PRELIMINARY ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN (MINOR PROJECTS)

Bussell Highway and Harewoods Road Intersection Upgrade

February 2007

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HAREWOODS ROAD LEFT SLIP LANE

PRELIMINARY ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN

1. PROJECT DESCRIPTION

Main Roads South West Region are proposing to develop a left slip lane into Harewoods Road at the Harewoods Road / Bussell Highway intersection (SLK 8.61) with the objective of improving traffic safety and flow. This Intersection is located in the suburb of Gelorup approximately 13 kms south of Bunbury central business district, within the Local Government Authority of Capel.

1.1 Background

As per Main Roads' Environmental Assessment and Approval process, the Low Impact Environmental Screening Checklist has been completed for the proposal, refer Appendix A. As the proposed works involves ground disturbance and the clearing of native vegetation, the preparation of a project specific Preliminary Environmental Impact Assessment (PEIA) and Environmental Management Plan (EMP) are required. This report fulfils this requirement.

1.2 Description of the Project

The location and boundaries of the study area are shown on Figure 1 & 2, and include the construction of a 150m long left turning lane.

Figure 1. Project Location

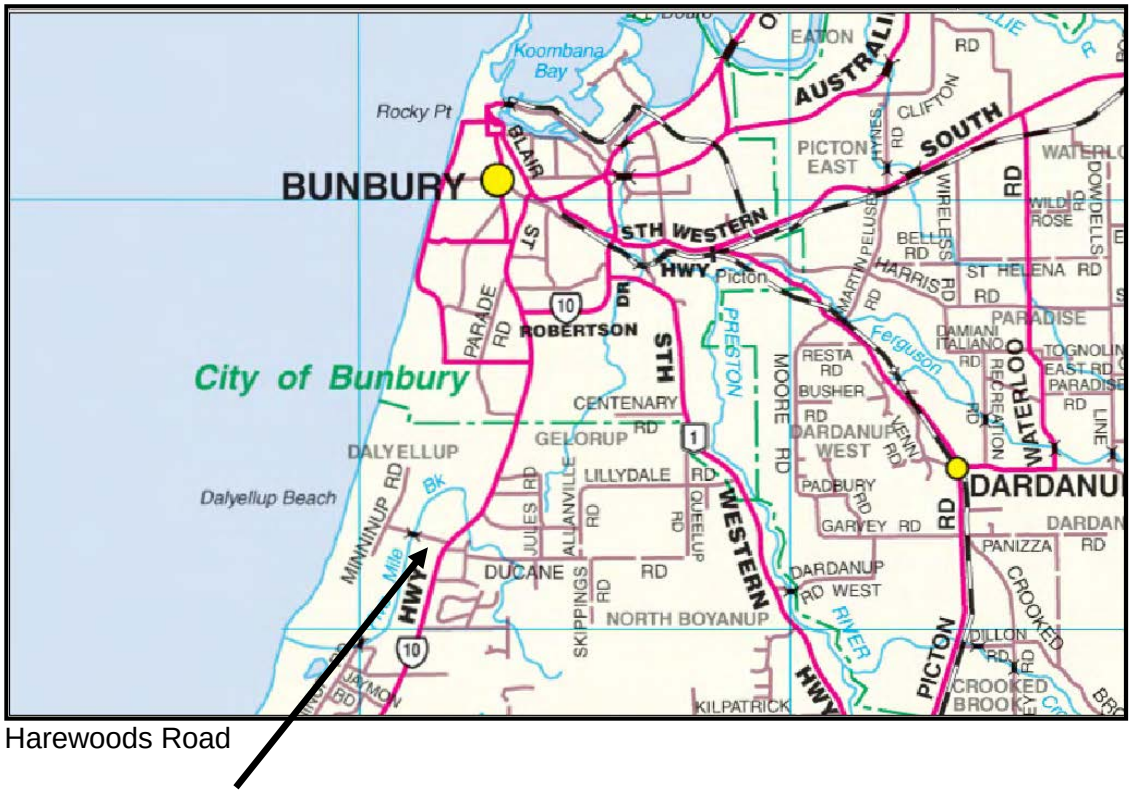
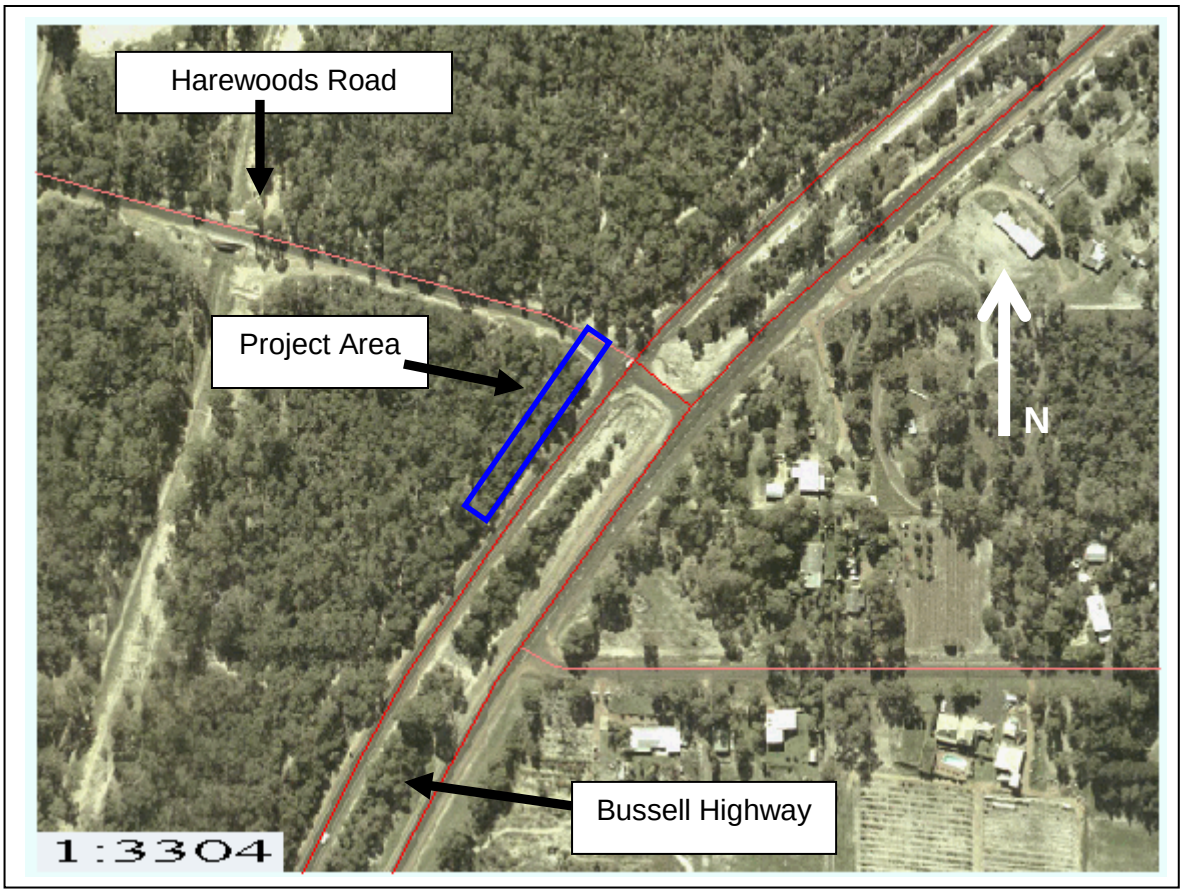


Figure 2. Aerial Photography of Project Area



Bussell Highway is a dual carriageway (median separated) double lane highway (two lanes each direction). The slip lane will be constructed on the north bound carriageway to allow northbound traffic to pass vehicles turning left into Harewoods Road without interruption to traffic flow. The slip lane will be built on fill to match the existing height of the highway.

2. METHODOLOGY

2.1 Preliminary Desktop Study

A preliminary assessment of the project area and its potential constraints was undertaken by consulting with relevant government agencies and stakeholders, reviewing a number of government agency managed databases, reviewing Main Roads guidelines and undertaking site assessments.

3.1.1 Air Quality

The need for a local air quality assessment was determined using the criteria outlined in the Main Roads environmental guideline, Air Quality.

3.1.2 Sensitive Receivers

Aerial photography was reviewed and site visits were undertaken to determine the location of sensitive receivers within close proximity to the project area.

3.1.3 Contamination

The presence of contaminated sites was assessed by examining past and present landuses against the Department of Environment and Conservation (DEC's) Contaminated Sites Management Series: Potentially Contaminating Activities, Industries and Landuses.

3.1.4 Acid Sulfate Soils

The Western Australian Planning Commission's (WAPC's) acid sulfate soils maps were reviewed and the self assessment undertaken (http://www.wapc.wa.gov.au/Publications/213.aspx) to determine what level of risk the project area is exposed to, refer Appendix B.

3.1.5 Non-Indigenous Heritage

Non-indigenous heritage was examined utilising the Australian Heritage Places Inventory (http://www.heritage.gov.au) and Heritage Council of Western Australia (http://register.heritage.wa.gov.au/) refer Appendix C.

3.1.6 Indigenous Heritage

A search of the Department of Indigenous Affairs' (DIA's) (http://www.dia.wa.gov.au/Heritage/SitesSurveysSearch.aspx) database was undertaken to determine whether the project area contains any sites of Aboriginal heritage, refer Appendix D.

3.1.7 ESAs

The DEC'S Environmentally Sensitive Areas (ESA's) mapping tool was reviewed to determine the location of ESA's within the project area, refer to Appendix E.

3.1.8 Wetlands

The locations of wetlands within the project area was determined using the Department of Environment and Heritage (DEH) environmental reporting tool (Appendix F), the DEC's ESA mapping tool (Appendix E) and the DEC's Wetland Database mapping tool (Appendix G).

3.1.9 Sensitive Water Resources

The Water Information Officer of the Department of Water's regional office was consulted on sensitive water resources (including Public Drinking Water Source Areas) to determine whether the project area supported, or was adjacent to, any significant lakes, rivers or wetlands or proclaimed areas, refer Appendix H.

3.1.10 Threatened Flora, Fauna and Communities,

Consultation was undertaken with DEC (Appendix I) and the DEH environmental reporting tool (Appendix F) was reviewed to identify any known populations of threatened flora, fauna and Threatened Ecological Communities (TECs).

3.1.11 Weeds

A search of the Department of Agriculture and Food's (DAF's) declared plant database was undertaken to determine significant weeds likely to occur in the project area and a site visit was undertaken to confirm their presence / absence.

3.1.12 Dieback

As the project area receives >400 mm of average annual rainfall there is a potential for dieback to be present in the study area. Advice regarding the broad dieback management of the project area was sought by contacting the DEC, refer Appendix I

3.1.13 Conservation Reserves

The Department of Land Information (DOLI) was consulted to determine the conservation status (designated land use) and tenure of lands adjacent to the project area and road reserve. The Shire of Capel was consulted regarding the proposed project and adjacent Reserve 23000 (Appendix J).

2.2 Commonwealth Referral

The decision to refer the project to the Commonwealths DEH was based upon whether the project was going to impact upon any matters of national significance, eg World Heritage properties, protected wetlands and migratory species, Commonwealth marine areas, threatened species or communities or nuclear actions, refer Appendix F.

2.3 Site Investigation

A site visit was carried out by Project Manager Ken Baker and Environmental Officer Jeanette Della Bona to examine the general features of the area. Photos of the project area can be seen in Appendix K. The broad vegetation types in the vicinity of the project area were identified, vegetative condition assessed and significant weed species noted. Other issues that were considered included topography, adjacent land uses, the impacts on water courses and wetlands, and the potential for noise and vibration impacts (dilapidation).

3. EXISTING ENVIRONMENT

The project area is located adjacent to the existing north-bound carriageway of Bussell Highway (east) and the A class reserve 23000 (west). Reserve 23000 is vested with the Shire of Capel and is designated for the use of "Caravan Park and Resting Place". The proposed works will be undertaken within Main Roads' reserves and will not impact upon the A class reserve.

The soils of the project area are freely draining grey sands with a thick top layer of organic topsoil and leaf litter (< 130mm). There is no evidence of high groundwater levels, seasonally perched water or plant species commonly found in wetland associated vegetation.

The DAF Shared Land Information Platform (SLIP) database classified the vegetation of the project area as medium Eucalyptus woodland of Tuart and Jarrah. The vegetation proposed to be cleared did not contain Tuarts. Common species did include Marri, Jarrah, Peppermints, Banksia, Macrozamia, Grasstrees, Woody Pairs, Snotty Gobbles, Zamia Palms and various Acacia species. The area of clearing required for the project is approximately 15m wide and 150m long (0.225ha).

The vegetation is subject to edge effects as it is exposed to the highway in the east and a firebreak (associated with reserve 23000) in the west. Subsequently, there is a moderate infestation of weeds and the understorey appears slightly disturbed. The DAF listed declared plants weren't present in the project area. Dieback indicator species present in the project area (including Macrozamia, Jarrah and Banksia) did not exhibit any signs or symptoms of infection by the *Phytophthora* pathogen. The vegetation condition is consistent with the Keighery (1994) classification of 3-4, Degraded to Good condition.

3.1 Clearing of Native Vegetation

Under the amended Environmental Protection Act 1986 (EP Act) clearing of native vegetation must be under the authority of a clearing permit.

In assessing whether the project is likely to have a significant impact on the environment, the project has been assessed against the DoE's 10 principles of clearing, see Appendix L.

Given that the area proposed to be cleared is not significantly at variance with the 10 clearing principles and does not occur within an ESA, the clearing will be undertaken with Main Roads purpose permit CPS 818/3.

4. ASSESSMENT OF ASPECTS AND IMPACTS

Table 1 summarises the desktop assessment of potential impacts of the proposed project on the relevant environmental aspects identified.

Table 1: Aspects and Impacts – Harewoods Road Left Slip lane

Aspect	Evaluation of Potential Impacts
Statutory Land Use Planning	Not relevant to the proposed project. The proposed works are within existing road reserve; no further amendments are required to the Local Government Planning Scheme or Region Scheme.
Visual Amenity	Not likely to be significant. The proposed works will result in minor and short-term visual impacts during construction.
Public Safety and Risk	Not likely to be significant. Provided traffic management and signage to Main Roads standards are 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 conditions.
Hazardous Substances	Not relevant to the proposed project.
Air Quality	Not relevant to the proposed project. Local air quality assessment is not required for the project since it is not expected to have an impact upon existing traffic volumes.
Dust	Not likely to be a significant. There are no major sensitive receivers. Due to the scale of the proposed earthworks, dust will be easily managed by standard construction management techniques.
Noise and Vibration	Not likely to be significant. There are no major sensitive local receivers however the requirements of the Shire of Capel must be met in respect of noise management and construction working hours.
Contamination	Not relevant to the proposed project. The project area includes land resumed from an adjacent reserve in 1993 and land that has been in control of Main Roads. There is no evidence in past or current land uses to suspect or indicate contamination.

Acid Sulfate Soils	Not relevant to the proposed project. The WAPC's self-assessment (Planning Bulletin 64) indicates that no further soil investigation is required for the project.
Salinity	Not relevant to the proposed project. Earthworks associated with the proposed project are entirely superficial.
Non-Indigenous Heritage	Not likely to be significant. A search of the Australian Heritage Places Inventory and Heritage Council of Western Australia on-line databases indicated that there are 7 sites in the Shire of Capel. A site visit confirmed there are no sites within close proximity of the proposed works area.
Indigenous Heritage	Not likely to be significant. A search of DIA database identified no known sites of Aboriginal heritage significance within the vicinity of the project area. The DIA should be consulted to ensure no further investigations are required.
ESA's	Not likely to be significant. The DEC ESA's database indicated there was an ESA located >1km west of the project area.
Surface Water & Drainage	Not likely to be significant. Consultation with Department of Water has confirmed that the proposed works occur within a P3 Public Drinking Water Source Area. All project related activities will be superficial and will not interfere with natural surface drainage patterns. Impacts to surface water flow or quality are expected to be negligible.
Wetlands	Not relevant to the proposed project. There are no wetlands within the close proximity (>500m) of the project area.
Groundwater	Not relevant to the proposed project. No dewatering or drainage modifications are required therefore no changes are expected to groundwater level or quality. The risk of contaminating groundwater sources is extremely low.
Fauna	Not likely to be significant. The DEH environmental reporting tool identified 11 threatened fauna species that could potentially occur within the project area. It is unlikely the project would have a significant impact on these species due to the scale (0.225 ha) of the clearing, the availability of suitable habitat in the adjacent Reserve (Reserve 23000 is 125.4 ha) and the habitat requirements of the species. The DEC asked that a site investigation be undertaken to ensure Western Ringtail Possums do not reside within the area proposed to be cleared. A site inspection by fauna consultant Susan Holmes (Bush Business) was conducted February 2007 and there were no confirmed sightings of Western Ring-tail Possums. There were some scats found and some hollows identified. It was thought that the scats could be from an animal passing through the area, and it was recommended to have a Western Ring-tail possum "spotter" present on site during clearing operations.
Vegetation – Clearing	Not likely to be significant. The native vegetation to be cleared (0.225 ha of Degraded to Good condition vegetation) will be done so using Main Roads purpose permit as the project does not occur within an ESA.
Vegetation – TECs/DRF	Not likely to be significant. The DEC has advised that no known TEC's or DRF occur within the proposed works area. DEC also undertook a site assessment (Russell Smith, DEC Bunbury, Feb 2007) and confirmed that no TEC's or DRF occur within the area proposed to be cleared.

Vegetation – weeds	Not likely to be significant. Numerous common weed species occur throughout the proposed project area and are likely to be widespread within the local vicinity. A site visit confirmed that there are no declared plants in the project area. The risk of spreading common weeds species as part of the proposed work should be minimised. Standard weed hygiene measures should be applied for all earthworks in the area, including ensuring that plant and equipment brought on to the site are clean of soil.
Vegetation – dieback	Not likely to be significant. There are dieback susceptible species within the area proposed to be cleared that are not showing any signs or symptoms of infection with the disease. DEC have advised their preference for a site assessment to be undertaken to confirm the presence / absence of the pathogen. Failing this, treating the project area as dieback free and employing appropriate hygiene practices is acceptable.
Reserves / Conservation areas	Not likely to be significant. The project area lies adjacent to the A Class Reserve 23000 however the proposed works shall occur within the designated road reserve only. Provided clearing is minimised, that the works do not disturb vegetation beyond the clearing limits and standard weed and dieback hygiene practices are employed, impacts to the A Class reserve are expected to be negligible.

5. DECISION TO REFER

Following advice given by the DEC (Appendix I) it was recommended that Main Roads arrange a site inspection by a fauna consultant to confirm whether there were any Western Ringtail Possums in the project area. Although some evidence of Western Ringtail Possum was found in the project area (scats near a tree hollow) it was concluded that this could be from an animal passing through the area only, and it was recommended that a Western Ringtail Possum "spotter" be present on site during clearing operations. Also the DEC botanist (Russell Smith, DEC Bunbury) checked the threatened flora database and inspected the site (Feb 2007) and confirmed that there was no threatened flora or TECs occurring in the project area.

The project will not require referral to the WA Environmental Protection Authority or the Commonwealth Department of the Environment and Heritage, given the scale of the project, the low significance of its impacts to the surrounding environment and the environmental management measures proposed.

6. ENVIRONMENTAL MANAGEMENT PLAN

This section of the report (the EMP) has been developed for the project area following the completion of the above sections. The main aims of this EMP is to provide a management plan to assist in minimising the environmental impacts of the activities associated with the proposed works and identify who is responsible for the implementation of the management strategies.

This EMP will only address the actions already listed as well as any site-specific issues that were identified during the PEIA. The project specific management measures identified within this EMP are in addition to the standard specifications used for Category 2 projects. The environmental management measures/conditions in Main Road's Specifications 203, 204, 301, 302 and 304 are still to be followed where applicable.

The areas that require special management will be addressed in terms of:

- area of management (eg vegetation);
- the timing of the various management requirements;
- the management objectives for each area;

- the management strategies that are necessary to minimise the impact;
- the person/s responsible for implementing the management action; and
- on whose advise or Main Roads requirement

ENVIRONMENTAL MANAGEMENT PLAN					
Area of management	**Timing**	**Management objective**	**Management Strategy**	**Responsibility**	**Whose advice**
Vegetation Clearing - Record-keeping	All phases of Construction	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, recorded in an ESRI Shapefile; - the size of the area cleared (in hectares); - the dates on which the clearing was done.	Project Manager	DoE
Public Safety and Risk	All phases of construction	Ensure that public are safe from the project and associated activities.	Employ the relevant Main Roads standards for traffic management and signage.	Project Manager	Main Roads
Vegetation - Clearing	Pre-Construction	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 chipped or replaced according to the EMP.	Contractor	Main Roads
			A possum “spotter” to be present on site during clearing operations.	Project Manager	Main Roads
Surface Water and Drainage	Construction	Maintain the hydrological regime and quality of surface and groundwater that existed prior to construction	Treat and dispose of stormwater drainage in accordance with DoW requirements if significant amounts of stormwater or turbid runoff is created	Contractor	Department of Water
			All machinery shall be serviced off site in an appropriately bunded or otherwise protected area.	Contractor	Main Roads

Area of management	Timing	Management objective	Management Strategy	Responsibility	Whose advice
Dieback and Weeds	Construction	To avoid the introduction of dieback and the introduction or spread of weeds.	Ensure all machinery and equipment are free of vegetative and soil material that have the potential to carry the dieback pathogen or the seed of weed species upon entering or leaving the project area either by brushing, scraping or compressed air.	Contractor	Advice received during PEIA
Noise, Vibration and Dust	Construction	Ensure that the construction of the proposal does not become a nuisance to the public	Ensure all activities meet the Shire of Capel's requirements for noise management and construction working hours,	Contractor	Main Roads
Noise, Vibration and Dust (cont.)	Construction	Ensure that the construction of the proposal does not become a nuisance to the public	Any complaints regarding dust will be attended to as soon as possible	Contractor/Project Manager	Main Roads
			Where it is found that trucks leaving the site are carrying excessive material onto sealed surfaces, these areas will be swept to reduce dust generation and maintain traffic safety.	Contractor	Main Roads
			Watering, the use of hydromulch or other forms of mulching to protect loose surfaces shall be used as mitigation measures to prevent the generation of dust where it is creating an issue	Contractor	Main Roads
Pollution and Litter	Construction	Ensure that the construction of the proposal is managed to a standard that minimises any adverse impacts on the environment.	Dumping or temporary storage of bitumen, asphalt, concrete or aggregate should only occur at designated depots or controlled hardstands.	Contractor	Main Roads
Site Management	Construction	Ensure that the site is managed to ensure that construction of the proposal will have minimal impact upon the surrounding environment	Materials storage areas will be located on previously disturbed/ designated area	Contractor	Main Roads
Rehabilitation	Post-Construction	Leave the project area free from debris; and Rehabilitate the project area so that the revegetated area provides a net increase in area of native vegetation at the site.	All waste materials from the construction are to be completely removes 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
			Ensure the area to be rehabilitated is free of weeds, before during and after rehabilitation.	Contractor	Main Roads
			Replace the cleared vegetation with natives that previously occurred there or natives that occur in the adjacent Reserve 23000	Contractor	Main Roads

7. 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.

APPENDIX A LOW IMPACT SCREENING CHECKLIST APPENDIX

Checklist - Low Impact Environmental Screening

The Low Impact Environmental Screening Checklist is part of the environmental assessment and approval process, explained in Figure **Error! Reference source not found.** and in the procedures. 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, ie that will have a low impact on the environment and that can be adequately managed through standard contract clauses.

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. Circle the relevant part of the item.

Project Name: Bussell Highway / Harewoods Road Intersection Improvements
.....Install Left Turn Slip Lane .....

ITEM NO.	ITEM	Y	N
1	New road or road reserve to be created or expansion of existing road reserve.		✓
2	Works require ground disturbance or clearing of native vegetation.	✓	
3	New, or expansion of existing, pits or quarries. (non-commercial sources)		✓
4	Adjoining sensitive land use. eg residential or hospital or education centre		✓
5	Passes over, adjoins or drains directly into a wetland or sensitive watercourse.		✓
6	Local natural drainage regime / hydrology will be changed.		✓
7	Within/immediately adjacent to surface/underground Public Drinking Water Source Area.		✓
8	Dewatering, or a new water bore.		✓
9	Known potential source of hazardous materials within or adjoining the road reserve. e.g. Acid Sulphate Soils, existing petrol station, industrial site or waste disposal site (landfill)		✓
10	Buildings will require demolition.		✓

Completed By: *Signature* K B L *Date* 29/8/2006
Name Ken Baker *Title* Project Manager

To be reviewed by a Main Roads Environment Officer: *Signature* Della-Bona *Date* 31/8/2006
Name Jeanette Della Bona *Title* Project Development Officer Environment

Comments:

Copies of all completed (reviewed) forms must be forwarded to the Manager Environment

APPENDIX B W.A. PLANNING COMMISSION, ACID SULFATE SOIL ASSESSMENT

Acid Sulfate Soils Applicant Self-Assessment Form

Western Australian Planning Commission 50 years spatial planning

Important information for applicants

This form need only be completed if there is evidence of significant risk of disturbing acid sulfate soils at this location or having completed Form 1A - Application for approval of freehold subdivision or survey strata you have indicated yes to either question 1 or 2, Acid sulfate soils assessment, section 7.

Applicant

The applicant is the person with whom the WAPC will correspond and if the application is approved, the person to whom the approval will be sent.

Full name: Joann Johnston

Applicant signature: [signature] Date: 03/01/07

Application property details: Bussell Highway Intersection Upgrade Harewood Road, Left Slip Lane

Step 1

If you have previously indicated yes to question 1 or 2 on Form 1A go to Step 2.

Is there evidence of a significant risk of disturbing acid sulfate soils at this location?

The WAPC has published maps showing the levels of risk of acid sulfate soils. The maps are shown on figures 1-11 of planning bulletin no. 64 can be downloaded at www.wapc.wa.gov.au/Publications/213.aspx

Question 1: Is the land depicted in figures 1-11 of the WAPC's Planning Bulletin No 64 Acid Sulfate Soils as having a high risk of actual acid sulfate soil and potential acid sulfate soil <3m from the surface? ☐ yes ☒ no

Question 2: Is the land located in an area, whether depicted in figures 1-11 or not, where site characteristics and local knowledge lead you to form the view that there is a significant risk of disturbing acid sulfate soils at this location? ☐ yes ☒ no

If yes to either of these questions go to Step 2.

If no to both of these questions then no further investigation is required. Sign this form and submit it with your application together with the written results of the preliminary site assessment.

Step 2

Are any of the following works proposed, or likely to be carried out, on the land?

Question 3: Are any dewatering works proposed to be undertaken? ☐ yes ☐ no

Question 4: Is the surface elevation ≤ 5m AHD and is excavation of ≥ 100m^3 of soil (ie 10 standard dump truck loads) with an excavation depth of ≥ 2m proposed? ☐ yes ☐ no

Question 5: Is the surface elevation > 5m AHD and is excavation of ≥ 100m^3 of soil (ie 10 standard dump truck loads) with an excavation depth of ≥ 2m proposed? ☐ yes ☐ no

If yes to any of these questions go to step 3.

If no to all of these questions no further investigation is required. Sign this form and submit it with your application.

Step 3

Carry out preliminary site assessment in accordance with Department of Environment and Conservation guidelines.

Note: Copies of documents in the acid sulfate soils guidelines series and further technical advice and information can be obtained from contaminated sites page on the Department of Environment and Conservation's website at http://www.dec.wa.gov.au

Question 6: Did the preliminary site assessment reveal the presence of acid sulfate soils? ☐ yes ☐ no

If yes to this questions go to step 4.

If no to this questions then no further investigation is required. Sign this form and submit it with your application together with the written results of the preliminary site assessment.

PTO for information on submissions
Version: 2.1 (October 2006)

1

APPENDIX C NON-INDIGENOUS HERITAGE SITES

Australian Heritage Places Inventory (LGA Capel)

Minninup Dunes Area

Minninup Rd, Stratham via Capel, WA

LGA: Capel Shire

Source: Register of the National Estate

Minninup Homestead

Mangles Rd, Capel, WA

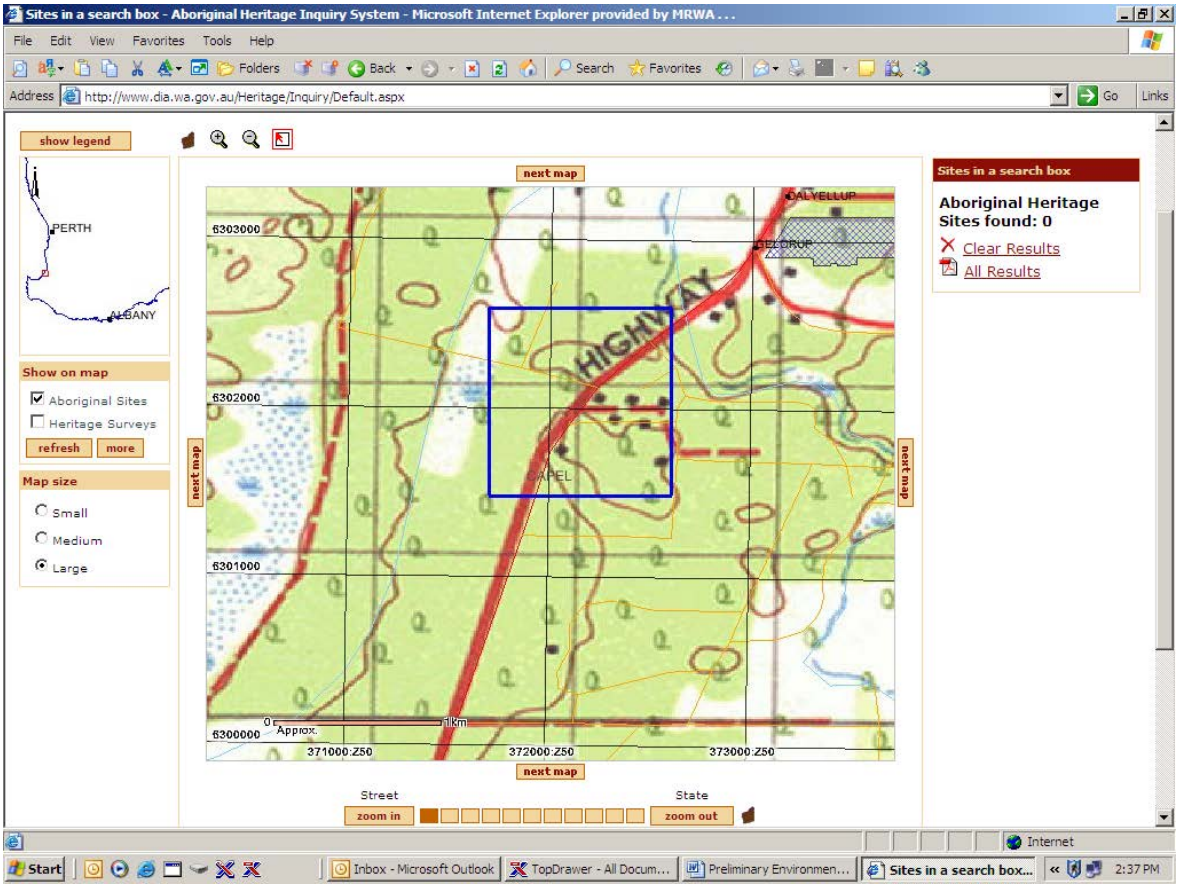
LGA: Capel Shire

Source: Register of the National Estate

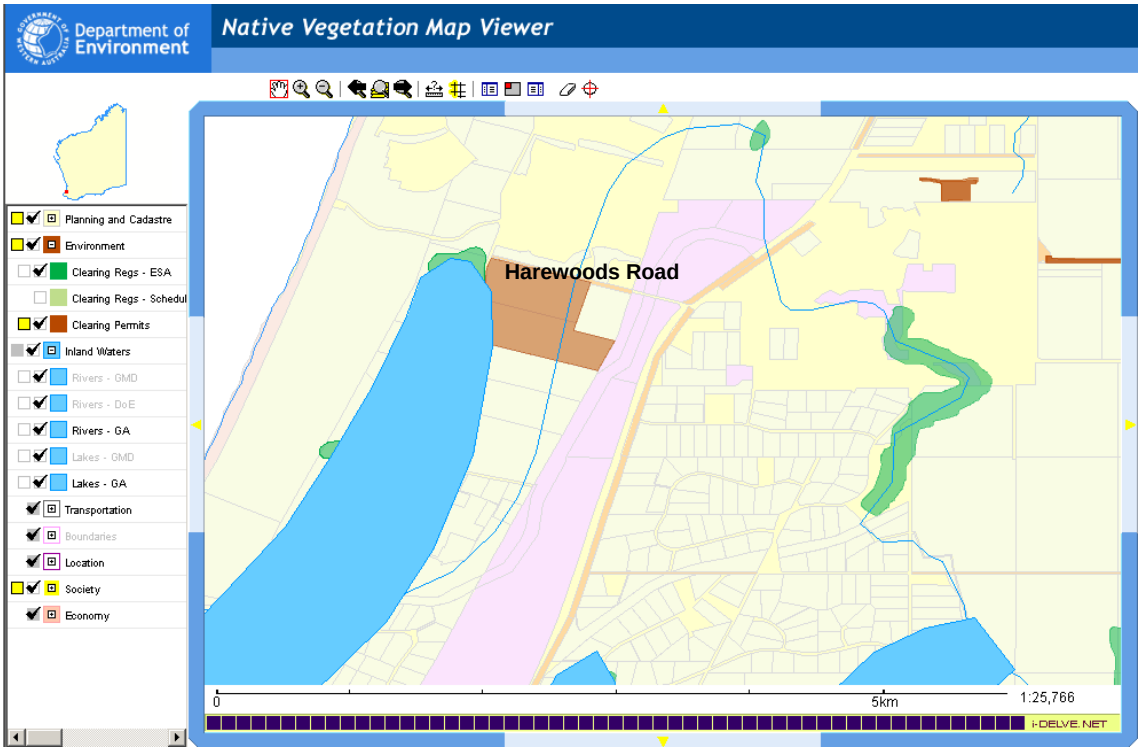
Heritage Council of Western Australia

Higgins Store and Goods Shed (3029)	Bussell Hwy, Capel
Original Capel Golf Course (15080)	Bussell Hwy, Capel
Sherwood Lodge (15157)	Cnr Bussell Hwy & Loretta Ave, Gelorup
Stratham Park (14968)	Cnr Bussell Hwy & Fishermans Rd, Stratham
Tren Creek Homestead & Staging Post (15077)	Bussell Hwy, Capel

APPENDIX D DEPARTMENT OF INDIGENOUS AFFAIRS, HERITAGE SITES



APPENDIX E DEPARTMENT OF ENVIRONMENT AND CONSERVATION, NATIVE VEGETATION MAP VIEWER (ESA'S)

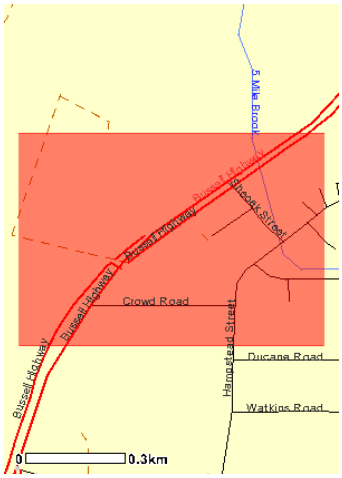


APPENDIX F DEPARTMENT OF ENVIRONMENT AND HERITAGE, ENVIRONMENTAL REPORTING TOOL

Database Report 27 November 2006 19:46

This report includes places of national environmental significance that are registered in the Department of the Environment and Heritage's databases, for the selected area. The information presented here has been provided by a range of groups across Australia, and the accuracy and resolution varies.

Search Type: Area
Buffer: 0 km
Coordinates: -33.407933,115.621879, -33.415808,115.621879, -33.415808,115.633103, -33.40793,115.633103

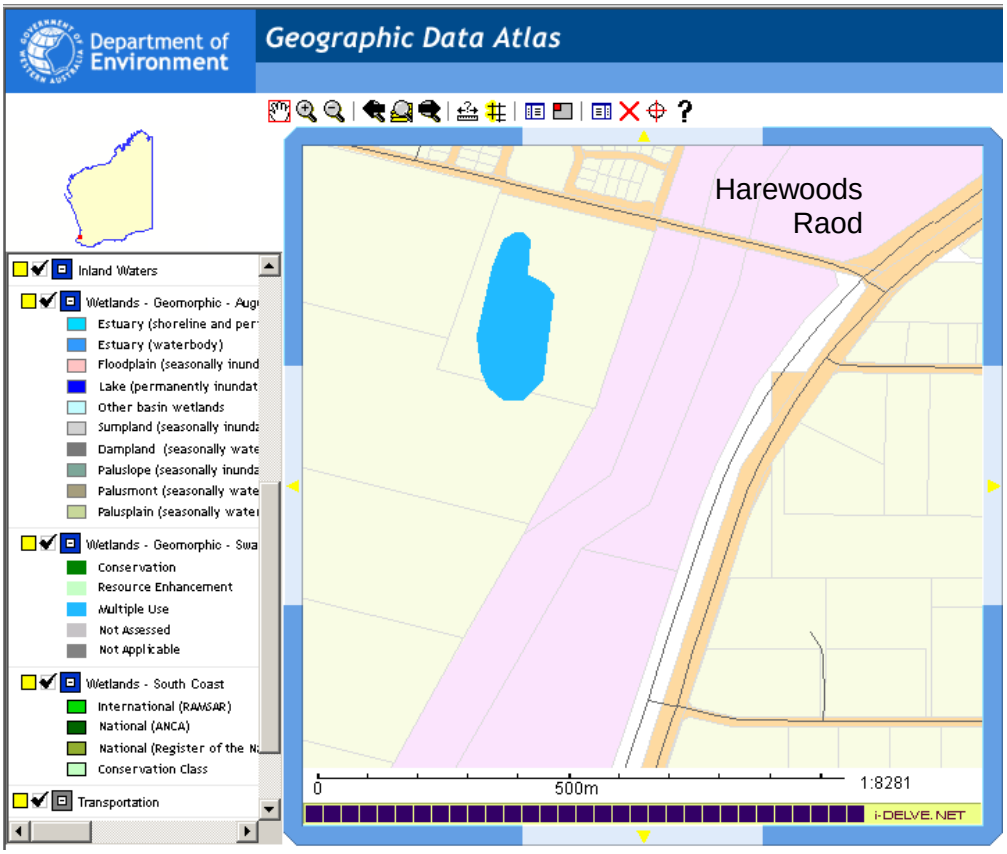


Biodiversity	
Threatened Species:	5
Migratory Species:	1
Listed Marine Species:	5
Invasive Species:	None
Whales and Other Cetaceans:	None
Threatened Ecological Communities:	None
Heritage	
World Heritage Properties:	None
Australian Heritage Sites:	None
Wetlands	
Ramsar sites: (Internationally important)	1
Nationally Important Wetlands:	None
National Pollutant Inventory	
Reporting Facilities:	None
Airsheds:	1
Catchments:	None
Protected Areas	
Reserves and Conservation Areas:	None
Regional Forest Agreements:	None

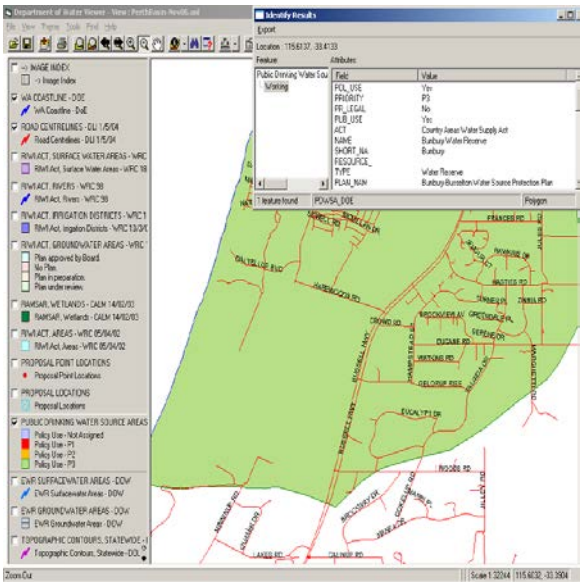
Biodiversity		
Threatened Species [Dataset Information]	Status	Comments
Birds		

Calyptorhynchus baudinii Baudin's Black-Cockatoo, Long-billed Black-Cockatoo	Vulnerable	Species or species habitat likely to occur within area
Calyptorhynchus latirostris Carnaby's Black-Cockatoo, Short-billed Black-Cockatoo	Endangered	Species or species habitat likely to occur within area
Mammals		
Dasyurus geoffroii Chuditch, Western Quoll	Vulnerable	Species or species habitat likely to occur within area
Pseudocheirus occidentalis Western Ringtail Possum	Vulnerable	Species or species habitat likely to occur within area
Setonix brachyurus Quokka	Vulnerable	Species or species habitat may occur within area
Migratory Species [Dataset Information]	Status	Comments
Migratory Terrestrial Species		
Birds		
Haliaeetus leucogaster White-bellied Sea-Eagle	Migratory	Species or species habitat likely to occur within area
Listed Marine Species [Dataset Information]	Status	Comments
Birds		
Apus pacificus Fork-tailed Swift	Listed - overfly marine area	Species or species habitat may occur within area
Ardea alba Great Egret, White Egret	Listed - overfly marine area	Species or species habitat may occur within area
Ardea ibis Cattle Egret	Listed - overfly marine area	Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle	Listed	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater	Listed - overfly marine area	Species or species habitat may occur within area
Wetlands		
Wetlands of International Importance (Ramsar sites) [Dataset Information]		
VASSE-WONNERUP SYSTEM		Within same catchment as Ramsar site
National Pollutant Inventory [Dataset Information]		
NPI Location Report		
Airshed	Substances	Sources
Bunbury Region, WA	52	23

APPENDIX G DEPARTMENT OF ENVIRONMENT AND CONSERVATION, GEOGRAPHIC DATA ATLAS (GEOMORPHIC WETLANDS)



APPENDIX H CORRESPONDENCE WITH THE DEPARTMENT OF WATER, SENSITIVE WATER RESOURCES



APPENDIX I CORRESPONDENCE WITH THE DEPARTMENT OF ENVIRONMENT AND CONSERVATION, THREATENED FLORA, FAUNA AND ECOLOGICAL COMMUNITIES

Cnr Dodson and South West Highway Bunbury 6230
Postal Address: PO Box 1693 Bunbury 6231

Tel: (08) 97254300 Fax: (08) 97254351

Joann Johnston
Environment Branch – Department of Main Roads
Don Aitken Centre
Waterloo Crescent, East Perth 6004

Dear Joann,
RE: ADVICE ON PRELIMINARY ENVIRONMENTAL IMPACT ASSESSMENT FOR CONSTRUCTION OF SLIP LANE AT HAREWOODS ROAD AND BUSSELL HIGHWAY INTERSECTION
The following should be taken into consideration with regard to your preliminary environmental impact assessment;
There are currently no known threatened flora or communities within the proposed area identified within the Department of Environment and Conservation's (DEC) Corporate information that would appear to be impacted. However, an on-site assessment would be advisable with Main Roads and Departmental staff once the area is pegged out to clarify the exact area of clearing necessary.

Imported soils for road works are the most common method by which weeds are introduced. No weeds or seeds are to be brought onto site in vehicles, equipment, soils, or any other method. Weeds already present, if likely to be disturbed in any way are to be destroyed by appropriate methods to avoid further spread.

Dieback disease; the preference is to have the site interpreted for the presence of phytophthora dieback and for any equipment to be clean prior to entering into uninfested areas. A less rigorous option, but probably acceptable if supervised well is that all vehicles being clean of soil and plant roots when entering the area or crossing a hill top or the bottom of a hill (ie mini catchments). In addition if puddles of water or mud are present then they are to be avoided (vehicles are not to drive through them). The contractor is authorised to use hand tools to dig a small drain on the side of any puddles to allow drainage.

The area proposed to be cleared represents potential habitat for the Western Ringtail Possum. Again, an on-site assessment between Main Roads and DEC is advisable once the area is more clearly identified with regard to what trees may require being either wholly removed or some limbs to be removed.

Thankyou for forwarding a copy of your proposed works for the Department of Environment and Conservation's (DEC) consideration and comment. Please advise if you have any further questions by contacting me on the details below.

Regards,

Tenielle Brown

Phone: 9725 4300
Email: tenielle.brown@dec.wa.gov.au

APPENDIX J ADVICE FROM THE SHIRE OF CAPEL REGARDING RESERVE 23000

Hello Joann,

Reserve No 23000 has a high conservation value. This reserve has significant remnant vegetation. However, the reserve does require strict dieback prevention methods be followed when working in the reserve as noted in the Shire's file on Recreational Facilities and reserves.

FYI There are residents licensed to take seed from the reserve.

I trust this information is of some value.

Kind regards

Jono Wesley
Manager Operational Services
Shire of Capel

APPENDIX K PHOTOGRAPHS FROM SITE VISIT

Northbound Carriageway, Bussell Highway, Facing North towards Harewoods Road

Location of Slip Lane, Northbound Carriageway, Facing South

Vegetation proposed to be cleared

APPENDIX L ASSESSMENT AGAINST 10 CLEARING PRINCIPLES

MRWA Vegetation Clearing Assessment Report

This guideline has been prepared to assist MRWA in addressing condition 7 "Assessment of Clearing Impacts" under Clearing Permit CPS 818/3.

For guidance on how to complete the form, refer to DEC completed reports (active permits) at http://203.20.251.100/cps_reports/.

1.0 AREA UNDER ASSESSMENT DETAILS

1.1 Proponent details

Proponent's name:	MRWA South West Region
Contacts:	Name: Ken Baker Phone: (08) 9725 5639 Fax: (08) 9725 5666 Email: ken.baker@mainroads.wa.gov.au

1.2 Property details

Property:	Bussell Highway intersection with Harewoods Road, Shire of Capel
Colloquial name:	

1.3 Area under assessment

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:	Site Plan Attached
0.225		Mechanical	Intersection Upgrade and Road Construction	

1.4 Avoidance/Minimise clearing
How have the clearing impacts been minimised?

2.0 BACKGROUND

2.1 Existing environment and information

2.1.1 Description of the native vegetation under application

Site Visit Undertaken	□ Yes	Fauna / Flora Survey Undertaken	□ No
Site Report Attached	□ Yes	Fauna / Flora Survey Report Attached	□ No
Site Photos Attached	□ Yes	Other Relevant References Attached	□ Yes

Vegetation Complex	Clearing Description	Vegetation Condition	Comment
Medium Eucalyptus Woodland	Vegetation under application to be cleared is for the construction on a left slip lane from the northbound carriageway of Bussell Highway into Harewoods Road	Degraded to Good condition Keighery (1994)	Vegetation Exposed to edge effects due to Hwy and fire break

3.0 ASSESSMENT OF APPLICATION AGAINST 10 CLEARING PRINCIPLES

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments Proposal is not likely to be at variance to this Principle

The vegetation under application is in Degraded to Good condition (Keighery 1994) and there is a slight infestation of weeds however the adjacent A Class Reserve (23000) contains 125.4 ha of similar vegetation in Good to Pristine condition. The

	clearing of the proposed 0.225 ha is therefore unlikely to have a significant impact to biodiversity on a regional or local scale.
Methodology	Department of Agriculture and Food (DAF), Shared Land Information Platform (SLIP) and site visit by Main Roads Environmental Officer

(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.

Comments	Proposal is not likely to be at variance to this Principle Several (11) significant fauna species were identified as potentially occurring within the project area. Most of which would only inhabit the project area on a seasonal (migratory) or temporary (feeding ground only) basis (8). Others would not inhabit the area as the vegetation under application is not conducive to species habitat requirements (i.e. Quokka and Chuditch require dense understorey). The Western Ringtail Possum is the most likely significant fauna species to occur in the project area. Some evidence of possible habitation (i.e. some scats and a possible hollow) were found in the area under application during site visits by a fauna consultant, but it was deemed likely from animals passing through the area and therefore the proposal is not considered to be at variance to this principle.
Methodology	Department of Environment and Heritage (DEH), Environmental Reporting Tool Database, site visit with Main Roads Environmental Officer and Consultation with the local Department of Environemnt and Conservation (DEC) Site inspection by Fauna consultants (Bush Business, Feb 2007).

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments	Proposal is not likely to be at variance to this Principle There are no known populations of Declared Rare or Priority flora within the project area. Given the relatively small area under application (0.225 ha), the condition of the vegetation (weed infested) and the adjacent A class Reserve (125.4 ha Good to Pristine), the proposal is not considered to be at variance to this principle.
Methodology	Consultation with DEC

(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.

Comments	Proposal is not likely to be at variance to this Principle No known Threatened Ecological communities are known to occur within the project area or the area under application for clearing.
Methodology	Consultation with DEC, search of DEH Environmental Reporting Tool Database

(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.

Comments	Proposal is not at variance to this Principle The area under application is classified as vegetation association No. 6 Medium woodland or Tuart and Jarrah (Beeston et. al. 2002) of the DAF SLIP database. According to Beeston et. al. (2002) there is currently 32.88% of the pre-European extent of 67, 429 ha of this vegetation remaining. This is above the EPA's threshold of 30% therefore the clearing of the proposed vegetation is not at variance to this principle.
Methodology	DAF SLIP database, Beeston et. al. 2002

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments	Proposal is not at variance to this Principle There are no watercourses or wetlands within close proximity to the project area.

Methodology	DEC Geographic Data Atlas (Inland Waters and Geomorphic Wetlands)

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments	Proposal is not likely to be at variance to this Principle Given the size of the area under application (0.225 ha0, the flat topography and the adjacent Bussell Highway it is highly unlikely that the proposed clearing is at variance to this principle.
Methodology	Site visit undertaken by Main Roads Environemntal Officer

(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.

Comments	Proposal is not likely to be at variance to this Principle The area under application lies adjacent to a cleared firebreak and beyond this firebreak lays an A Class Reserve (23000). The vegetated portion of the road reserve varies in width from 18-23 m (approximately) and the maximum clearing width for construction of the left slip lane is approximately 15 m. A vegetated portion of the road reserve would therefore remain after construction and provide a degree of buffering to the Reserve, It is unlikely that the clearing of 0.225 ha would have a significant impact upon the environmental values of the adjacent A Class Reserve (23000).
Methodology	Site visit by Main rOads Environemntal Officer

(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.

Comments	Proposal is not likely to be at variance to this Principle There are no defined surface water drainage patters within the project area that have the potential to deteriorate in quality either through contaminates or turbidity. Potentially contaminating materials will not be stored on site. Due to the size and nature of the proposed works, it is highly unlikely that the quality of surface or groundwater would be deteriorated.
Methodology	Site visit by Main Roads Environmental Officer, DEC Geographic Data Atlas (Inland Waters and Geomorphioc Wetlands)

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Comments	Proposal is not likely to be at variance to this Principle Due to the location of the project area (Shire of Capel) and the small area of vegetation to be cleared, it is highly unlikely the proposed project would be at variance to this principle.
Methodology	Site visit by Main Roads Environmental Officer

Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

Comments	
Methodology	

4.0 SUBMISSIONS

If required have submissions been requested and addressed

Submission Requested from	Request Sent (Date)	Submission Received (Date)	Issues Raised / Comments Made

5.0 ASSESSOR'S RECOMMENDATION

The project is unlikly or highly unlikley to be at variance with any of the clearing principles	It is recomedned that Main Roads undertake a site asseessment of confirm that the project area does not contain threatened flora or fauna.

6.0 REFERENCES

Beeston, G.R., Hopkins, A.J.M., and Shepherd, D.P. (2002) Resource Management Technical Report 250. Audit Report of Land-Use and Vegetation. Department of Agriculture and Food.

OFFICER PREPARING REPORT

Joann Johnston
Graduate Environment, Environment Branch
02/01/2007