch	31/05/11	Advice on DRF/PF
Mark Humble	A/District Manager DEC Dwellingup	19/08/11	Advice re clearing a narrow strip of the timber reserve to achieve standard width of lateral clearance. Dieback management advice
Linda Barter	Shire of Murray	08/06/11	LGA Heritage search

## 10. OTHER APPROVALS/PERMITS/LICENCES

N/A

## 11. 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.

Cecchi, J. July 2011. *Report on an Archaeological Survey of MRWA Pinjarra Williams Road (SLK 0-67) and Bannister Marradong Road (SLK 0-22) Upgrade Works*, commissioned by R. & E. O'Connor for MRWA.

Department of Sustainability, Environment, Water, Population and Communities (SEWPaC); (2011b). Environment Protection and Biodiversity Conservation Act 1999 draft referral guidelines for three threatened black cockatoo species: Carnaby's cockatoo (endangered) *Calyptorhynchus latirostris*, Baudin's cockatoo (vulnerable) *Calyptorhynchus baudinii*, Forest red-tailed black cockatoo (vulnerable) *Calyptorhynchus banksii naso*.

Department of Environment and Conservation. *A Guide to the Assessment of Applications to clear Native Vegetation under Part V of the Environmental Protection Act 1986.*

Department of the Environment and Heritage (DEH) (2006), *EPBC Act - Principal Significant Impact Guidelines 1.1, Matters of National Environmental Significance. EPBC Act Policy Statement.*

EPA Guidance Statement No.19 '*Guidance for the Assessment of Environmental Factors (Environmental Offsets)*', 2008.

Gleван Consulting, August 2011. *Assessment for the presence of Phytophthora cinnamomi – Pinjarra Williams Road*, report for Main Roads WA.

Harewood, G. August 2011. *Fauna Assessment – Pinjarrah Williams Road (SLK 14 – 67) Dwellingup*, report for Main Roads WA.

Keighery, B. J. 1994. *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

O'Connor, R. July 2011. *Ethnographic Survey of Pinjarra Williams and Bannister Marradong Roads*, commissioned by GHD for MRWA.

# Appendix A

## Low Impact Environmental Screening Checklist

Form No. 6707/001/01

### Checklist - Low Impact Screening Checklist

The Low Impact Screening Checklist is part of the environmental assessment and approval process, refer to in Figure 2 in the Main Roads environmental guideline Environment Assessment and Approvals. 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.

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.

Project Name Pinjarra Williams Road 26.80 SLK to 27.72 SLK

ITEM NO.	ITEM	Y	N
1	New road or road reserve to be created or expansion of existing road reserve.		<input checked="" type="checkbox"/>
2	Works require clearing of native vegetation outside the maintenance zone.	<input checked="" type="checkbox"/>	
3	Works require clearing of native vegetation that is older than 10 years old within the maintenance zone.	<input checked="" type="checkbox"/>	
4	Works to occur outside normal working hours.		<input checked="" type="checkbox"/>
5	Passes over, adjoins or drains directly into a wetland or sensitive watercourse.		<input checked="" type="checkbox"/>
6	Local natural drainage regime / hydrology will be changed.		<input checked="" type="checkbox"/>
7	Dewatering, or a new water bore required.		<input checked="" type="checkbox"/>
8	Known potential source of hazardous materials within or adjoining project area. e.g. Acid Sulphate Soils, existing petrol station, industrial site or waste disposal site (landfill)		<input checked="" type="checkbox"/>
9	Buildings will require demolition.		<input checked="" type="checkbox"/>

Completed By: Signature [Signature] Date 05/09/11

Name HAYLOCK Title P.M.

To be reviewed by a Main Roads Environment Officer: Signature [Signature] Date 05/09/11

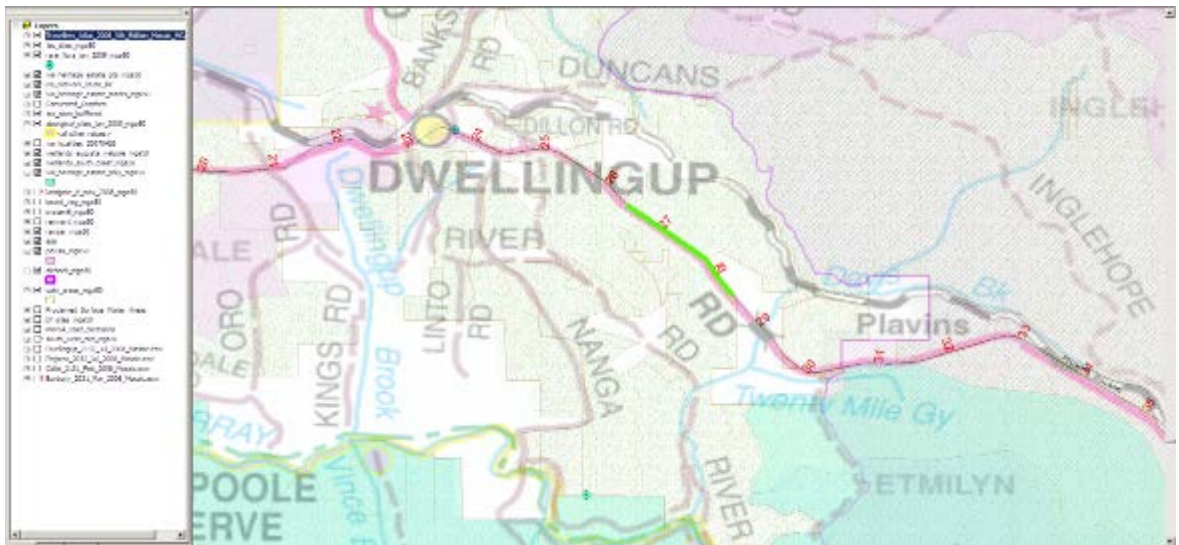
Name Peter Swanson Title E.O.

Comments: PEIA to be undertaken.



## Appendix B

### Main Roads GIS Data Search



GIS search overview of surrounding area



GIS search of project site



**Aerial view showing vegetation cover**

## Appendix C

### DEC DRF & PF data search

31/05/2011

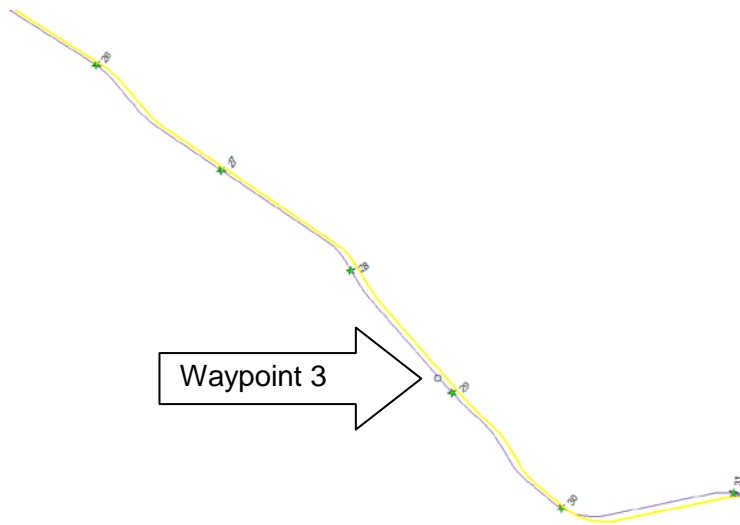
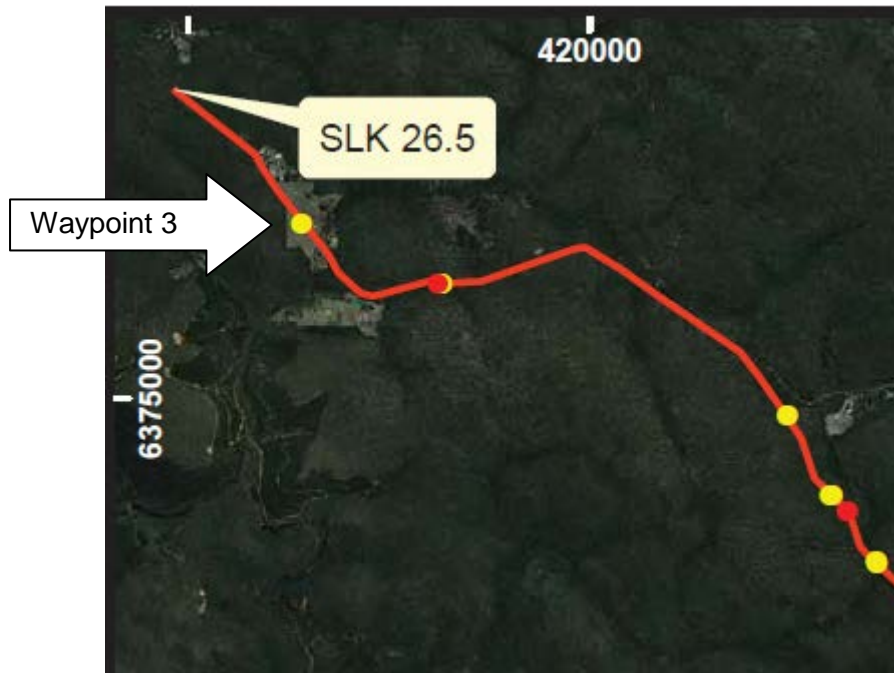
DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
DECLARED RARE AND PRIORITY FLORA LIST  
16 September 2010

Page 1

SPECIES / TAXON	CONS CODE	DEC REGION	DISTRIBUTION	FLOWER PERIOD
<i>Acacia oncinophylla</i> subsp. <i>ocninophylla</i>	3	SW,MW,W A	Mogumber, Mundaring, John Forrest NP, Serpentine, Mt Lennard, Dwellingup, Winnejup	
<i>Acacia subrigida</i>	2	MW,WB,GLD	Mukinbudin, Walyahmoning Rock, Ida Valley Stn, Nanga Stn, Tamala Station	Sep,Oct
<i>Chorizema ulotropis</i>	4	SC,SW	Jerramungup, Ongerup, Ravensthorpe, Young River, Dwellingup, Wandering, North Bannister	
<i>Cyathochaeta teretifolia</i>	3	SW,WA	Whiteman Park, Lake Gnangara, Ellenbrook, Muchea, Denbarker, Yelverton, Wellard, Mundijong	Dec
<i>Dampiera triloba</i>	1	SW,WB	Gnangarra, Bayswater, Cunderdin	
<i>Drosera sidjamesii</i> x	1	SW	Gnangarra, Wanneroo, Beechboro	Nov-Mar
<i>Grevillea manglesii</i> subsp. <i>dissectifolia</i>	3	SW	North Bannister, Gleneagle, Helena Valley, Dwellingup, Wandering	Nov
<i>Lasiopetalum bracteatum</i>	4	SW	Helena Valley, Glen Forrest, Darlington, Dwellingup	Oct-Nov
<i>Lasiopetalum membranaceum</i>	3	SR,SW	Yalgorup, Capel, Dwellingup, Yandup, Australind, Dawesville, Yanchep	Oct-Nov
<i>Leucopogon</i> sp. Yanchep (M. Hislop 1986)	3	SW	Yanchep N.P., Gnangarra-Moore River S.F., Neerabup N.P.	Apr-Jun, Sep
<i>Senecio leucoglossus</i>	4	SR,SW,WA	Mundaring, Harvey, Mt Saddleback, Dwellingup, Darling Range, Wheatley	Aug-Dec

# Appendix D

## Fauna Survey Results

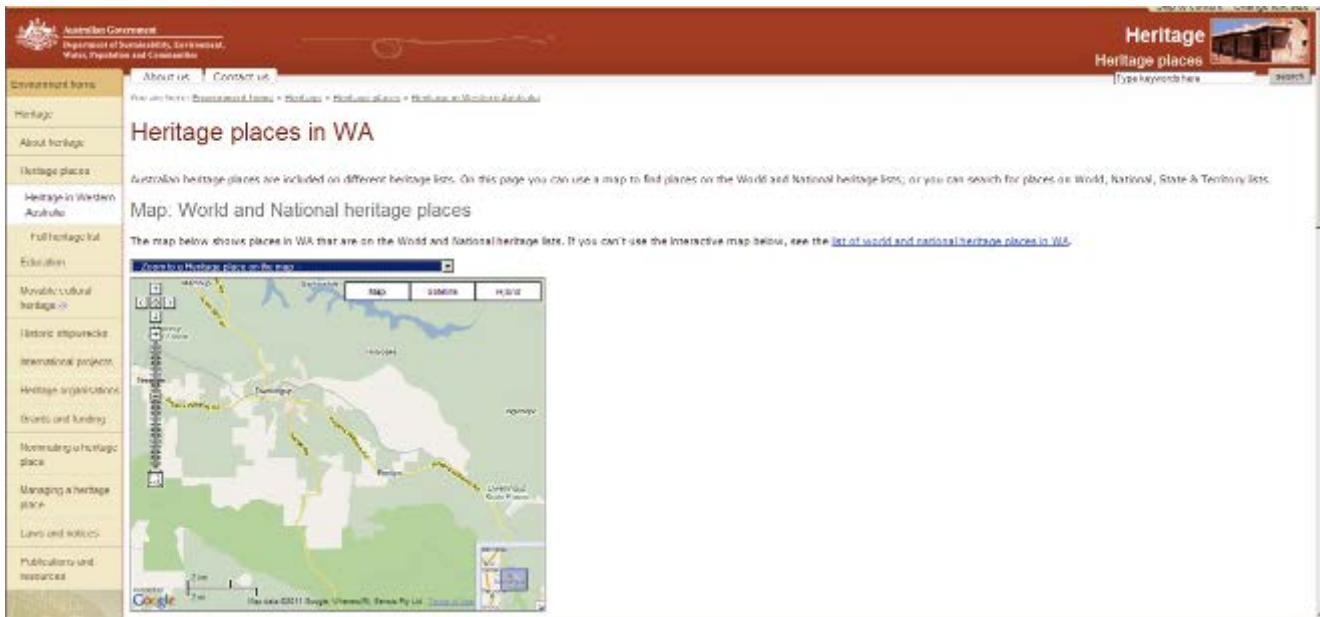


Waypoint Number	Zone	mE	mN	Side of Road	Tree Species	Tree Height (m)	DBH (cm)	Number of Hollows	Hollow Type 1	Hollow Size 1 (cm)	Hollow Type 2	Hollow Size 2 (cm)	Hollow Type 3	Hollow Size 3 (cm)	Hollow Type 4	Hollow Size 4 (cm)	Hollow Type 5	Hollow Size 5 (cm)	Occupancy	Chew Marks	Potential Cockatoo Nest Hollow	Comments
wpt003	SOH	416407	6377203	S	Dead Unknown	20+	>50	5+	Branch	5-10	Branch	10-20	Branch	5-10	Branch	10-20	Branch	5-10	No Signs	No Signs	No	

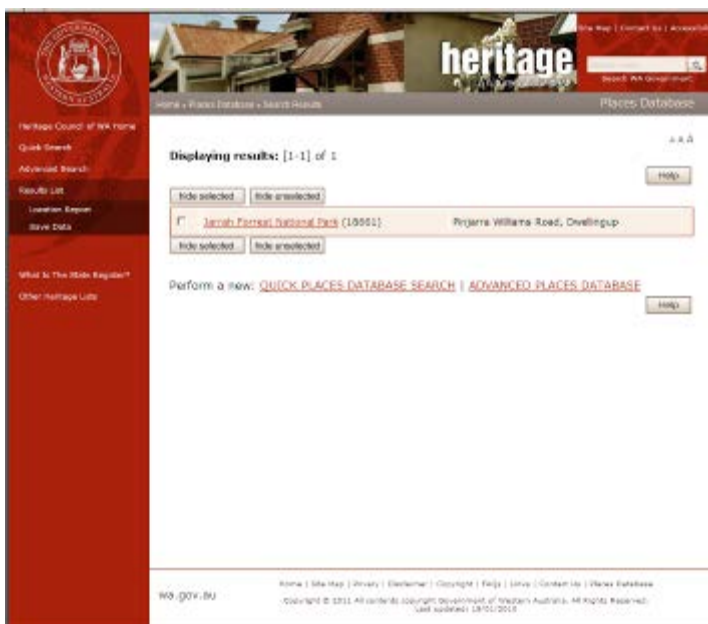
### Potential habitat tree in the vicinity of the project area: Mapping and data - Harewood 2011

## Appendix E

### Australian Heritage Places Inventory, Heritage Council of Western Australia Database Search and the Shire of Murray Heritage Advice



Australian Heritage Places Inventory



#### Heritage Council of Western Australia

Indicative property: Data provided to or obtained by the Heritage Division has been entered into the database. However, a formal nomination has not been made and the Department has not prepared all the data necessary for a nomination.

Wed 8/06/2011 9:29 AM  
Hi Peter

Thank you for providing the information below. There appears to be no heritage issues in the area of the proposed road widening/realignment.

Kind regards,

**Linda Barter**  
Personal Assistant Director Technical Services



PO Box 21 - Pinjarra - WA - 6208 -  
Australia  
Tel: (08) 9531 7762  
Fax: (08) 9531 1981  
E-mail: [PADTS@murray.wa.gov.au](mailto:PADTS@murray.wa.gov.au)

---

**From:** SWANSON Peter (PEO) [<mailto:peter.swanson@mainroads.wa.gov.au>]  
**Sent:** Thursday, 2 June 2011 3:59 PM  
**To:** Linda Barter  
**Subject:** RE: Main Roads enquiry re Heritage sites Pinjarra Williams Rd

Linda  
Sorry about the delay getting back to you. I was on leave until earlier this week.

At this stage the project is a conceptual design only and plans are not yet available. The project will not be implemented for some years. The realignments are proposed between SLK 14 and 16 to the south of the existing road and 20 to 21 to the north. All works in the remaining sections will be completely within the existing road reserve.

Currently we are undertaking a preliminary investigation only to enable us to identify if there are any issues that may need to be taken into consideration for the ultimate design. Please provide information of any heritage sites in the vicinity of the road along this length (SLK 14-66).

Many thanks.  
Peter

**From:** Linda Barter [<mailto:PADTS@murray.wa.gov.au>]  
**Sent:** Thursday, 19 May 2011 1:14 PM  
**To:** SWANSON Peter (PEO)  
**Subject:** RE: Main Roads enquiry re Heritage sites Pinjarra Williams Rd

Morning Peter

With regard to the above, can you please provide more details, e.g. construction plan detailing more information of the extent and location of the road widening so that we may respond to your email.

Kind regards,

**Linda Barter**  
Personal Assistant Director Technical Services



PO Box 21 - Pinjarra - WA - 6208 - Australia  
Tel: (08) 9531 7762  
Fax: (08) 9531 1981  
E-mail: [PADTS@murray.wa.gov.au](mailto:PADTS@murray.wa.gov.au)

---

**From:** SWANSON Peter (PEO) [<mailto:peter.swanson@mainroads.wa.gov.au>]  
**Sent:** Thursday, 12 May 2011 10:58 AM  
**To:** Mailbag Account  
**Subject:** Main Roads enquiry re Heritage sites Pinjarra Williams Rd

Good afternoon

Main Roads South West Region is proposing to undertake widening and realignment works along Pinjarra Williams Road between SLK 14 and 66 in the Shire of Murray.

As part of the environmental assessment of the project I request information from the Shire in regarding Heritage sites or any other issues that may occur in the vicinity.

I note that the Shire's web site includes a Municipal Heritage Inventory which I have reviewed, but I would like to confirm with you so that nothing is over-looked.

I have included a map indicating the extent of the proposed works below.

Please let me know if you require additional information.  
Thanks very much.

Peter Swanson  
Environment Officer  
South West Region

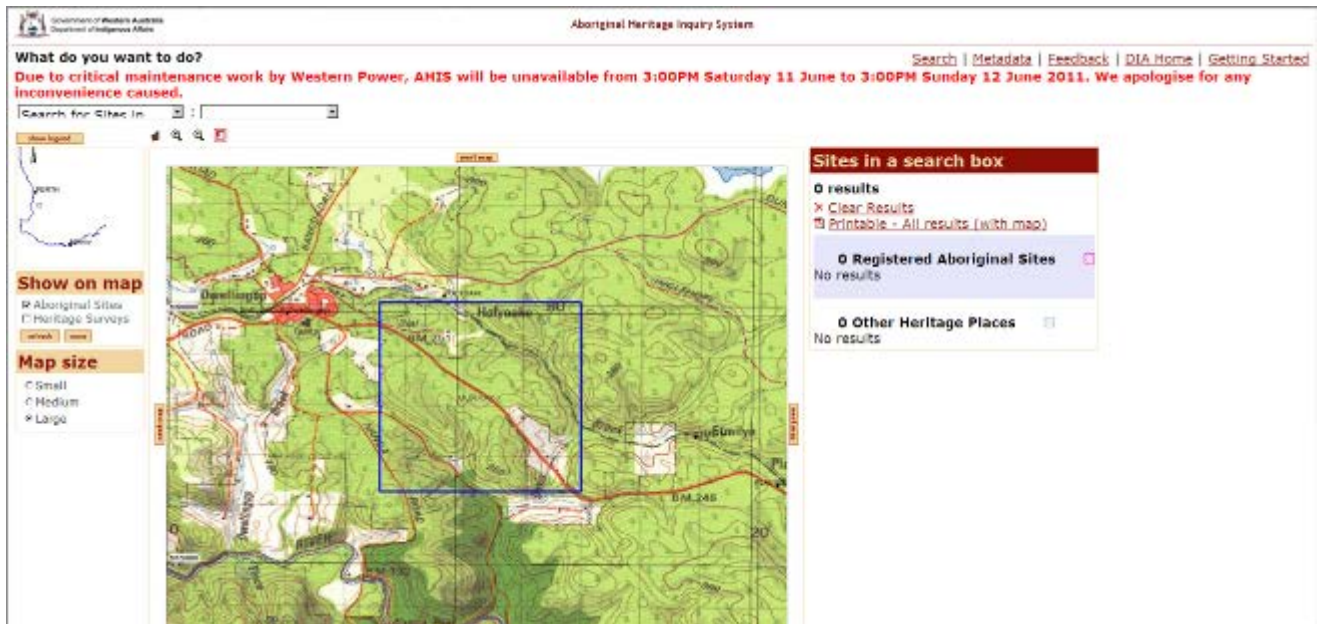


Telephone: (08) 9724 5692 Fax: (08) 9725 5656  
Mobile: 0437 318 721  
Email: [peter.swanson@mainroads.wa.gov.au](mailto:peter.swanson@mainroads.wa.gov.au)  
[www.mainroads.wa.gov.au](http://www.mainroads.wa.gov.au)

**Shire of Murray Heritage Advice**

## Appendix F

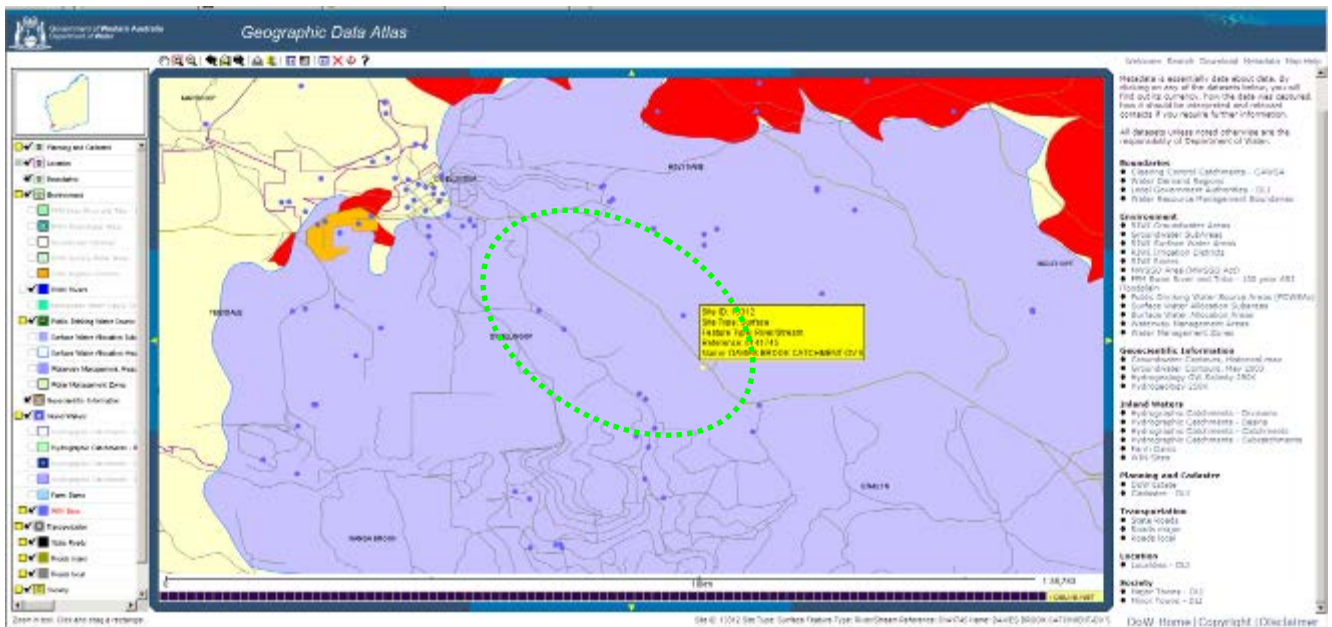
### Department of Indigenous Affairs Database Search



Department of Indigenous Affairs heritage enquiry system search

# Appendix G

## DoW Geographic Data Atlas Database Search

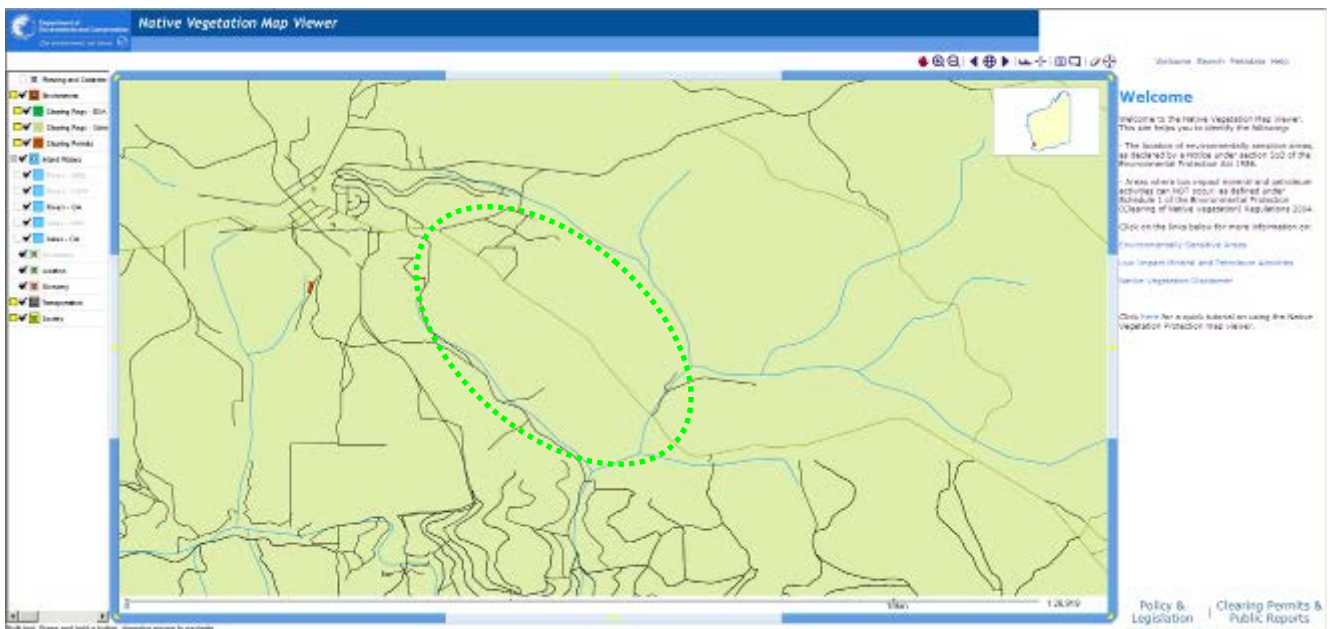


### Department of Water Geographic Data Atlas



## Appendix H

### DEC Native Vegetation Map Viewer Database Search



Department of Environment and Conservation Map Viewer

## Appendix I

### Department of Agriculture & Food Advice on Declared Weeds

Fri 6/05/2011 11:52 AM

Thanks Lindsay.

I will incorporate this into the Environmental Management Plan.

Cheers

Peter

**From:** Strange, Lindsay [<mailto:lindsay.strange@agric.wa.gov.au>]

**Sent:** Friday, 6 May 2011 11:40 AM

**To:** SWANSON Peter (PEO)

**Subject:** RE: Main Roads request information for works at Pinjarra Williams Road - DAF

Hi Peter,

Cotton Bush is a common problem along that section of the road, the heaviest infestation is in Meelon. We get the odd plant on the road verge, which I try and remove. Any plants I have missed would have disbursed their seed by now. I guess you run the risk of spreading the seeds along the road verge if you are moving soil around, There is not a lot you can do to avoid this. You will need to either spray or remove any plants prior to commencing work, removing would be the preferred option, especially if they have pods on them. I think it is more of a problem if any equipment leaves the site without a thorough clean down.

I know you said it is mandatory to clean down from site to site, as long as this occurs it should be OK. I would suggest a follow up inspection 6 months after the completion of the road works. Any plants that have survived would be very easy to eradicate at this point.

I have attached information on Cotton Bush which you probably already have.

It is possible there may be the odd Cape Tulip along there as well. I am unaware of any but it is possible. I have attached some info on that as well.

Any problems give me a call.

Regards

Lindsay Strange

Biosecurity Officer Invasive Species

Peel Region

P 97337777

F 97332377

M 0439943511

E [lindsay.strange@agric.wa.gov.au](mailto:lindsay.strange@agric.wa.gov.au)

---

**From:** SWANSON Peter (PEO) [<mailto:peter.swanson@mainroads.wa.gov.au>]

**Sent:** Friday, 6 May 2011 10:26 AM

**To:** Strange, Lindsay

**Subject:** FW: Main Roads request information for works at Pinjarra Williams Road - DAF

Lindsay

As per our telephone conversation, please respond with a brief comment regarding possible weed issues.

Note I have increased the distance from SLK 14 to SLK 66 to incorporate a section that is proposed for works in the near future; and adjusted the map below.

Thanks

Peter

**From:** Rafferty, Dennis [<mailto:dennis.rafferty@agric.wa.gov.au>]

**Sent:** Tuesday, 19 April 2011 10:06 AM

**To:** SWANSON Peter (PEO)

**Cc:** Stewart, Alex; Strange, Lindsay

**Subject:** RE: Main Roads request information for works at Pinjarra Williams Road - DAF

Hello Peter,

Please contact Lindsay Strange at our Waroona Office [lindsay.strange@agric.wa.gov.au](mailto:lindsay.strange@agric.wa.gov.au) (97337717 / 0439943511) to discuss.  
Regards Dennis

---

**From:** Stewart, Alex  
**Sent:** Tuesday, 19 April 2011 9:42 AM  
**To:** 'SWANSON Peter (PEO)'  
**Cc:** Rafferty, Dennis  
**Subject:** RE: Main Roads request information for works at Pinjarra Williams Road - DAF

Hello Peter,

Further to our telephone conversation. The study area that is shown on the map attached to your email is actually outside my jurisdiction. Because of this, I can't really advise you of the declared plant situation as I don't do inspections in the area.

You need to contact Dennis Rafferty at the Bunbury office [(08) 97806100] to find out who would be best to speak to regarding this issue.

Cheers,

Alex

---

**From:** SWANSON Peter (PEO) [<mailto:peter.swanson@mainroads.wa.gov.au>]  
**Sent:** Monday, 18 April 2011 12:17 PM  
**To:** Stewart, Alex  
**Subject:** Main Roads request information for works at Pinjarra Williams Road - DAF  
Good afternoon Alex

Main Roads South West Region is proposing to undertake widening and realignment works along Pinjarra Williams Road between SLK 14 and 66 in the Shire of Murray.

As part of the environmental assessment of the project I request information from DAF in regard Declared Plants or any other issues that may occur in the vicinity.

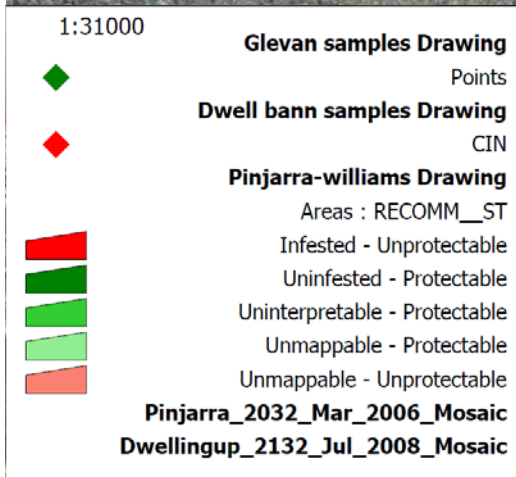
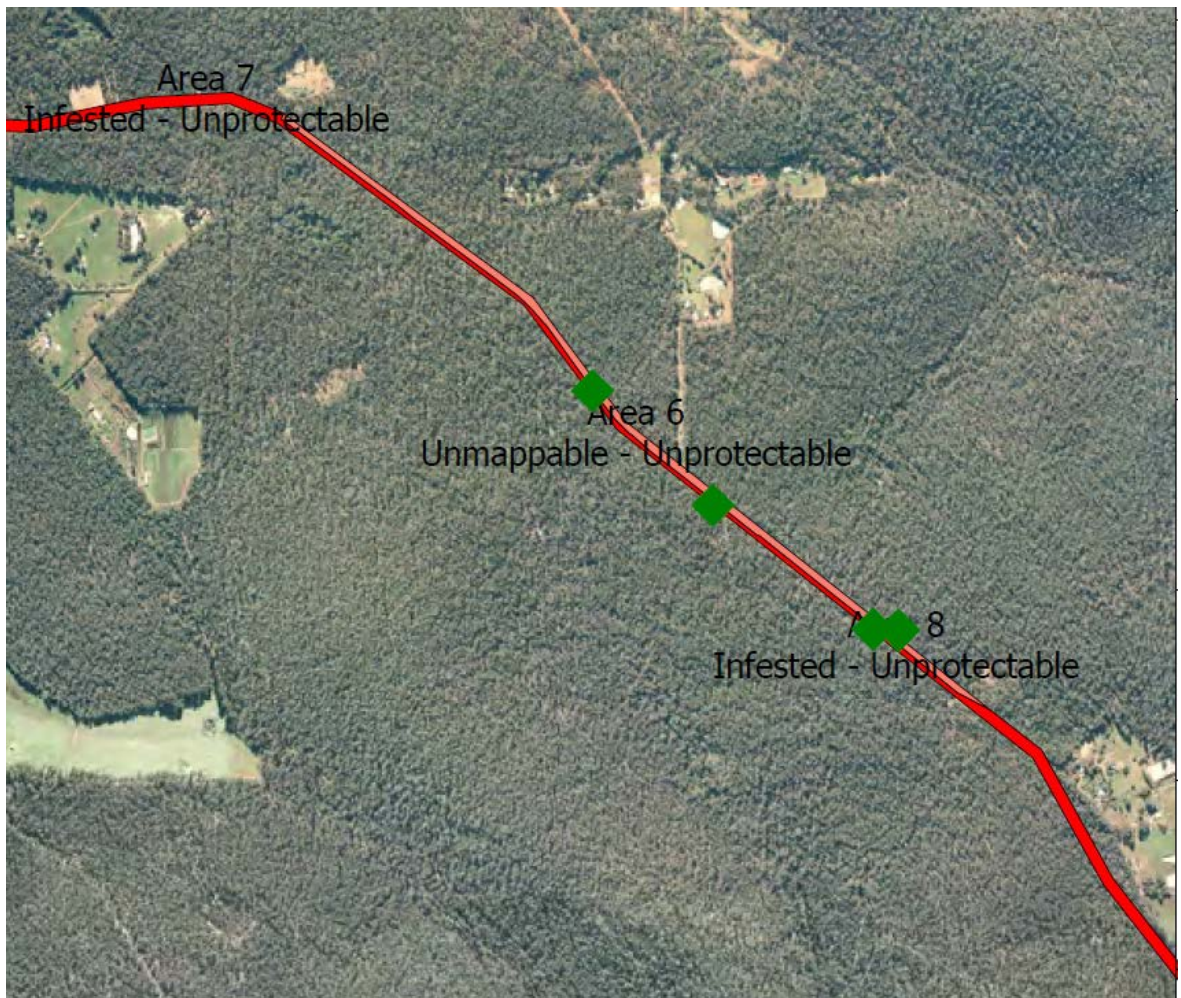
I have attached a map of the area to be investigated below.

Please let me know if you require additional information.  
Thanks very much.

**Peter Swanson**  
Environment Officer  
South West Region


## Appendix J

### Dieback Interpretation Map, extracts from Glevan Report & Hygiene Management Plan



Site	Start	End	Disease occurrence	Recommended Hygiene status
6	413,874mE	415,648mE	Unmappable	Unprotectable
<p>This vegetation on the northern side of the road has been recently burnt. As the disease is located on the southern side of the road, this area has also been deemed to be Unprotectable.</p>				
7-8	412,766mE	416,245mE	Infested	Unprotectable
<p>This section covers the vegetation on the southern side (and a smaller section on the northern side) of the road which is displaying disease symptoms along the road verge. Whilst some areas appear Uninfested, the location of the disease did not allow any demarcation of these Uninfested areas.</p>				

**Site Details table: extract from dieback report (Glevan 2011)**

<b>HYGIENE MANAGEMENT PLAN</b> <i>Phytophthora cinnamomi</i> Management Plan & Weed Management Plan		 Department of <b>Environment and          Conservation</b> <i>Our environment, our future</i>
<b>District:</b> .....Perth Hills.....  <b>Plan &amp; Map ID Number:</b> Areas 6and 8 Pinjarra Williams rd 3km east of Dwellingup		

<b>This Plan Only Applies to operation/works(s)</b> (specify) ...Passing Lane on the Pinjarra Williams road 3 km east of the Dwellingup town site – southern side of the road only.....	
<b>Recheck date:</b> ...3/8/2012..... (+ 1 yr of Occurrence Map)	<b>Expiry Date:</b> .....3/8/2014..... (+ 3 yrs of Occurrence Map)

**Objective:** To ensure that approved human activities within the 'protectable' areas of .....Holmes..... Block are inconsequential as vectors for the establishment of new centres of infestation of *Phytophthora cinnamomi*.

<b>Tactics for Management of the Area</b>	
All operations are to be in accordance with ' <i>Phytophthora cinnamomi</i> and disease caused by it. Volume 1 - Management Guidelines' Circle and complete action (NO may be used for actions that are non applicable)	
ACTION	ACTIVITIES
1 NO	The 'protectable' areas and their boundaries have been established in the field and are identified as P..... on the attached map.
2 NO	Areas that are predicted high impact and infested or unprotectable are identified on the attached map ..... and marked in the field for retention and promotion of resistant species and individuals.
3 NO	The proponent shall identify the applicable points on a map: <ul style="list-style-type: none"> <li>• Clean on entry points (COE): No. ....N/A.....</li> <li>• Clean on entry points with gates ( COE with 'Gate' ): No. ...N/A.....</li> <li>• Wash down locations (W): No. ....N/A.....</li> <li>• Road drainage points (D): No. ....N/A.....</li> <li>• Roads/areas with no soil movement ( ): No. ....N/A.....</li> <li>• Road Closure (X): No. ....N/A.....</li> <li>• Management Point (M): No. ....N/A.....</li> <li>• Turnarounds, 'not effectively quarantined roads' and roads for rehabilitation (map legend )N/A</li> </ul>
4 N/A	The roads marked ..... on the attached map will only be used when vehicles and machines will not pick up and move soil along them.
5 N/A	The proponent is to close roads TYPE .....within the protectable area to specified standard <i>prior</i> to the operation commencing and X..... to TYPE 7 during the operation.
6 N/A	COE signs will be installed <i>prior</i> to operation commencing at: COE point..... 'Clean on entry fellers block signage' COE point..... 'Access all vehicles' COE point..... 'No soil movement'
7 N/A	<i>Phytophthora cinnamomi</i> permanent management gates .....will be installed by DEC. Temporary management gates ..... and all signage to be installed by the proponent <i>prior</i> to operation commencing.
8 N/A	Clean down points will be installed <i>prior</i> to the operation commencing to ensure vehicles can be cleaned before entering the 'protectable' area.
9 N/A	Turnarounds at the clean down points will be installed <i>prior</i> to the operation commencing so vehicles can turn around without entering the 'protectable' area.
10 N/A	Road drainage entering the 'protectable' areas at the points marked D..... on the attached map is to be redirected by the proponent away from the 'protectable' areas by..... (define by operational phase).
11 N/A	Entry into the protectable areas is via the permanent entry points COE..... and/or temporary COE entry points.....
12 N/A	COE points ..... will be closed to the specified standard when operation has ceased for .....weeks

Effective from: 3 April, 2009  
 Last revised: 5 August, 2009  
 Custodian: Senior Environmental Systems Officer, Sustainable Forest Management Division  
 Approved by: Director, Nature Conservation

Plan and Map ID Number: .....

13	N/A	At the completion of ..... activities all temporary COE are closed and rehabilitated to TYPE 3 and turnaround no. .... to TYPE 5 by the proponent.
14	N/A	The proponent is to close roads X..... to TYPE:..... and rehabilitate roads ..... to standard ..... within the protectable area within..... weeks of completion of operation.
15	YES	Only uninfested basic raw materials will be used for all earthworks within the 'protectable' areas and/or in-situ BRM in uninterpretable areas.
16	N/A	The proponent will ensure that vehicles, machines and equipment are clean when entering 'protectable' areas and a written record of inspections and/or clean down is maintained and available to DEC staff. <b>Operation is confined to p/c infested forest – clean down required on leaving the job.</b>
17	N/A	Cross contamination from infested areas into uninfested areas will not occur where work methods involve machines or vehicles working at demarcated management boundaries.
18	N/A	All COE signage, turnarounds, gates, clean down points and drainage and other management points will be effectively maintained during the operation by the proponent.
<b>19. Other hygiene tactics or requirements</b> Specify additional requirements. Include all requirements from the HMP Meeting: e.g. split phase harvesting, specified frequency of COE monitoring, areas excluded from harvest ..... ..... ..... Define requirements at Management Point: M <sub>1</sub> .....M <sub>2</sub> .....M <sub>3</sub> .....		

**Objective:** To ensure activities are inconsequential as vectors for the establishment and spread of Declared, Prohibited and High to Moderately rated environmental weeds.

Tactics for Management of the Area		
Circle and complete action (NO may be used for actions that are non applicable)		
ACTION		ACTIVITIES
1	N/A	The proponent will clean down machinery when leaving areas infested with Declared/Prohibited or High to Moderate rated environmental weeds marked ..... on the map.
2	N/A	Machinery will not enter areas infested with Declared/Prohibited or Moderate to High Environmental weeds marked .....on the map.

**Recommended by proponent: Copy provided: Yes/No/NA**

PETER SWANSON ENVIRONMENTAL OFFICER ..... 29/08/11  
 (PRINT NAME) (POSITION) (SIGNATURE) (DATE)

**Plan approved by DEC:**

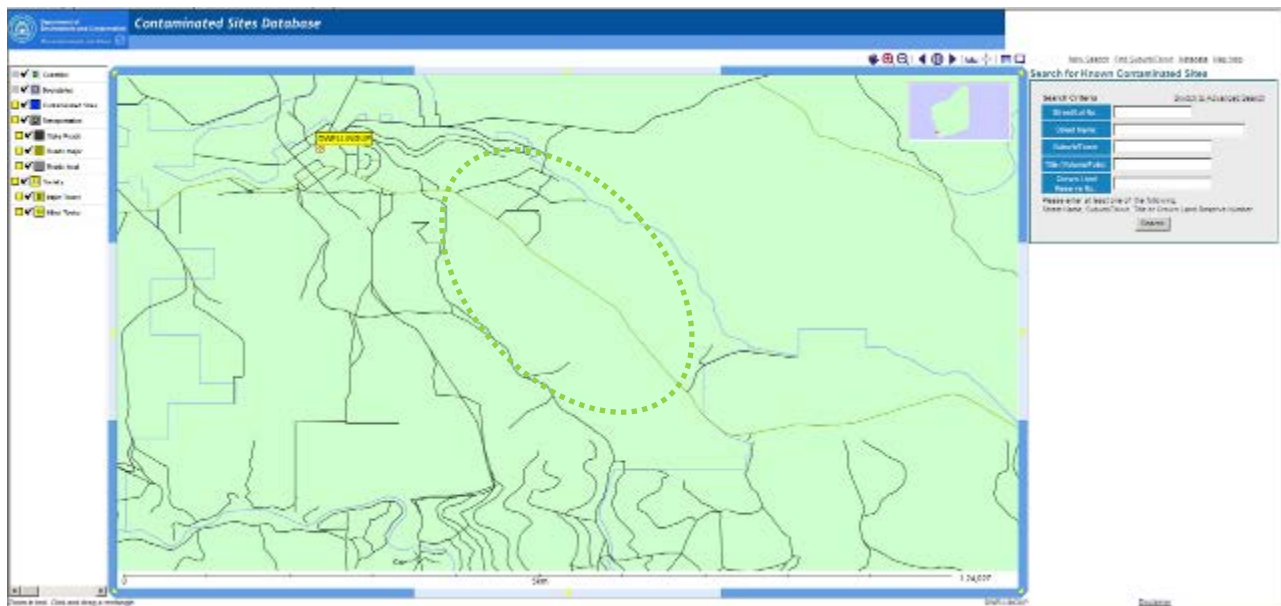
MARK HARRISON SEM CO-ORDINATOR ..... 29/8/11  
 (PRINT NAME) (POSITION) (SIGNATURE) (DATE)

Effective from: 3 April, 2009  
 Last revised: 5 August, 2009  
 Custodian: Senior Environmental Systems Officer, Sustainable Forest Management Division  
 Approved by: Director, Nature Conservation

**Hygiene Management Plan compiled by DEC Dwellingup**

## Appendix K

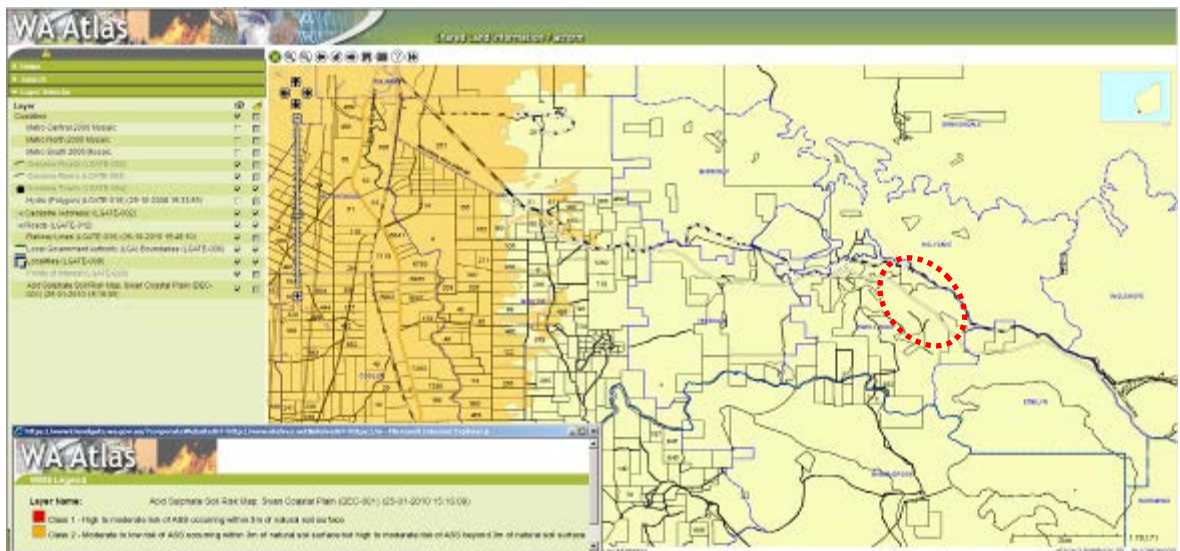
### DEC Contaminated Sites Database Search





## Appendix L

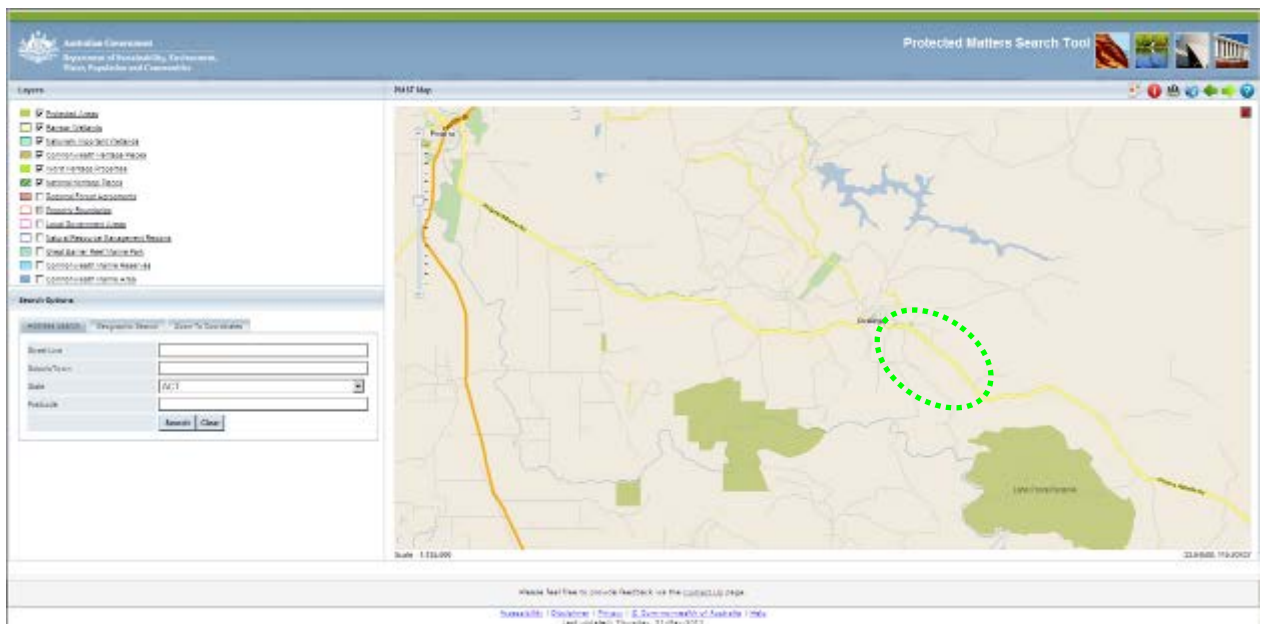
### Acid Sulfate Soils Mapping



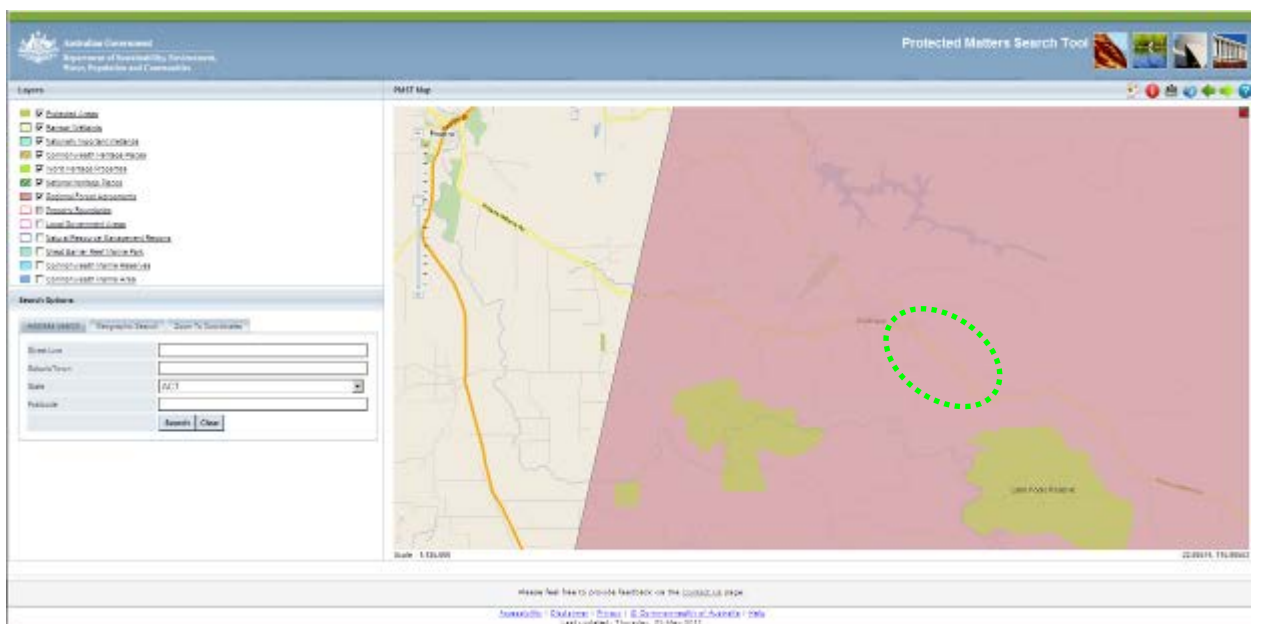
**WA Atlas Acid Sulfate Soils**

## Appendix M

### DSEWPC Database Search



Department of Sustainability, Environment, Water, Population and Communities



Regional Forest Agreement area



## EPBC Act Protected Matters Report: Coordinates

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.

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>

Report created: 07/06/11 15:21:28



### [Summary](#)

### [Details](#)

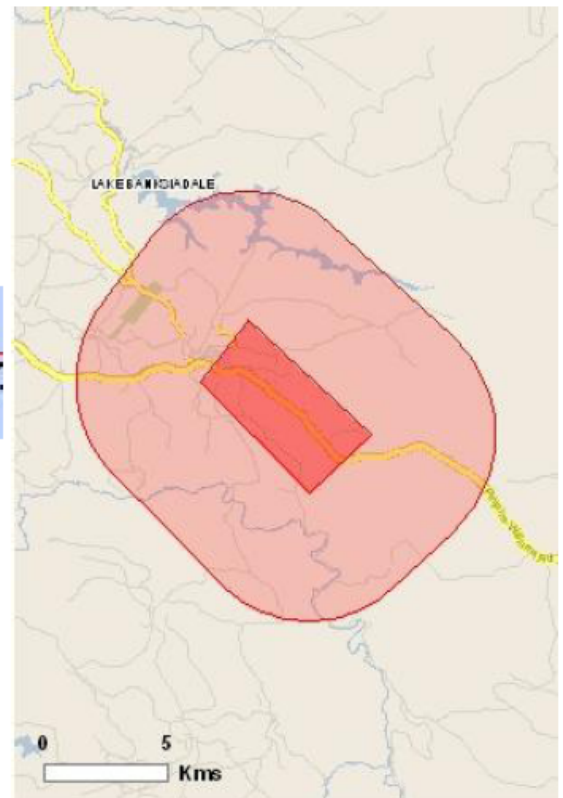
[Matters of NES](#)

[Other matters protected by  
the EPBC Act](#)

[Extra Information](#)

### [Caveat](#)

### [Acknowledgements](#)



This map may contain data which are  
©Commonwealth of Australia (Geoscience  
Australia), ©PSMA 2010

[Coordinates](#)

Buffer: 5.0Km

## 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>.

<a href="#">World Heritage Properties:</a>	None
<a href="#">National Heritage Places:</a>	None
<a href="#">Wetlands of International Significance (Ramsar Wetlands):</a>	1
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Areas:</a>	None
<a href="#">Threatened Ecological Communities:</a>	None
<a href="#">Threatened Species:</a>	9
<a href="#">Migratory Species:</a>	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>.

<a href="#">Commonwealth Lands:</a>	1
<a href="#">Commonwealth Heritage Places:</a>	None
<a href="#">Listed Marine Species:</a>	5
<a href="#">Whales and Other Cetaceans:</a>	None
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves:</a>	None

## Report Summary for Extra Information

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

<a href="#">Place on the RNE:</a>	2
<a href="#">State and Territory Reserves:</a>	1
<a href="#">Regional Forest Agreements:</a>	1
<a href="#">Invasive Species:</a>	9
<a href="#">Nationally Important Wetlands:</a>	None

## Details

### Matters of National Environmental Significance

#### Wetlands of International Significance (RAMSAR Sites) [\[ Resource Information \]](#)

Name	Proximity
<a href="#">Peel-yaigorup system</a>	Upstream from Ramsar site

#### Threatened Species [\[ Resource Information \]](#)

Name	Status	Type of Presence
------	--------	------------------

##### BIRDS

[Atrichornis clamosus](#)  
Noisy Scrub-bird [654]      Vulnerable      Species or species habitat likely to occur within area

[Calyptorhynchus banksii naso](#)  
Forest Red-tailed Black-Cockatoo [67034]      Vulnerable      Species or species habitat may occur within area

[Calyptorhynchus baudinii](#)  
Baudin's Black-Cockatoo, Long-billed Black-Cockatoo [769]      Vulnerable      Roosting known to occur within area

[Calyptorhynchus latirostris](#)  
Carnaby's Black-Cockatoo, Short-billed Black-Cockatoo [59523]      Endangered      Breeding likely to occur within area

##### MAMMALS

[Bettongia penicillata ogilbyi](#)  
Woylie [66844]      Endangered      Species or species habitat may occur within area

[Dasyurus geoffroii](#)  
Chuditch, Western Quoll [330]      Vulnerable      Species or species habitat likely to occur within area

[Phascogale calura](#)  
Red-tailed Phascogale [316]      Endangered      Species or species habitat may occur within area

[Setonix brachyurus](#)  
Quokka [229]      Vulnerable      Species or species habitat may occur within area

##### PLANTS

[Verticordia fimbriolepis subsp. fimbriolepis](#)

Shy Featherflower [24631]      Endangered      Species or species habitat may occur within area

## Migratory Species [\[ Resource Information \]](#)

Name	Status	Type of Presence
<b>Migratory Marine Birds</b>		
<a href="#">Apus pacificus</a>		
Fork-tailed Swift [678]		Species or species habitat may occur within area
<a href="#">Ardea alba</a>		
Great Egret, White Egret [59541]		Species or species habitat may occur within area
<a href="#">Ardea ibis</a>		
Cattle Egret [59542]		Species or species habitat may occur within area
<b>Migratory Terrestrial Species</b>		
<a href="#">Haliaeetus leucogaster</a>		
White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
<a href="#">Merops ornatus</a>		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
<b>Migratory Wetlands Species</b>		
<a href="#">Ardea alba</a>		
Great Egret, White Egret [59541]		Species or species habitat may occur within area
<a href="#">Ardea ibis</a>		
Cattle Egret [59542]		Species or species habitat may occur within area

## Other Matters Protected by the EPBC Act

## Commonwealth Lands [\[ Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land -

## Listed Marine Species [\[ Resource Information \]](#)

Name	Status	Type of Presence
<b>Birds</b>		
<a href="#">Apus pacificus</a>		
Fork-tailed Swift [678]		Species or species habitat may occur within area
<a href="#">Ardea alba</a>		
Great Egret, White Egret [59541]		Species or species habitat may occur within area
<a href="#">Ardea ibis</a>		
Cattle Egret [59542]		Species or species habitat may occur within area
<a href="#">Haliaeetus leucogaster</a>		
White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
<a href="#">Merops ornatus</a>		
Rainbow Bee-eater [670]		Species or species habitat may occur within area

## Extra Information

## Places on the RNE [\[ Resource Information \]](#)

Note that not all Indigenous sites may be listed.

Name	Status
<b>Natural</b>	
<a href="#">Jarrah Forest National Park (proposed) WA</a>	Indicative Place
<b>Historic</b>	
<a href="#">Marrinup No 16 Prisoner of War Camp WA</a>	Indicative Place

**State and Territory Reserves**[\[ Resource Information \]](#)

Lane Poole Reserve, WA

**Regional Forest Agreements**[\[ Resource Information \]](#)

Note that all areas with completed RFAs have been included.

[South West WA RFA, Western Australia](#)**Invasive Species**[\[ Resource Information \]](#)

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

**Name****Status****Type of Presence****Mammals**[Felis catus](#)Cat, House Cat, Domestic Cat  
[19]

Species or species habitat likely to occur within area

[Oryctolagus cuniculus](#)

Rabbit, European Rabbit [128]

Species or species habitat likely to occur within area

[Sus scrofa](#)

Pig [6]

Species or species habitat may occur within area

[Vulpes vulpes](#)

Red Fox, Fox [18]

Species or species habitat may occur within area

**Plants**[Asparagus asparagoides](#)Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus  
[22473]

Species or species habitat likely to occur within area

[Chrysanthemoides monilifera](#)

Bitou Bush, Boneseed [18983]

Species or species habitat may occur within area

[Genista sp. X Genista monspessulana](#)

Broom [67538]

Species or species habitat may occur within area

[Pinus radiata](#)Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine  
[20780]

Species or species habitat may occur within area

[Rubus fruticosus aggregate](#)

Blackberry, European Blackberry [68406]

Species or species habitat likely to occur within area

## Appendix N

### Site Photos

(West to East)



**Photo 1: View east SLK 26.80 (western extent of the project) – Vegetation on the right to be removed 4m from existing maintenance line.**





**Photo 2: View east SLK 27.54 – inside peg is road reserve boundary, outside peg is the ideal lateral clearance.**



**Photo 3: View west SLK 27.54 – distance between pegs is approx 4m**



**Photo 4: View west SLK 27.65 – Existing passing bay indicating width of clearing required.**



**Photo 5: View east SLK 27.65 – Start of existing passing bay and 70m west of the eastern extent of the project.**

## Appendix O

### Environmental Management Plan

#### 11.1 Introduction

This Environmental Management Plan (EMP) has been developed for the project area following the completion of the Preliminary Environmental Impact Assessment (PEIA) report. The aim of this EMP is to minimise the environmental impacts associated with the proposed works as well as to identify areas of responsibilities required for the implementation of management strategies.

This EMP addresses specific issues that were identified during the thanEIA. The project management measures identified within this EMP are in addition to the standard environmental management contract specifications used for Category 2 projects. Main Roads' standard environmental contract specifications (Specifications 203, 204, 301, 302 and 304) are to be adhered to where appropriate.

The areas that require special management will be addressed in terms of:

- the timing of the various management actions;
- the topic (e.g. vegetation);
- the objectives for each area;
- the actions that are necessary to minimise the impact;
- the responsible party for implementing the action; and
- whether the action arose from external advice or is a Main Roads requirement.

#### 11.2 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
Contract Meetings	XXX	Main Roads' Project Manager and Contractor Project Manager	EMP	Minutes of Meeting
Authority Consultation				

<b>Method</b>	<b>Frequency</b>	<b>Participants</b>	<b>Reference</b>	<b>Record</b>
Department of Environment and Conservation and Department of Water	As required	Main Roads' Project Manager and Contractor Project Manager	-	Minutes of meeting

### **11.3 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.

### **11.4 Monitoring**

After project completion and project handover, the Asset manager should develop a monitoring program to monitor for those aspects that have been identified as requiring monitoring.

### **11.5 Contingency Measures**

Due to the scale and nature of the project, no contingency measures are identified as the inherent environmental risks are small.

### **11.6 Auditing**

Due to the scale and nature of the project, there is no requirement for auditing the implementation of the EMP as the environmental risks are small.

ENVIRONMENTAL MANAGEMENT PLAN					
Timing	Topic	Objective	Action	Responsible Party	Advice
Pre-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"> <li>a <b>copy of the EIA &amp; EMP</b> (Minor projects) for small projects;</li> <li>a map showing the location where the clearing occurred, recorded by <b>co-ordinates</b>;</li> <li>the <b>size of the area</b> cleared (in hectares); and</li> <li>the <b>dates</b> on which the clearing was done.</li> </ul>	Project Manager	DEC
	Visual Amenity	Ensure that road blends into environment.	Develop design documentation to meet project requirements as identified in the visual impact assessment.	Project Manager	Main Roads
	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.	Selection of designs/locations that minimise adverse impacts on the biological environment.	Project Manager	Main Roads
			Selection of individual tree specimens that might be retained and protected with barriers or similar alternative treatments.	Project Manager	Main Roads
			The clearing line (or individual specimens) will be clearly marked and checked prior to clearing.	Project Manager / Contractor	Main Roads
			Trees to be removed are to be felled in a manner that they fall within the approved clearing line.	Contractor	Main Roads
			Vehicles and equipment will not be parked or driven over tree roots or undisturbed vegetation.	Contractor	Main Roads
			<b>The Dwellingup State Forest outside of the road reserve (clearing line) will need to be included in inductions as a no-go zone.</b>	Project Manager / Contractor	Main Roads
			Construction works to be undertaken as much as possible in summer to reduce the potential for soil erosion and drainage line siltation due to vegetation removal and heavy rains. However, due to the location of the site on a ridge line, there is reduced likelihood of this occurring.	Project Manager	Main Roads
			Observe <b>Department of Agriculture and Food advice re Narrow Leaf Cotton Bush</b> (Appendix I): <ul style="list-style-type: none"> <li><b>prior to the commencement of earthworks all established plants to be removed (if in fruit) or treated with herbicide.</b></li> <li><b>Post earthworks , a herbicide control program may be required in October ,as the disturbance of roadside soil will trigger the germination of the dormant seed bank.</b></li> </ul> <p>The topsoil along the entire project has been assessed and a topsoil management plan is being developed.</p>	Project Manager / Contractor	Main Roads
Any stockpiled vegetation from clearing works shall not be burnt. This vegetation shall be used during any rehabilitation works and either mulched or respread according to the TDP/Revegetation Plan.	Contractor	Main Roads			

ENVIRONMENTAL MANAGEMENT PLAN					
Timing	Topic	Objective	Action	Responsible Party	Advice
	Dieback Management	Avoid spreading dieback to other areas	<b>Develop a Hygiene Management Plan in association with DEC.</b> (see Appendix J) .	Project Manager	
			<b>Clean machinery and plant before entering and leaving site.</b>	Contractor	Main Roads
	Surface Drainage	Maintain the hydrological regime that exists prior to the construction of the proposal.	Stormwater drainage shall be treated and disposed of in an appropriate manner.	Project Manager	DoW
	Public Relations		Inform Main Roads, local shire and local land-holders of the nature and timing of works and provide contact details for complaints.	Contractor	Main Roads
	Aboriginal Heritage	Preserve known sites	Ensure all personnel are inducted to observe the requirements to cease work if any objects of Aboriginal heritage significance are uncovered and contact the police if skeletal materials are identified.	Project Manager / Contractor	Main Roads / DIA
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
			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
			Watering, the use of hydromulch or other forms of mulching to protect loose surfaces shall be used as mitigation measures.	Contractor	Main Roads
Construction	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
			Temporary storage of bitumen, asphalt, concrete or aggregate should only occur at designated depots or controlled hardstands. Precoating of aggregate will only occur in approved areas.	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
			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	No fires shall be lit within the project area.	Contractor	Main Roads
		Machinery will be fitted with approved spark arresting mufflers.	Contractor	Main Roads	

<b>ENVIRONMENTAL MANAGEMENT PLAN</b>					
<b>Timing</b>	<b>Topic</b>	<b>Objective</b>	<b>Action</b>	<b>Responsible Party</b>	<b>Advice</b>
		construction of the proposal is minimised.	A water tanker/fire fighting equipment will be on site at all times.	Contractor	Main Roads
	Fauna	Avoid unnecessary impacts to fauna and damage to fauna habitat.	Fauna are not to be fed or intentionally harmed.	Contractor	Main Roads
			No pets or firearms permitted on site.	Contractor	Main Roads
			The WILDCARE Helpline is to be contacted, 9474 9055, in the event of sick, injured or orphaned native wildlife on the site.	Contractor	Main Roads
	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
			All waste materials from the development are to be completely removed from the site upon completion of the project. Final clean-up shall be to the satisfaction of the Project Manager and the Site Superintendent.	Contractor	Main Roads