



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

**Northam-Cranbrook Road (M031) / Taylor Street
Intersection Upgrade 99.28 SLK**

August 2011

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Revision	Prepared by	Date	Reviewed by	Date
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SUMMARY

The project involves upgrading the Northam-Cranbrook Road at the Taylor Street Intersection.

Clearing native vegetation is the main environmental impact of the project with approximately 0.05 ha to be cleared. This clearing is proposed to be undertaken using Main Roads' clearing permit CPS 818 and is **not** likely to be at variance to the 10 clearing principles.

No other clearances, permits or further studies are required.

PRELIMINARY ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN

Northam-Cranbrook Road / Taylor Street Intersection

1. BACKGROUND

The upgrade to the Northam-Cranbrook Road at the Taylor Street Intersection (99.28) is required due to the poor geometry of the existing intersection. These works will create a safer road and roadside environment for motorists. This intersection upgrade will also allow safer turning movements for vehicles entering the Brookton CBH bin.

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 will clear vegetation 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

Turning bulges and slip lanes will be installed on the Northam-Cranbrook Road to allow for safer turning movements for vehicles entering and exiting Taylor Street.

2.1 Project Location

The location for the project is shown on Figure 1 with the boundaries of the study area being 100 m either side of the road centreline.

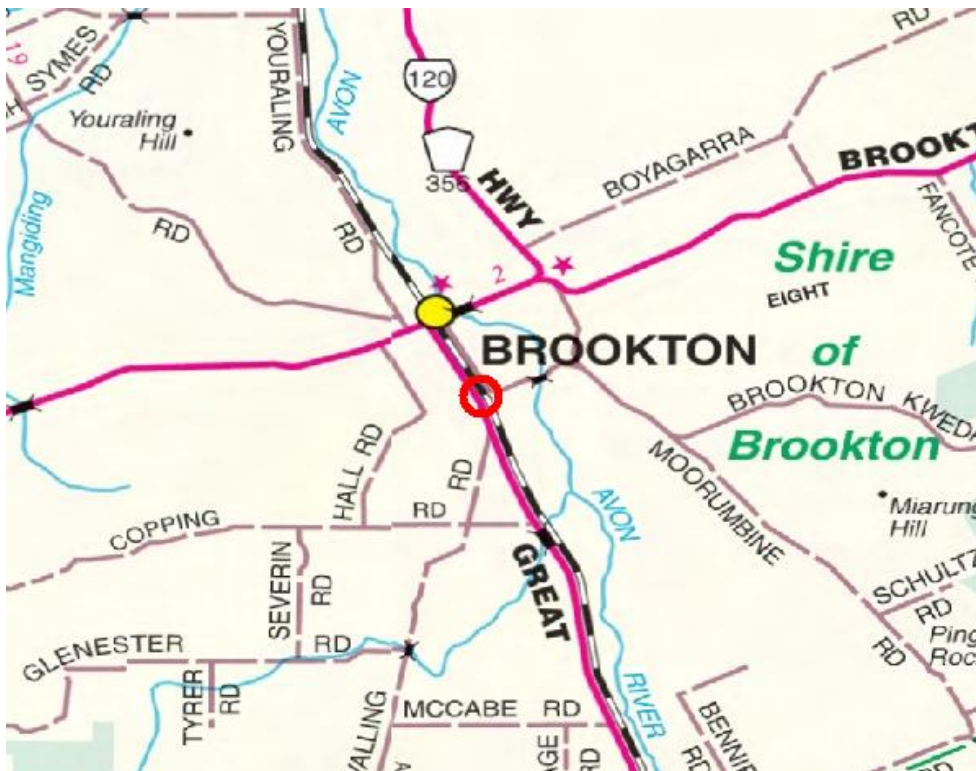


Figure 1 – Project Location and Study Area

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 photo Appendix J.

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, refer Appendix H.

3.1.9 Acid Sulfate Soils

The project is outside the DEC's acid sulfate soils maps, refer Appendix I, (<https://uat2.landgate.wa.gov.au/bmvf/app/waatlas/>), a site inspection was used to determine the level of risk for the project.

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 along this section of the Northam-Cranbrook Road is heavily altered and contains an overstorey mix of York Gum, Wandoo and Sheoak with a degraded weedy understory comprising Acacia and various agricultural weeds.

4.2 Site Investigation

A site visit was carried out by Nigel Rowe and Larry Trinder on the 22nd of July 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. A site photo has been included in Appendix J.

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 these projects 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 Northam-Cranbrook Road – Taylor Street Intersection the vegetation type, condition and percent of pre-European Extent remaining has been identified. Table 1 describes the location and condition of the vegetation association within the project area while Table 2 provides further information regarding the 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)
352	Medium woodland; York gum	99.28	L	Degraded	20.02	0.05
Total Area (ha)						0.05

Table 2: Vegetation Percent Remaining

Pre-European Extent Remaining: Vegetation Association No. 1023		
Regional Context	Location	Pre-European Extent Remaining (%)
State-wide	N/A	20.02
Bioregional (IBRA Region)	Avon Wheatbelt (AW)	17.61
Bioregional (IBRA Sub-Region)	Avon Wheatbelt (AW2)	11.28
LGA	Shire of Brookton	9.77

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	Vegetation to be cleared is in degraded condition with only several different species to be removed. Adjacent vegetation to remain is in a good condition.
METHODOLOGY & REFERENCES	Site Inspection, Vegetation Condition Scale (Keighery, 1994).
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.
METHODOLOGY & REFERENCES	Site inspection.
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	Vegetation Association 352: Medium woodland; York gum with 20.02 % pre European extent remaining. Vegetation is not a significant remnant with the area adjacent to the clearing in a good condition with the vegetation to be cleared in a degraded condition.
METHODOLOGY & REFERENCES	Beeston, G.R., Hopkins, A.J.M. and Shepherd, D.P. (2002) – Technical Report 250. Vegetation Condition Scale (Keighery, 1994).
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 will not impact any watercourse areas.
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 0.05 ha is proposed to be cleared with adjacent vegetation to remain, this project will not cause appreciable land degradation.
METHODOLOGY & REFERENCES	Site Inspection.
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 nearest DEC managed land is the Weam Nature Reserve over seven kilometres to the east, the Pingeculling Nature Reserves eight kilometres to the south east and Boyagin Nature Reserve located nine kilometres to the south west of the project. These reserves will not be impacted by the works.
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	Small amount of clearing, no impact to groundwater as no dewatering proposed.
METHODOLOGY & REFERENCES	Site Inspection.
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	Small amount of clearing, this will not affect flooding.
METHODOLOGY & REFERENCES	Site Inspection.
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 Northam-Cranbrook Rd - Taylor St Intersection Upgrade;

- Construction works to be undertaken in summer to reduce the potential for soil erosion impacting adjoining vegetation during heavy rains,
- 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,
- Implement the Project Revegetation Management Plan and monitor effectiveness of revegetation works and weed control.

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 – Northam-Cranbrook Rd / Taylor Street Intersection Upgrade

Aspect	Evaluation of Potential Impacts
Vegetation – clearing	<p>0.05 ha of native vegetation is proposed to be cleared, the vegetation is described as Vegetation Association 352: Medium woodland; York gum with 20.02 % pre European extent remaining.</p> <p>The native vegetation proposed to be cleared isn't well represented regionally as it possesses less 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 Degraded.</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 - 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	<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. Site inspection indicates that the area should be treated as dieback free.</p>
Fauna	<p>No significant fauna issues associated with any of the proposed upgrade works. DEC records indicate two sighting of a threatened mammal and reptile to the east and the north west of the project. With the generally degraded and exposed nature of the works areas, 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 and the Heritage Council of Western Australia on-line databases has indicated that there are no known sites of heritage significance within the vicinity of the project area. No sites were identified in the Shire of Brookton on the Australian Heritage Places Inventory. Two sites were identified in the Shire of Brookton along the Great Southern Highway (Northam-Cranbrook Road) on the Heritage Council of Western Australia Places Database. These sites are in the Brookton town site and will not be impacted by the works.</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 no known sites of Aboriginal heritage significance within the vicinity of the project area. The Avon River (DIA Site 3536) and the Brookton Reserve (DIA Site 4421) are approximately a kilometre from the project site but will not be impacted by the works.</p> <p>No further investigations are required for all aspects of the project.</p>

Table 4: Aspects and Impacts – Northam-Cranbrook Rd / Taylor Street Intersection Upgrade

Aspect	Evaluation of Potential Impacts
Wetlands	<p>DEC shapefiles show that there are no wetlands within the vicinity of the project area. The nearest watercourse, the Avon River which is also an ESA, is located approximately a kilometre from the project and will not be impacted by the works.</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 or surface run-off patterns. There are two PDWSA's located near the project, the Brookton Water Supply Catchment Area 3 ½ km to the west and the Brookton-Happy Valley Water Reserve 4 ½ km to the north east of the project. Both areas will not be impacted by these works. The project site is also located within the Avon River catchment Proclaimed Surface Water Area, however as there will be no impact to bed and banks no permits are required.</p>
Groundwater	<p>No dewatering nor drainage modifications are required, hence no change to groundwater level or quality.</p>
Reserves / Conservation areas	<p>There are no conservation areas or reserves that will 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>
Noise and vibration	<p>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 Brookton must be met in respect of noise management and construction working hours.</p>
Visual amenity	<p>The proposed works will result in minor and short-term visual impacts during construction.</p>
Public safety and risk	<p>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.</p>
Hazardous substances	<p>Not relevant to the proposed works, the project requires no hazardous substances to be used.</p>
Contamination	<p>The works are within the road reserve and no known previous land use activities on or adjacent to the project area have had the potential to create contamination, e.g. petrol station. A search of the DEC's contaminated sites database indicates there are no identified contaminated sites within the project area.</p>

Table 4: Aspects and Impacts – Northam-Cranbrook Rd / Taylor Street Intersection Upgrade

Aspect	Evaluation of Potential Impacts
Salinity	There were no visual signs of salinity observed in the project area. Given the location, nature and scale of the project any impact on salinity 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 i.e. Shark Bay
National Heritage places	A search of the Australian Heritage Places Inventory Database located no sites within the vicinity of the project.
Wetlands of international importance (Ramsar)	A search of the Department of Sustainability, Environment, Water, Population and Communities Protected Matters Search Tool located no Ramsar Wetlands near 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, 7 threatened species and 5 listed marine species within the vicinity of the project. The project activities are unlikely to have a significant impact on these species with the vegetation present unlikely to be habitat for these species.
Migratory species protected under international agreements	A search of the Department of Sustainability, Environment, Water, Population and Communities Protected Matters Search Tool located 7 migratory species within the vicinity of the project. The project activities are unlikely to have a significant impact on these species as the vegetation present is unlikely to be habitat for these species.
Commonwealth marine areas	The project will not impact any Commonwealth marine area or marine protected area i.e. Ningaloo Marine Park
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 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 environmental stakeholders had been consulted at the time of preparing this report.

9. OTHER APPROVALS/PERMITS/LICENCES

No other clearances, permits or further studies 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: Northam-Cranbrook Rd - Taylor St Intersection Upgrade 99.28 SLK (11/4760)

ITEM NO.	ITEM	Y	N
1	New road or road reserve to be created or expansion of existing road reserve.	X	
2	Works require clearing of native vegetation outside the maintenance zone.	X	
3	Works require clearing of native vegetation that is older than 10 years old within the maintenance zone.		X
4	Works to occur outside normal working hours.		X
5	Passes over, adjoins or drains directly into a wetland or sensitive watercourse.		X
6	Local natural drainage regime / hydrology will be changed.		X
7	Dewatering, or a new water hole required.		X
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)		X
9	Buildings will require demolition.		X

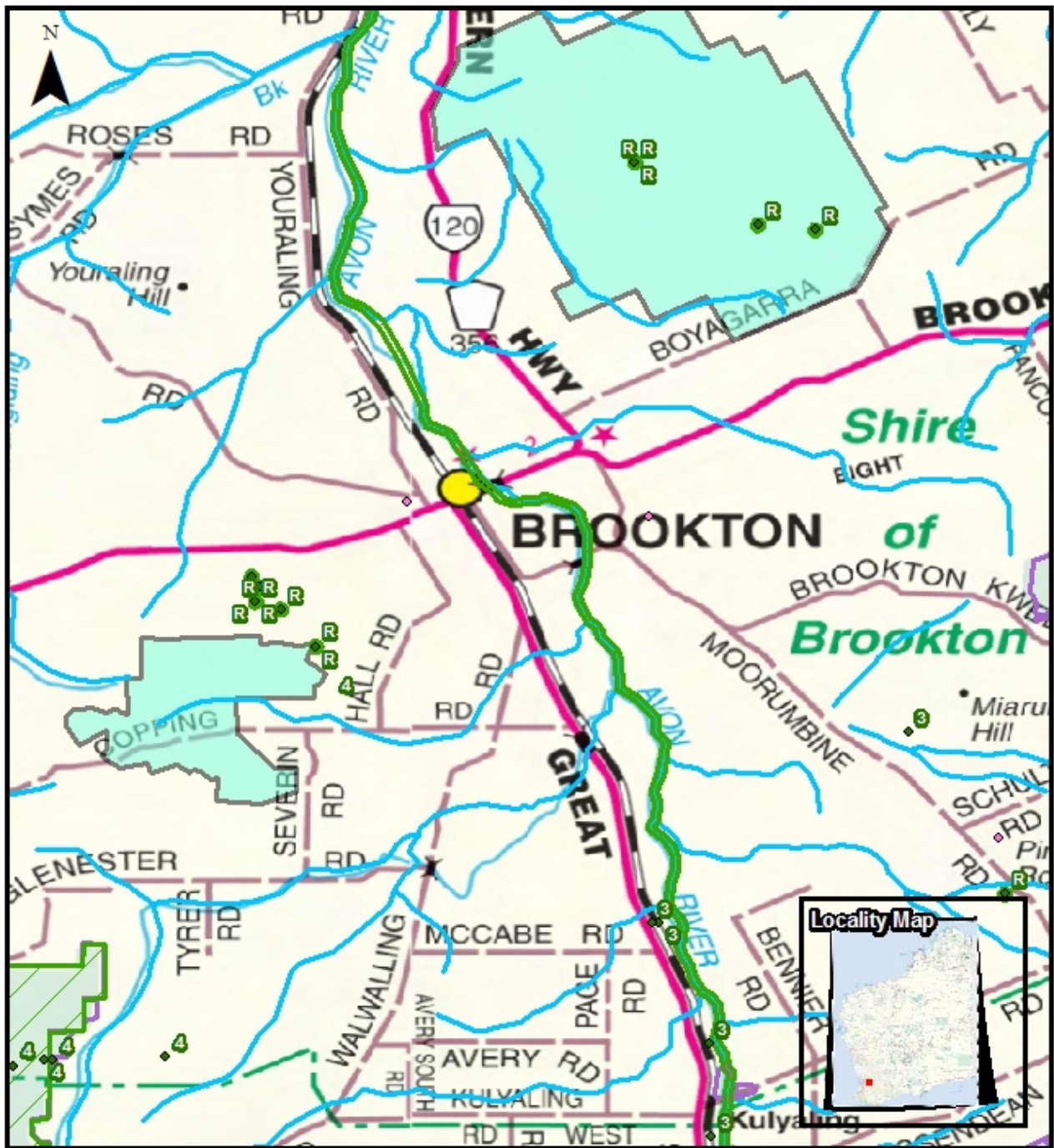
Completed By: *Signature*  *Date* 24.08.11
Name Henryk Marek *Title* Senior Project Manager

To be reviewed by a Main Roads Environment Officer: *Signature*  *Date* 24/08/11
Name Nigel Rowe *Title* Environment Officer

Comments: _____

Appendix B

DEC Threatened Flora, Fauna and Conservation Areas GIS Search



<p>LEGEND</p> <ul style="list-style-type: none"> ◆ THFL - MRWA ◆ Threatened Fauna ◆ TEC / PEC Sites ■ TEC / PEC Buffers ■ TEC / PEC Sites & Buffers ■ ESAs ■ DEC Lands ■ RAMSAR Sites ■ PDWSAs 	<p>00.45.9 1.8 Km</p> <p>MAP INFORMATION Geographic Coordinate System: Geocentric Datum of Australia 1994 - Projection MGA Zone 50</p>	<p>PUBLISHER DETAILS</p> <p>Directorate: Regional Services Branch: Wheatbelt South Region Author: Nigel Rowe Data Currency: As Supplied Project: Narrogin-Kondinin Road</p>
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Appendix C

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

AHPI - Results - Microsoft Internet Explorer provided by MRWA ...

http://www.heritage.gov.au/cgi-bin/ahpi/results.pl?id=&pn=&ad=&lg=Brookton&st=WA&country=&ss=&ds=&sc=&submit=S Live Search

File Edit View Favorites Tools Help

AHPI - Results

AUSTRALIAN HERITAGE PLACES INVENTORY

[\[New Search \]](#)

No records matched your query.

Report produced : 13/9/2011
AHPI URL : <http://www.environment.gov.au/heritage/ahpi/index.html>


Heritage Council of WA - Places Database : Search Results - Microsoft Internet Explorer provided by MRWA ...

http://register.heritage.wa.gov.au/search_results.html

File Edit View Favorites Tools Help

Heritage Council of WA - Places Database : Search Re...

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heritage
a future for our past

Search here...
Search WA Government

Home » Places Database » Search Results

Places Database

Heritage Council of WA Home

Quick Search

Advanced Search

Results List

Location Report

Save Data

What Is The State Register?

Other Heritage Lists

Displaying results: [1-2] of 2

hide selected hide unselected

<input type="checkbox"/>	Blacksmith Shop - Site of (8822)	Great Southern Hwy, Brookton
<input type="checkbox"/>	Headmaster's House (8821)	Cnr Great Southern Hwy & Richardson St, Brookton

hide selected hide unselected

Perform a new: [QUICK PLACES DATABASE SEARCH](#) | [ADVANCED PLACES DATABASE](#)

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Last updated: 19/01/2010

Appendix D

Department of Indigenous Affairs Database Search



Aboriginal Heritage Inquiry System

What do you want to do?

[Search](#) | [Metadata](#) | [Feedback](#) | [DIA Home](#) | [Getting Started](#)

Search for Sites in... : ...

[show legend](#)



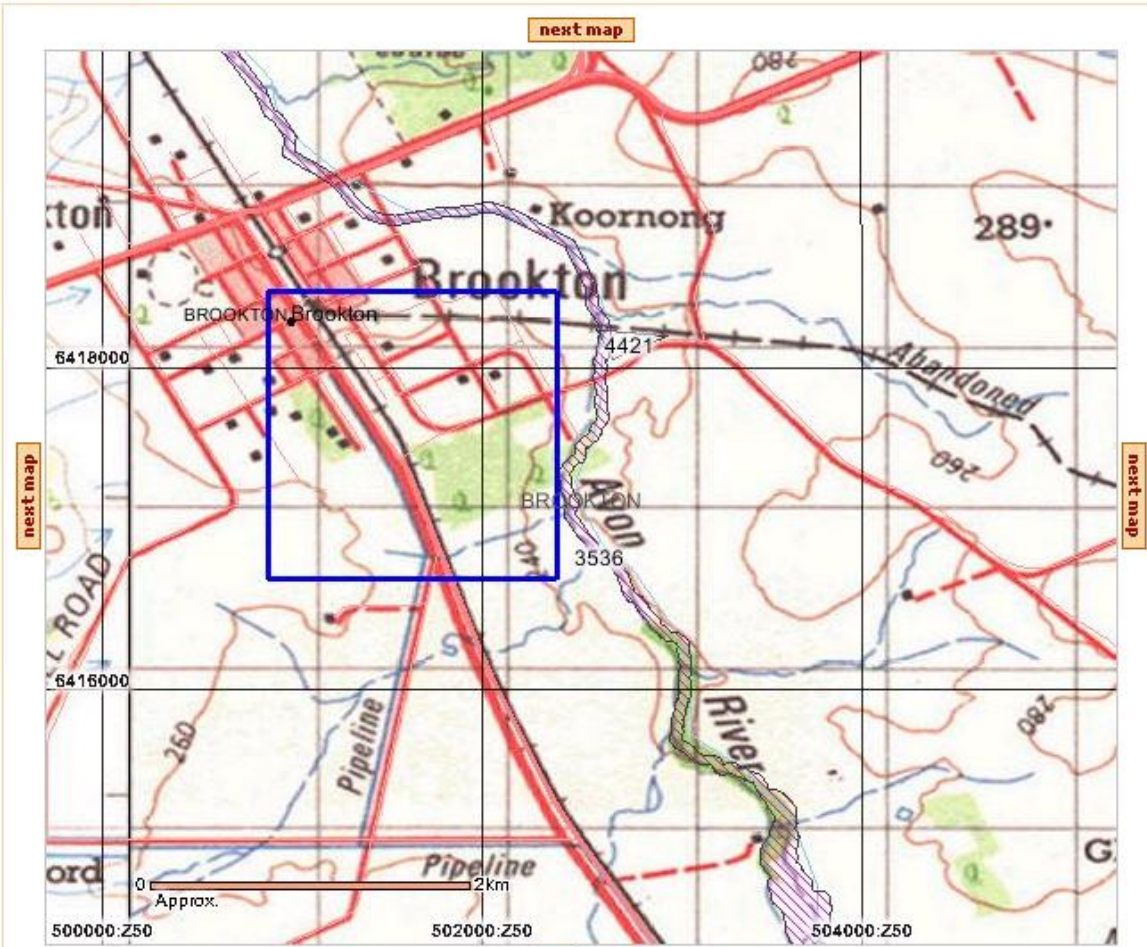
Show on map

- Aboriginal Sites
- Heritage Surveys

[refresh](#) [more](#)

Map size

- Small
- Medium
- Large



Sites in a search box

0 results

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

0 Registered Aboriginal Sites

No results

0 Other Heritage Places

No results

Appendix E

DoW Geographic Data Atlas Database Search

Department of Water - Geographic Data Atlas - Microsoft Internet Explorer provided by MRWA ...

http://www.water.wa.gov.au/idelve/dowdataext/index.jsp

File Edit View Favorites Tools Help

Department of Water - Geographic Data Atlas

Government of Western Australia
Department of Water

Geographic Data Atlas

Welcome Search Download Metadata Map Help

Search - Towns

1 Results (page 1 of 1)

New Search Clear

Summary	Action
BROOKTON	[Map]

Map layers legend:

- Planning and Cadastre
- Location
- Boundaries
- Environment
 - FPM Swan River and Tribs - 1
 - RIWI Groundwater Areas
 - Groundwater Subareas
 - RIWI Surface Water Areas
 - RIWI Irrigation Districts
 - RIWI Rivers
 - Metropolitan Water Supply Se
- Public Drinking Water Source
 - Surface Water Allocation Sub:
- Surface Water Allocation Area
- Waterway Management Areas
- Water Management Zones
- Geoscientific Information
- Inland Waters
- Transportation

Scale: 0 2km 1:40,789

i-DELVE.NET

Appendix F

DEC Native Vegetation Map Viewer Database Search

Department of Environment and Conservation - Native Vegetation - Microsoft Internet Explorer provided by MRWA ...

http://maps.dec.wa.gov.au/idelve/nv/index.jsp

File Edit View Favorites Tools Help

Department of Environment and Conservation - Nativ...

Welcome Search Metadata Help

Search - Towns

1 Results (page 1 of 1)

[New](#) [View all](#) [Clear](#)

Summary	Action
BROOKTON	[Map]

0 2km 1:17,069

Zoom in tool: Click and drag a rectangle.

MAIN ROADS Western Australia PEIA & EMP for Minor Projects 27 of 47 TAYLOR ST

Northam-Cranbrook Rd - Taylor St Intersection Upgrade 99.28 SLK PEIA_EMP - August 2011.docx

Policy & Legislation | Clearing Permits & Public Reports

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Appendix G

DSEWPC Database Search



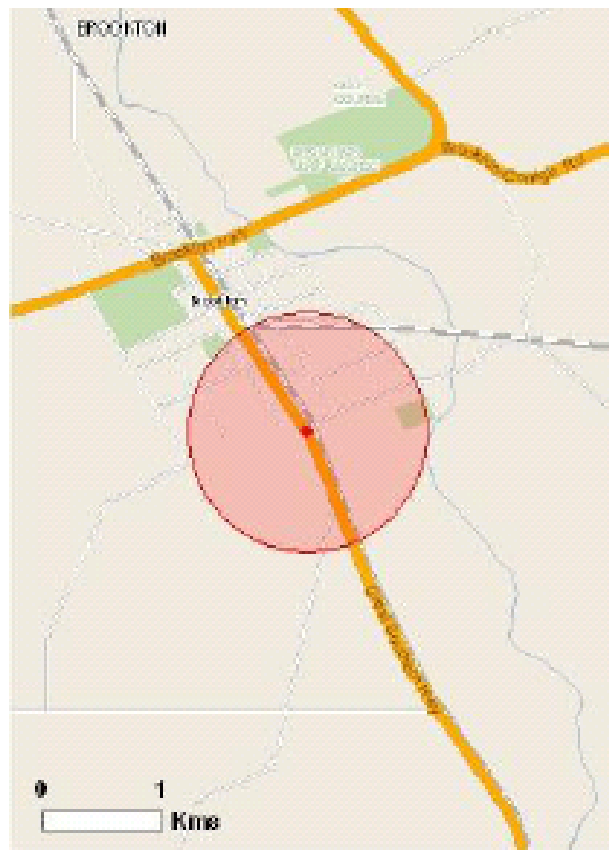
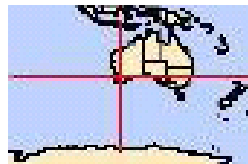
EPBC Act Protected Matters Report: Coordinates

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: 13/09/11 14:04:11



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

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

[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>.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Significance (Ramsar Wetlands):	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Areas:	None
Threatened Ecological Communities:	None
Threatened Species:	7
Migratory Species:	7

Other Matters Protected by the EPBC Act

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

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage/index.html>

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

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species. Information on EPBC Act permit requirements and application forms can be found at <http://www.environment.gov.au/epbc/permits/index.html>.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	5
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:	9
Nationally Important Wetlands:	None

Details

Matters of National Environmental Significance

Threatened Species [[Resource Information](#)]

Name	Status	Type of Presence
BIRDS		
Calyptorhynchus latirostris Carnaby's Black-Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Breeding likely to occur within area
MAMMALS		
Dasyurus geoffroyi Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat likely to occur within area
Phascogale calura Red-tailed Phascogale [316]	Endangered	Species or species habitat may occur within area
PLANTS		
Banksia oligantha Wagin Banksia [20697]	Endangered	Species or species habitat may occur within area
Centrolepis caespitosa [6393]	Endangered	Species or species habitat may occur within area
Roycea pycnophylloides Saltmat [21161]	Endangered	Species or species habitat may occur within area
Verticordia fimbrialepis subsp. fimbrialepis Shy Featherflower [24631]	Endangered	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	
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
-------------------------	--

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
----------------------	--

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
----------------------	--

[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
-------------------------	--

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

[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

[Asparagus asparagoides](#)

Bridal Creeper, Bridal Veil	Species or species habitat likely to occur within area
-----------------------------	--

Creeping Smilax, Florist's Smilax, Smilax Asparagus [22473] Carrichtera annua	
Ward's Weed [9511] Cenchrus ciliaris	Species or species habitat may occur within area
Buffel-grass, Black Buffel-grass [20213] Chrysanthemoides monilifera	Species or species habitat may occur within area
Bitou Bush, Boneseed [18983] Lycium ferocissimum	Species or species habitat may occur within area
African Boxthorn, Boxthorn [19235] Tamarix aphylla	Species or species habitat may occur within area
Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypress, Salt Cedar [16018]	Species or species habitat likely to 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

-32.38011 117.01676

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

The Department 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.

Appendix H

DEC Contaminated Sites Database Search

Department of Environment and Conservation - Contaminated Sites Database - Microsoft Internet Explorer provided by MRWA ...

https://secure.dec.wa.gov.au/idelve/css/

File Edit View Favorites Tools Help

Department of Environment and Conservation - Cont...

Department of Environment and Conservation
Our environment, our future

Contaminated Sites Database

New Search Find Suburb/Town Metadata Map Help

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.

Map scale: 0 1 km 1:12,503

Appendix I

Acid Sulfate Soils Mapping

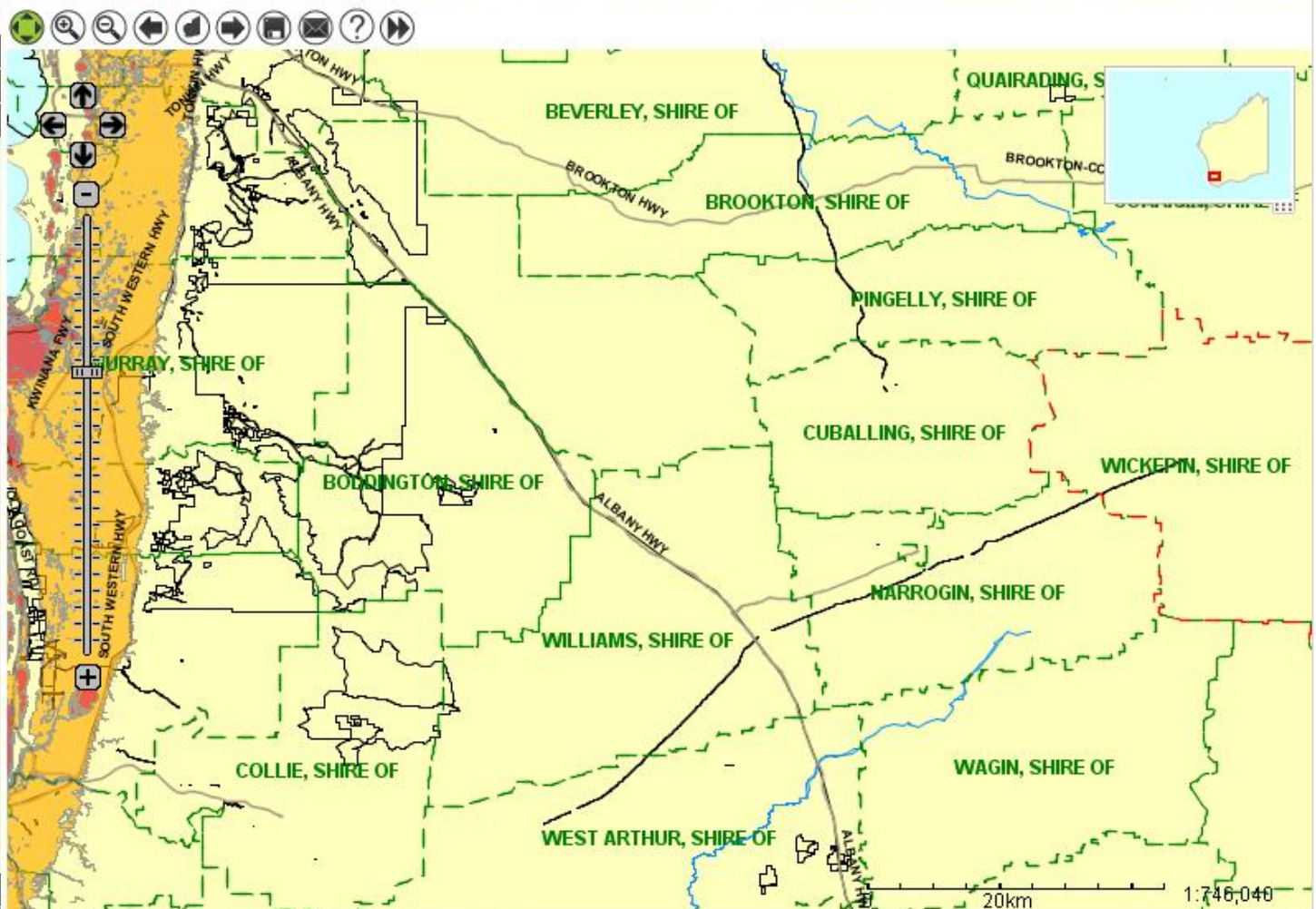
WA Atlas

Shared Land Information Platform

- Home
- Search
- Layer Selector

Layer

Add Layers



Appendix J

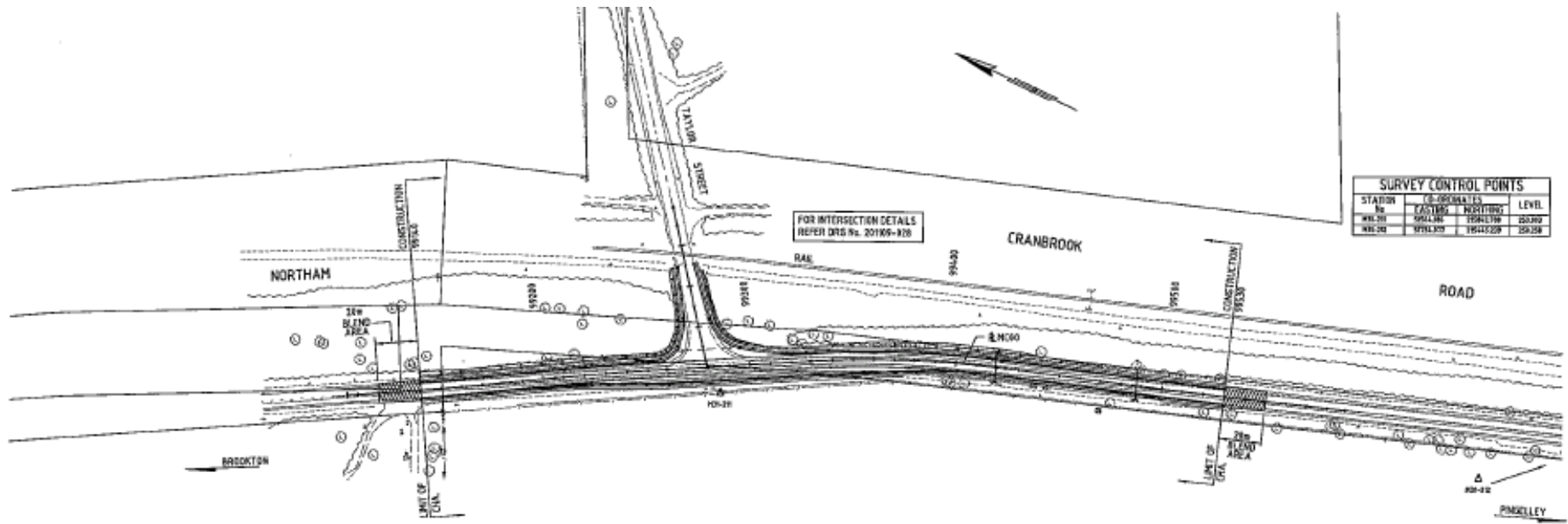
Site Photo



Northam-Cranbrook Road facing north with the Taylor St Intersection on the right. Regrowth vegetation around the intersection (mainly *Acacia* sp.) is required to be removed for this project.

Appendix K

Road Design



SURVEY CONTROL POINTS			
STATION No	CO-ORDINATES	LEVEL	
WH-20	994436	EASTING	NORTHING
WH-21	994435	994432.0	994432.0

CHAINAGE (MC00)	V.P.1 CHA 99140 ELEV. 251.481 L.V.C. 0		V.P.1 CHA 99328 ELEV. 254.270 L.V.C. 24.6 P. 0.351 K. -95		V.P.1 CHA 99469 ELEV. 252.870 L.V.C. 4.9 P. 0.034 K. 59		V.P.1 CHA 99538 ELEV. 252.678 L.V.C. 0	
	CHG 99140 EXTEND EXIST. 1.05m L.H.S.	CHG 99328 EXTEND EXIST. 2775.9 R.C.P.	CHG 99469 EXTEND EXIST. 1.05m L.H.S.	CHG 99538 EXTEND EXIST. 1.05m R.C.P.	20m BLEND AREA			
99140	99140	99140	99140	99140	99140	99140	99140	99140
99150	99150	99150	99150	99150	99150	99150	99150	99150
99160	99160	99160	99160	99160	99160	99160	99160	99160
99170	99170	99170	99170	99170	99170	99170	99170	99170
99180	99180	99180	99180	99180	99180	99180	99180	99180
99190	99190	99190	99190	99190	99190	99190	99190	99190
99200	99200	99200	99200	99200	99200	99200	99200	99200
99210	99210	99210	99210	99210	99210	99210	99210	99210
99220	99220	99220	99220	99220	99220	99220	99220	99220
99230	99230	99230	99230	99230	99230	99230	99230	99230
99240	99240	99240	99240	99240	99240	99240	99240	99240
99250	99250	99250	99250	99250	99250	99250	99250	99250
99260	99260	99260	99260	99260	99260	99260	99260	99260
99270	99270	99270	99270	99270	99270	99270	99270	99270
99280	99280	99280	99280	99280	99280	99280	99280	99280
99290	99290	99290	99290	99290	99290	99290	99290	99290
99300	99300	99300	99300	99300	99300	99300	99300	99300
99310	99310	99310	99310	99310	99310	99310	99310	99310
99320	99320	99320	99320	99320	99320	99320	99320	99320
99330	99330	99330	99330	99330	99330	99330	99330	99330
99340	99340	99340	99340	99340	99340	99340	99340	99340
99350	99350	99350	99350	99350	99350	99350	99350	99350
99360	99360	99360	99360	99360	99360	99360	99360	99360
99370	99370	99370	99370	99370	99370	99370	99370	99370
99380	99380	99380	99380	99380	99380	99380	99380	99380
99390	99390	99390	99390	99390	99390	99390	99390	99390
99400	99400	99400	99400	99400	99400	99400	99400	99400
99410	99410	99410	99410	99410	99410	99410	99410	99410
99420	99420	99420	99420	99420	99420	99420	99420	99420
99430	99430	99430	99430	99430	99430	99430	99430	99430
99440	99440	99440	99440	99440	99440	99440	99440	99440
99450	99450	99450	99450	99450	99450	99450	99450	99450
99460	99460	99460	99460	99460	99460	99460	99460	99460
99470	99470	99470	99470	99470	99470	99470	99470	99470
99480	99480	99480	99480	99480	99480	99480	99480	99480
99490	99490	99490	99490	99490	99490	99490	99490	99490
99500	99500	99500	99500	99500	99500	99500	99500	99500
99510	99510	99510	99510	99510	99510	99510	99510	99510
99520	99520	99520	99520	99520	99520	99520	99520	99520
99530	99530	99530	99530	99530	99530	99530	99530	99530
99540	99540	99540	99540	99540	99540	99540	99540	99540
99550	99550	99550	99550	99550	99550	99550	99550	99550
99560	99560	99560	99560	99560	99560	99560	99560	99560
99570	99570	99570	99570	99570	99570	99570	99570	99570
99580	99580	99580	99580	99580	99580	99580	99580	99580
99590	99590	99590	99590	99590	99590	99590	99590	99590
99600	99600	99600	99600	99600	99600	99600	99600	99600

AMENDMENTS		AMENDMENTS		AMENDMENTS		AMENDMENTS	
No.	DESCRIPTION	APPROVED & DATE	No.	DESCRIPTION	APPROVED & DATE	No.	DESCRIPTION

METADATA

GROUND SURVEY STANDARD:
DATE OF CAPTURE:
MAPPING SURVEY STANDARD:
DATE OF CAPTURE:
MAIN ROADS PROJECT ZONE: BROCKTON/SLK
HERCIT BAY/SLK

REGIONAL OFFICES
WHEATBELT SOUTH REGION
NORTH ROAD
Telephone: (08) 94916666

NORTHAM-CRANBROOK ROAD (M031)
TAYLOR STREET INTERSECTION
99.28 SLK
PLAN AND PROFILE - MC00
CHA. 99140 TO CHA. 99530

DESIGNED: M. CELI FEB. '11
DRAWN: M. CELI FEB. '11
CHECKED: M. CELI FEB. '11
PROJECT NUMBER: 201109-026

Appendix L

Environmental Management Plan

ENVIRONMENTAL MANAGEMENT PLAN

NORTHAM-CRANBROOK RD / TAYLOR STREET INTERSECTION UPGRADE

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	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 mulched.	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 culverts will only need to be extended which 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
Construction	Pollution and Litter	Ensure that the construction of the proposal is managed to a standard that minimises	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

ENVIRONMENTAL MANAGEMENT PLAN					
Timing	Topic	Objective	Action	Responsible Party	Advice
		any adverse impacts on the environment.	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