



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

**Great Northern Highway (H006), Fitzroy Crossing
Fitzroy Bridge (B1311)
Emergency reinstatement works to abutment 2 left-hand side
guidebank**

July 2011

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Revision	Prepared by	Date	Reviewed by	Date
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SUMMARY

The project involves undertaking emergency reinstatement works to abutment 2 left-hand side guidebank of the Fitzroy River Bridge (B1311), Fitzroy Crossing.

Clearing of native vegetation is the main environmental impact of the project with 1 ha approximately to be cleared adjacent to the Fitzroy Bridge. This clearing will provide a laydown and turn-around area where machinery can access the guidebank to be reinstated. Clearing is proposed to be undertaken using Main Roads' clearing permit CPS 818/5. Clearing activities are deemed to not be at variance with any of the 10 clearing principles.

Main Roads have applied to the Department of Water for a permit to interfere with bed and banks and a 5C licence to take surface water. No further clearances, permits or further studies are required.

PRELIMINARY ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN

Fitzroy Bridge Emergency Guidebank Reinstatement Works

1. BACKGROUND

Main Roads Kimberley region are required to undertake emergency reinstatement works to abutment 2 left-hand side guidebank of the Fitzroy Bridge (B1311) located in Fitzroy Crossing townsite.

Significant erosion and scour has occurred to the Fitzroy Bridge guidebank and adjacent river bank from recent rain events. If reinstatement works do not occur as soon as possible, there is a high risk the bridge could collapse and / or further erosion could occur along the river bank, primarily toward the Fitzroy Lodge. Reinstatement works are expected to commence early September 2011 and continue for a 10 week period.

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 (item 2 on the checklist). 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 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 project involves transporting and depositing gravel and rock material to a hardstand and turn-around area near the guidebank. Gravel material will be used to fill the guidebank area to its previous shape, geofabric will be placed over the fill material to minimise scour. Rock material will be placed over the geofabric to create a solid guidebank structure. Rock protection will be placed around the guidebank and along the river bank toward the Fitzroy Lodge with the aim of minimising future erosion and scour.

2.1 Project Location

Figure 1 provides a broad locality image of the project area.

Figure 2 provides a close-up image of the project area and location of clearing activities.

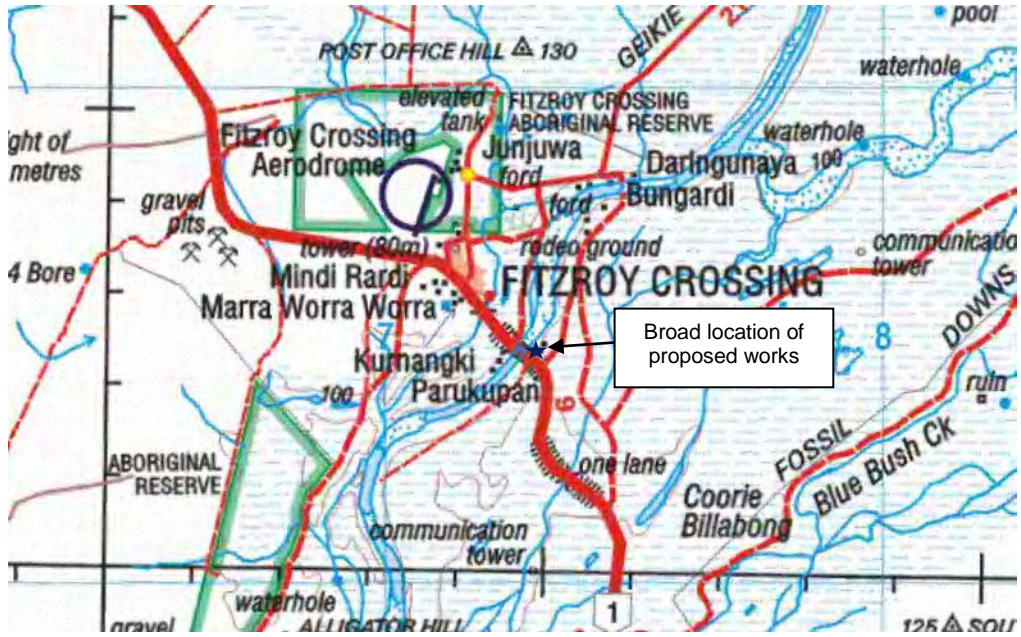


Figure 1...Broad locality image of the project area.



Figure 2...Close-up image of project area and location of clearing activities.

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 and viewing GIS shapefiles 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>) and the Heritage Council of Western Australia Places Database (<http://register.heritage.wa.gov.au/>), 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 adjacent to any significant lakes, rivers, wetlands or located in 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 and viewing current GIS shapefiles, refer to Appendix F.

3.1.6 Weeds

A site inspection was carried out to identify any declared plants or significant weeds in or adjacent to the project area, refer to site photos Appendix I.

3.1.7 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 site inspection was carried out to determine the presence of dieback, refer to site photos Appendix I.

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, refer Appendix H.

3.1.9 Acid Sulfate Soils

The project is outside the DEC's acid sulfate soils maps. No further investigations are necessary as the site is outside of the high risk area for ASS and there is no dewatering or excavation below the water table planned.

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 vegetation at adjacent to the Fitzroy Bridge consists of grasslands, tall bunch grass savannah woodland, coolabah over ribbon grass (*Crysopogon spp.*). The vegetation to be cleared is heavily altered due to the severe flooding which occurs around the project area. All trees and significant vegetation will be avoided where possible and impacts to native vegetation resulting from the proposed project are expected to be short term.

4.2 Site Investigation

A site visit was carried out by Environment Officer Marni Baetge and Project Manager Etienne van der Merwe 18 May 2011 to examine the general features of the area. The

broad vegetation types in the vicinity of the project area were identified. Other issues which were considered included machinery access, Aboriginal heritage clearance and general topography. Site photos were taken and are included in Appendix I.

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 for this project is proposed to be undertaken using Main Roads' clearing permit CPS 818.

5.1 Details of Vegetation Associations to be Cleared

In order to assess the significance of the vegetation proposed to be cleared for the Fitzroy Bridge guidebank reinstatement works, 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)
61	Grasslands, tall bunch grass savannah woodland, coolabah over ribbon grass (<i>Crysopogon spp.</i>).	2525	LHS	3 – Vegetation structure altered, obvious signs of disturbance.	99.9	1
Total Area (ha)						1

Table 2: Vegetation Percent Remaining

Pre-European Extent Remaining: Vegetation Association No. 61		
Regional Context	Location	Pre-European Extent Remaining (%)
State-wide	N/A	99.9
Bioregional (IBRA Region)	Dampier Botanical District of the Northern Province	100.00
LGA	Shire of Derby – West Kimberley	99.91

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	The area proposed to be cleared is highly homogenous and the condition of vegetation is somewhat degraded by annual flooding. Diversity will not be compromised and therefore the proposal is not at variance with this Principle.
METHODOLOGY & REFERENCES	Site inspection 18 May 2011.
Proposal is not likely to be 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	Native vegetation on the site is already disturbed and unlikely to present significant habitat for fauna. No nesting hollows in the trees proposed to be cleared.
METHODOLOGY & REFERENCES	Site inspection 18 May 2011.
Proposal is not likely to be 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	None present.
METHODOLOGY & REFERENCES	DEC shapefiles and site inspection.
Proposal is not likely to be 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	None present.
METHODOLOGY & REFERENCES	DEC shapefiles and site inspection.
Proposal is not likely to be 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	The vegetation type under application is representative of Beard Vegetation Association 61 consisting of "grasslands, tall bunch grass savannah woodland, coolabah over ribbon grass (<i>Crysopogon spp.</i>)" of which there is 99.9% extent remaining (Beeston <i>et al.</i> 2002). Vegetation is not a significant remnant and not of a vegetation association that has been extensively cleared.
METHODOLOGY & REFERENCES	Beeston <i>et al.</i> 2002. GIS Databases: - Interim Biogeographic Regionalisation of Australia – 05/07/11 - Pre-European Vegetation
Proposal is not likely to be at 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	Works are outside of any watercourse areas and not located within any ESA.
METHODOLOGY & REFERENCES	DoW and DEC shapefiles.
Proposal is not likely to be 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	Only 1 ha approx is proposed to be cleared with adjacent vegetation to remain, this will not cause appreciable land degradation.
METHODOLOGY & REFERENCES	Site inspection 18 May 2011.
Proposal is not likely to be 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 proposal is not at variance with this Principle as remnant native vegetation in the project area is not associated with any adjacent or nearby conservation areas.
METHODOLOGY & REFERENCES	DEC shapefiles and Site Inspection.
Proposal is not likely to be 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 potential clearing of remnant native vegetation is considered unlikely to cause deterioration in the quality of surface or underground waters.
METHODOLOGY & REFERENCES	Site inspection 18 May 2011.
Proposal is not likely to be 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	Proposed upgrading should aim to minimise changes to natural flows and reduce the impact of flooding and channel erosion.
METHODOLOGY & REFERENCES	Site inspection 18 May 2011.
Proposal is not likely to be 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 Fitzroy Bridge guidebank reinstatement works;

- Construction works to be undertaken in the dry season to reduce the potential for soil erosion impacting adjoining vegetation during heavy rains,
- Any stockpiled vegetation from clearing works shall be used during any rehabilitation works and either mulched or respread.

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

6. ASSESSMENT OF ASPECTS AND IMPACTS

Table 4: Aspects and Impacts – Fitzroy Bridge Guidebank Reinstatement

Aspect	Evaluation of Potential Impacts
Vegetation – clearing	<p>1 ha approximately of native vegetation is proposed to be cleared for project activities. The vegetation is described as Vegetation Association 61: Grasslands, tall bunch grass savannah woodland, coolabah over ribbon grass (<i>Crysopogon spp.</i>).</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 – Vegetation structure has been altered and there are obvious signs of disturbance.</p>
Vegetation – TECs/DRF	<p>None present in the proposed works areas. No significant vegetation types or threatened flora have been recorded within the project area, see assessment to Clearing Principle ‘c & d’ in Section 5.2.</p> <p>No Matters of National Environmental Significance as protected under EPBC Act (1999) will be impacted (see Table 5).</p>
Vegetation – weeds	No declared weeds or environmental weeds were identified in the project areas.
Vegetation – dieback	Site inspection indicates that the area should be treated as dieback free.

Table 4: Aspects and Impacts – Fitzroy Bridge Guidebank Reinstatement

Aspect	Evaluation of Potential Impacts
Fauna	<p>No significant fauna issues associated with any of the proposed upgrade works. Site investigations identified the vegetation to be cleared for the proposed works is not likely to support important populations of significant species of fauna communities. The presence of similar habitat in adjacent areas will enable fauna to relocate if necessary.</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 and Heritage Council of Western Australia databases has indicated that there are no heritage significant listed sites present in the proposed works areas.</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 identified the Fitzroy River to be a registered Aboriginal heritage site of significance. The Kimberley Land Council have been consulted regarding the proposed works and if any issues relating to Aboriginal heritage arise, these issues will be managed separately before any construction work proceeds.</p>
Wetlands	<p>DEC shapefiles show that there are no wetlands 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>
Surface water/drainage	<p>A search of the DoW's database has confirmed that the proposed works will not disturb or interrupt any natural drainage and surface run-off patterns. As stated previously, a bed and bank permit and 5C licence to extract water have been applied for through the DoW.</p>
Groundwater	<p>No dewatering nor drainage modifications are anticipated, hence no change to groundwater level or quality.</p>
Reserves / Conservation areas	<p>There are no conservation areas or reserves expected to be impacted by the proposed works, see assessment to Clearing Principle 'h' in Section 5.2.</p>
Air quality	<p>Not relevant to the proposed works. Local air quality assessment is not required for the project since:</p> <ul style="list-style-type: none"> • the predicted traffic flow is less than 15,000 vehicles per day in rural areas; • residential and other sensitive receptors are not within 200 meters of the road centre.
Dust	<p>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.</p>

Table 4: Aspects and Impacts – Fitzroy Bridge Guidebank Reinstatement

Aspect	Evaluation of Potential Impacts
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 Northam 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 predominantly 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	No further investigations are necessary as the site is outside of the high risk area for ASS and 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

Aspect	Evaluation of Potential Impacts
World Heritage properties	The project will not impact any World Heritage properties.
National Heritage places	A search of the Australian Heritage Places Inventory Database has indicated there are no heritage significant listed sites present in the proposed works areas.
Wetlands of international importance (Ramsar)	A search of the Department of Sustainability, Environment, Water, Population and Communities Protected Matters Search Tool located no Ramsar Wetlands 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, 4 threatened species and 9 listed marine species within the vicinity of the project. Site investigations identified the vegetation to be cleared for the proposed works is not likely to support important populations of significant species of fauna communities. The presence of similar habitat in adjacent areas will enable fauna to relocate if necessary.

Table 5: Commonwealth Aspects and Impacts

Aspect	Evaluation of Potential Impacts
Migratory species protected under international agreements	A search of the Department of Sustainability, Environment, Water, Population and Communities Protected Matters Search Tool located 12 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 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

No stakeholders have been consulted regarding the proposed works due to the small scale of works and minor environmental impacts.

9. OTHER APPROVALS/PERMITS/LICENCES

Main Roads have applied to the Department of Water for a permit to interfere with bed and banks and a 5C licence to take surface water. No further clearances, permits or further studies are required. No further approvals, permits or licences are required.

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 ...Fitzroy Bridge guidebank reinstatement works

ITEM NO.	ITEM	Y	N
1	New road or road reserve to be created or expansion of existing road reserve.	<input type="checkbox"/>	<input checked="" 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

[Handwritten Signature]

Date

5.7.2011

Name

[Handwritten Name]

Title

Environment Officer.

To be reviewed by
a Main Roads
Environment Officer

Signature

[Handwritten Signature]

Date

6/07/2011

Name

ETIENNE VAN DER MERWE

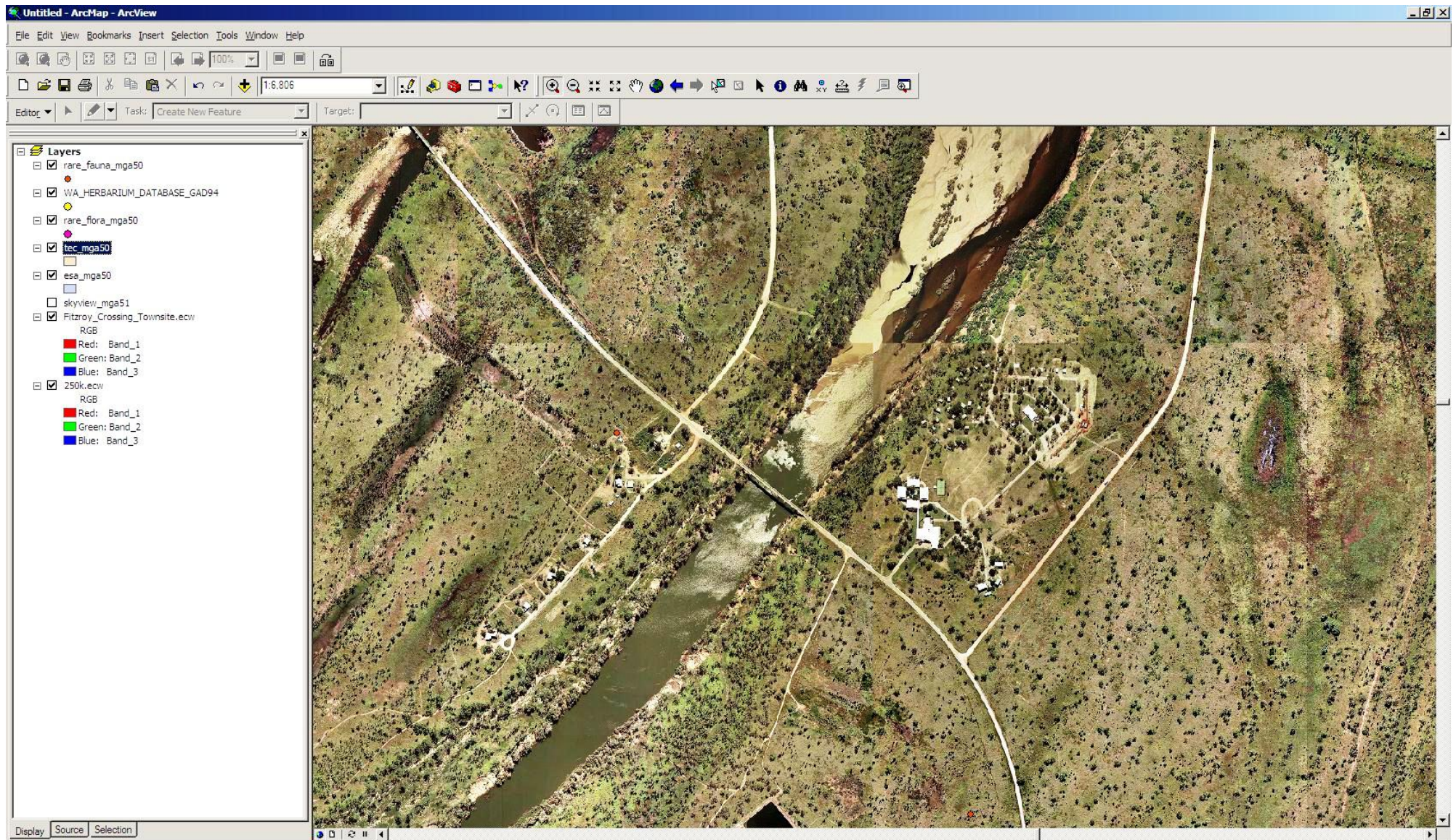
Title

P/CM

Comments:

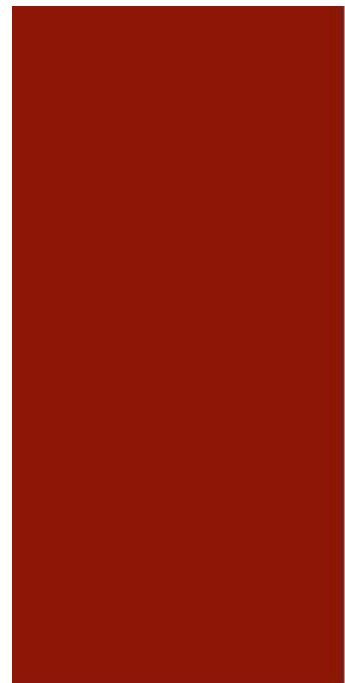
Appendix B

DEC Threatened Flora, Fauna and Conservation Areas GIS Search



Appendix C

Australian Heritage Places Inventory and Heritage Council of Western Australia Database Searches



[Search](#) [Help](#)

Search In:	<input type="radio"/> State Register of Heritage Places <input checked="" type="radio"/> Entire Database
Place No:	<input type="text"/>
Name Contains:	<input type="text" value="Fitzroy Bridge"/>
Street:	<input type="text" value="Great Northern High"/> <input type="text" value="Street"/>
Suburb/Town:	<input type="text" value="Fitzroy Crossing"/>
Local Govt:	<input type="text" value="Derby-West Kimberley"/>
Search logic:	<input type="text" value="Match ALL criteria (AND)"/>

[Search](#) [Help](#)



[Heritage Council of WA Home](#)

[Quick Search](#)

[Advanced Search](#)

[Results List](#)

[Location Report](#)

[Save Data](#)



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Search WA Government

[Home](#) » [Places Database](#) » [Search Results](#)

[Places Database](#)

A A A

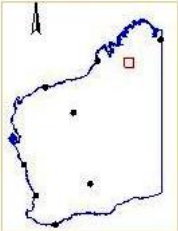
There are no Places matching your search criteria.

If you'd like to perform a new search, please select a new Places database search, from the menu on the left-hand side.

Appendix D

Department of Indigenous Affairs Database Search

show legend



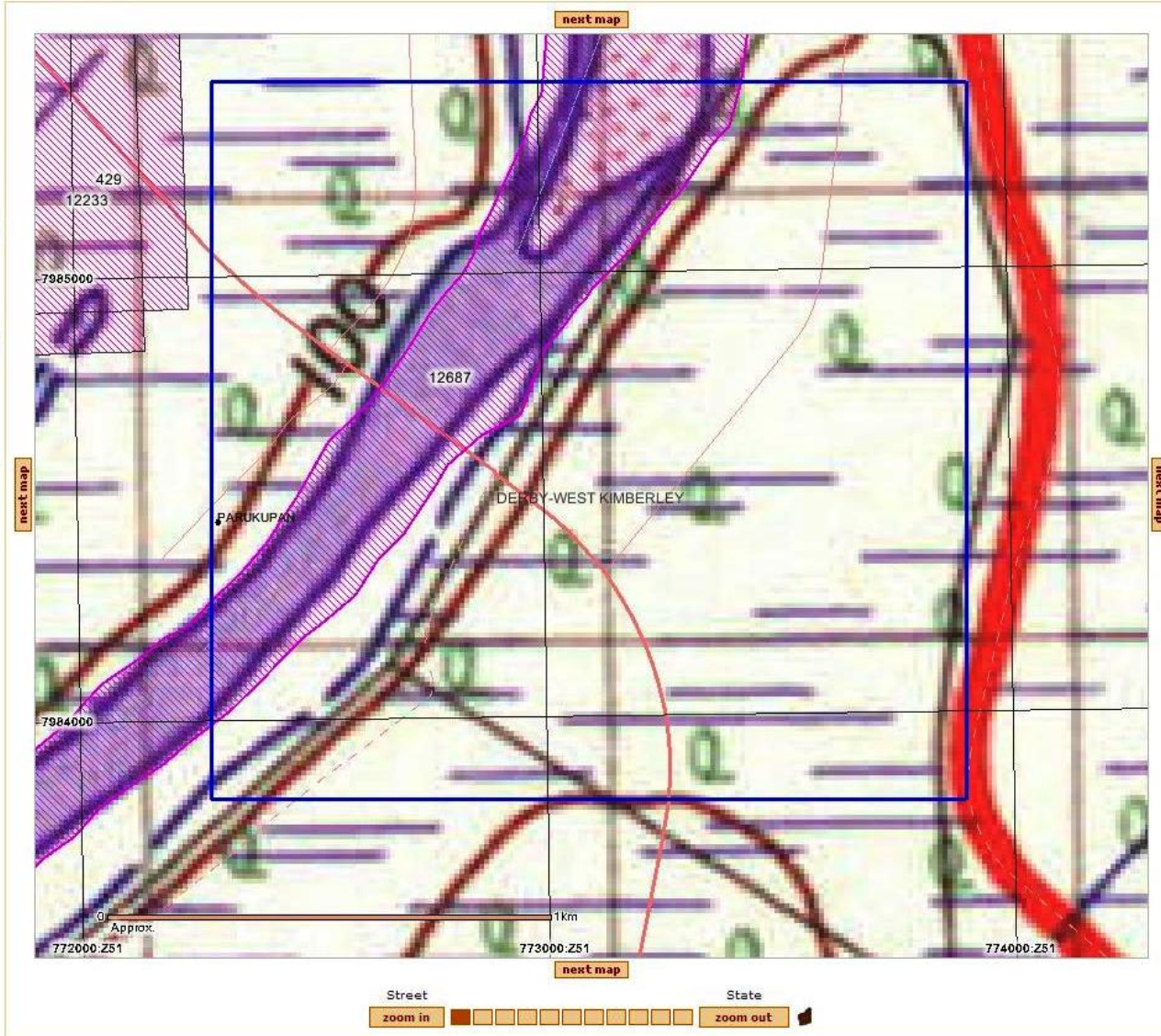
Show on map

- Aboriginal Sites
- Heritage Surveys

refresh more

Map size

- Small
- Medium
- Large



Sites in a search box

1 results

- [Clear Results](#)
- [Printable - All results \(with map\)](#)
- [Related Survey Reports](#)

1 Registered Aboriginal Sites

Show on Map

1

ID	Name	Status	Type
12687	Fitzroy River R O N	Mythological	

0 Other Heritage Places

No results



Search Criteria

Site 12687

Disclaimer

Aboriginal sites exist that are not recorded on the Register of Aboriginal Sites, and some registered sites may no longer exist. Consultation with Aboriginal communities is on-going to identify additional sites. The AHA protects all Aboriginal sites in Western Australia whether or not they are registered.

Copyright

Copyright in the information contained herein is and shall remain the property of the State of Western Australia. All rights reserved. This includes, but is not limited to, information from the Register of Aboriginal Sites established and maintained under the Aboriginal Heritage Act 1972 (AHA).

Legend

Restriction

- N No restriction
- M Male access only
- F Female access

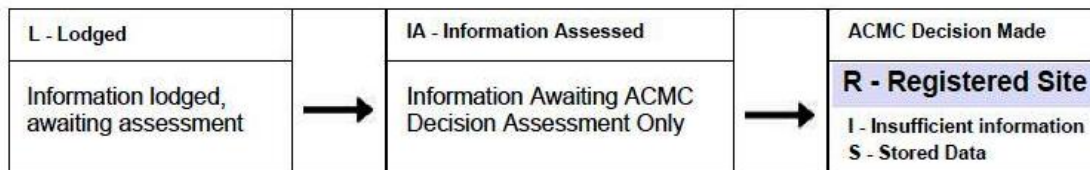
Access

- C Closed
- O Open
- V Vulnerable

Coordinate Accuracy

- Accuracy is shown as a code in brackets following the site coordinates.
- [Reliable]** The spatial information recorded in the site file is deemed to be reliable, due to methods of capture.
 - [Unreliable]** The spatial information recorded in the site file is deemed to be unreliable due to errors of spatial data capture and/or quality of spatial information reported.

Status



*Explanation of Assessment

Sites lodged with the Department are assessed under the direction of the Registrar of Aboriginal Sites. These are not the final assessment.

Final assessment and decisions will be determined by the Aboriginal Cultural Material Committee (ACMC).

Spatial Accuracy

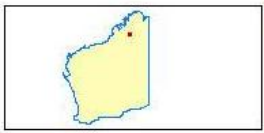
Index coordinates are indicative locations and may not necessarily represent the centre of sites, especially for sites with an access code "closed" or "vulnerable". Map coordinates (Lat/Long) and (Easting/Northing) are based on the GDA 94 datum. The Easting / Northing map grid can be across one or more zones. The zone is indicated for each Easting on the map, i.e. '5000000:Z50' means Easting=5000000, Zone=50.

Sites Shown on Maps

Site boundaries may not appear on maps at low zoom levels

Appendix E

DoW Geographic Data Atlas Database Search



- Planning and Cadastre
- Location
- Boundaries
- Environment
 - FPM Swan River and Tribs - 100
 - RMI Groundwater Areas
 - Groundwater Subareas
 - RMI Surface Water Areas
 - RMI Irrigation Districts
 - RMI Rivers
 - Metropolitan Water Supply Sewers
 - Public Drinking Water Source Areas
 - Surface Water Allocation Subarea
 - Surface Water Allocation Areas
 - Waterway Management Areas
 - Water Management Zones
- Geoscientific Information
- Inland Waters
 - Hydrographic Catchments - Divis
 - Hydrographic Catchments - Basin
 - Hydrographic Catchments - Catc
 - Hydrographic Catchments - Subc
 - Farm Dams
 - WIN Sites
- Transportation
- Society

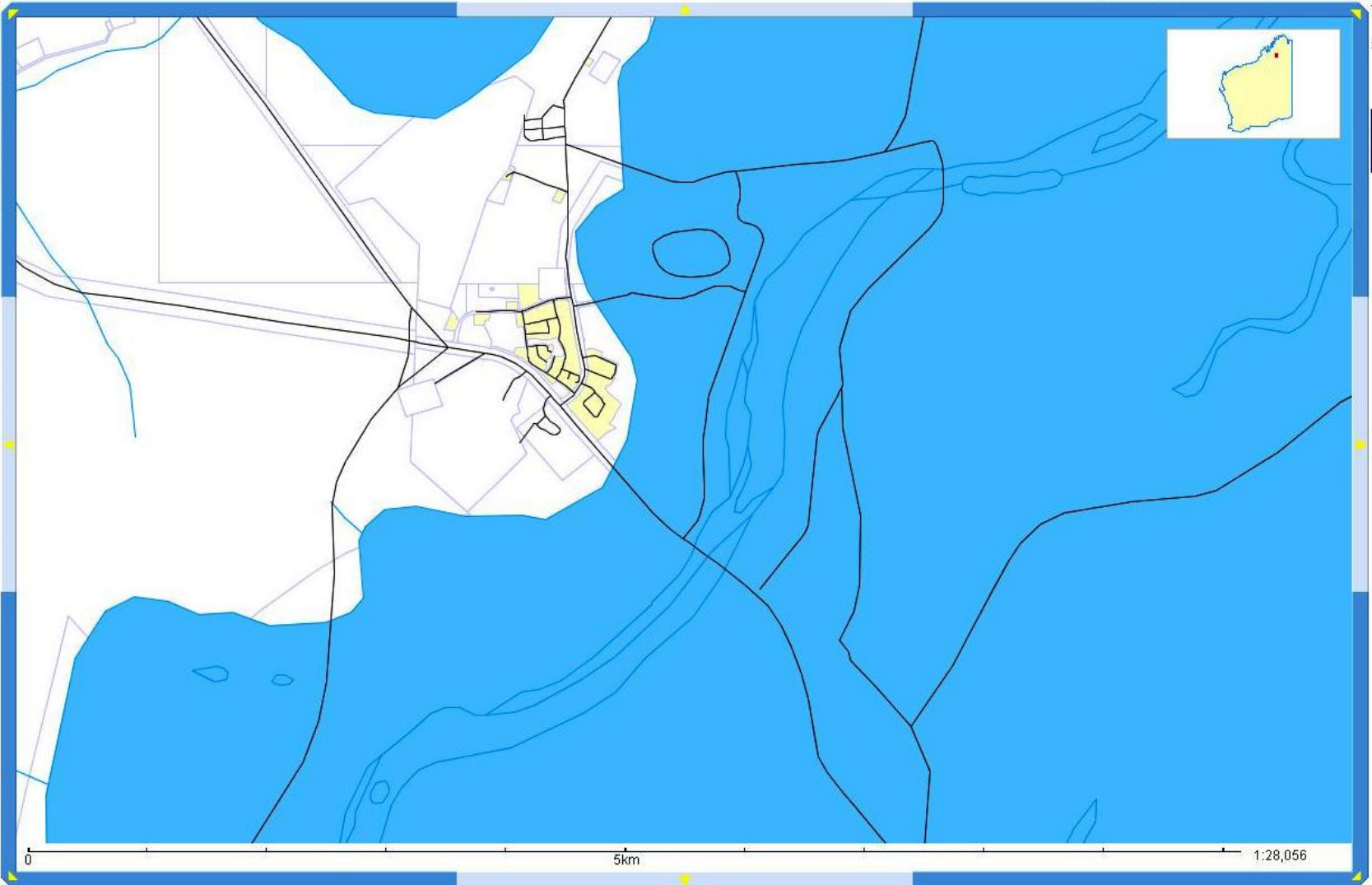


Appendix F

DEC Native Vegetation Map Viewer Database Search



- Planning and Cadastre
 - Cadastre (250k)
 - Cadastre (50k)
 - Cadastre (15k)
- Environment
 - Clearing Regs - ESA
 - Clearing Regs - Schem
 - Clearing Permits
- Inland Waters
 - Rivers - GMD
 - Rivers - DDW
 - Rivers - GA
 - Lakes - GMD
 - Lakes - GA
- Boundaries
- Location
- Economy
- Transportation
- Society
- Major Towns
- Minor Towns



Appendix G

DSEWPC Database Search



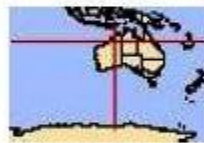
EPBC Act Protected Matters Report: Coordinates

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.

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: 05/07/11 15:01:44



[Summary](#)

[Details](#)

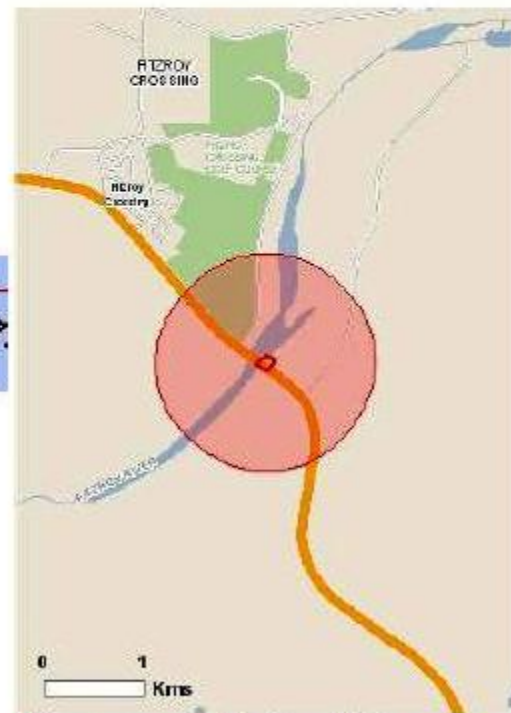
[Matters of NES](#)

[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: 1.0Km

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>.

<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>	4
<u>Migratory Species:</u>	12

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>	9
<u>Whales and Other Cetaceans:</u>	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:	5
Nationally Important Wetlands:	None

Details

Matters of National Environmental Significance

Threatened Species [[Resource Information](#)]

Name	Status	Type of Presence
BIRDS		
Erythrura gouldiae Gouldian Finch [413]	Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Vulnerable	Species or species habitat may occur within area
MAMMALS		
Macrotis lagotis Greater Bilby [282]	Vulnerable	Species or species habitat likely to occur within area
SHARKS		
Pristis microdon Freshwater Sawfish [66182]	Vulnerable	Species or species habitat likely to occur within area

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
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Migratory Terrestrial Species		
Erythrura gouldiae Gouldian Finch [413]	Endangered	Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area

Merops ornatus Rainbow Bee-eater [670]	Species or species habitat may occur within area
Poecilodryas superciliosa cerviniventris Derby White-browed Robin [26190]	Species or species habitat likely to occur within area

Migratory Wetlands Species

Ardea alba Great Egret, White Egret [59541]	Species or species habitat may occur within area
Ardea ibis Cattle Egret [59542]	Species or species habitat may occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]	Species or species habitat may occur within area
Glaucopoda maldivarum Oriental Pratincole [840]	Species or species habitat may occur within area
Rostratula benghalensis s. lat. Painted Snipe [889]	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
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glaucopoda maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Rostratula benghalensis s. lat. Painted Snipe [889]		Species or species habitat may occur within area
Reptiles		
Crocodylus johnstoni Freshwater Crocodile, Johnston's Crocodile, Johnston's River Crocodile [1773]		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.

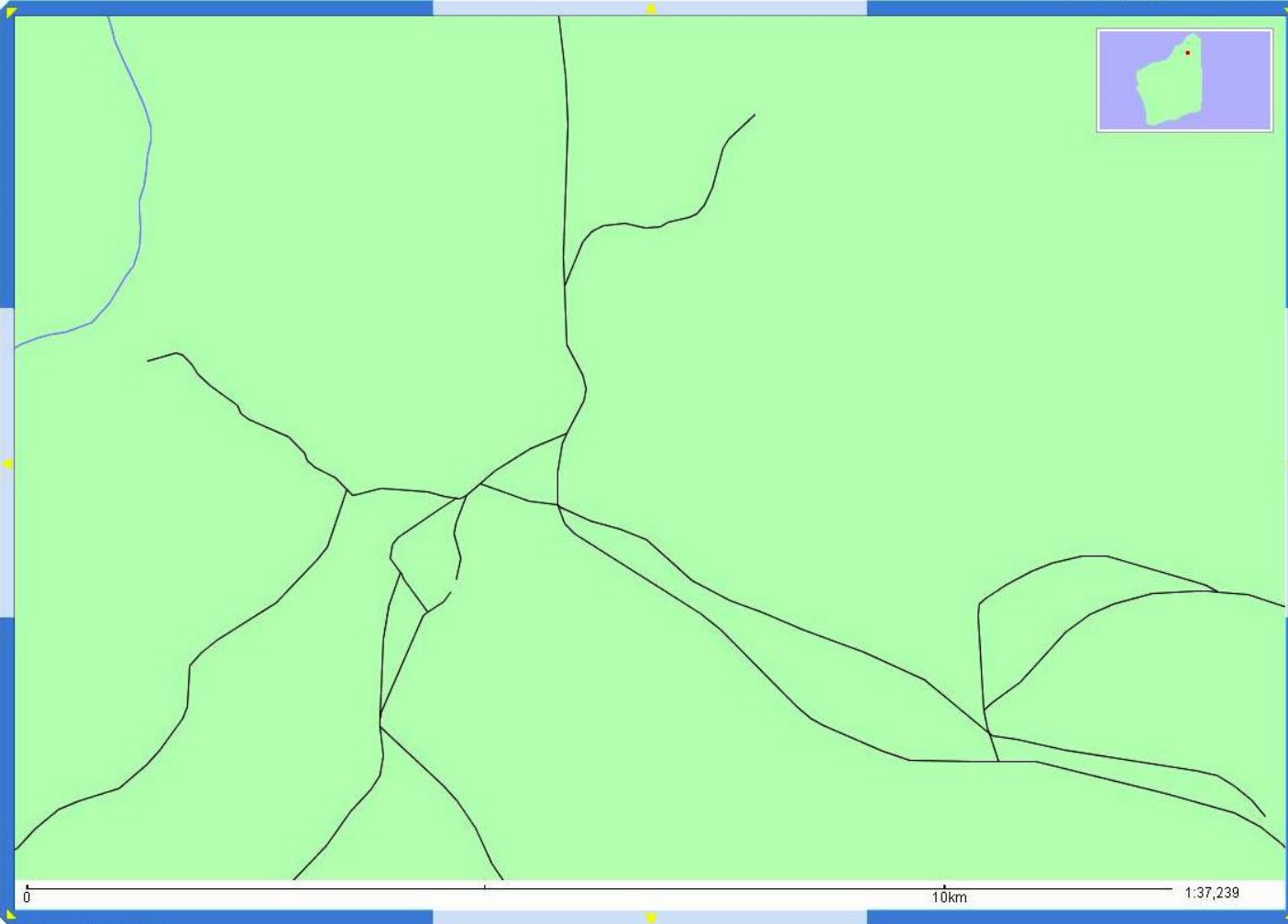
Name	Status	Type of Presence
Mammals		
<u>Bubalus bubalis</u>		
Water Buffalo, Swamp Buffalo [1]		Species or species habitat may occur within area
<u>Felis catus</u>		
Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
<u>Vulpes vulpes</u>		
Red Fox, Fox [18]		Species or species habitat may occur within area
Plants		
<u>Cenchrus ciliaris</u>		
Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
<u>Parkinsonia aculeata</u>		
Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat may occur within area

Appendix H

DEC Contaminated Sites Database Search



- Coastline
- Boundaries
- LGA
- Suburbs
- Contaminated Sites
- Transportation
- State Roads
- Roads major
- Roads local
- Society
- Major Towns
- Minor Towns



Search for Known Contaminated Sites

Search results

[New Search](#)

Location	Classification	Map	Site Information
No matches were found			

If a site does not appear in your search of the Contaminated Sites Database, it may be listed on the Reported Sites Register. Click [here](#) for more information.

Multi-tool. Press and hold a button, dragging mouse to navigate.

[Disclaimer](#)

Appendix I

Site Photos



Abutment 2 LHS Guidebank Prior to Flooding current original



Abutment 2 LHS Guidebank After to Flooding



Abutment 2 LHS Guidebank Prior to Flooding



Abutment 2 LHS Guidebank After Flooding



Remaining Abut 2 LHS Guidebank After to Flooding



Remaining Abut 2 LHS Guidebank After to Flooding with Silt Deposits Behind Guidebank

Appendix J

Environmental Management Plan

ENVIRONMENTAL MANAGEMENT PLAN

FITZROY BRIDGE EMERGENCY GUIDE BANK REINSTATEMENT WORKS

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
Toolbox Meetings	Weekly	Project Personnel	Contractor Safety Plan	Minutes of 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 with a <i>single coordinate (as clearing is below 0.5 ha)</i>; 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	Revegetation and Landscape planning	To revegetate site.	Prepare a Project Revegetation Plan. Revegetation will occur along Great Eastern Highway not related to this project however the topsoil and mulch from this clearing will be used in this revegetation.	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
			Any stockpiled vegetation from clearing works shall not be burnt. This vegetation shall be used mulched and used for the 2011 Great Eastern Highway rehabilitation works.	Contractor	Main Roads
Pre-Construction	Surface Drainage	Maintain the hydrological regime that exists prior to the construction of the proposal.	Stormwater drainage shall not be altered, the culvert extension will not impact surface drainage..	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

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