



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

**Onslow Road
Seal Widening & Overtaking Lanes**

September 2011



CONTENTS

SUMMARY	III
1. BACKGROUND	4
2. DESCRIPTION OF THE PROJECT	4
2.1 PROJECT LOCATION	6
3. METHODOLOGY	7
3.1 PRELIMINARY DESKTOP STUDY	7
3.2 COMMONWEALTH REFERRAL	8
3.3 STATE REFERRAL	8
4. EXISTING ENVIRONMENT	9
4.1 DESCRIPTION	9
4.2 SITE INVESTIGATION	9
5. CLEARING OF NATIVE VEGETATION	10
5.1 DETAILS OF VEGETATION ASSOCIATIONS TO BE CLEARED	10
5.2 ASSESSMENT AGAINST CLEARING PRINCIPLES	11
5.3 SUMMARY OF MANAGEMENT ACTIONS	15
6. ASSESSMENT OF ASPECTS AND IMPACTS	16
7. DECISION TO REFER	19
7.1 REFERRAL TO THE DEPARTMENT OF SUSTAINABILITY, ENVIRONMENT, WATER, POPULATION AND COMMUNITIES	19
7.2 REFERRAL TO THE ENVIRONMENTAL PROTECTION AUTHORITY	19
8. REFERENCES	19
ATTACHMENT A THREATENED FLORA LOCATION MAPPING	20
APPENDIX A LOW IMPACT ENVIRONMENTAL SCREENING CHECKLIST	26
APPENDIX B AUSTRALIAN HERITAGE PLACES INVENTORY, HERITAGE COUNCIL OF WESTERN AUSTRALIA AND THE MUNICIPAL HERITAGE INVENTORY DATABASE SEARCHES	28
APPENDIX C ABORIGINAL HERITAGE INVESTIGATION	31
APPENDIX D DEC CONTAMINATED SITES DATABASE SEARCH	34
APPENDIX E DSEWPC DATABASE SEARCH	36
APPENDIX F ENVIRONMENTAL MANAGEMENT PLAN	38
ENVIRONMENTAL MANAGEMENT PLAN	39
INTRODUCTION	39
COMMUNICATION PLAN	39

SUMMARY

Main Roads commissioned GHD Pty Ltd (GHD) to undertake a Vegetation and Flora survey along Onslow Road in order to ascertain any environmental risks that may exist on the site. Outcomes of the investigation indicate that:

- A total of 19 vegetation types were delineated, including one comprised of Cleared / Degraded vegetation occurring as a result from existing impacts.
- No Threatened or Priority Ecological Communities were recorded in the Project Area
- Vegetation within the Project Area is considered to be of Least Concern with greater than 90% of its pre-European extent remaining. The Project Area occurs in a location with relatively unaltered vegetation and associated ecological linkages.
- No Threatened (Declared Rare) Flora taxa were recorded from the Project Area.
- Three Priority 3 Flora taxa were recorded from the Project Area:
 - *Eremophila forrestii* subsp. *viridis*;
 - *Tephrosia bidwillii*; and
 - *Triumfetta echinata*.
- The recorded locations of these Priority Flora can easily be avoided during the proposed upgrade to the Onslow Road.
- Two Priority 4 fauna species were observed during the field assessment:
 - Australian Bustard (*Ardeotis australis*); and
 - Grey Falcon (*Falco hypoleucos*).
- GHD considers that both species are highly mobile and nomadic and are unlikely to be impacted by the proposed works.
- No significant fauna habitats are considered likely to be impacted by the proposed works.
- An examination of the Ten Clearing Principles applied against the finding of this flora and fauna assessment and any clearing of native vegetation within the Project Area has been assessed to be not likely at variance;
- This Project is considered unlikely to require referral to the Environmental Protection Authority for any approval to clear vegetation;

(GHD, September 2011. Main Roads Western Australia. Onslow Road, Vegetation & Flora Survey)

1. BACKGROUND

Onslow Road (0.00SLK -79.4SLK) is the main arterial and freight transport route to Onslow from North West Coastal Highway. The route traverses a number of low level floodways and was built in the 1980's to service the Onslow community and Onslow Salt venture and was not designed to cater for the resource industry expansion that is currently being planned.

The road has a total pavement width of 8.6 metres with 6.2 metre seal and 9.0 metre sealed floodways and a pavement designed to last 20 years. Although the seal width meets the current demands, the expected increase in heavy vehicles will require a seal width of 9.0 metres in accordance with Austroads Standards. Onslow Road is a designated RAV Route 9 but will need to be upgraded to RAV route 10.

Industry proponents Chevron and BHPB Petroleum/Exxon Mobil are proposing on-shore LNG processing facilities surrounding the Onslow town site. Early indications from the project proponents is that there could be up to 30,000 road train movements on Onslow Road per year during the construction phase of these facilities. Many of these road trains will be over width with concessional loading permits.

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

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

Main Roads Gascoyne Region proposes to undertake the clearing of vegetation using the Main Roads State Wide Clearing Permit 818/5, under the authorised activity of Section 1a (xiii) "*road widening*".

2. DESCRIPTION OF THE PROJECT

The project scope is to widen pavement on Onslow Road to 10.0 metres with a total seal width of 9.0 metres (9.0 m with 0.5m sealed shoulders either side) from SLK 0 to SLK 79.4. The widening of pavement contains no clearing permit requirements as this will be undertaken within the existing maintenance zone.

The widening of pavements over the Onslow Lake Causeways will not be undertaken as they were previously widened to 9.0 meters in 2006. The works on the main alignment will simply tie into the approaches of the causeways. The locations of the seal widening already undertaken on Onslow Road are as follows:

- 68.280 SLK to 68.680 SLK
- 70.980 SLK to 71.350 SLK
- 71.750 SLK to 72.200 SLK
- 73.180 SLK to 73.670 SLK

Main Roads is proposing to also provide overtaking opportunities along Onslow Road at the following locations:

- LHS 14.5 to 16.0 SLK (1.5km)
- RHS 15.4 to 16.9 SLK (1.5km)
- LHS 42.0 to 44.4 SLK (2.4km)
- RHS 44.9 to 46.9 SLK (2km)

The clearing width required to incorporate the passing lanes, outside the maintenance zone, is 4 meters. This activity will contain no temporary clearing, as the area will remain clear in order to maintain this as a new lateral clearance zone. Total clearing requirement for all passing lanes is 2.96 hectares.

2.1 Project Location

The location of the study area for the project is shown in Figure 1 below.

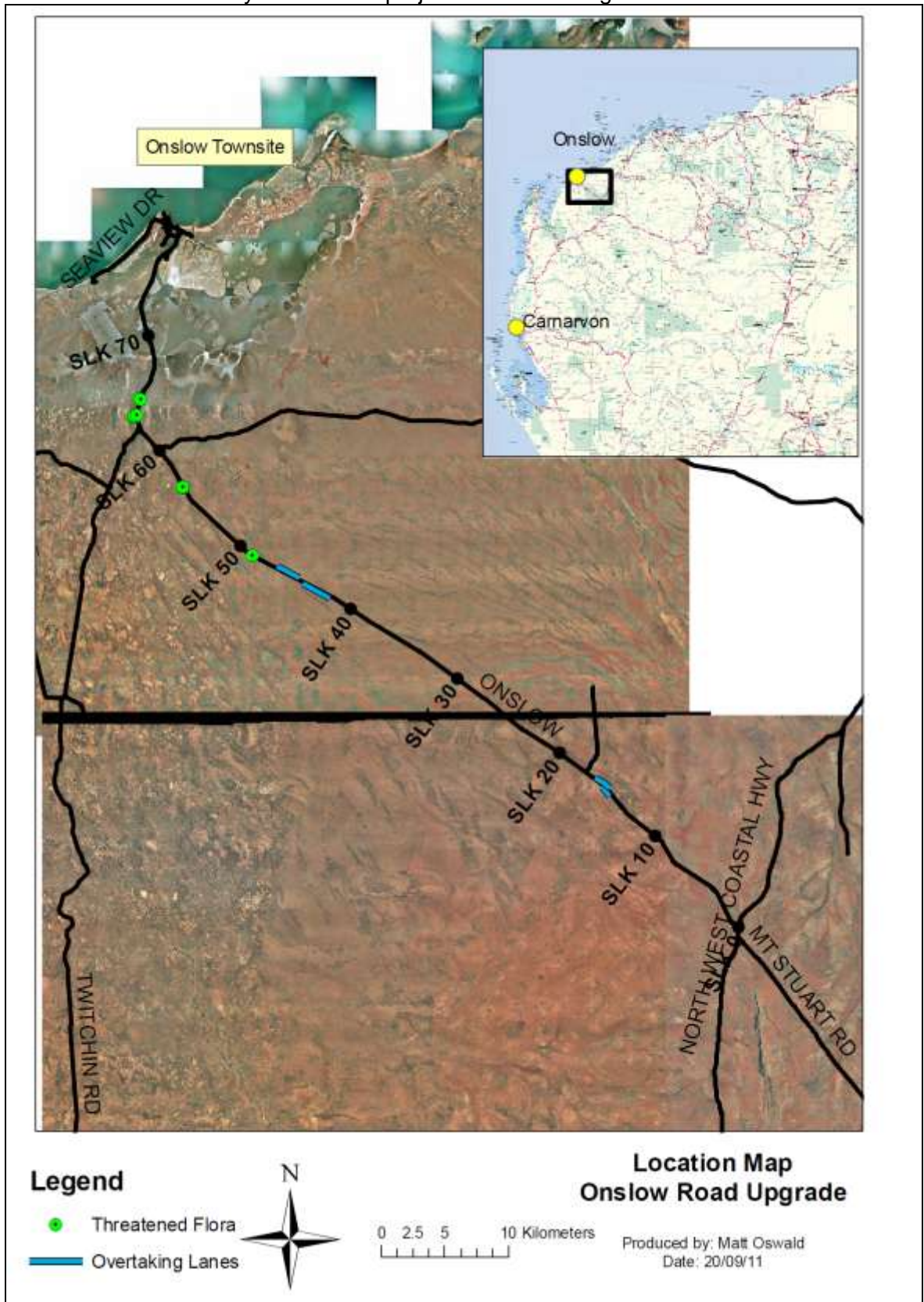


Figure 1 – Project Location Map

3. METHODOLOGY

3.1 Preliminary Desktop Study

An assessment of the project area and the potential constraints of the proposal was undertaken by reviewing a number of government agency managed databases, viewing GIS shapefiles, consulting with relevant stakeholders where necessary and engaging GHD to undertake a Vegetation and Flora Survey of the area which was completed in September 2011.

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

GHD was engaged to undertake a Vegetation & Flora Report of the project area. See attached report. *Main Roads Western Australia, Report for Onslow Road. Vegetation and Flora Report. September 2011.*

3.1.2 Heritage

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

3.1.3 Aboriginal Heritage

Archae-aus was contracted by Buurabalayi Thalanyi Association Inc to conduct a Aboriginal Heritage Assessment on behalf of Main Roads Gascoyne Region.

3.1.4 Sensitive Water Resources

GHD was engaged to undertake a Vegetation and Flora Survey of the project area and covered this aspect within their report. See attached report. *Main Roads Western Australia, Report for Onslow Road. Vegetation and Flora Report. September 2011. Section 3.8.*

3.1.5 Wetlands

GHD was engaged to undertake a Vegetation and Flora Survey of the project area and covered this aspect within their report. See attached report. *Main Roads Western Australia, Report for Onslow Road. Vegetation and Flora Report. September 2011. Section 3.8.*

3.1.6 Weeds

GHD was engaged to undertake a Vegetation and Flora Survey of the project area and covered this aspect within their report. See attached report. *Main Roads Western Australia, Report for Onslow Road. Vegetation and Flora Report. September 2011. Section 4.3.6.*

3.1.7 Dieback

As the project receives <400 mm of rain and is north of the 26th parallel, 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 D.

3.1.9 Acid Sulfate Soils

GHD was engaged to undertake a Vegetation and Flora Survey of the project area and covered this aspect within their report. See attached report. *Main Roads Western Australia, Report for Onslow Road. Vegetation and Flora Report. September 2011. Section 3.6.*

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 E 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

Refer to *Main Roads Western Australia, Report for Onslow Road. Vegetation and Flora Report. September 2011. Section 3.*

4.2 Site Investigation

A site visit was carried out by suitably qualified GHD Ecologists between 19th and 25th April 2011 to examine the general features of the area and undertake a vegetation and flora survey. A field study of relevant biological aspects was done as well as covering issues such as reserves, wetlands, drinking water catchment areas and the impacts on creek lines. Site photos were taken and are included in the GHD 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.

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.

Clearing of vegetation will be undertaken using Main Roads State Purpose Permit CPS 818/5 for the purpose described under section 1 (a) (ii) as clearing for road infrastructure.

5.1 Details of Vegetation Associations to be Cleared

In order to assess the significance of the vegetation proposed to be cleared for Onslow Road Upgrade, the vegetation type, condition and percent of pre-European Extent remaining has been identified in Table 1 below.

Table 1. Regional Assessment of Vegetation Extent for the Cape Range Sub-Region

Vegetation Association	Description	Pre-European Extent (Ha)	Current Extent (Ha)	% Remaining	Status
98	Hummock grasslands, shrub steppe; kanji over soft spinifex & Triodia basedowii.	221851.483 (CAR1)	221851.483 (CAR 1)	100.0 (CAR1)	Least Concern
		153.14 (PIL4)	153.14 (PIL4)	100.0 (PIL4)	
127	Bare Areas; mud flats.	100903.221 (CAR1)	100612.131 (CAR1)	99.7 (CAR1)	Least Concern
		179917.135 (PIL4)	177262.423 (PIL4)	98.5 (PIL4)	

583	Hummock grasslands, sparse shrub steppe; kanji & Acacia bivenosa over hard spinifex Triodia basedowii & T. wiseana.	2427.254 (PIL4)	2427.254 (PIL4)	100.0 (PIL4)	Least Concern
585	Mosaic: Shrublands; snakewood & Acacia victoriae scrub/Hummock grasslands, shrub-steppe; kanji over soft spinifex & Triodia basedowii.	797.02 (CAR1)	797.02 (CAR1)	100.0 (CAR1)	Least Concern
		144749.039 (PIL4)	144749.039 (PIL4)	100.0 (PIL4)	
670	Hummock grasslands, shrub steppe; scattered shrubs over Triodia basedowii.	147814.252 (CAR1)	147714.96 (CAR1)	99.9 (CAR1)	Least Concern
		1.182 (PIL4)	1.182 (PIL4)	100.0 (PIL4)	
676	Succulent steppe; samphire	29195.18 (CAR1)	28900.32 (CAR1)	99.0 (CAR1)	Least Concern
		10369.549 (PIL4)	10305.864 (PIL4)	99.4 (PIL4)	

(GHD, September 2011. *Main Roads Western Australia, Report for Onslow Road. Vegetation and Flora Report*)

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.	
GHD ASSESSMENT (VEGETATION & FLORA ASSESSMENT SURVEY, SEPTEMBER 2011)	<p>Plant Species</p> <p>Total Vascular Plant Taxa</p> <p>– A total of 230 flora taxa from 44 families were recorded from the Project Area, representing a moderate level of diversity, with nine weed species. This total is considered to be similar to that found in the local and regional area.</p> <p>Vascular Plant Taxa Diversity</p> <p>– Diversity in the Project Area is considered to be comparable to that found in the local area; in similar habitat that has areas of disturbance (e.g. roads, tracks, pastoral stations).</p>

	<p>Priority Flora, Significant Flora Three Priority Flora taxa were recorded from the Project Area:</p> <ul style="list-style-type: none"> o Eremophila forrestii subsp. forrestii (Priority 3); o Triumphetta echinata (Priority 3); and o Tephrosia bidwillii (Priority 3). <p>– These species were recorded in the Project Area in locations away from the edge of the current road alignment and are not under threat from the proposed Project activities.</p> <p>Fauna Species Total Fauna Taxa – The reconnaissance fauna survey recorded 48 bird species, five mammal species, 10 reptile species and two amphibian species from the Project Area. The survey result was Considered to be a relatively good reflection of fauna species present.</p> <p>Ecosystem Diversity Number of Ecological Communities (Plant, Fauna) – A total of 19 vegetation types and six fauna habitats were recorded from the Project Area. This includes a cleared/degraded vegetation type/habitat. These communities are also present in the local area in similar or better condition.</p> <p>Habitat Diversity – Habitats (macro- and microhabitats) found in the Project Area are also present in the local area in similar or better condition.</p> <p>Variety of Soil Types/Geological Formations – Soil types or geological formations in the Project Area are also present in the local and regional area.</p>
EO ASSESSMENT	EO Oswald mapped the locations of Threatened Flora recorded by GHD Ecologists in Appendix A of this PEIA/EMP report. Mapping shows that population locations are not within the proposed work locations and that the works will not have a detrimental impact to the survival of Priority Species. No clearing of Priority Species is expected.
METHODOLOGY & REFERENCES	GHD Desktop assessment of available information, field survey results and Threatened Flora Mapping Attachment A of PEIA/EMP document
Project is considered unlikely to be at variance with clearing principle. The locations of the known Priority Flora species can be avoided as part of this project.	

(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.

GHD ASSESSMENT (VEGETATION & FLORA ASSESSMENT SURVEY, SEPTEMBER 2011)	<p>Significant Fauna Threatened Fauna – The desktop assessment indicated that threatened fauna may potentially utilise the Project Area. Significant habitat for threatened fauna was not recorded within the Project Area, with habitat is considered to be common in the local and regional area. No Threatened Fauna taxa were recorded from the Project Area.</p> <p>Priority Fauna – The desktop assessment indicated that priority fauna may potentially utilise the Project Area for foraging. Two Priority 4 fauna species were recorded within the Project Area:</p> <ul style="list-style-type: none"> o Ardeotis australis (Australian Bustard); and o Falco hypoleucos (Grey Falcon). <p>– Both Priority Fauna species are considered to utilise a wide range and are considered unlikely to be impacted by the proposed project. These species are highly mobile and expected to move away during Project activities.</p> <p>Other Significant Fauna – The desktop assessment indicated that significant fauna may occur in the Project Area. Nine EPBC Act Marine and/or Migratory Listed species were recorded from the Project Area. These species are considered common in Western Australia and are not under threat.</p>
---	--

	<p>Habitat Significant Habitat / Habitats of Significance – No habitat deemed to be significant occurs in the Project Area. Habitat in the Project Area also occurs in the local area in similar or better condition. The habitat in the Project Area is disturbed by road maintenance, urban development, salt works, and pastoral activities. Habitat Extent and Retention – Habitats recorded in the Project Area are also found in the local area in similar or better condition. The proposed Project will not significantly diminish the extent of these habitats. Ecological Corridors – The habitat in the Project Area occurs in a region with relatively undisturbed ecological corridors. Existing corridors are not considered to be significantly modified by the proposed project. Assessment</p>
METHODOLOGY & REFERENCES	GHD Desktop assessment of available information and GHD field survey results
Two Priority Fauna species were recorded from the Project Area, however, due to their mobile nature; the Project is considered unlikely to be impact on these species and is therefore considered unlikely to be at variance with this clearing principle.	

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.	
GHD ASSESSMENT (VEGETATION & FLORA ASSESSMENT SURVEY, SEPTEMBER 2011)	<p>Rare Flora Presence – No Threatened (Declared Rare) Flora taxa were indicated to occur within the vicinity of the Project Area as a result of database searches. No Threatened (Declared Rare) Flora taxa were recorded in the Project Area during the field survey. Habitat – No habitat considered to be required for the continued existence of Threatened Flora is considered to be present in the Project Area.</p>
METHODOLOGY & REFERENCES	GHD Desktop assessment of available information and GHD field survey results
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.	
GHD ASSESSMENT (VEGETATION & FLORA ASSESSMENT SURVEY, SEPTEMBER 2011)	<p>Extent and Status Vegetation Associations within the vicinity of the project area are considered to be of Least Concern with >90% remaining. Vegetation types recorded in the project area are considered to be equivalent to the Vegetation Associations indicated by Beard. Communities No Threatened or Priority Ecological Communities were recorded from the Project area. Areas No Environmentally Sensitive Areas occur within or immediately adjacent to the Project Area.</p>
METHODOLOGY & REFERENCES	GHD Desktop assessment of available information and GHD field survey results
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.	
GHD ASSESSMENT (BIOLOGICAL SURVEY, JUNE 2011)	<p>Vegetation Extent and Status Vegetation Associations within the vicinity of the project area are considered to be of Least Concern with >90% remaining. Vegetation types recorded in the project area are considered to be equivalent to the Vegetation Associations indicated by Beard. Regionally Significant Areas</p>

	Vegetation within the Project Area is not considered to contain communities required to maintain ecosystem services (e.g. hydrological processes).
METHODOLOGY & REFERENCES	GHD Desktop assessment of available information and GHD field survey results
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.

GHD ASSESSMENT (VEGETATION & FLORA ASSESSMENT SURVEY, SEPTEMBER 2011)	<p>Watercourses and Wetlands</p> <p>Vegetation</p> <ul style="list-style-type: none"> – A number of saline wetlands occur within the Project Area. The majority of these have been highly modified for the production of salt and are no longer considered to be natural. – There are a few un-modified wetlands within the vicinity of the Project Area. These will not be impacted by the proposed Project as they occur away from the road alignment. – Two ill-defined floodways with occur towards the southern end of the Project Area associated with runoff from adjacent hills. Neither floodway contains riparian vegetation. <p>Groundwater Dependent Ecosystems</p> <ul style="list-style-type: none"> – No groundwater dependent ecosystems occur within or adjacent to the Project Area.
METHODOLOGY & REFERENCES	GHD Desktop assessment of available information and GHD field survey results
Given that no upgrade works will be undertaken over the causeways section of Onslow Road which contains the modified wetlands, the 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.

GHD ASSESSMENT (VEGETATION & FLORA ASSESSMENT SURVEY, SEPTEMBER 2011)	<p>Land Degradation</p> <p>Soil Erosion</p> <p>The Project proposes to clear vegetation to allow for the upgrade of Onslow Road. Erosion from wind is considered to be moderate, with some of vegetation in the northern project area occurring on consolidated sand dunes. The small scale of the project is considered unlikely to impact on the risk of soil erosion in the</p> <p>Project Area.</p> <p>The clearing of native vegetation is not expected to alter the quality or quantity of water run-off in or adjacent to the project area. Waterlogging and changes to nutrient levels are not expected to be altered by the clearing of vegetation in the project area.</p> <p>Soil Acidity</p> <p>The clearing of vegetation is not considered to alter soil acidity in or adjacent to the project area.</p> <p>Salinity</p> <p>The clearing of vegetation is not considered to significantly alter the hydrological balance and cause a change in the salinity either on- or off-site.</p>
METHODOLOGY & REFERENCES	GHD Desktop assessment of available information and GHD field survey results
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.

GHD ASSESSMENT (VEGETATION & FLORA ASSESSMENT SURVEY, SEPTEMBER 2011)	<p>Conservation Areas</p> <p>Protected Areas</p> <ul style="list-style-type: none"> – At the southern end of the Project Area, the Onslow Road passes through the Cane River Nature Reserve. <p>Fragmentation</p> <ul style="list-style-type: none"> – The Project Area occurs in an area where the vegetation is relatively un-fragmented. <p>Ecological Linkages</p> <ul style="list-style-type: none"> – The Project Area occurs in a region where the vegetation where ecological
---	---

	linkages remain mostly intact. Existing ecological linkages are not considered to be impacted by the proposed works.
METHODOLOGY & REFERENCES	GHD Desktop assessment of available information and GHD field survey results
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.

GHD ASSESSMENT (VEGETATION & FLORA ASSESSMENT SURVEY, SEPTEMBER 2011)	<p>Water Quality</p> <p>Catchment Areas The project area does not occur within a proclaimed Public Drinking Water Supply Catchment.</p> <p>Groundwater The clearing of vegetation is not considered to cause an alteration to the quality of groundwater in or adjacent to the project area. No groundwater dependent ecosystems occur in or adjacent to the project area.</p> <p>Surface Water The clearing of vegetation is not considered to cause an alteration to the quality of surface waters in or adjacent to the Project area.</p>
METHODOLOGY & REFERENCES	GHD Desktop assessment of available information and GHD field survey results
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.

GHD ASSESSMENT (VEGETATION & FLORA ASSESSMENT SURVEY, SEPTEMBER 2011)	<p>Flooding The clearing of vegetation in the project area is not considered to alter the frequency or intensity of flood events. Runoff coefficients in the project area are not likely to be significantly altered by the clearing of native vegetation.</p>
METHODOLOGY & REFERENCES	GHD Desktop assessment of available information and GHD field survey results
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 Onslow Road Upgrade;

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

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	If no, No further action required. – skip question 2 and 3
2. Does the assessment indicate that the clearing is at variance with one or more of the principles for clearing? (This decision may be pending information to be provided in an EIA/biological survey. If this is the case indicate NA.)	N/A	
3. Does the assessment indicate that	N/A	

the clearing is at variance with clearing principle (g) land degradation, (i) surface or underground water quality or (j) the incidence of flooding? (This decision may be pending information to be provided in an EIA/biological survey. If this is the case indicate NA.)		
4. Will the project involve clearing for purposes considered temporary in nature under Condition 13 of CPS818?	No	If no, No further action required. Cleared area will remain cleared as necessary for the maintenance of the asset.

6. ASSESSMENT OF ASPECTS AND IMPACTS

Table 4: Aspects and Impacts – Onslow Road Upgrade

Aspect	Evaluation of Potential Impacts
Vegetation – clearing	<p>2.96 hectares of native vegetation is proposed to be cleared.</p> <p>The native vegetation proposed to be cleared is well represented regionally as it possesses more than 30% of its pre-European extent</p> <p>According to Keighery, (1994) the condition of the native vegetation to be cleared is described as very good to good.</p> <p>Of the 2.96 hectares of native vegetation proposed to be cleared, 0 hectares is temporary clearing.</p>
Vegetation – TECs/DRF	<p>No TEC's/DRF species are present within the project area.</p> <p>Field surveys by GHD and mapping of threatened flora locations confirms that the proposal is not going to have a impact upon any DRF, TECs or Priority Flora.</p> <p>No Matters of National Environmental Significance as protected under EPBC Act (1999) will be impacted.</p>
Vegetation – weeds	<p>There are numerous common weed species that occur throughout the proposed works areas. These species are widespread within the reserve and general area.</p>
Vegetation – dieback	<p>Not an issue given the project area receives less than 400 mm of average annual rainfall or is located above the 26° parallel.</p>
Fauna	<p>No significant fauna issues associated with the proposed works. 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.</p>
Heritage (non-indigenous)	<p>A search of the Australian Heritage Places Inventory, Heritage Council of Western Australia and the Shire of Ashburton's Municipal Heritage Inventory on-line databases has indicated that there are no known sites of heritage significance within the vicinity of the project area.</p> <p>No Matters of National Environmental Significance as protected under EPBC Act (1999) will be impacted.</p>

Table 4: Aspects and Impacts – Onslow Road Upgrade

Aspect	Evaluation of Potential Impacts
Aboriginal heritage	Aboriginal Heritage Assessment undertaken by Archae-aus found 2 archaeological sites of significance within the road reserve. The proposed works will not impact upon these sites.
Wetlands	No wetlands occur within the vicinity of the project area. No Matters of National Environmental Significance as protected under EPBC Act (1999) will be impacted.
Surface water/drainage	GHD Biological Report (September 2011) indicates that the proposed works will not disturb or interrupt any natural drainage and surface run-off patterns.
Groundwater	No dewatering nor drainage modifications are required, hence no change to groundwater level or quality.
Reserves / Conservation areas	There are no conservation areas or reserves that will be impacted by these works.
Air quality	Not relevant to the proposed works. Local air quality assessment is not required for the project since: <ul style="list-style-type: none"> • the predicted traffic flow is less than 10,000 vehicles per day (in urban areas) or 15,000 vehicles per day in rural areas & • 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.
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	Not an issue due to the minor nature of the works.
Acid Sulfate Soils	As the works will not occur over the modified wetlands (salt lakes), Acid Sulphate Soils will not be a concern.
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 – Onslow Road Upgrade

Aspect	Evaluation of Potential Impacts
World Heritage properties	The project will not impact any World Heritage properties i.e. <u>Shark Bay</u>
National Heritage places	A search of the Australian Heritage Places Inventory Database located no 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 Wetland(s) within the vicinity of the project. See Appendix E.
Nationally threatened species or ecological communities	A search of the Department of Sustainability, Environment, Water, Population and Communities Protected Matters Search Tool located no threatened ecological communities, no threatened species and no listed marine species within the vicinity of the project(
Migratory species protected under international agreements	A search by GHD of the Department of Sustainability, Environment, Water, Population and Communities Protected Matters Search Tool located 2 migratory species that may occur within the vicinity of the project (see section 3.10.3 of report). The project activities will not have a significant impact on these species.
Commonwealth marine areas	The project will not impact any Commonwealth marine area or marine protected area i.e. <u>Ningaloo Marine Park</u>
Commonwealth lands	The project is not located on and will not impact any Commonwealth lands.
Nuclear Actions	Not relevant to the proposed works.

7. DECISION TO REFER

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

The preliminary impact assessment determined the project will not 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. REFERENCES

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

GHD, September 2011. *Main Roads Western Australia, Report for Onslow Road. Vegetation and Flora Report*.

Attachment A

Threatened Flora Location Mapping

Object ID	SLK Location	Side of Road	Distance(m) to Flora from Road Centre Line	Genus	Species	Status	Easting	Northing
8	48.87	Right	16.48	<i>Tephrosia</i>	<i>bidwillii</i>	P3	311418	7579680
20	56.57	Left	107.71	<i>Triumfetta</i>	<i>echinata</i>	P3	305898	7585003
19	56.59	Left	124.4	<i>Triumfetta</i>	<i>echinata</i>	P3	305877	7585007
18	56.6	Left	126.38	<i>Triumfetta</i>	<i>echinata</i>	P3	305868	7585019
17	56.61	Left	123.24	<i>Triumfetta</i>	<i>echinata</i>	P3	305867	7585024
16	56.63	Left	124.91	<i>Triumfetta</i>	<i>echinata</i>	P3	305855	7585044
14	63.32	Left	121.39	<i>Triumfetta</i>	<i>echinata</i>	P3	302105	7590585
11	63.33	Left	226.15	<i>Triumfetta</i>	<i>echinata</i>	P3	302049	7590591
12	63.33	Left	206.45	<i>Triumfetta</i>	<i>echinata</i>	P3	302069	7590591
13	63.34	Left	198.11	<i>Triumfetta</i>	<i>echinata</i>	P3	302077	7590597
10	63.35	Left	225.1	<i>Triumfetta</i>	<i>echinata</i>	P3	302050	7590604
3	63.5	Left	37.39	<i>Eremophila</i>	<i>forrestii</i> subsp. <i>viridis</i>	P3	302259	7590756
4	64.74	Right	16.97	<i>Eremophila</i>	<i>forrestii</i> subsp. <i>viridis</i>	P3	302607	7591956





Legend

● Significant Flora



0 5 10 20 Meters



Significant Flora Location
48.87 SLK *Tephrosia bidwillii*
Onslow Road

Produced by: Matt Oswald
(using data supplied by GHD Biological survey)
Date: 14/09/11



**Significant Flora Locations
56.87 SLK to 56.63 SLK
Triumfetta echinata
Onslow Road**

Produced by: Matt Oswald
(using data supplied by GHD Biological survey)
Date: 14/09/11



Legend

● Significant Flora



0 10 20 40 Meters

**Significant Flora Locations
63.32 SLK to 63.50 SLK
Eremophila and Triumphetta Sp.
Onslow Road**

Produced by: Matt Oswald
(using data supplied by GHD Biological survey)
Date: 14/09/11



Legend

● Significant Flora



0 10 20 40 Meters

**Significant Flora Location
ID 4 - 64.74 SLK
Eremophila forrestii subsp. *viridis*
Onslow Road**

Produced by: Matt Oswald
(using data supplied by GHD Biological survey)
Date: 14/09/11

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 ONSLow RD UPGRADE - SEAL WIDENIN f OVERTAKING CANE
SLK 0 - SLK 79.4 SLK .

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

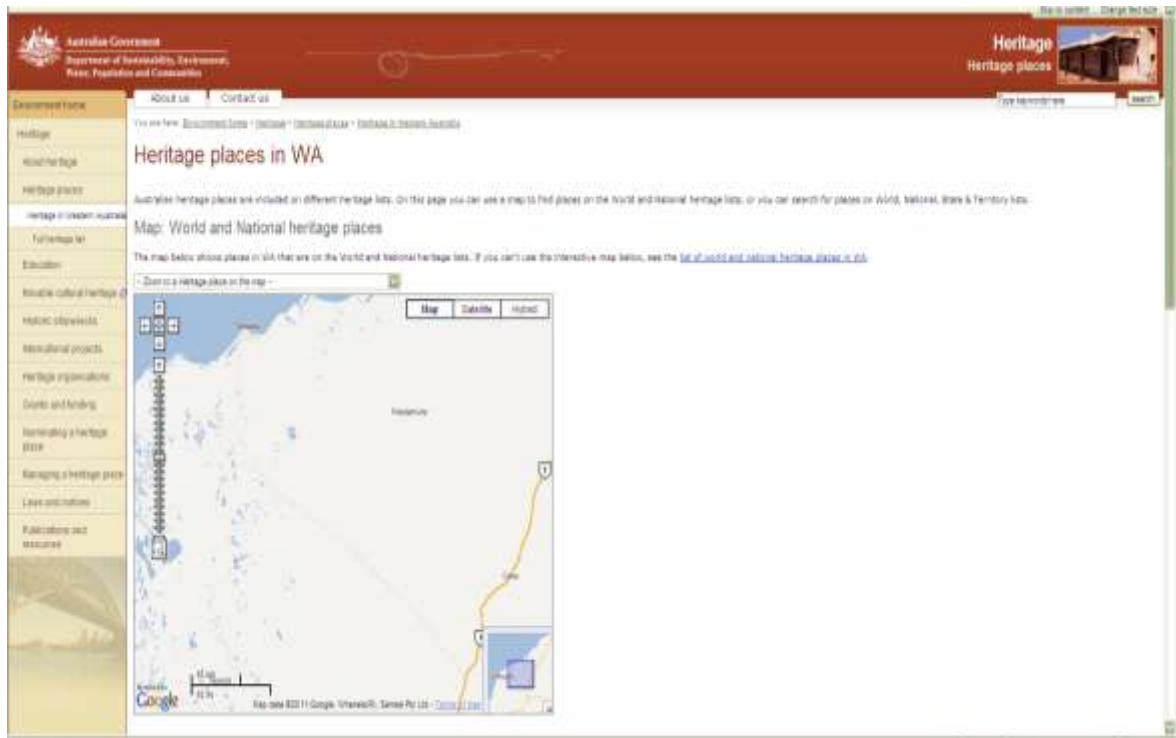
Completed By: Signature [Signature] Date 26/02/2011
 Name P.G. WARD. Title PRMD

To be reviewed by a Main Roads Environment Officer: Signature [Signature] Date 20/9/11
 Name Matthew Oswald Title EO.

Comments: WORKS WILL NOT INVOLVE UPGRADES TO CAUSEWAYS. CAUSEWAY
(CROSSING) WERE UPGRADED TO 9.0M IN 2006.

Appendix B

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



Search undertaken by: Matt Oswald 21/09/11
Result: No items of world or national heritage places

HERALD OF WESTERN AUSTRALIA

heritage

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: [1-23] of 23

Hide selected Hide unselected

Help

<input type="checkbox"/>	Ashburton District Roll of Honour, WW1 & WW2 (15824)	8M Forrest Memorial Hall, Onslow		
<input type="checkbox"/>	Ashburton River Road Bridge (3395)	over Ashburton River, Minderoo Str, Onslow		
<input type="checkbox"/>	Beaumont Hotel (15364)	22-26 Second Av, Onslow		
<input type="checkbox"/>	Coastal Margin - Esmouth Gulf to Cape Preston (18617)	Esmouth Gulf to Cape Preston, Onslow		
<input type="checkbox"/>	Huish, First Street (18472)	Onslow		
<input type="checkbox"/>	Minderoo Homestead (15389)	Along the Ashburton River, Onslow		
<input type="checkbox"/>	North Sandy Island Lighthouse (15741)	Onslow		
<input type="checkbox"/>	Old Onslow Police Station (3949)	CV Old Marrow & Denzil St, Onslow		
<input type="checkbox"/>	Old Onslow Townsite (3444)	Reserve 25118, Onslow	[REG]	[ASSESS]
<input type="checkbox"/>	Old Power Station (flr), Onslow (19007)	55 Second Avenue, Onslow		
<input type="checkbox"/>	Onslow Fire Station (flr) (14828)	Second Ave, Onslow		
<i>Onslow Coombe Street Museum</i>				
<input type="checkbox"/>	Onslow Fire Station (flr) (14828)	Second Ave, Onslow		
<input type="checkbox"/>	Onslow Goods Shed Museum (4638)	Second Av, Onslow		
<input type="checkbox"/>	Onslow Police Station (17387)	Simpson Street, Onslow		
<input type="checkbox"/>	Onslow Post Office & Residence (flr) (15367)	19 Second Ave, Onslow		
<input type="checkbox"/>	Pardemaka Homestead (over) (4858)	Great Northern Hwy 50 k SE, Onslow	[REG]	[ASSESS]
<input type="checkbox"/>	Police Residence (flr) (15366)	1-3 First St, Cnr Second & Third Av, Onslow		
<input type="checkbox"/>	Residence (15376)	25 Third Ave, Onslow		
<input type="checkbox"/>	Residence - Swasting (15377)	18 Third Ave, Onslow		
<input type="checkbox"/>	Residence - Turner (15378)	65 Second Ave, Onslow		
<input type="checkbox"/>	Soldiers' Memorial, WW1 & Memorial Plaque, WW1 & Submarine War (15825)	8 M Forrest Memorial Hall, Onslow		
<input type="checkbox"/>	St Nicholas Church (15392)	19 Third Ave, Onslow		
<input type="checkbox"/>	The Front Lead Light (15824)	Second Av, Onslow		
<input type="checkbox"/>	Tramway and Jetty (4232)	Old Onslow Townsite		

Hide selected Hide unselected

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

Help

WA.gov.au

Home | Site Map | Privacy | Disclaimer | Copyright | FAQs | Links | Contact Us | Places Database

Copyright © 2011. All contents copyright Government of Western Australia. All Rights Reserved.

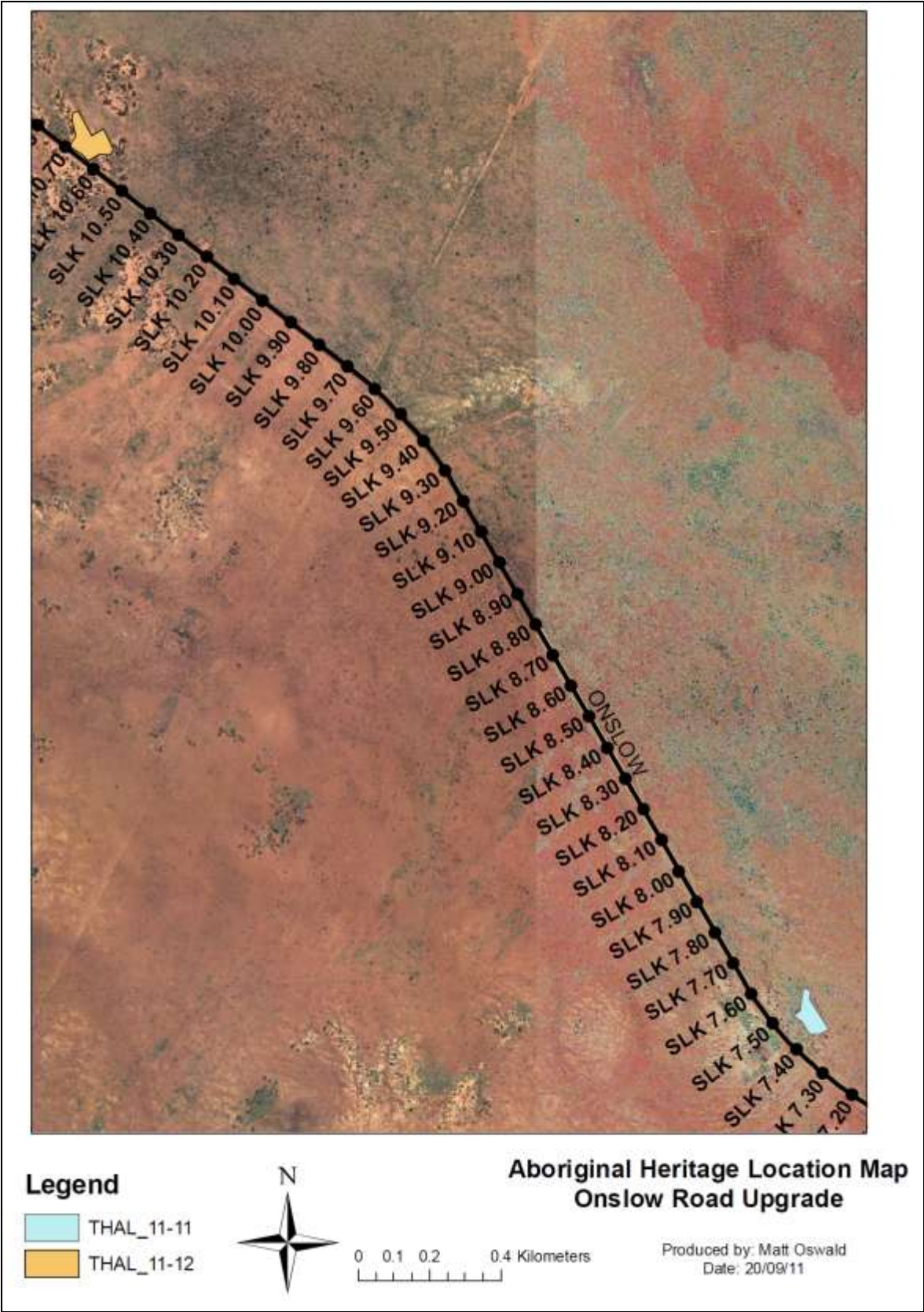
Search undertaken by: Matt Oswald 06/09/11
 Search Query: Place name: Onslow. Local Government: Ashburton
 Result: No items of state heritage will be impacted by works

Appendix C

Aboriginal Heritage Investigation

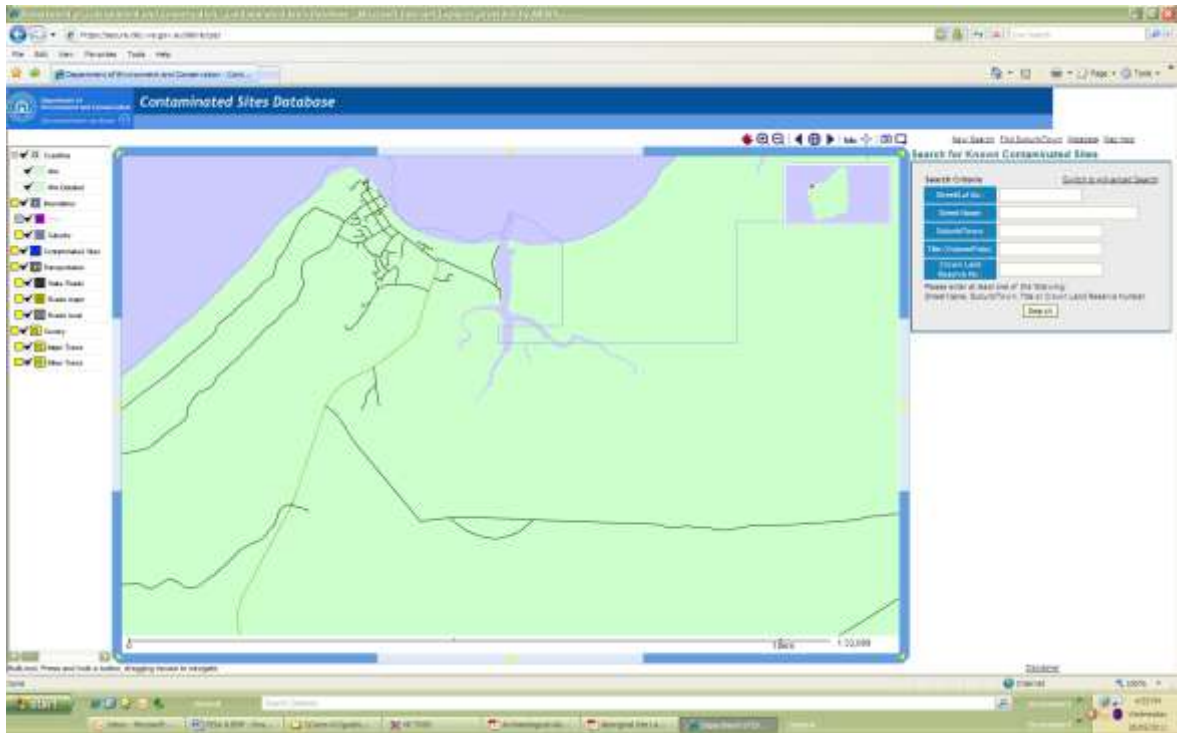


(See TRIM Document D11#232388 for full report)



Appendix D

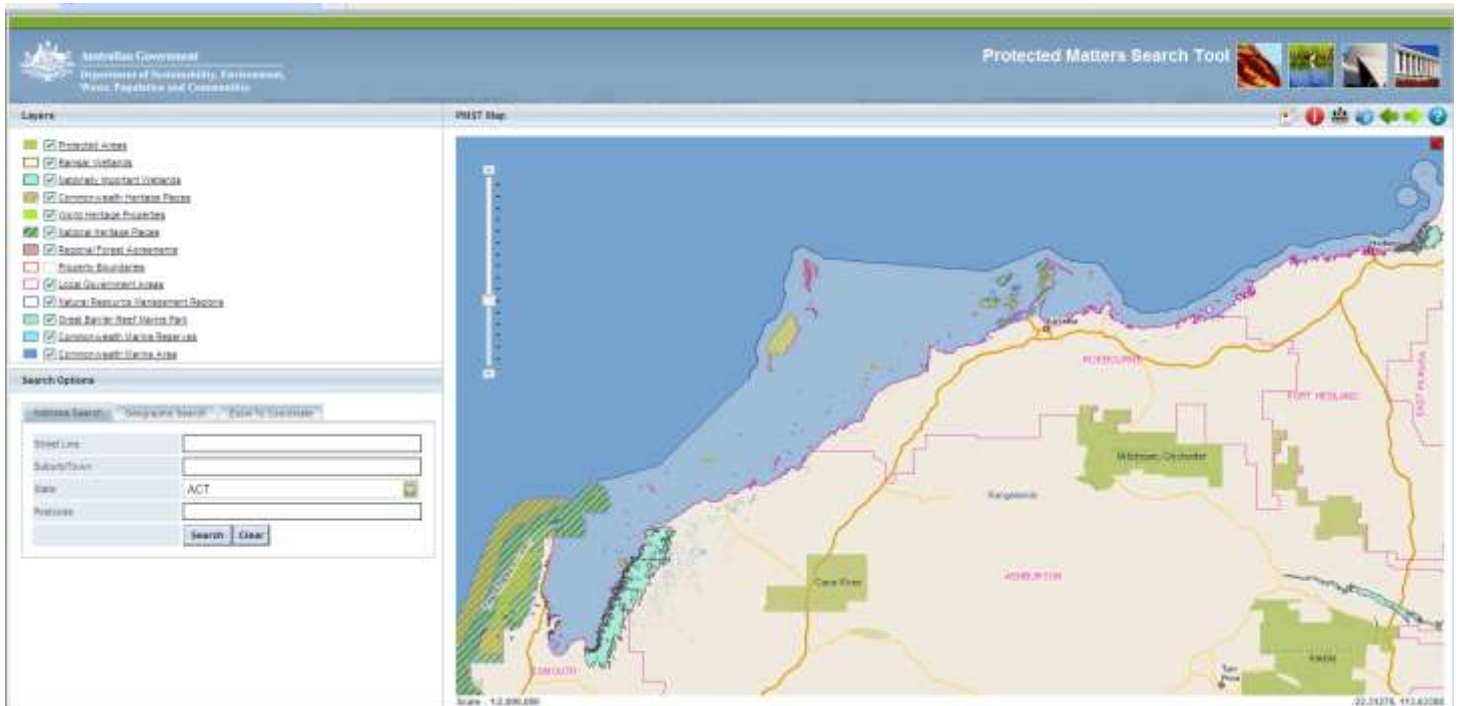
DEC Contaminated Sites Database Search



Search undertaken by: Matt Oswald 06/09/11
Result: No places matching search criteria.

Appendix E

DSEWPC Database Search



Search undertaken by: Matt Oswald 22/09/11
Result: No places matching search criteria.

Appendix F

Environmental Management Plan

ENVIRONMENTAL MANAGEMENT PLAN

ON SLOW ROAD 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

ENVIRONMENTAL MANAGEMENT PLAN

Timing	Topic	Objective	Action	Responsible Party	Advice
All phases of Construction	Vegetation Clearing - Record-keeping	All projects should maintain the required records relating to clearing native vegetation under the purpose permit.	Clearing: <ul style="list-style-type: none"> a copy of the PEIA & EMP (Minor projects) for small projects; a map showing the location where the clearing occurred, recorded in an ESRI Shapefile the size of the area cleared (in hectares); and the dates on which the clearing was done. 	Project Manager	DEC
All phases of Construction	Vegetation Clearing - Record-keeping	All projects should maintain the required records relating to clearing native vegetation under the purpose permit.	Control of weeds, dieback and other pathogens: <ul style="list-style-type: none"> a copy of any management plan prepared; and for any pathogen other than dieback, the appropriate steps taken. 	Project Manager	Main Roads
Pre - Construction	Visual Amenity	Ensure that road blends into environment.	Develop design documentation to meet project requirements as identified in the visual impact assessment.	Project Manager	Main Roads
Pre-Construction	Vegetation Clearing	Ensure that the overall objectives of the alignment and construction works are compatible with maintaining and, where possible, enhancing the biological integrity of the surrounding environment and minimising vegetation loss and degradation; and Ensure the retention of as many habitat trees, shrubs and vegetated corridors for fauna as possible, particularly where associated with riparian zones.	Selection of designs/locations that minimise adverse impacts on the biological environment.	Project Manager	Main Roads
			Construction works to be undertaken in summer to reduce the potential for soil erosion and drainage line siltation due to vegetation removal and heavy rains.	Project Manager	Main Roads
			Control/spray weeds species within the project area prior to construction to limit the amount of propagative material that may be spread during disturbance.	Contractor	Main Roads
			Any stockpiled vegetation from clearing works shall not be burnt. This vegetation shall be used during any rehabilitation works and either mulched or respread according to the TDP/Revegetation Plan.	Contractor	Main Roads
Construction	Noise, Vibration and Dust	Ensure that the construction of the proposal does not become a nuisance to the public.	Access to private property and appropriate traffic management measures should be planned and implemented prior to the construction of works.	Contractor	Main Roads
			Any complaints regarding dust will be attended to as soon as possible.	Contractor/Project Manager	Main Roads
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
			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

ENVIRONMENTAL MANAGEMENT PLAN					
Timing	Topic	Objective	Action	Responsible Party	Advice
			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
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