



**PRELIMINARY ENVIRONMENTAL IMPACT ASSESSMENT AND
ENVIRONMENTAL MANAGEMENT PLAN**

Goldfields Highway SLK 737 to 748

May 2011

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SUMMARY

Along the Goldfields Highway there are large sections of road reserve that are currently not fenced. The lack of fencing allows stray stock to graze on the road verges and cross the road, which is a major road safety risk.

The proposed fencing project is located between SLK 737 and 748 on the Goldfields Highway (Killara Station), in the Shire of Meekatharra.

A flora survey was conducted along the proposed fencing area and did not identify any species of concern (i.e. threatened flora). An aboriginal heritage survey (ethnographic and archaeological) was conducted. Both reports stated that the fencing works would be able to avoid the aboriginal heritage sites discovered in the surveys.

PRELIMINARY ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN GOLDFIELDS HIGHWAY FENCING PROJECT SLK 737 TO 748

1. BACKGROUND

The proposed works involve the construction of a fence along the Goldfields Highway from SLK 737 to 748.

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 requires clearing outside of the maintenance zone. Therefore the preparation of a project specific Preliminary Environmental Impact Assessment (PEIA) and Environmental Management Plan (EMP) are required.

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

2. DESCRIPTION OF THE PROJECT

The proposed project is required to keep stock from Killara Station from grazing on the road reserve and potential crossing the road and hitting a vehicle. The project will require the clearing of vegetation 5.5 hectares to allow for the construction of the fence.

2.1 Project Location

The location and boundaries of the study area for the project are shown in Figures 1 to 3 and include the following features:

Goldfields Highway Proposed Fencing SLK 737 – 748



Figure 1 – Project Location Area



Goldfields Highway Proposed Fencing SLK 737 – 748

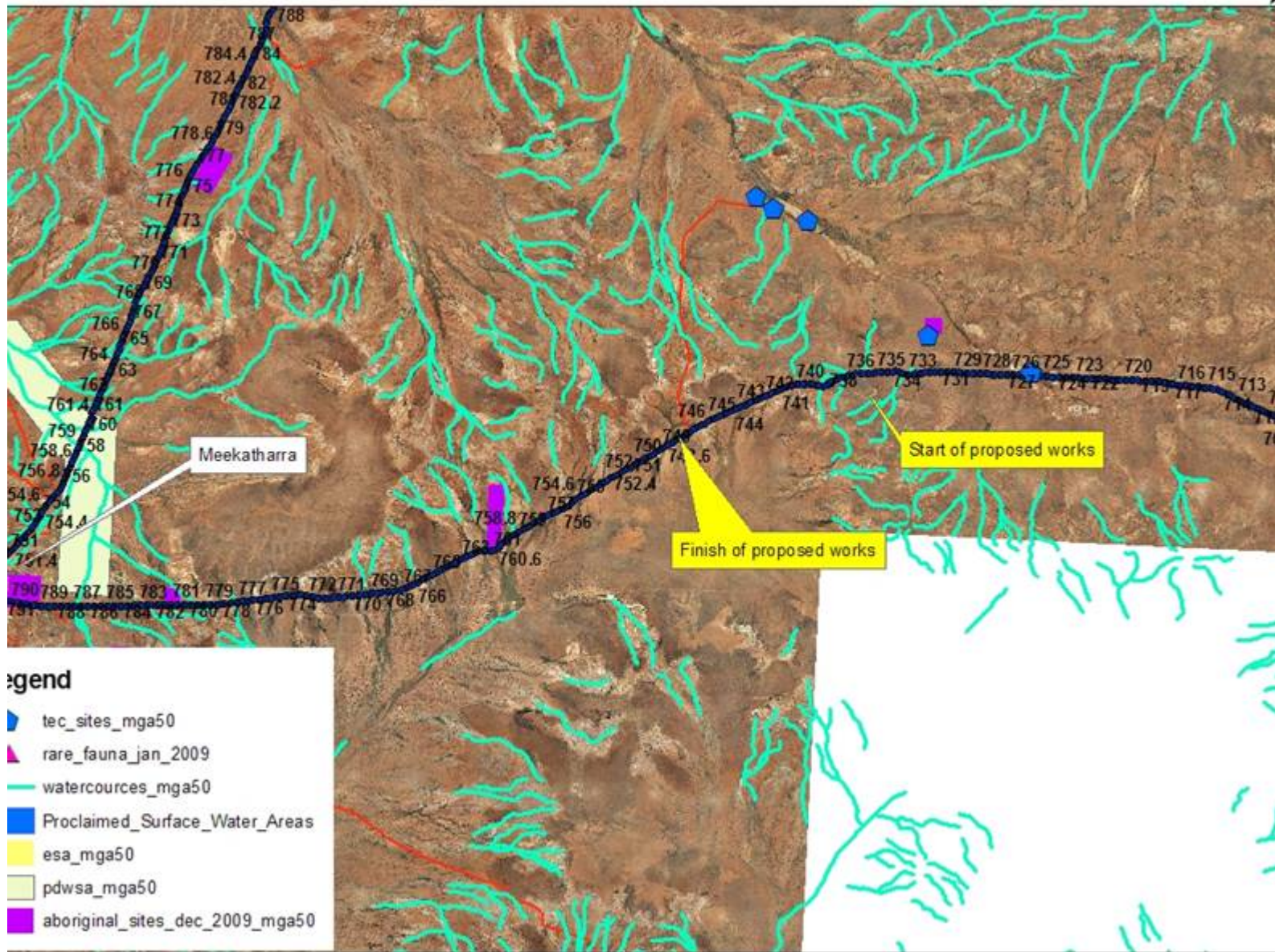


Figure 3 – Project Location

3. METHODOLOGY

3.1 Preliminary Desktop Study

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

3.1.1 Threatened Flora, Fauna & Communities, Conservation Reserves and ESAs

Current GIS shapefiles 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 Appendix B.

3.1.2 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 Meektharra local heritage list (previously known as the Municipal Heritage Inventory), refer to Appendix C.

3.1.3 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 D.

3.1.4 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 E.

3.1.5 Wetlands

The locations of any wetlands within the project area was determined using the Commonwealth Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) mapping tool, the Department of Environment and Conservation (DEC) "Native Vegetation Map Viewer" mapping tool, viewing current GIS shapefiles.

3.1.6 Weeds

A flora survey was conducted on the proposed fencing alignment and identified weed species.

3.1.7 Dieback

As the project receives <400 mm of rain dieback is considered not to be an issue.

3.1.8 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.

3.1.9 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 K.

3.1.10 Air Quality

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

3.2 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 G for the results of this search and Section 7 for a discussion on the findings.

3.3 State Referral

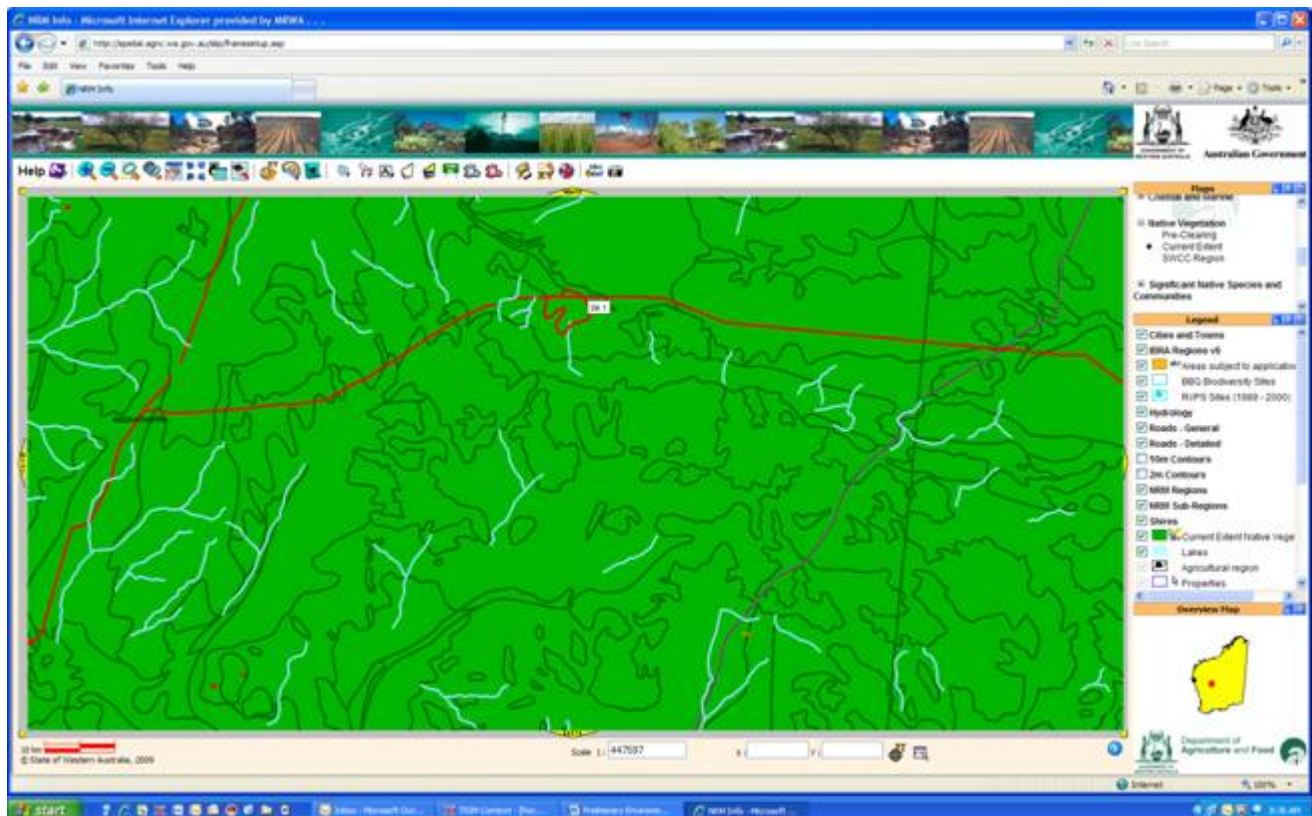
The decision whether to refer the project to the State's EPA was based on whether the project would impact on environmental factors significantly enough to require referral under section 38 of the *Environmental Protection Act 1986*.

4. EXISTING ENVIRONMENT

4.1 Description

The existing vegetation at the proposed works site contains the following vegetation associations:

- Vegetation Association 18 - Low woodland; mulga (*Acacia aneura*) (99.99% remaining);
- Vegetation Association 107 - Hummock grasslands, shrub steppe; mulga and *Eucalyptus kingmillii* over hard *Spinifex* (100% remaining).



Source: <http://spatial.agric.wa.gov.au/slip/framesetup.asp> (21/04/11)

Figure 3: Native Vegetation Current extent at proposed fencing site.

4.2 Site Investigation

A site visit was carried out by GHD (8-11 November 2011) 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 impacts on creek lines, property access and if further studies are required for noise and vibration impacts (dilapidation). The GHD report is located at D11#106730.

5. CLEARING OF NATIVE VEGETATION

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

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

The clearing of native vegetation will be undertaken for this project will be using CPS818/5.

5.1 Details of Vegetation Associations to be Cleared

In order to assess the significance of the vegetation proposed to be cleared for Goldfields Highway Fencing SLK 737 to 748 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 and at road building material extraction sites 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, RBM -road building materials)	Condition (Keighery 1994)*	Pre-European Extent Remaining (%) **	Area (ha)
3	<ul style="list-style-type: none"> Vegetation Association 18 - Low woodland; mulga (<i>Acacia aneura</i>) (99.99% remaining); Vegetation Association 107 - Hummock grasslands, shrub steppe; mulga and <i>Eucalyptus kingsmillii</i> over hard Spinifex (100% remaining). 	737-748	B	Very Good to Completely Degraded	100	5.5
Total Area (ha)						5.5

Table 2: Vegetation Percent Remaining

Pre-European Extent Remaining: Vegetation Association No. 18 – Low woodland; mulga (<i>Acacia aneura</i>)		
Regional Context	Location	Pre-European Extent Remaining (%)
State-wide	N/A	99.99%
Bioregional (IBRA Region)	Carnarvon (CAR)	100%
Bioregional (IBRA Sub-Region)		100%
LGA	Shire of Meekatharra	100%

Pre-European Extent Remaining: Vegetation Association No. 107 - Hummock grasslands, shrub steppe; mulga and Eucalyptus kingsmillii over hard spinifex		
Regional Context	Location	Pre-European Extent Remaining (%)
State-wide	N/A	100%
Bioregional (IBRA Region)	Murchison (MUR)	100%
Bioregional (IBRA Sub-Region)	Eastern Murchison (MUR1)	100%
LGA	Shire of Meekatharra	100%

5.2 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).

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

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.	
ASSESSMENT	No priority flora located within project area and a total of 98 flora taxa were recorded.
METHODOLOGY & REFERENCES	GHD Biological Survey May 2011
Proposal is not likely at variance to this Principle.	

(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.	
ASSESSMENT	No habitat deemed to be significant occurs in the project area.
METHODOLOGY & REFERENCES	GHD Biological Survey May 2011
Proposal is not likely at variance to this Principle.	

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.	
ASSESSMENT	No rare flora located within project area.
METHODOLOGY & REFERENCES	GHD Biological Survey May 2011
Proposal is not likely at variance to this Principle.	

(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.	
ASSESSMENT	No threatened ecological community located in the project area.
METHODOLOGY & REFERENCES	GHD Biological Survey May 2011
Proposal is not likely at variance to this Principle.	

(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.	
ASSESSMENT	Vegetation associations located within the project area but have current extents of 100%
METHODOLOGY & REFERENCES	GHD Biological Survey May 2011
Proposal is not likely variance to this Principle.	

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.	
ASSESSMENT	No watercourses associated within proposed project area.
METHODOLOGY & REFERENCES	GHD Biological Survey May 2011
Proposal is not likely at variance to this Principle.	

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	
ASSESSMENT	Site visit from GHD
METHODOLOGY & REFERENCES	GHD Biological Survey May 2011
Proposal is not likely at variance to this Principle.	

(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.	
ASSESSMENT	The project area is not adjacent to, or in the vicinity of a conservation reserve or protected area.
METHODOLOGY & REFERENCES	GHD Biological Survey May 2011
Proposal is not likely at variance to this Principle.	

(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.	
ASSESSMENT	The project areas will not impact on any surface or underground water source areas.
METHODOLOGY & REFERENCES	GHD Biological Survey May 2011
Proposal is not likely at variance to this Principle.	

(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.	
ASSESSMENT	Site visit by GHD
METHODOLOGY & REFERENCES	GHD Biological Survey May 2011
Proposal is not likely at variance to this Principle.	

5.3 Summary of Management Actions

Main Roads attempts to avoid clearing vegetation if possible, where clearing cannot be avoided then this clearing is kept to a minimum. The following actions are proposed to manage and minimise vegetation clearing for the Goldfields Highway Fencing SLK 737 to 748;

- Select design/locations that minimise adverse impacts on the biological environment,
- Materials storage areas will be located on previously disturbed/ designated area, and
- 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.

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?	N	No further action required.
2. Does the assessment indicate that the clearing is at variance with one or more of the principles for clearing?		No further action required.
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 further action required.
4. Will the project involve clearing for purposes considered temporary in nature under Condition 13 of CPS818?	N	No further action required.

6. ASSESSMENT OF ASPECTS AND IMPACTS

Table 4: Aspects and Impacts – Goldfields Highway Fencing Project SLK 737 - 748

Aspect	Evaluation of Potential Impacts
Vegetation – clearing	<p>5 hectares of native vegetation is proposed to be cleared, the vegetation is described as</p> <ul style="list-style-type: none"> Vegetation Association 18 - Low woodland; mulga (<i>Acacia aneura</i>) (99.99% remaining); Vegetation Association 107 - Hummock grasslands, shrub steppe; mulga and <i>Eucalyptus kingsmillii</i> over hard Spinifex (100% remaining). <p>these Vegetation Associations has 100% remaining.</p> <p>The native vegetation proposed to be cleared is well represented regionally as it possesses more than 30% of its pre-European extent.</p> <p>According to Keighery, (1994) the condition of the native vegetation to be cleared is described as Very good to completely degraded.</p> <p>Of the 5ha of native vegetation proposed to be cleared 0 is temporary clearing.</p> <p>As the project will involve temporary clearing revegetation will be required.</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.</p> <p>Consultation with DEC confirms that the proposal is not going to have a significant impact upon any DRF or TECs.</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>
Vegetation – dieback	<p>Not an issue given the project area receives less than 400 mm of average annual rainfall or is located above the 26° parallel.</p>
Fauna	<p>No significant fauna issues associated with any of the proposed works. No significant impacts would be expected on native fauna generally as a result of the proposed works.</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>A search of the Australian Heritage Places Inventory, Heritage Council of Western Australia and the Shire of Meekatharra Municipal Heritage Inventory on-line databases has indicated that there are no known site(s) 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 site(s) of Aboriginal heritage significance within the vicinity of the project area.</p> <p>However a Aboriginal Heritage Survey was conducted and identified several aboriginal heritage sites. These sites will be avoided during the fencing construction works.</p>

Table 4: Aspects and Impacts – Goldfields Highway Fencing Project SLK 737 - 748

Aspect	Evaluation of Potential Impacts
Wetlands	There are no wetlands within the vicinity of the project area. No Matters of National Environmental Significance as protected under EPBC Act (1999) will be impacted (see Table 5).
Surface water/drainage	A search of the DoW's database confirmed that the proposed works will not disturb or interrupt any natural drainage and surface run-off patterns.
Groundwater	No dewatering nor drainage modifications are required, hence no change to groundwater level or quality.
Reserves / Conservation areas	There are no conservation areas or reserves adjacent to the project area
Air quality	Not relevant to the proposed works. Local air quality assessment is not required for the project since: <ul style="list-style-type: none"> • the predicted traffic flow is less than 10,000 vehicles per day (in urban areas) or 15,000 vehicles per day in rural areas; and • residential and other sensitive receptors are not within 200 meters of the road centre.
Dust	Likely to be a minor issue during earthworks. No major sensitive receivers adjacent to the proposed works, but excessive dust could impact vegetation. This is likely to be easily managed by standard construction dust management techniques.
Noise and vibration	No major sensitive local receivers. Construction works is not expected to significantly contribute to noise levels at the nearest sensitive receivers, provided works are limited to normal working hours. The requirements of the Shire of Meekatharra must be met in respect of noise management and construction 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 and pedestrian 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.
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 the area is classified as not mapped and as there is no dewatering or excavation below the water table planned no further investigations are required.
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 – Goldfields Highway Fencing

Aspect	Evaluation of Potential Impacts
World Heritage properties	The project will not impact any World Heritage properties i.e. <u>Shark Bay</u>
National Heritage places	A search of the Australian Heritage Places Inventory Database located no site(s) 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 no Ramsar Wetland(s) within the vicinity of the project.
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, no threatened species and no listed marine species within the vicinity of the project.
Migratory species protected under international agreements	A search of the Department of Sustainability, Environment, Water, Population and Communities Protected Matters Search Tool located no migratory species within the vicinity of the project.
Commonwealth marine areas	The project will not impact any Commonwealth marine area or marine protected area i.e. <u>Ningaloo Marine Park</u>
Commonwealth lands	The project is not located on and will not impact any Commonwealth lands.
Nuclear Actions	Not relevant to the proposed works.

7. DECISION TO REFER

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

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

7.2 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.

8. STAKEHOLDER CONSULTATION

Table 6: Project Consultation

Name	Agency	Date	Comments

9. OTHER APPROVALS/PERMITS/LICENCES

No further approvals, permits or licences are required for the Goldfields Highway Fencing SLK 737 - 748

10. 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.

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

Appendix A

Low Impact Environmental Screening Checklist

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 Goldfields Highway Fencing SLK 737-748

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 clearing of native vegetation outside the maintenance zone.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Works require clearing of native vegetation that is older than 10 years old within the maintenance zone.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Works to occur outside normal working hours.	<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	Dewatering, or a new water bore required.	<input type="checkbox"/>	<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 type="checkbox"/>	<input checked="" type="checkbox"/>
9	Buildings will require demolition.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

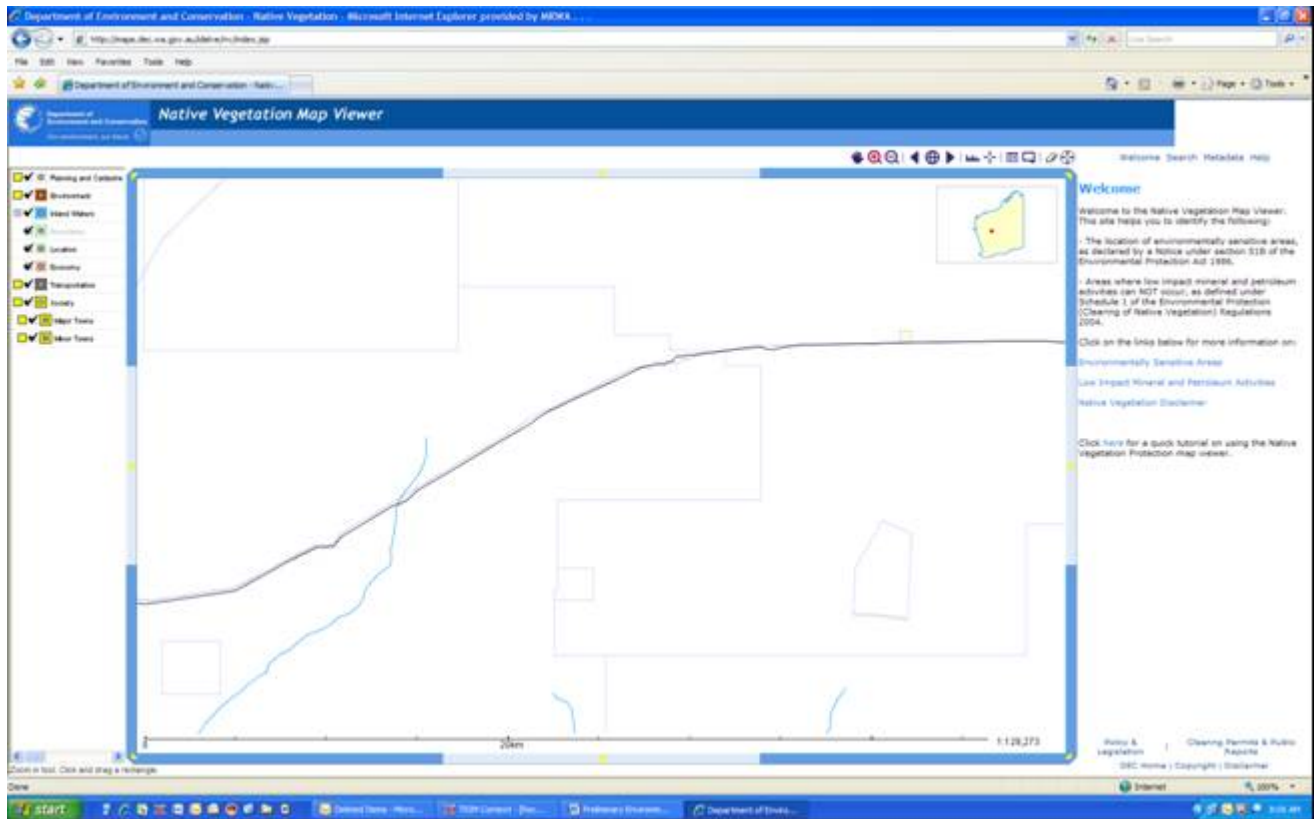
Completed By: Signature PL Swann Date 20/4/2011
Name _____ Title _____

To be reviewed by a Main Roads Environment Officer: Signature Anna Sutherland Date 20/4/2011
Name Anna Sutherland Title Environment officer.

Comments: Clearing for fencing expected to commence early May 2011
with fence installed around May/June 2011
PL Swann

Appendix B

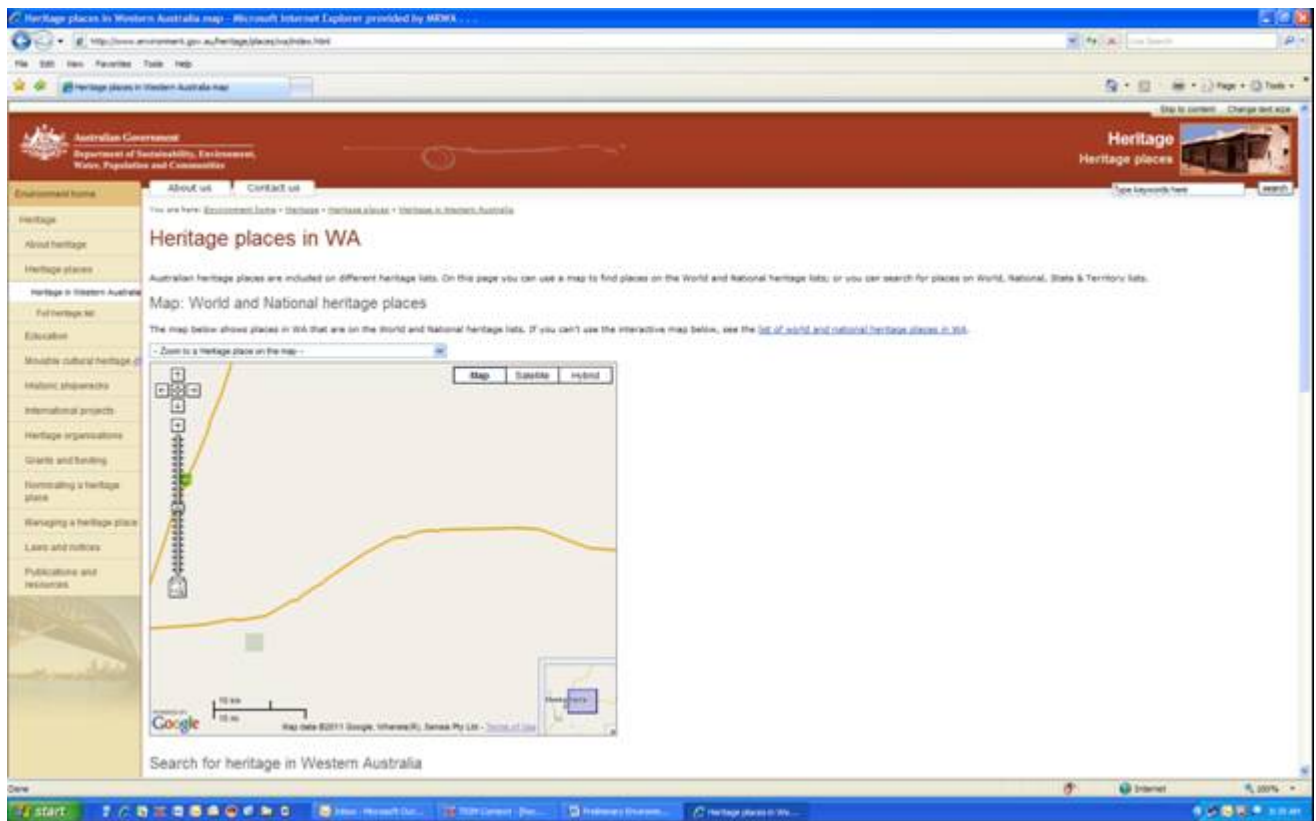
DEC Threatened Flora and Fauna Database Searches



Source: <http://maps.dec.wa.gov.au/idelve/nv/index.jsp> (21/4/11)


Appendix C

Australian Heritage Places Inventory, Heritage Council of Western Australia and the Municipal Heritage Inventory Database Searches



Source: <http://www.environment.gov.au/heritage/places/wa/index.html> (21/4/11)

<input type="checkbox"/> Bundi Club (1531)	Darlot St, Meekatharra	 [REG]
<input type="checkbox"/> Chunderloo Mine (16679)	Robinson ranges	
<input type="checkbox"/> Commercial Hotel (1534)	Main St, Meekatharra	
<input type="checkbox"/> Darrigans House (3974)	Lot 388 Main Street, Meekatharra	
<input type="checkbox"/> Gabanintha (16680)	Meekatharra - Sandstone Road, Gabanintha	
<input type="checkbox"/> General Store (1535)	Main St, Meekatharra	
<input type="checkbox"/> Haine St Pierre Steam Locomotive 0-4-0T (16620)	Main St, Meekatharra	
<input type="checkbox"/> Haveluck Mine (16684)	Meekatharra	
<input type="checkbox"/> Horseshoe Lights Mine (16703)	Peak Hill	
<input type="checkbox"/> House 113 Darlot Street (18934)	113 Darlot St, Meekatharra	
<input type="checkbox"/> House 132 Darlot Street (18936)	132 Darlot Street, Meekatharra	
<input type="checkbox"/> House 44 Queen Rd (18937)	44 Queen Road, Meekatharra	
<input type="checkbox"/> House Lot 489 McCleary street (18935)	McCleary Street, Meekatharra	
<input type="checkbox"/> House, 126 Hill Street (18932)	126 Hill Street, Meekatharra	
<input type="checkbox"/> House, 133 Hill Street (18933)	133 Hill Street, Meekatharra	
<input type="checkbox"/> Ilgarari Main Mine (8883)	Peak Hill	
<input type="checkbox"/> Ilgarari Northeast Mine (16702)	Peak Hill	
<input type="checkbox"/> Ingliston Consols (16687)	Meekatharra	
<input type="checkbox"/> Jack Hills (4480)	Nookawarra Station, Beringarra	
<input type="checkbox"/> Keep it Dark Mine (16704)	Peak Hill Goldfield	
<input type="checkbox"/> Main Street Streetscape (1533)	Main St, Meekatharra	
<input type="checkbox"/> Masonic Lodge (fmr), Meekatharra (1530)	Cnr Darlot & Savage Sts, Meekatharra	 [REG]  [ASSE]
<input type="checkbox"/> Meekatharra Fire Station (14599)	Hill St, Meekatharra	
<input type="checkbox"/> Meekatharra Fire Station (fmr # 1) (14598)	Cnr High & Hill Sts, Meekatharra	
<input type="checkbox"/> Meekatharra Fire Station (fmr No 2) (1532)	Cnr High & Hill Sts, Meekatharra	
<input type="checkbox"/> Meekatharra Police Station & Courthouse (17380)	Cnr Main & Savage Streets, Meekatharra	
<input type="checkbox"/> Meekatharra Post Office (4619)	Main St, cnr High St, Meekatharra	
<input type="checkbox"/> Meekatharra War Memorial Swimming Pool (13193)	Main St, Meekatharra	
<input type="checkbox"/> Miner's Dwelling (1537)	Meekatharra	
<input type="checkbox"/> Mountain View Gabanintha Mine (8727)	Gabanintha	
<input type="checkbox"/> Old Mount Gould Police Station Group (1539)	Berongarra-Mt Gould Rd, Mount Gould	
<input type="checkbox"/> Paddys Flat Group Mine (16688)	Meekatharra	
<input type="checkbox"/> Palace Hotel (1540)	Enright St, Peak Hill	

 Pioneer Mine (3360)	Yule River
 Presbyterian Church, Meekatharra (1529)	Darlot St, Meekatharra
 Royal Mail Hotel (1536)	Main St, Meekatharra
 State Battery (1538)	Wiluna Rd, Meekatharra



[REG]

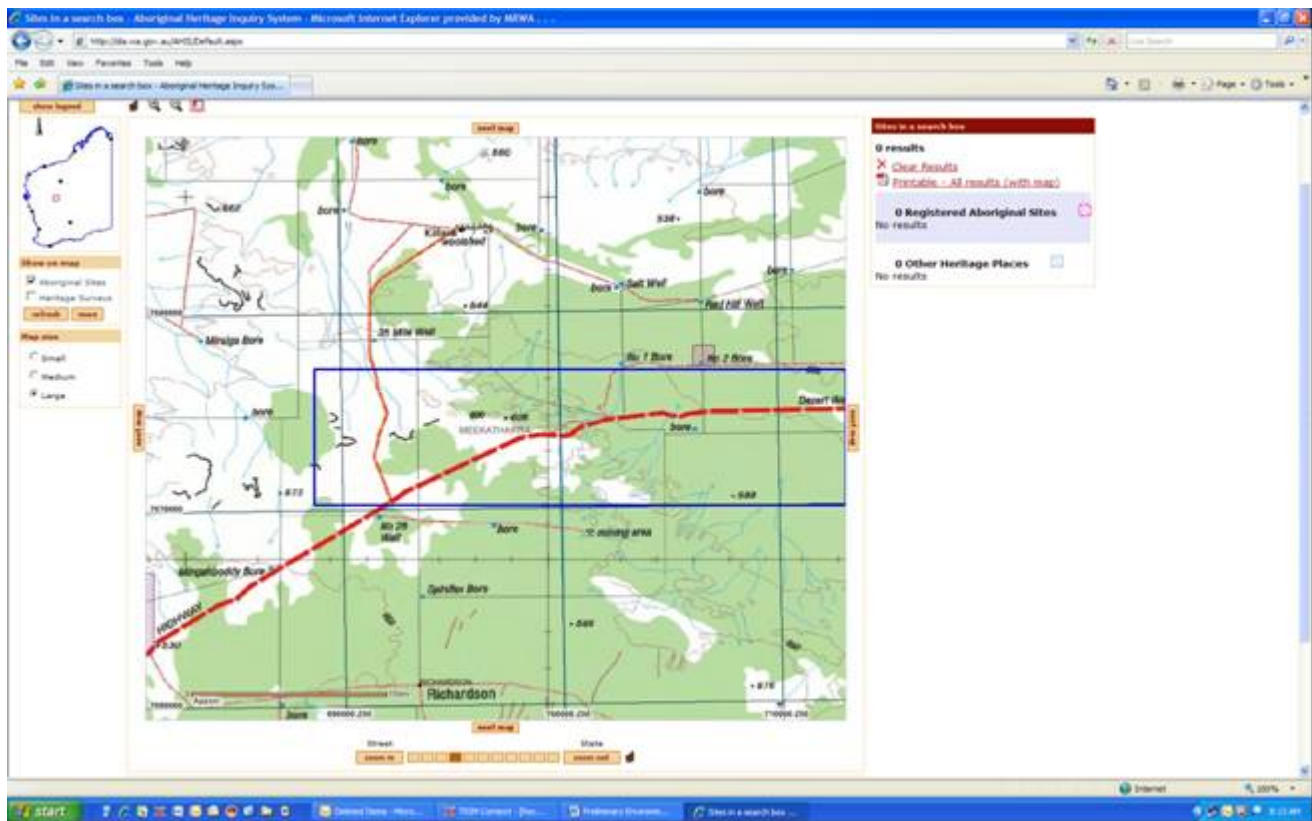


[ASSE]

Source: http://register.heritage.wa.gov.au/search_results.html (21/4/11)

Appendix D

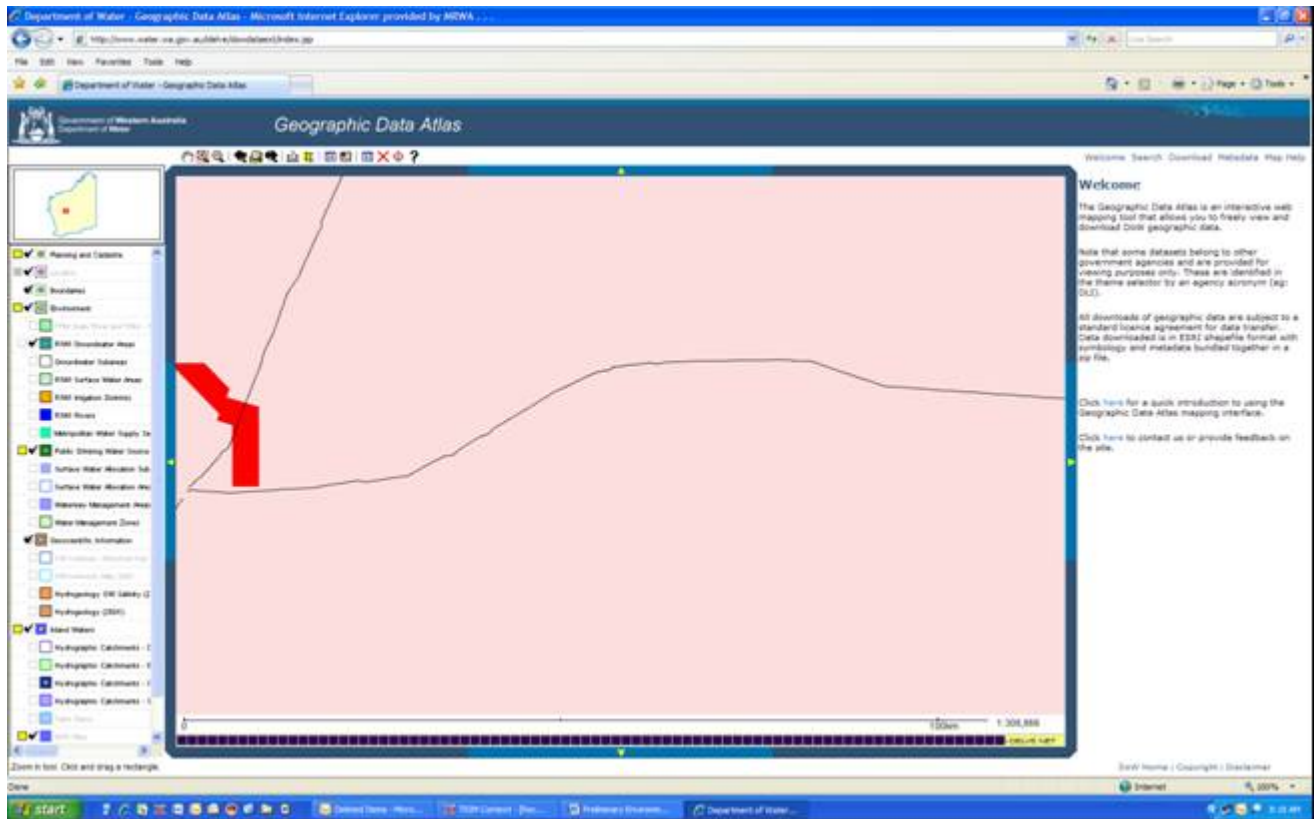
Department of Indigenous Affairs Database Search



Source: (<http://dia.wa.gov.au/AHIS/Default.aspx>) 21/4/11

Appendix E

DoW Geographic Data Atlas Database Search



Source: <http://www.water.wa.gov.au/idelve/dowdataext/index.jsp> (21/4/11)

Appendix F

DEC Native Vegetation Map Viewer Database Search

Appendix G

DSEWPC Database Search



EPBC Act Protected Matters Report: Coordinates

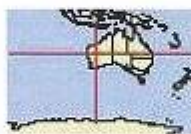
This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

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.

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

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: 21/04/11 10:47:57



Summary

Details

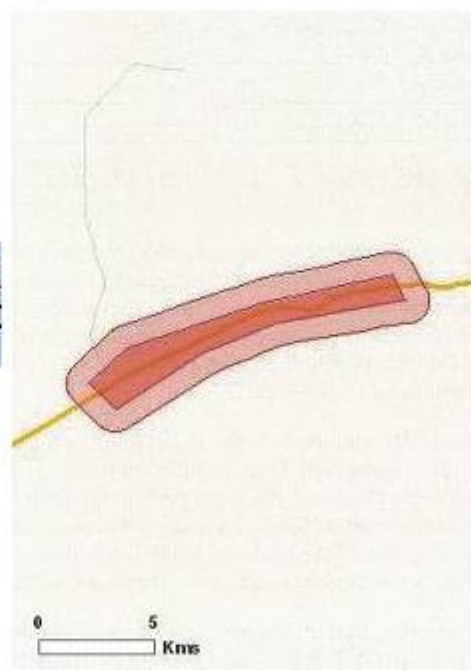
[Matters of NES](#)

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

[Extra Information](#)

Caveat

Acknowledgements



This map may contain data which are
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Australia), ©PSMA 2010

[Coordinates](#)

Buffer: 1Km

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>.

<u>World Heritage Properties:</u>	None
<u>National Heritage Places:</u>	None
<u>Wetlands of International Significance (Ramsar Wetlands):</u>	None
<u>Great Barrier Reef Marine Park:</u>	None
<u>Commonwealth Marine Areas:</u>	None
<u>Threatened Ecological Communities:</u>	None
<u>Threatened Species:</u>	2
<u>Migratory Species:</u>	5

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>.

<u>Commonwealth Lands:</u>	None
<u>Commonwealth Heritage Places:</u>	None
<u>Listed Marine Species:</u>	4

Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves:	None

Report Summary for Extra Information

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

Place on the RNE:	None
State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	6
Nationally Important Wetlands:	None

Details

Matters of National Environmental Significance

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

Name	Status	Type of Presence
BIRDS		
Acanthiza iredalei iredalei Slender-billed Thornbill (western) [25967]	Vulnerable	Species or species habitat likely to occur within area

MAMMALS

Rhinonicteris aurantia (Pilbara form) Pilbara Leaf-nosed Bat [82790]	Vulnerable	Species or species habitat likely to occur within area
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Migratory Species [\[Resource Information \]](#)

Name	Status	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat may occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat may occur within area
Migratory Terrestrial Species		
Merops ornatus Rainbow Bee-cater [670]		Species or species habitat may occur within area
Migratory Wetlands Species		
Ardea alba Great Egret, White Egret [59541]		Species or species habitat may occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [Resource Information]

Name	Status	Type of Presence
Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat may occur within area
Ardea alba		
Great Egret, White Egret [59541]		Species or species habitat may occur within area
Charadrius veredus		
Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area

Extra Information

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		
Capra hircus		
Goat [2]		Species or species habitat likely to occur within area
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
Vulpes vulpes		
Red Fox, Fox [18]		Species or species habitat likely to occur within area

Plants

Carrichtera annua		
Ward's Weed [9511]		Species or species habitat may occur within area
Cenchrus ciliaris		
Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World Heritage and Register of National Estate properties, Wetlands of International Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites;
- seals which have only been mapped for breeding sites near the Australian continent.

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

119.04463
-26.43876,119.04463
-26.43846,119.04492
-26.43906,119.04463
-26.43876,118.99347
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-26.42895,119.04463 -26.43876

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [Department of Environment, Climate Change and Water, New South Wales](#)
- [Department of Sustainability and Environment, Victoria](#)
- [Department of Primary Industries, Parks, Water and Environment, Tasmania](#)

- [Department of Environment and Natural Resources, South Australia](#)
- [Parks and Wildlife Service NT, NT Dept of Natural Resources, Environment and the Arts](#)
- [Environmental and Resource Management, Queensland](#)
- [Department of Environment and Conservation, Western Australia](#)
- [Department of the Environment, Climate Change, Energy and Water](#)
- [Birds Australia](#)
- [Australian Bird and Bat Banding Scheme](#)
- [Australian National Wildlife Collection](#)
- [Natural history museums of Australia](#)
- [Museum Victoria](#)
- [Australian Museum](#)
- [SA Museum](#)
- [Queensland Museum](#)
- [Online Zoological Collections of Australian Museums](#)
- [Queensland Herbarium](#)
- [National Herbarium of NSW](#)
- [Royal Botanic Gardens and National Herbarium of Victoria](#)
- [Tasmanian Herbarium](#)
- [State Herbarium of South Australia](#)
- [Northern Territory Herbarium](#)
- [Western Australian Herbarium](#)
- [Australian National Herbarium, Atherton and Canberra](#)
- [University of New England](#)
- [Ocean Biogeographic Information System](#)
- [Australian Government, Department of Defence](#)
- [State Forests of NSW](#)
- [Other groups and individuals](#)

Environment Australia is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

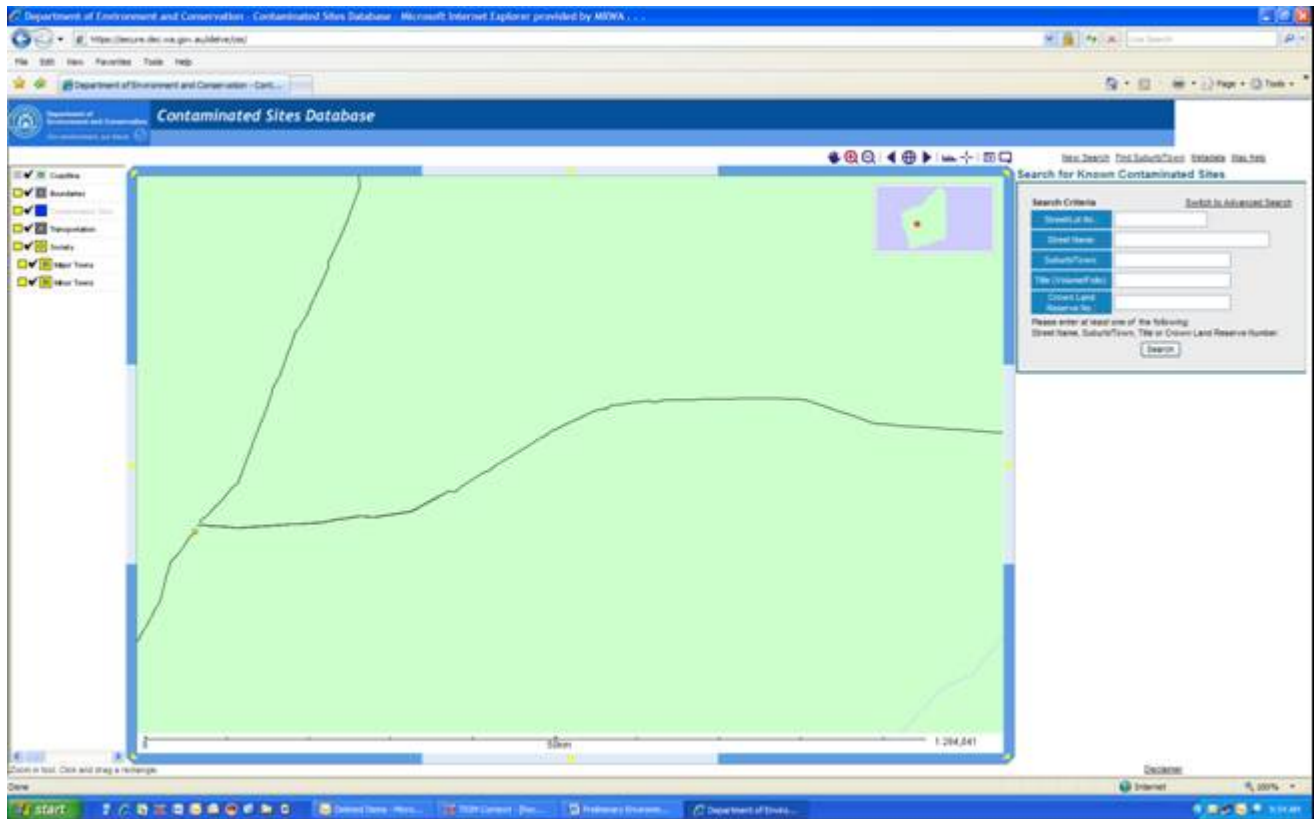
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 +61 2 6274 1111 [ABN](#)

| [Australian Government](#) |

Appendix H

DEC Contaminated Sites Database Search



Source: <https://secure.dec.wa.gov.au/idelve/css/> (21/4/11)

Appendix I

GHD Threatened Flora Survey

Appendix J

Environmental Management Plan

ENVIRONMENTAL MANAGEMENT PLAN

GOLDFIELDS HIGHWAY FENCING SLK 737-748

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 PEIA. 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.

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
Authority Consultation				
Department of Environment and Conservation	As required	Main Roads' Project Manager and Contractor Project Manager	-	Minutes of meeting

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.

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.

Contingency Measures

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

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
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, recorded in an ESRI Shapefile; the size of the area cleared (in hectares); and the dates on which the clearing was done. 	Project Manager	DEC
Pre - Construction	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
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, particularly where associated with riparian zones.	Selection of designs/locations that minimise adverse impacts on the biological environment.	Project Manager	Main Roads
			Construction works to be undertaken in summer to reduce the potential for soil erosion and drainage line siltation due to vegetation removal and heavy rains.	Project Manager	Main Roads
			Control/spray weeds species within the project area prior to construction to limit the amount of propagative material that may be spread during disturbance.	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
Pre-Construction	Surface Drainage	Maintain the hydrological regime that exists prior to the construction of the proposal.	Stormwater drainage shall be treated and disposed of in accordance with DEC requirements.	Project Manager	DEC
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
			Pedestrian public access should be 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

ENVIRONMENTAL MANAGEMENT PLAN					
Timing	Topic	Objective	Action	Responsible Party	Advice
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
Construction	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/fire fighter unit will be on site at all times.	Contractor	Main Roads
Construction	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
Construction	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
Construction	Rehabilitation	Rehabilitate the project area to meet project commitments.	Implement the contract specifications for rehabilitation of the site.	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