PRELIMINARY ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN

Brookton Highway Realignment

Bulyee 160.6 – 169.4 SLK

July 2012

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SUMMARY

Main Roads Wheatbelt South Region is proposing to upgrade and realign the Brookton Highway between 160.6 – 169.4 SLK. This project, known as the Bulyee section is approximately 9km long with much of the work in resumed farmland.

Over the length of the project there are five areas that contain native vegetation. A total of 0.7 hectares of native vegetation from Beard Vegetation Associations 955 and 1023 are proposed to be cleared. The native vegetation is in completely degraded to degraded (Keighery, 1994) condition. This clearing will be undertaken using Main Roads' clearing permit CPS 818/6 and this Preliminary Environmental Impact Assessment (PEIA) found that the project is considered not likely to be at variance to any of the ten clearing Principles.

No Matters of National Environmental Significance as protected under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) will be impacted. 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 Office of the Environmental Protection Authority (OEPA).

No temporary clearing or offsets are required for this project.

A Bed and Banks permit will be sought from the Department of Water as the project area is a Proclaimed Surface Water Area and impacts to a watercourse are proposed.

Local Aboriginal informants will be consulted in relation to the registered aboriginal heritage sites located in the project area to determine if any project works may impact these Aboriginal heritage sites.

PRELIMINARY ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN

BROOKTON HIGHWAY REALIGNMENT - BULYEE SECTION

1. BACKGROUND

Main Roads is proposing to upgrade and realign approximately nine kilometres of the Brookton Highway near the Bulyee CBH grain receival facility. Known locally as the Brookton-Corrigin Road the project is situated 40 km to the west of Corrigin and 50 km to the east of Brookton. These works will create a safer road and roadside environment for motorists. This upgrade will also complement other projects to the west of this section that have been recently delivered.

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 PEIA and Environmental Management Plan (EMP) are required.

The PEIA 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 PEIA 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 Brookton Highway upgrade and realignment project starts at 160.6 SLK and finishes at 169.4 SLK. The first 2km of the project is widening of the existing Highway alignment with two minor realignments to straighten the road. At 162.5 SLK, a realignment moves the new road to the south leaving the existing Brookton Highway to allow for a safer curve and improvements at the Bulyee Road intersection (163.3 SLK). This first major realignment runs for approximately 1km before the Highway curves back onto the existing alignment. The works then widen the existing Highway for 1.3km, including upgrading the Rigby Road intersection, before the largest realignment, starting at 164.8 SLK, moves the road east of the old alignment into cleared agricultural land for 3.5km. The project finishes with a further 200m tie in to the existing Highway and stopping at 169.4 SLK. As part of the realignment section there will also be a north and south access road constructed into the CBH grain receival facility which will incorporate sections of the old Brookton Highway alignment.

2.1 Project Location

The project is located within the Shire of Gingin, 1km north of Bulyee. The location of the study area and project area are shown in figures 1 & 2 respectively.

Figure 1: Project Area

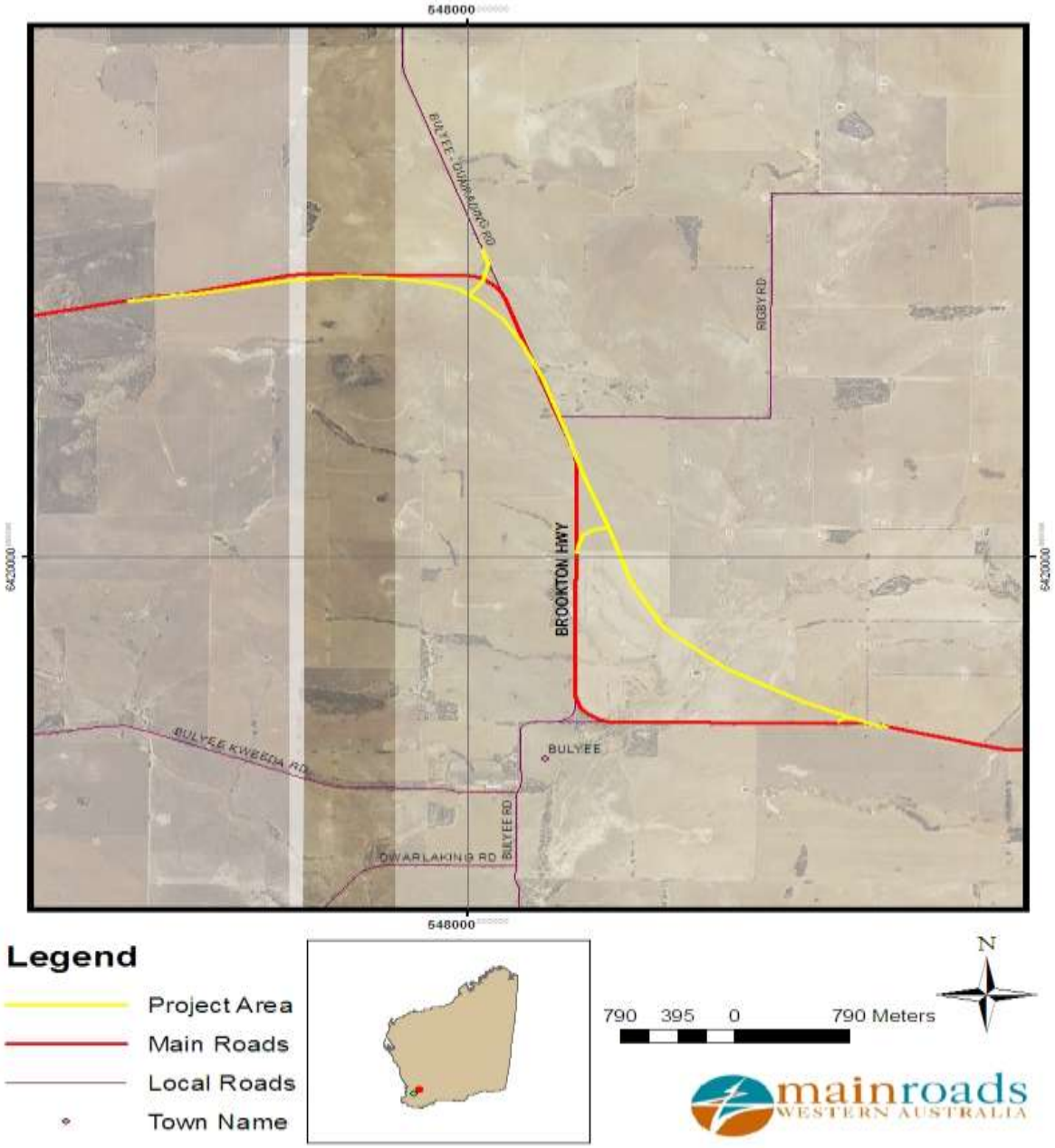
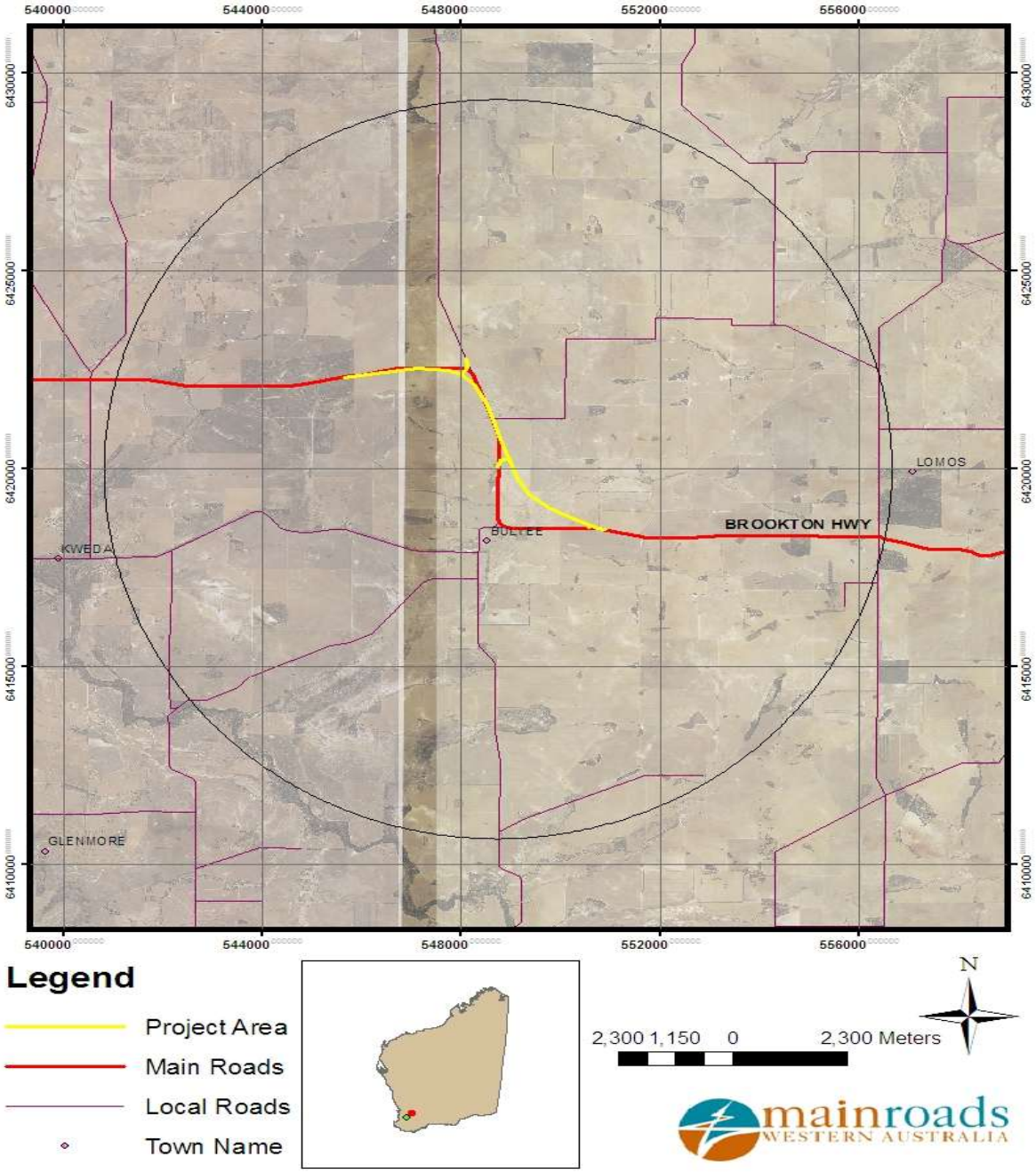


Figure 2: Study Area (10km radius, black circle)



3. METHODOLOGY

3.1 Desktop & Field Studies

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.

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 Department of Sustainability, Environment, Water, Population and Communities (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 OEPA 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* (EP Act).

4. EXISTING ENVIRONMENT

4.1 Vegetation Description

The native vegetation within the project area is mapped as two different Beard Vegetation Associations (Shepherd, 2007);

- 955 - Mosaic: Shrublands; scrub-heath (South East Avon) / Shrublands; *Allocasuarina campestris* thicket, and
- 1023 Medium woodland; York Gum, Wandoo & Salmon Gum

The project area consists of two main types of vegetation, being *Acacia acuminata* (Jam tree) scrub and a *Eucalyptus* tree stand. The vegetation is in predominately completely degraded condition with heavy weed infestation. There is a small area of approximately 25m^2 containing Jam scrub in degraded condition with an understorey of *Acacia pulchella* and *Daviesia rhombifolia*. Much of the project areas are degraded, dominated by an overstorey of tree species and a weedy understory of common introduced perennial and annual pasture species, including Watsonia species.

4.2 Landform and Soils

The road traverses a gently undulating landscape with geology and soils of the area changing from east to west. The western end of the project is an upland area with undulating terrain with some ridges and the presence of lateritic/granitic tors and hard alkaline yellow mottled soils. Down slope the major road realignment exists in a hard neutral red soils on colluvial slopes. At the eastern end of the project the road then moves lower in the landscape which is in a shallow swampy flat valley floor with sandy soils that are acidic gley (greenish-blue-grey) soils.

4.3 Site Investigation

A site inspection was carried out by Nigel Rowe (Environment Officer) in March and James Widenbar (Senior Environment Officer) and David Coates (Project Manager) in June 2012 to examine the project area. The broad vegetation types in the vicinity of the project area were identified along with their condition. See Appendix K for the site investigation report.

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.

Vegetation is proposed to be cleared for this project and as the activities are not exempt under the clearing regulation (Section 5 – Prescribed Clearing), this clearing will be undertaken using Main Roads' clearing permit CPS818/6.

5.1 Details of Vegetation Associations to be Cleared

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

Table 1: Vegetation Description, Condition and Percent Remaining

Vegetation Description	Start & End SLK	Condition (Keighery 1994)	Pre-European Extent Remaining (%)	Area (ha)
Acacia acuminata (Jam tree) scrub	160.6 – 163.1	Completely Degraded to Degraded	11	0.5
Eucalyptus tree stand (Wandoo and another unidentified Eucalyptus species)	163.1 –169.4	Degraded	11	0.2
			Total Area	0.7

Table 2: Vegetation Percent Remaining

	Pre European Extent (Ha)	Hectares Remaining	% Remaining Vegetation	Hectares Remaining in DEC Managed Lands	% Remaining Vegetation in DEC Lands
IBRA Region Avon-Wheatbelt	9,517,110	1,736,215	18	165,059	10
Shire of Corrigin	268,117	23,139	9	1,070	5
Beard Veg Association 955	139,324	15,263	11	1,764	12
955 in Bioregion	120,565	12,882	11	1,098	9

Shepherd, 2009

AVOIDANCE / MINIMISE CLEARING:

The clearing impacts been minimised by the following actions:

- *The road alignment was shortened to avoid a section of good condition native vegetation.*
- *Road alignment was picked to avoid several sections in the middle of the project area that contained numerous large Wandoo trees and good condition Jam scrub.*
- *The road alignment at the eastern end it constrained by the location of a western power structure.*

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, Schedule 5).

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.	
ASSESSMENT	The project area consists of two main types of vegetation, being Acacia acuminata (Jam tree) scrub and a Eucalyptus tree stand. The vegetation is in predominately completely degraded condition with heavy weed infestation. There is a small area of approximately 25m2 containing Jam scrub in degraded condition with an understorey of Acacia pulchella and Daviesia rhombifolia. Much of the project areas are degraded, dominated by an overstorey of tree species and a weedy understory of common introduced perennial and annual pasture species, including Watsonia species. The completely degraded understorey will not provide significant fauna habitat and only two mature wandoo trees contain suitable nesting hollows. There are six records of priority flora in the study area (10km radius). The nearest population being a Priority 2 species growing in the Overheu "A" class Nature Reserve, 3km to the west. There are no Threatened or Priority Ecological Communities recorded within the study area. Given the above the proposal is not likely to be at variance to this Principle.
METHODOLOGY & REFERENCES	Keighery (1994) DEC shapefiles MRWA Site Inspection (2012)
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	There are no recorded threatened fauna within the study area. The native vegetation on the site is in a completely degraded to degraded (Keighery, 1994) condition. The completely degraded understorey will not provide significant fauna habitat and only two mature wandoo trees contain suitable nesting hollows and is unlikely to present significant habitat for indigenous fauna. The project area is adjacent to farmland and there are numerous larger remnants of intact vegetation scattered in the adjacent farmland that are in considerably better condition than the project area. The project area is unlikely to provide a significant value as an ecological linkage. Given the above the proposal is not likely to be at variance to this Principle.
METHODOLOGY & REFERENCES	DEC shapefiles Keighery (1994) MRWA Site Inspection (2012)
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	The nearest record of rare flora is approximately 7 kilometres to the west of the project area. Given the project areas completely degraded (Keighery, 1994) condition with little to no understorey it is not to considered that the project area is necessary for the continued existence of rare flora. Given the above the proposal is not likely to be at variance to this Principle.
METHODOLOGY &	DEC shapefiles

REFERENCES	Keighery (1994) MRWA Site Inspection (2012)
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	There are no known records of Threatened Ecological Communities (TEC) in the study area. The nearest TEC is greater than 50 kilometres from the study area. The project area is also in completely degraded condition with little to no understorey. Given the above the proposal is not likely to be at variance to this Principle.
METHODOLOGY & REFERENCES	DEC shapefiles Keighery (1994) MRWA Site Inspection (2012)
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 surrounding area has scattered pockets of native vegetation cover with approximately 30% native vegetation remaining in the study area. The project area is adjacent to farmland and there are numerous larger remnants of intact vegetation scattered in the adjacent farmland that are in considerably better condition than the project area. The project area is unlikely to provide a significant value as an ecological linkage. The Beard Vegetation Associations are considered to be extensively cleared with less than 30% remaining, however the small number of wandoo trees proposed to be cleared and the degraded (Keighery, 1994) condition of Jam scrub are not considered to be significant remnants of native vegetation. Given the above the proposal is not likely to be at variance to this Principle.
METHODOLOGY & REFERENCES	Keighery (1994) MRWA Site Inspection (2012) Shepherd (2009)
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	The project crosses a minor non perennial watercourse that flows into the Avon River. The project area is in a Proclaimed Surface Water Area. No native vegetation occurs in the project area where it crosses the watercourse areas. There are no mapped wetlands in the project area. Given the above the proposal is not likely to be at variance to this Principle.
METHODOLOGY & REFERENCES	DoW and DEC shapefiles MRWA Site Inspection (2012)
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	The project areas soil mapping in the western section is Kweda 1 Subsystem described as Gravelly hill crests and upper slopes with sandy gravels and small areas of pale deep sands and loamy gravels. In the eastern section it is mapped as Aldersyde 1 Subsystem described as unsalinised broad valley flats of the upper Avon with sandy duplex and deep sand soils. Sandy / gravelly soils have good water infiltration and a small risk of wind and water erosions. Salinity and flooding risk are mapped as low and is not expected to be an issue given the small area proposed to be cleared.

	Given the sandy / gravelly soils, small area of clearing (0.7 ha), low relief and the project area being in a low rainfall zone (Corrigin 372.3 mm) this project is not considered likely to cause appreciable land degradation. Therefore the proposal is not likely to be at variance to this Principle.
METHODOLOGY & REFERENCES	BOM Website (Accessed 3 July 2012) MRWA Site Inspection (2012) Natural Resoruce Manaement SLIP Soil Systems (Accessed 3 July 2012)
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	There are two conservation areas within the study area. One is the Overheu "A" class Nature Reserve, and the other an unnamed "C" class Nature Reserve, 3km and 5km from the project area, respectively. The project area is adjacent to farmland and there are numerous larger remnants of intact vegetation scattered in the adjacent farmland that are in better condition than the project area. The project area is unlikely to provide a significant value as an ecological linkage to the nearby conservation areas. Given the above the proposal is not considered to impact on the environmental values of the nearby conservation areas and is not likely to be at variance to this Principle.
METHODOLOGY & REFERENCES	DEC shapefiles MRWA Site Inspection (2012)
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 proposal is to clear a small amount of native vegetation along approximately 9km of roadside. The project crosses a minor non perennial watercourse that flows into the Avon River. No vegetation will be cleared along the watercourse and as such no deterioration to surface water is expected. Given the small area of clearing and no dewatering being proposed it is unlikely to impact on groundwater. Given the above the proposal is not likely to be at variance to this Principle.
METHODOLOGY & REFERENCES	MRWA Site Inspection (2012) Natural Resoruce Manaement SLIP Soil Systems (Accessed 3 July 2012)
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	The soil mapping of the project area has low risk for flooding. The proposed clearing has a low relief and contains sandy / gravelly soils. Given the high infiltration rate of sandy soils and undulating low relief of the project area flooding is not likely to be caused or exacerbated. Given the above the proposal is not likely to be at variance to this Principle.
METHODOLOGY & REFERENCES	MRWA Site Inspection (2012) Natural Resoruce Manaement SLIP Soil Systems (Accessed 3 July 2012)
Proposal is not likely to be at variance to this Principle.	

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

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 Brookton Highway realignment project;

- A design has been selected that takes the road into previously cleared areas where possible to minimise adverse impacts on the biological environment,
- Site office and materials storage areas will be located on previously disturbed areas,
- Construction works to be undertaken in summer to reduce the potential for soil erosion impacting adjoining vegetation during heavy rains,
- Weeds will be sprayed within the project area prior to revegetation to limit the amount of propagative material that may be spread during disturbance,
- Any stockpiled vegetation from clearing will not be burnt, this material shall be mulched and used during the revegetation works,

Table 3 summarizes what further assessment and management is required in accordance with MRWA State-wide vegetation Clearing Permit (CPS 818/6).

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?	**N/A**	
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?	**N/A**	
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 – Brookton Highway Bulyee Realignment

Aspect	Evaluation of Potential Impacts
Vegetation – clearing	0.7 hectares of native vegetation is proposed to be cleared. The project area consists of two main types of vegetation, being *Acacia acuminata* (Jam tree) scrub and a *Eucalyptus* tree stand. The vegetation is in predominately completely degraded condition with heavy weed infestation. There is a small area of approximately 25m^2 containing Jam scrub in degraded condition with an understorey of *Acacia pulchella* and *Daviesia rhombifolia*. Much of the project areas are degraded, dominated by an overstorey of tree species and a weedy understory of common introduced perennial and annual pasture species, including Watsonia species.
Vegetation – TECs/DRF	None TEC's identified within the project area. 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. No Matters of National Environmental Significance as protected under EPBC Act (1999) will be impacted (see Table 5).
Vegetation – weeds	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.
Vegetation – dieback	Not an issue given the project area receives less than 400 mm of average annual rainfall (Corrigin 372.3 mm).
Fauna	No significant fauna issues associated with any of the proposed upgrade works. With the predominately completely degraded (Keighery, 1994) condition of the project areas no significant impacts are expected on native fauna. The project area is not considered to be a vital ecological linkage or contain significant fauna habitat. No Matters of National Environmental Significance as protected under the EPBC Act (1999) will be impacted (see Table 5).
Heritage (non-indigenous)	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 Corrigin on the Australian Heritage Places Inventory. Five sites were identified in the Shire of Corrigin in Bulyee on the Heritage Council of Western Australia Places Database. These sites are all structures from the Bulyee town site and will not be impacted by the works. No Matters of National Environmental Significance as protected under EPBC Act (1999) will be impacted (see Table 5).
Aboriginal heritage	A search of the DIA's database identified three known sites of Aboriginal heritage significance within the vicinity of the project area. • Site 3536 – Swan River • Site 5729 – Turners Farm 1. Bulyee • Site 5730 – Turners Farm 2 Further heritage studies are now required in relation to these sites to determine if there will be any impact and if a Section 18 is needed.

Table 4: Aspects and Impacts – Brookton Highway Bulyee Realignment

Aspect	Evaluation of Potential Impacts
Wetlands	DEC shapefiles show that there are no wetlands within the vicinity of the project area. No Matters of National Environmental Significance as protected under EPBC Act (1999) will be impacted (see Table 5).
Surface water/drainage	A search of the DoW's database has identified the project crosses a minor non perennial watercourse. The culvert under the road at this watercourse will not alter any natural drainage or surface run-off patterns allowing the water (when present) in the watercourse to flow downstream.
Groundwater	No dewatering nor major drainage modifications are required, hence no change to groundwater level or quality.
Reserves / Conservation areas	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.
Air quality	Not relevant to the proposed works. Local air quality assessment is not required for the project since: • the predicted traffic flow is less than 15,000 vehicles per day in rural areas (320 vehicles per day with 24.0% heavy vehicles on the Brookton Hwy just east of Bulyee Road ~167 SLK); • residential and other sensitive receptors are not within 200 meters of the road centre.
Dust	Likely to be a minor issue during earthworks. No major sensitive receivers adjacent to the proposed works, but excessive dust could impact vegetation. This is likely to be easily managed by standard construction dust management techniques.
Noise and vibration	No major sensitive local receivers. Construction works is not expected to significantly contribute to noise levels at the nearest sensitive receivers, provided works are limited to normal working hours. The requirements of the Shire of Corrigin must be met in respect of noise management and construction working hours.
Visual amenity	The proposed works will result in minor and short-term visual impacts during construction.
Public safety and risk	Provided traffic management and signage to Main Roads standards is employed, none of the proposed works present any significant hazards to public safety. The proposed works will serve to enhance public safety by improving local road and pedestrian conditions.
Hazardous substances	Not relevant to the proposed works, the project requires no hazardous substances to be used.
Contamination	The works are within the road reserve and no known previous land use activities on or adjacent to the project area have had the potential to create contamination, e.g. petrol station. 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.

Table 4: Aspects and Impacts – Brookton Highway Bulyee Realignment

Aspect	Evaluation of Potential Impacts
Statutory Land Use Planning	The proposed works for the realignment sections will take place outside the existing road reserve. This will require land excision, with the project area being outside of any Regional Scheme area and is zoned as "Farming" under the Local Government Planning Scheme (Corrigin) which is a supported land use for roads.

Table 5: Commonwealth Aspects and Impacts – Brookton Highway Realignment

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, 13 threatened species and 4 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 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 DSEWPC.

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 OEPA.

8. STAKEHOLDER CONSULTATION

Aboriginal informants from the Gnaala Karla Booja (WC98/58 / WAD6274/1998) group will need to be consulted in relation to the registered aboriginal heritage sites located in the project area in line with Main Roads Aboriginal Heritage Guideline (6707/006).

No stakeholders have been consulted at the time of preparing this report.

9. OTHER APPROVALS/PERMITS/LICENCES

A Bed and Banks permit will be sought from the Department of Water.

A section 18 may be required following consultation with the local Aboriginal informants.

10. REFERENCES

Bureau of Meteorology Australia. Climate Averages for Australian Sites – Corrigin – Accessed 3 July 2012
http://www.bom.gov.au/climate/averages/tables/cw_010536.shtml

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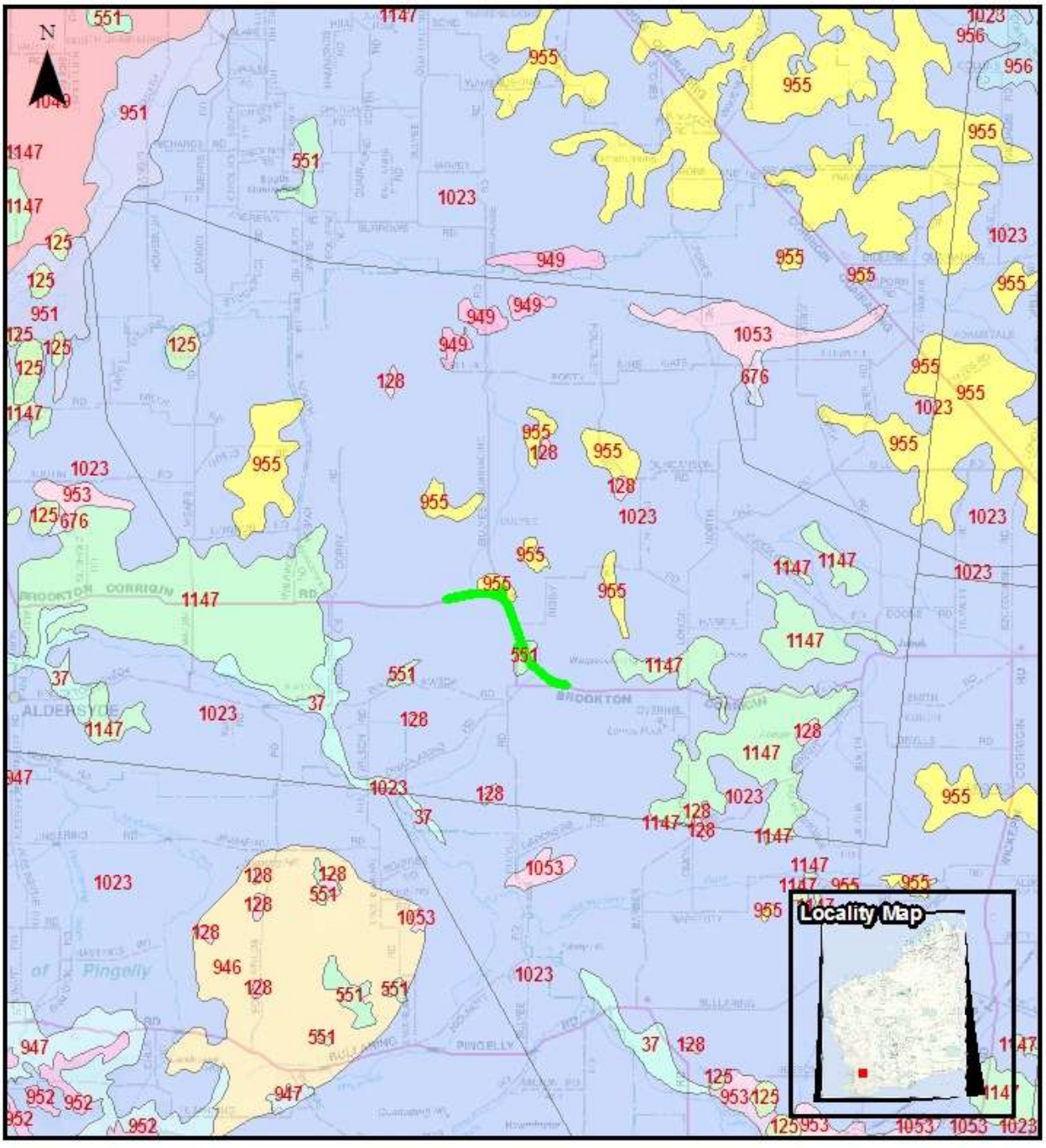
http://spatial.agric.wa.gov.au/slip/products_view.asp

Shepherd, D.P. (2009) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A. J. M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.

Appendix A

Vegetation Association Mapping

Brookton Highway - Bulyee Project, 160.6-169.4 SLK



LEGEND
Travellers Atlas
RGB
Red: Band_1
Green: Band_2
Blue: Band_3

0 1 2 4 Km

MAP INFORMATION
Geographic Coordinate System: Geocentric
Datum of Australia 1994 - Projection MGA Zone 50

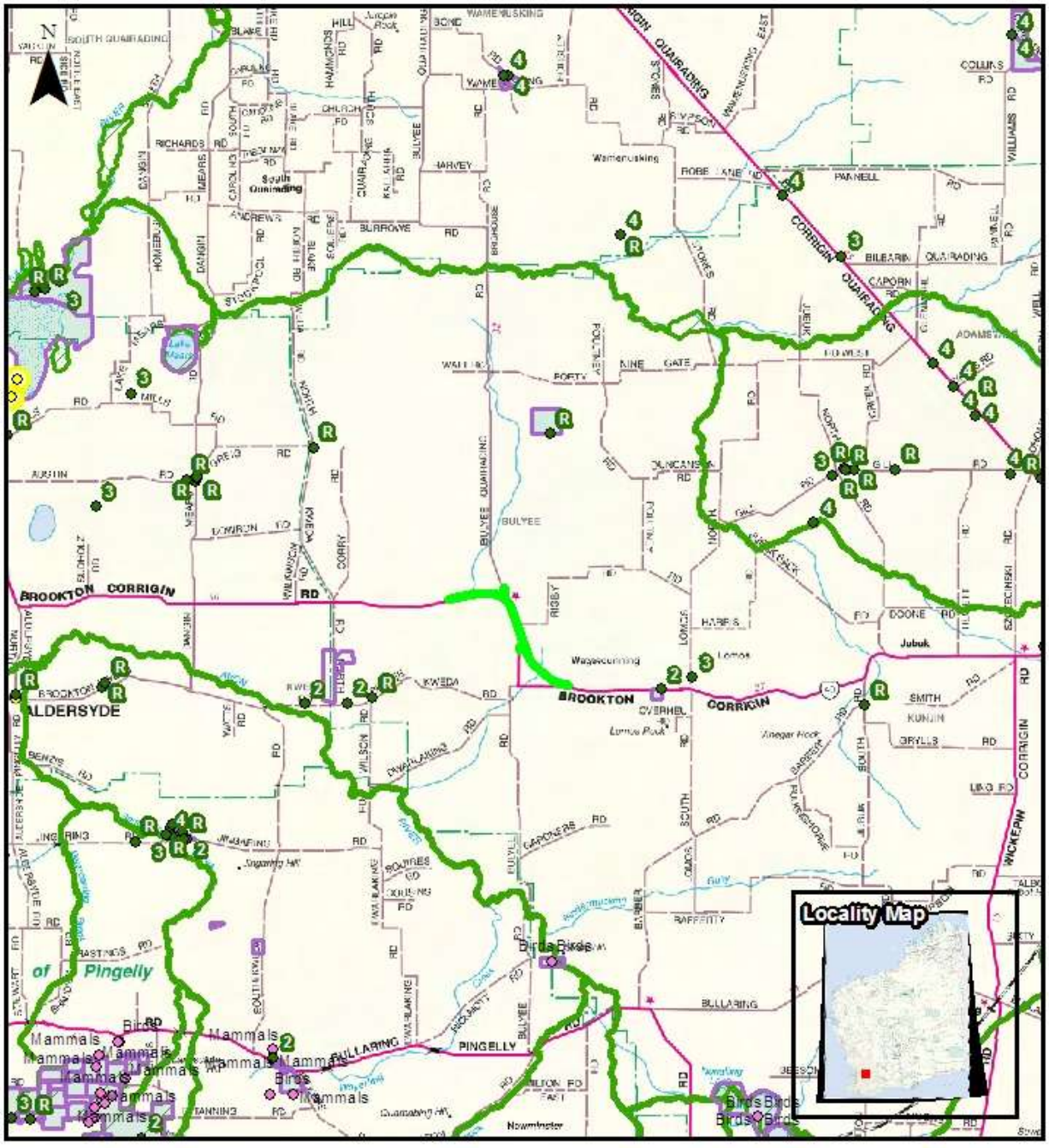
PUBLISHER DETAILS
Directorate: Regional Services
Branch: Wheatbelt South Region
Author: Nigel Rowe
Data Currency: As Supplied

Project: Brookton Highway - Bulyee

Appendix B

DEC Threatened Flora, Fauna and Conservation Areas GIS Search

Brookton Highway - Bulyee Project, 160.6-169.4 SLK



LEGEND

- THFL - MRWA
- Threatened Fauna
- TEC / PEC Sites
- TEC / PEC Buffers
- TEC / PEC Sites & Buffers
- DEC Lands
- ESAs

0 1 2 4 Km

MAP INFORMATION
Geographic Coordinate System: Geocentric
Datum of Australia 1994 - Projection MGA Zone 50

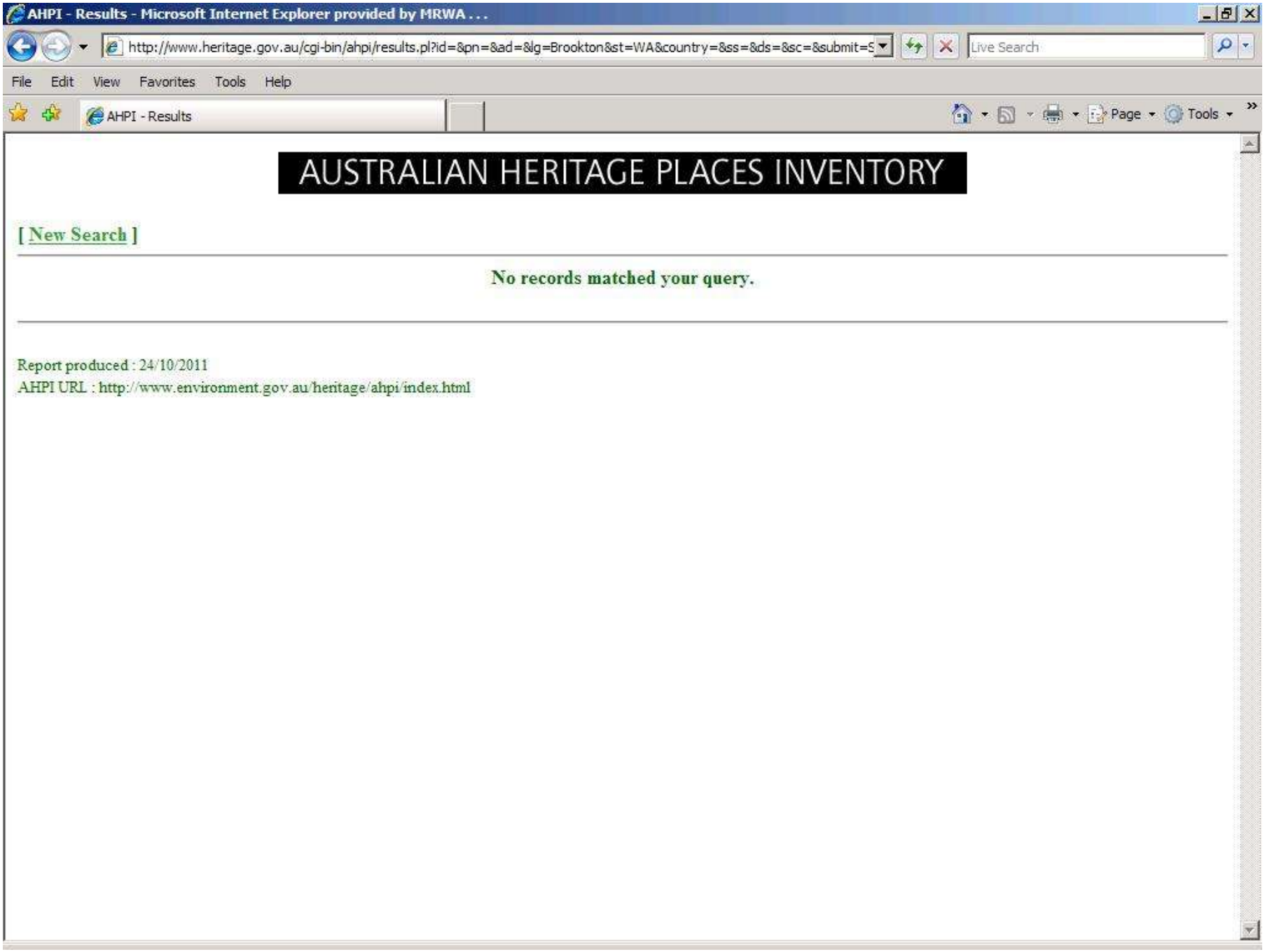
PUBLISHER DETAILS

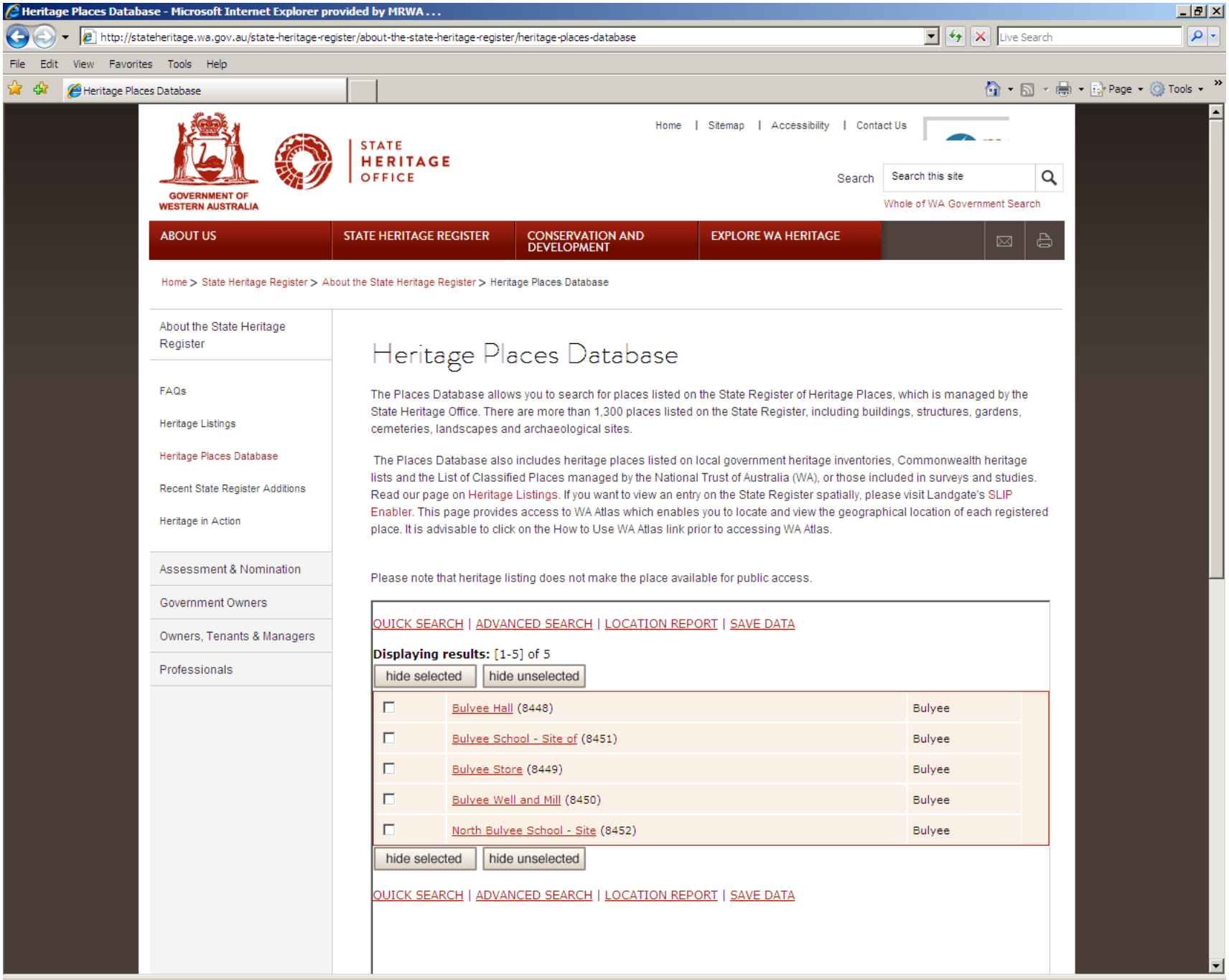
Directorate: Regional Services
Branch: Wheatbelt South Region
Author: Nigel Rowe
Data Currency: As Supplied

Project: Brookton Highway - Bulyee

Appendix C

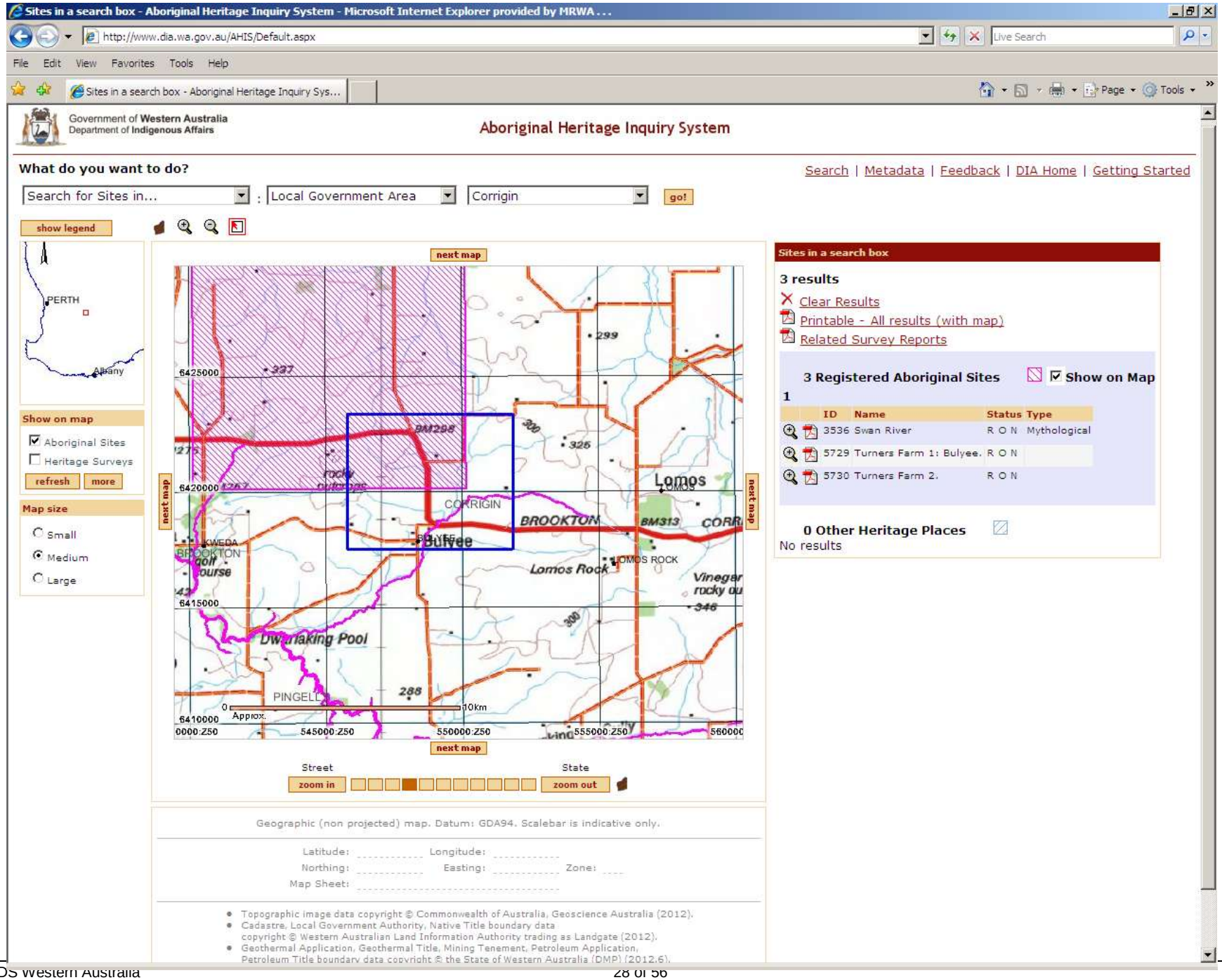
Australian Heritage Places Inventory and Heritage Council of Western Australia Database Searches


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
Page Tools
AUSTRALIAN HERITAGE PLACES INVENTORY
[New Search]
No records matched your query.
Report produced : 24/10/2011
AHPI URL : http://www.environment.gov.au/heritage/ahpi/index.html


Heritage Places Database - Microsoft Internet Explorer provided by MRWA . . .
http://stateheritage.wa.gov.au/state-heritage-register/about-the-state-heritage-register/heritage-places-database
File Edit View Favorites Tools Help
Heritage Places Database
Page Tools
GOVERNMENT OF WESTERN AUSTRALIA
STATE HERITAGE OFFICE
Home | Sitemap | Accessibility | Contact Us
Search
Search this site
Whole of WA Government Search
ABOUT US
STATE HERITAGE REGISTER
CONSERVATION AND DEVELOPMENT
EXPLORE WA HERITAGE
Home > State Heritage Register > About the State Heritage Register > Heritage Places Database
About the State Heritage Register
FAQs
Heritage Listings
Heritage Places Database
Recent State Register Additions
Heritage in Action
Assessment & Nomination
Government Owners
Owners, Tenants & Managers
Professionals
Heritage Places Database
The Places Database allows you to search for places listed on the State Register of Heritage Places, which is managed by the State Heritage Office. There are more than 1,300 places listed on the State Register, including buildings, structures, gardens, cemeteries, landscapes and archaeological sites.
The Places Database also includes heritage places listed on local government heritage inventories, Commonwealth heritage lists and the List of Classified Places managed by the National Trust of Australia (WA), or those included in surveys and studies. Read our page on Heritage Listings. If you want to view an entry on the State Register spatially, please visit Landgate's SLIP Enabler. This page provides access to WA Atlas which enables you to locate and view the geographical location of each registered place. It is advisable to click on the How to Use WA Atlas link prior to accessing WA Atlas.
Please note that heritage listing does not make the place available for public access.
QUICK SEARCH | ADVANCED SEARCH | LOCATION REPORT | SAVE DATA
Displaying results: [1-5] of 5
hide selected
hide unselected
Bulyee Hall (8448) Bulyee
Bulyee School - Site of (8451) Bulyee
Bulyee Store (8449) Bulyee
Bulyee Well and Mill (8450) Bulyee
North Bulyee School - Site (8452) Bulyee
hide selected
hide unselected
QUICK SEARCH | ADVANCED SEARCH | LOCATION REPORT | SAVE DATA

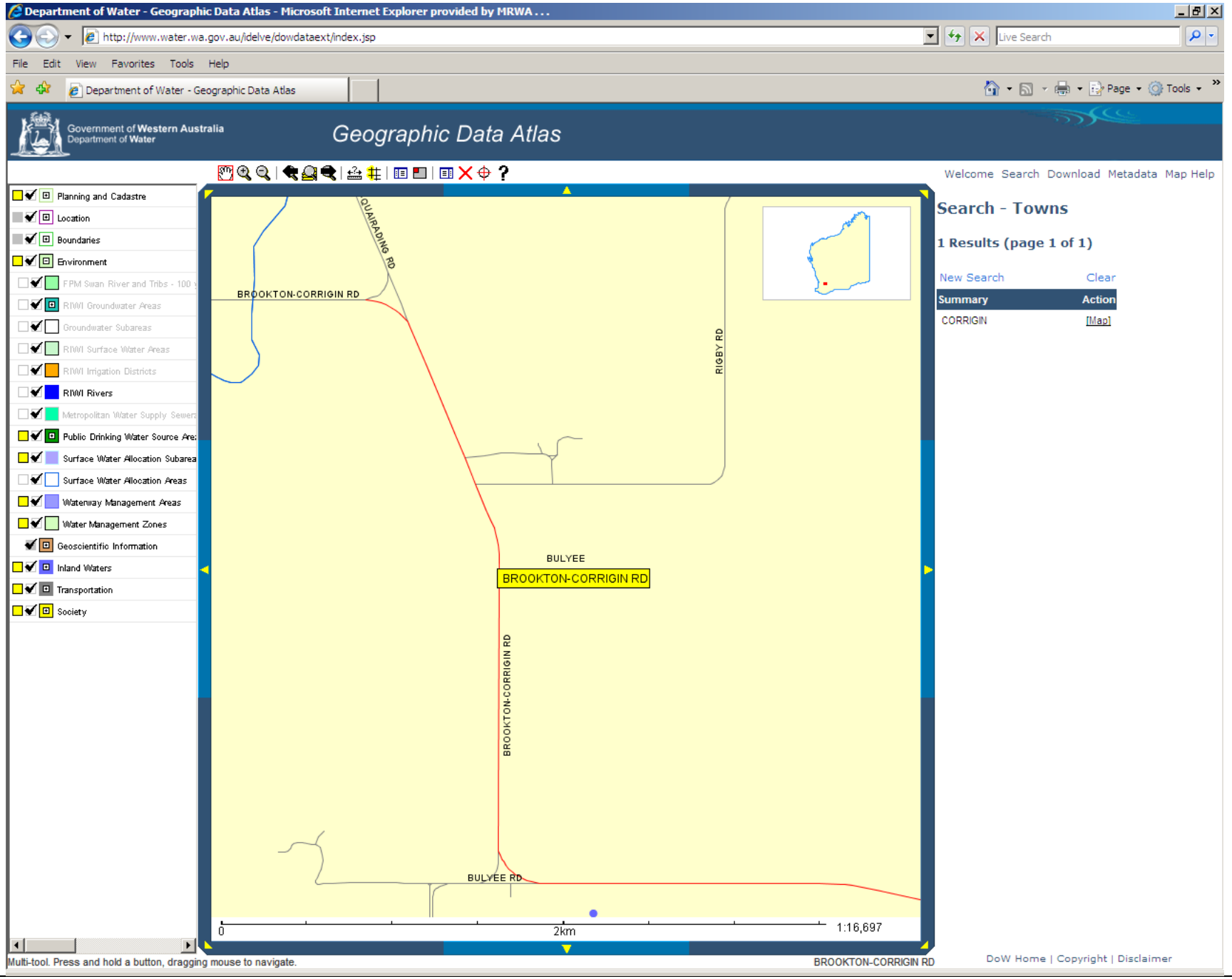
Appendix D

Department of Indigenous Affairs Database Search


Sites in a search box - Aboriginal Heritage Inquiry System - Microsoft Internet Explorer provided by MRWA . . .
http://www.dia.wa.gov.au/AHIS/Default.aspx
Government of Western Australia
Department of Indigenous Affairs
Aboriginal Heritage Inquiry System
What do you want to do?
Search | Metadata | Feedback | DIA Home | Getting Started
Search for Sites in...
Local Government Area
Corrigin
go!
show legend
PERTH
Albany
Show on map
Aboriginal Sites
Heritage Surveys
refresh
more
Map size
Small
Medium
Large
next map
6425000
6420000
6415000
6410000
CORRIGIN
BROOKTON
Bulyee
Lomos
Lomos Rock
LOMOS ROCK
PINGELLY
Approx.
0
10km
545000:Z50
550000:Z50
555000:Z50
Street
State
zoom in
zoom out
Geographic (non projected) map. Datum: GDA94. Scalebar is indicative only.
Latitude:
Longitude:
Northing:
Easting:
Zone:
Map Sheet:
Topographic image data copyright © Commonwealth of Australia, Geoscience Australia (2012).
Cadastre, Local Government Authority, Native Title boundary data
copyright © Western Australian Land Information Authority trading as Landgate (2012).
Geothermal Application, Geothermal Title, Mining Tenement, Petroleum Application,
Petroleum Title boundary data copyright © the State of Western Australia (DMP) (2012.6).
Sites in a search box
3 results
Clear Results
Printable - All results (with map)
Related Survey Reports
3 Registered Aboriginal Sites
Show on Map
1
ID
Name
Status
Type
3536 Swan River R O N Mythological
5729 Turners Farm 1: Bulyee. R O N
5730 Turners Farm 2. R O N
0 Other Heritage Places
No results

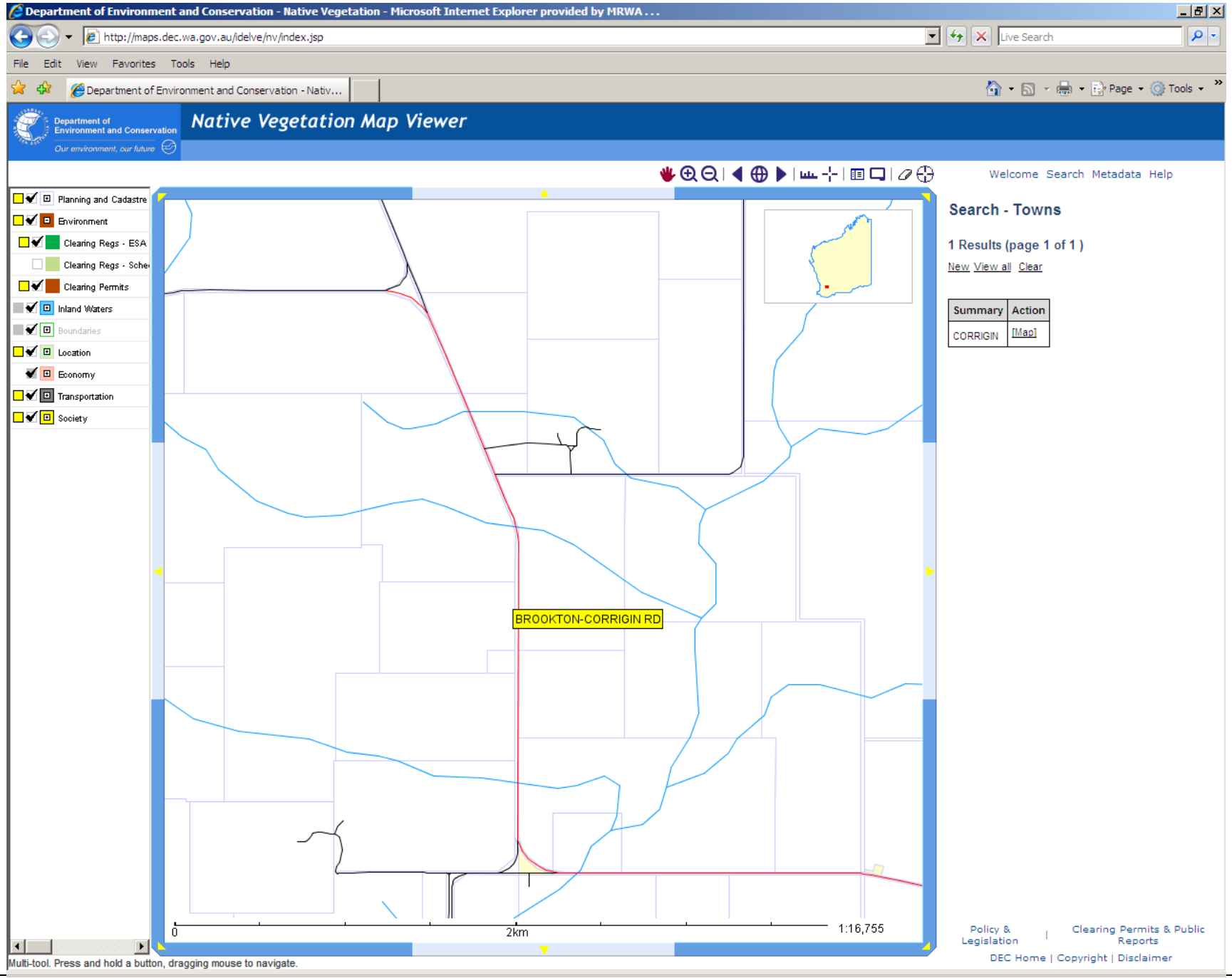
Appendix E

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
Live Search
File Edit View Favorites Tools Help
Department of Water - Geographic Data Atlas
Page Tools
Government of Western Australia
Department of Water
Geographic Data Atlas
Welcome Search Download Metadata Map Help
Planning and Cadastre
Location
Boundaries
Environment
FPM Swan River and Tribs - 100 y
RIWI Groundwater Areas
Groundwater Subareas
RIWI Surface Water Areas
RIWI Irrigation Districts
RIWI Rivers
Metropolitan Water Supply Sewer
Public Drinking Water Source Are
Surface Water Allocation Subarea
Surface Water Allocation Areas
Waterway Management Areas
Water Management Zones
Geoscientific Information
Inland Waters
Transportation
Society
QUARADING RD
BROOKTON-CORRIGIN RD
RIGBY RD
BULYEE
BROOKTON-CORRIGIN RD
BROOKTON-CORRIGIN RD
BULYEE RD
0
2km
1:16,697
Search - Towns
1 Results (page 1 of 1)
New Search
Clear
Summary
Action
CORRIGIN
[Map]
Multi-tool. Press and hold a button, dragging mouse to navigate.
BROOKTON-CORRIGIN RD
DoW Home | Copyright | Disclaimer

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
Live Search
File Edit View Favorites Tools Help
Department of Environment and Conservation - Nativ...
Page Tools
Department of Environment and Conservation
Our environment, our future
Native Vegetation Map Viewer
Welcome Search Metadata Help
Planning and Cadastre
Environment
Clearing Regs - ESA
Clearing Regs - Sche
Clearing Permits
Inland Waters
Boundaries
Location
Economy
Transportation
Society
BROOKTON-CORRIGIN RD
0
2km
1:16,755
Search - Towns
1 Results (page 1 of 1)
New View all Clear
Summary
Action
CORRIGIN
[Map]
Policy & Legislation
Clearing Permits & Public Reports
DEC Home | Copyright | Disclaimer
Multi-tool. Press and hold a button, dragging mouse to navigate.

Appendix G

DSEWPC Database Search

Australian Government
Department of Sustainability, Environment, Water, Population and Communities

EPBC Act Protected Matters Report

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

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information about the EPBC Act including significance guidelines, forms and application process details can be found at http://www.environment.gov.au/epbc/assessmentsapprovals/index.html

Report created: 07/06/12 17:20:24

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 Environment 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	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Areas:	None
Threatened Ecological Communities:	None
Threatened Species:	13
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

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.

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.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	4
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves:	None

Extra Information

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

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

Name	Status	Type of Presence
Leipoa ocellata		
Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
MAMMALS		
Dasyurus geoffroii		
Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat likely to occur within area
Phascogale calura		
Red-tailed Phascogale [316]	Endangered	Species or species habitat may occur within area
PLANTS		
Acacia ataxiphylla subsp. magna		
Large-fruited Tammin Wattle [64823]	Endangered	Species or species habitat may occur within area
Banksia oligantha		
Wagin Banksia [20697]	Endangered	Species or species habitat may occur within area
Boronia capitata subsp. capitata		
a shrub [29156]	Endangered	Species or species habitat may occur within area
Grevillea dryandroides subsp. hirsuta		
Hairy Phalanx Grevillea [64577]	Endangered	Species or species habitat likely to occur within area
Grevillea scapigera		
Corrigin Grevillea [12195]	Endangered	Species or species habitat known to occur within area
Rhizanthella gardneri		
Underground Orchid, Western Australian Underground Orchid [20109]	Endangered	Species or species habitat likely to occur within area
Roycea pycnophylloides		
Saltmat [21161]	Endangered	Species or species habitat may occur within area
Symonanthus bancroftii		
Bancrofts Symonanthus [12837]	Endangered	Species or species habitat may occur within area
Verticordia fimbrilepis subsp. fimbrilepis		
Shy Featherflower [24631]	Endangered	Species or species habitat may occur within area

Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	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		
Leipoa ocellata		
Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
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]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	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
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 Resouces Audit,

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

Name	Status	Type of Presence
Vulpes vulpes		
Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Asparagus asparagoides		
Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Carrichtera annua		
Ward's Weed [9511]		Species or species habitat may occur within area
Cenchrus ciliaris		
Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
Chrysanthemoides monilifera		
Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Lycium ferocissimum		
African Boxthorn, Boxthorn [19235]		Species or species habitat may occur within area
Tamarix aphylla		
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

Coordinates

-32.33303 117.50376,-32.33303 117.50924,-32.3347 117.51229,-32.34765 117.51807,
-32.36607 117.52249,-32.36927 117.52538,-32.36927 117.53026

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

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

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.

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

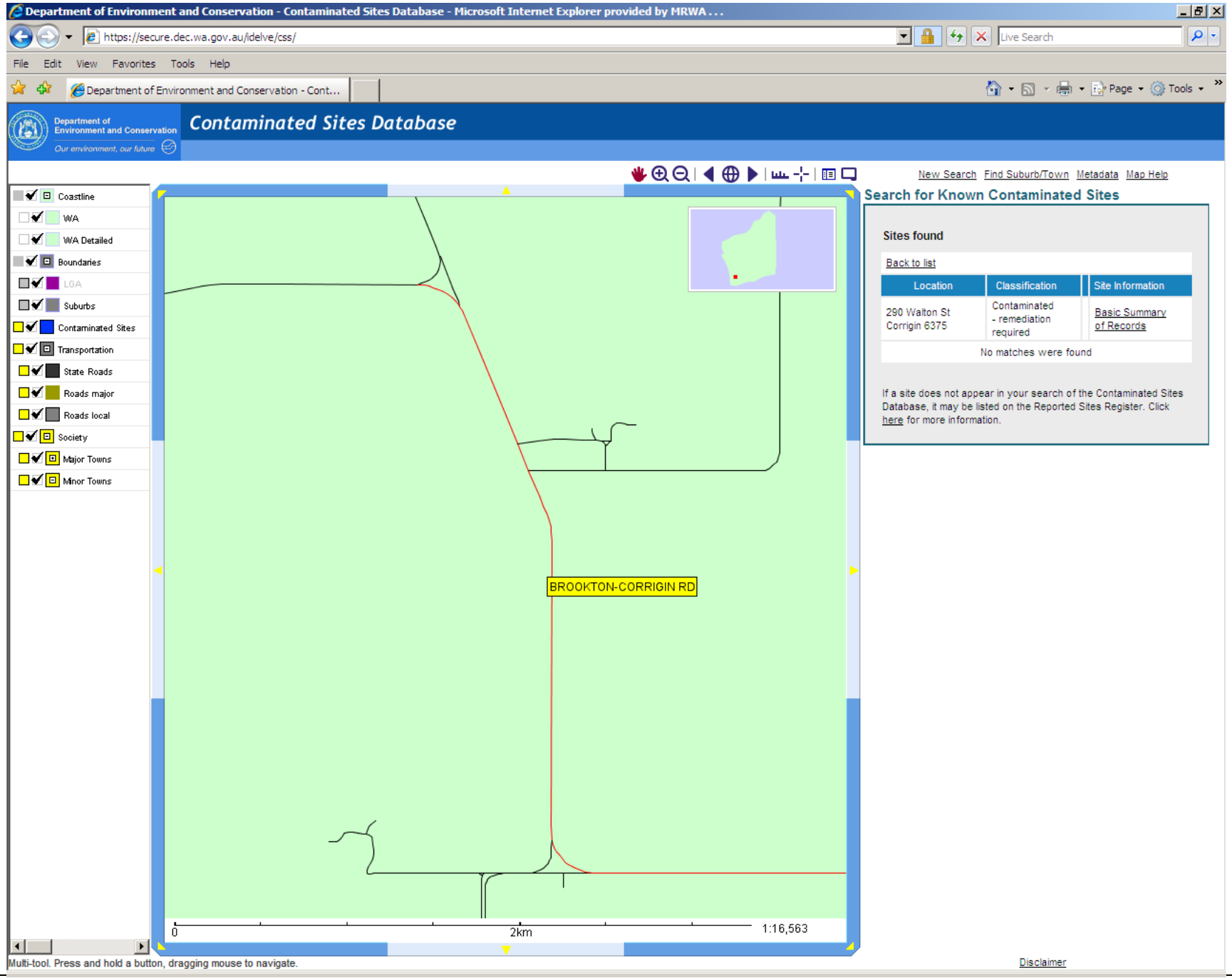
The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

Department of Sustainability, Environment, Water, Population and Communities
GPO Box 787
Canberra ACT 2601 Australia
+61 2 6274 1111

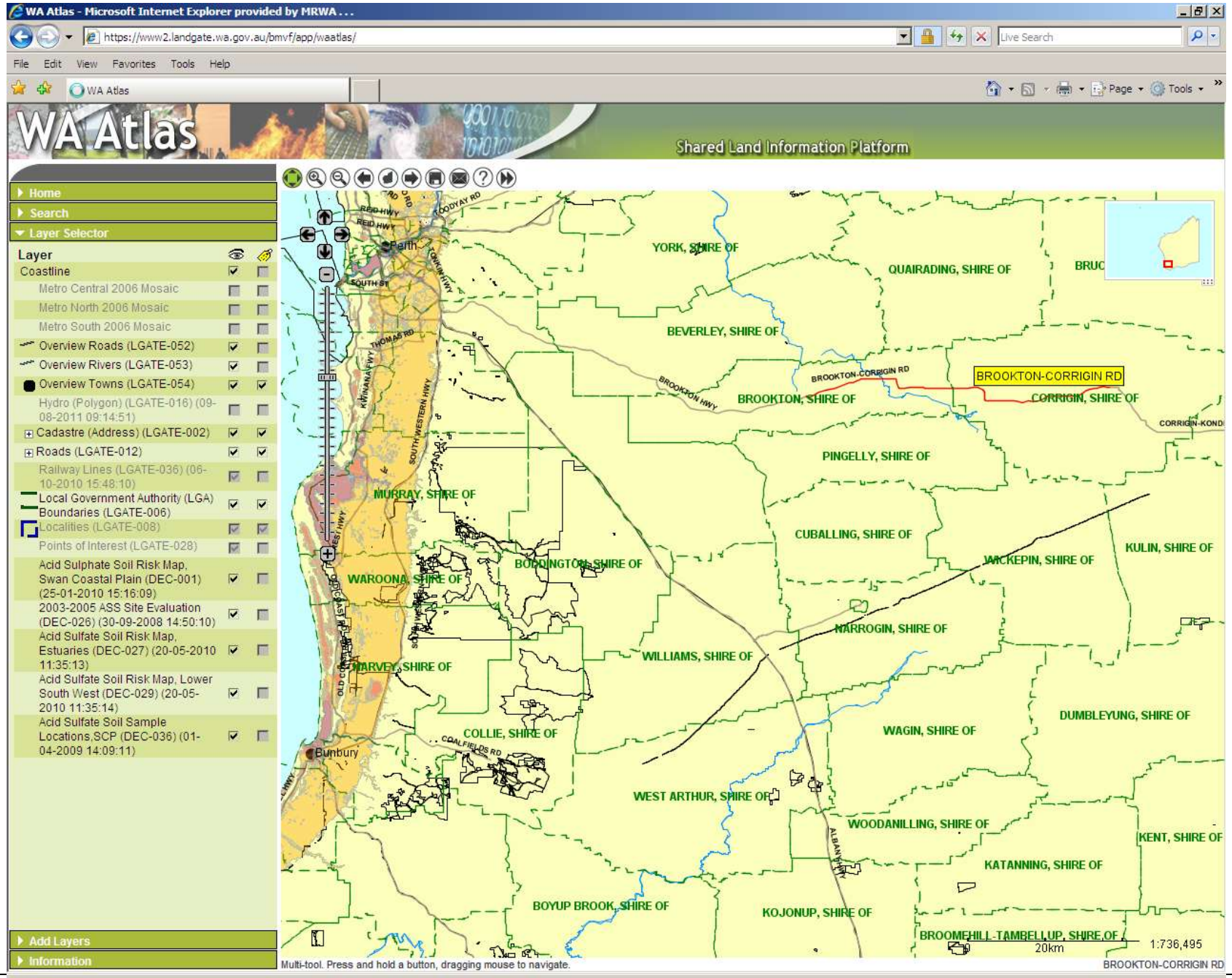
Appendix H

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/
Live Search
File Edit View Favorites Tools Help
Department of Environment and Conservation - Cont...
Page Tools
Department of Environment and Conservation
Our environment, our future
Contaminated Sites Database
New Search Find Suburb/Town Metadata Map Help
Coastline
WA
WA Detailed
Boundaries
LGA
Suburbs
Contaminated Sites
Transportation
State Roads
Roads major
Roads local
Society
Major Towns
Minor Towns
BROOKTON-CORRIGIN RD
0
2km
1:16,563
Search for Known Contaminated Sites
Sites found
Back to list
Location
Classification
Site Information
290 Walton St Corrigin 6375
Contaminated - remediation required
Basic Summary of Records
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

Acid Sulfate Soils Mapping


WA Atlas - Microsoft Internet Explorer provided by MRWA . . .
https://www2.landgate.wa.gov.au/bmvf/app/waatlas/
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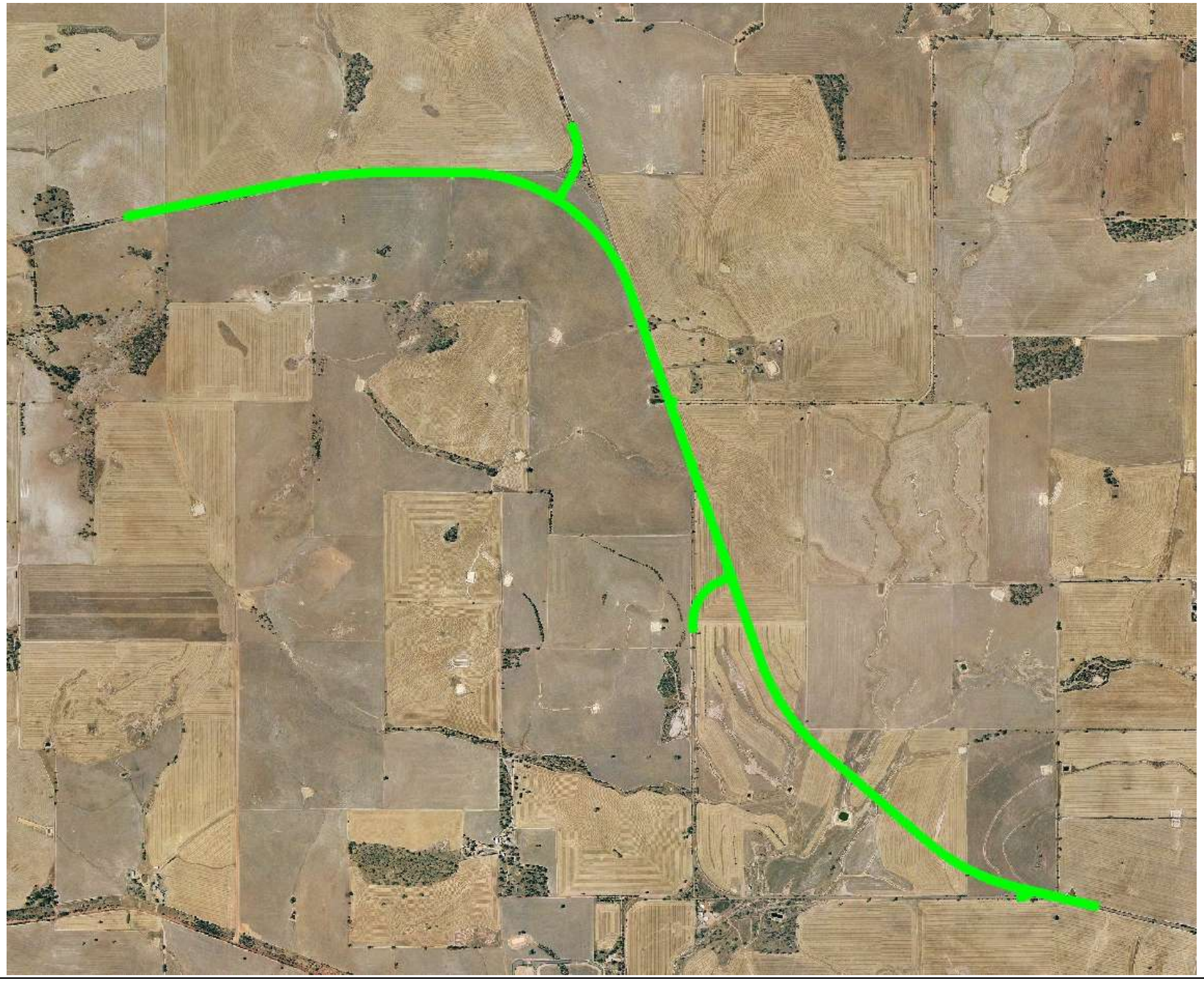
WA Atlas
WA Atlas
Shared Land Information Platform
Home
Search
Layer Selector
Layer
Coastline
Metro Central 2006 Mosaic
Metro North 2006 Mosaic
Metro South 2006 Mosaic
Overview Roads (LGATE-052)
Overview Rivers (LGATE-053)
Overview Towns (LGATE-054)
Hydro (Polygon) (LGATE-016) (09-08-2011 09:14:51)
Cadastre (Address) (LGATE-002)
Roads (LGATE-012)
Railway Lines (LGATE-036) (06-10-2010 15:48:10)
Local Government Authority (LGA) Boundaries (LGATE-006)
Localities (LGATE-008)
Points of Interest (LGATE-028)
Acid Sulphate Soil Risk Map, Swan Coastal Plain (DEC-001) (25-01-2010 15:16:09)
2003-2005 ASS Site Evaluation (DEC-026) (30-09-2008 14:50:10)
Acid Sulfate Soil Risk Map, Estuaries (DEC-027) (20-05-2010 11:35:13)
Acid Sulfate Soil Risk Map, Lower South West (DEC-029) (20-05-2010 11:35:14)
Acid Sulfate Soil Sample Locations,SCP (DEC-036) (01-04-2009 14:09:11)
Add Layers
Information
Perth
Bunbury
YORK, SHIRE OF
QUAIRADING, SHIRE OF
BEVERLEY, SHIRE OF
BROOKTON, SHIRE OF
BROOKTON-CORRIGIN RD
CORRIGIN, SHIRE OF
PINGELLY, SHIRE OF
MURRAY, SHIRE OF
CUBALLING, SHIRE OF
BODDINGTON, SHIRE OF
WICKEPIN, SHIRE OF
KULIN, SHIRE OF
WAROONA, SHIRE OF
NARROGIN, SHIRE OF
HARVEY, SHIRE OF
WILLIAMS, SHIRE OF
DUMBLEYUNG, SHIRE OF
COLLIE, SHIRE OF
WAGIN, SHIRE OF
WEST ARTHUR, SHIRE OF
WOODANILLING, SHIRE OF
KENT, SHIRE OF
KATANNING, SHIRE OF
BOYUP BROOK, SHIRE OF
KOJONUP, SHIRE OF
BROOMEHILL-TAMBELLUP, SHIRE OF
20km
1:736,495
Multi-tool. Press and hold a button, dragging mouse to navigate.
BROOKTON-CORRIGIN RD

Appendix J

Aerial Photo



Appendix K

Site Investigation Report

Brookton Highway Realignment, Bulyee – 160.6 – 169.4 SLK

ATTENDEES

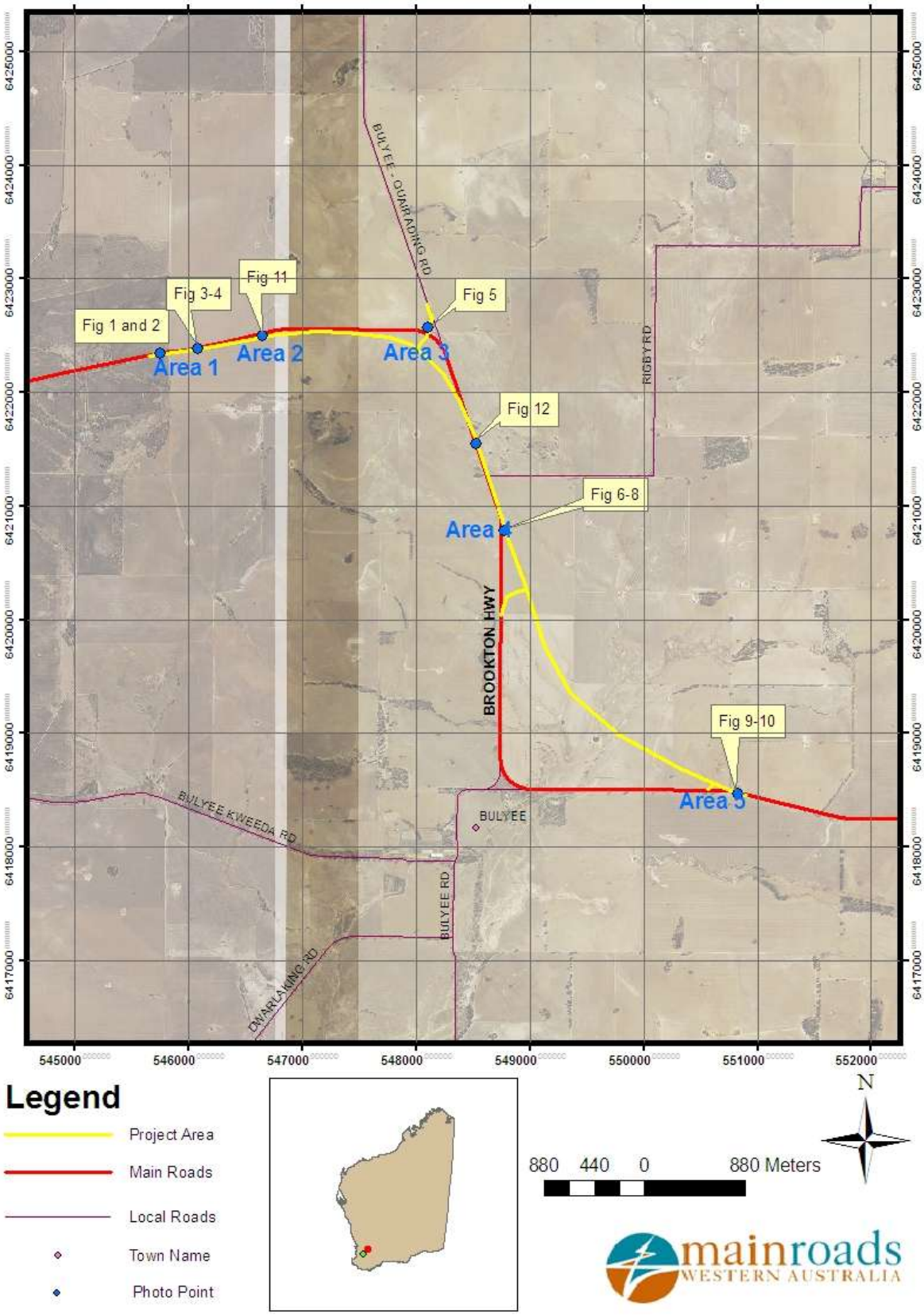
James Widenbar (Senior Environment Officer, MRWA)
David Coates (Project Manager, MRWA)

ACTIONS UNDERTAKEN

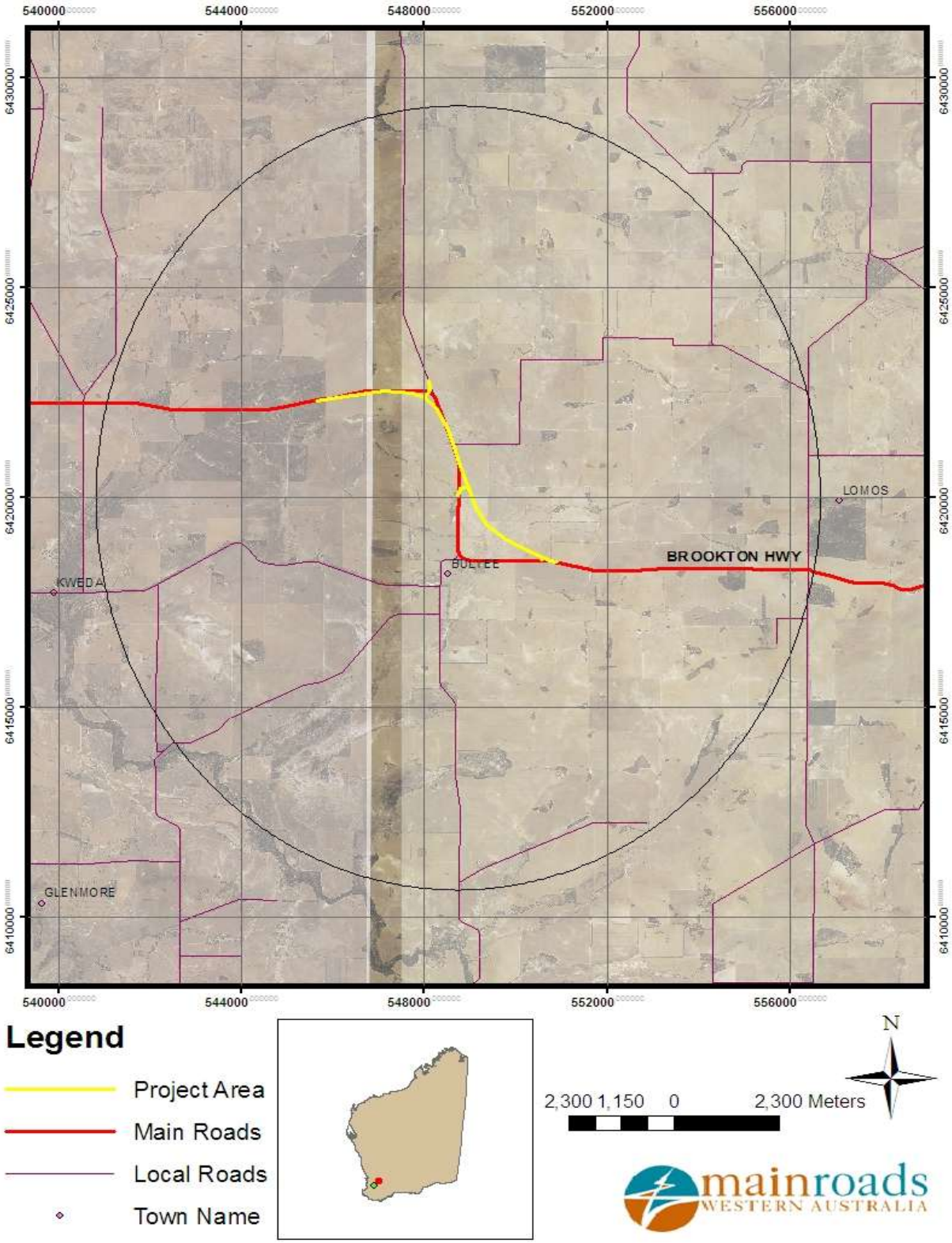
- Met with David Coates and went to project area.
- Drive along project areas and stopped at each of the five areas where native vegetation clearing is proposed to occur.
- Traversed proposed clearing areas on foot.
- Took representative site photos.

EXISTING ENVIRONMENT & INFORMATION

Map 1: Brookton Highway Realignment- Bulyee 160.6 – 169.4 SLK



Map 2 Local Area (10km Radius, black circle)



Site Photos

Fig 1. Looking east along Area 1. Scattered scrubs in completely degraded condition. Heavy weed presence.

Fig 2. Looking west from Area 1 boundary. **This area is not being cleared**. The road alignment was shortened here to avoid this section of good (Keighery, 1994) condition native vegetation.

Fig 3. Looking east along Area 2. 15 *Acacia acuminata* (Jam) trees in degraded condition with no understorey and weeds present.

Fig 4. Looking east into Area 2 to be cleared. 15 *Acacia acuminata* (Jam) Trees in degraded (Keighery, 1994) condition with no understorey and weeds present.

Fig 5. Looking north into Area 3. Small stand of *Acacia acuminata* trees in degraded (Keighery, 1994) condition. Understorey of *Acacia pulchella and Daviesia rhombifolia.*

Fig 6. Looking north into Area 4. Area is in completely degraded to degraded (Keighery, 1994) condition. *Watsonia* species weed also present.

Fig 7. Close up of Area 4. Completely degraded (Keighery, 1994) condition with no understorey and weeds present.

Fig 8. Close up of Area 4. Completely degraded (Keighery, 1994) condition with no understorey and weeds present.

Fig 9. Looking east into Area 5. One *Eucalyptus wandoo* tree being cleared. *Watsonia* spc weed is also present.

Fig 10. Looking west into Area 5. The two *Eucalyptus wandoo* trees on the left to be cleared.

Fig 11. Looking east. **This area is not being cleared.** Road alignment chosen to avoid this area as it contains the largest stand of *Eucalyptus wandoo* trees along the road reserve.

Figure 12. Looking east. **This area is not being cleared.** Road alignment picked to avoid Jam scrub area.

The mapped Beard Vegetation Associations are

- 955 - Mosaic: Shrublands; scrub-heath (South East Avon) / Shrublands; *Acacia acuminata* thicket, and
- 1023 Medium woodland; York Gum, Wandoo & Salmon Gum

The project area consists of two main types of vegetation, being *Acacia acuminata* (Jam tree) scrub and a *Eucalyptus wandoo* tree stand. The vegetation is in predominately completely degraded condition with heavy weed infestation. There is a small area of approximately 20m^2 containing Jam scrub in degraded condition with an understorey of one *Acacia pulchella* and *Daviesia rhombifolia*. The project area is adjacent to farmland and there are numerous larger remnants of intact vegetation scattered in the adjacent farmland that are in better condition than the project area. The project area is unlikely to provide a significant value as an ecological linkage.

- Area 5 has three Wandoo trees that have hollows and would be considered as potential nesting habitat trees.
- Nil fauna observations.
- Nil Rare flora observations.
- The project area structure was comprised of predominantly mature trees with little signs of natural regeneration.
- Vegetation Community was very open with no to little understorey (except for a cover of weeds. The project area had little plant diversity and no riparian vegetation.
- The project area traverses a gently undulating landscape. The eastern sections of the project area have some ridges with yellow sandy / gravel soils and the western section contains grey sandy soils.
- Landforms – There was an undulating low relief due to the relatively flat landscape.
- Hydrology – No wetlands were present. One watercourse was present but no native vegetation present in this area.
- Disturbance/Impacts – high level of weed invasion along the project area the surrounding area. There were also several tree deaths in and near to the project area.

Appendix L

Environmental Management Plan

ENVIRONMENTAL MANAGEMENT PLAN

Brookton Highway Bulyee Realignment & Widening

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: • a copy of the PEIA & EMP (Minor projects) for small projects; • a map showing the location where the clearing occurred and shapefiles; • 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 revegetation site.	Prepare a Project Revegetation Plan for the 2013 revegetation season.	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 and used for the 2013 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 new culverts will maintain surface drainage.	Project Manager	DEC DoW
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	Aboriginal Heritage	Minimise disturbance to Aboriginal Heritage Sites	Reduce ground disturbance in the watercourse area and engage one monitor for the initial ground disturbance activity in the registered Aboriginal Heritage site area if required.	Contractor	Main Roads
Construction	Surface Drainage	Meet requirement of Bed & Banks permit.	Ensure conditions in the bed and banks permit are adhered to.	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