

**ENVIRONMENTAL IMPACT ASSESSMENT AND  
ENVIRONMENTAL MANAGEMENT PLAN  
North West Coastal Highway Crest Realignment SLK 47-49  
July 2011**



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**ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT  
PLAN – NORTH WEST COASTAL HIGHWAY CRESTS REALIGNMENT  
SLK 47-49**

**EXECUTIVE SUMMARY**

The North West Coastal Highway (NWCH) is the major link, joining the Brand Highway (Geraldton) to the Great Northern Highway (Port Hedland). The highway carries a mix of heavy freight vehicles, tourist and commute vehicles. On the section between 45.56 and 48.56 SLK there have been six crashes reported over the past five years, all involved loss of control.

Main Roads Western Australia (Main Roads) proposes to reconstruct two sections of the highway between SLK 47.0 and 49.0 (the Project), which will involve the lowering of vertical crests to increase the line of site for vehicles, increasing road safety and reducing the risk of traffic accidents.

The Project is located approximately 2.5 km south of Northampton (Figure 1), within the Shire of Northampton.

The widening of the seal will require the clearing of approximately 56,090m<sup>2</sup> of native vegetation along both sides of the road and as such MRWA, as specified under their permit (CPS818/5), undertook a PEIA. The outcome of the PEIA was that the project may be at variance with the following principles:

- e1 – Native vegetation should not be cleared if the remaining native vegetation represents less than 30%, or the clearing would reduce the representation of remaining native vegetation to less than 30% in the Bioregion (or sub region where applicable).

A Biological Survey was conducted in September 2009, the results of which were referred to in the PEIA.

The results of the survey concluded that:

Suitably qualified GHD Ecologists undertook a biological survey on the 18th August 2009. In summary, the following conclusions on environmental aspects are made:

▶ The vegetation of the Project Area is identified by Beard (1976) as likely to contain Vegetation Association 35, which is described as 'Shrublands; jam scrub with scattered York gum'. This vegetation type is considered to be *Vulnerable*, with 10.5% of the pre-European extent considered to be remaining in the Geraldton Sandplains Interim Biogeographic Regionalisation for Australia (IBRA) region (Shepherd, 2005).

– Based on evidence from the field survey, the original vegetation type has been altered to an extent that it no longer resembles the distinct vegetation type described and mapped by Beard (1976), and is most likely natural regrowth and planted vegetation after previous clearing activities.

- ▶ No Declared Rare Flora species were recorded during the field survey. However, one Priority species, *Acanthocarpus parviflorus* (Priority 3) was recorded within the Project Area.
- ▶ There are no conservation reserves within the immediate vicinity of the Project Area.
- ▶ Vegetation condition throughout the Project Area ranged from Condition 5 (*Degraded*) to Condition 6 (*Completely Degraded*). The main disturbance factors were historical clearing for the purpose of road construction and agriculture, and weed invasion.
- ▶ A total of 96 species (52 native species) from 34 families were recorded in the Project Area, which represents low native species diversity.
- ▶ A total of 44 weed species were recorded during the field survey. This represents approximately 46% of the total number of plant species recorded. Two Declared Plants listed under the *Agriculture and Related Resources Act* (1976) were recorded in the Project Area,

being *\*Echium plantagineum* (Paterson's Curse) and *\*Lantana camara* (Common Lantana). Within the Project Area, one species is recognised as having status as a Weed of National Significance (WONS), being *\*Lantana camara* (Common Lantana).

▶ The reconnaissance fauna survey recorded 27 fauna species. These included: 22 bird species; 3 mammals; and 2 reptiles. One introduced species; the European rabbit was recorded in the Project Area. – Potential clearing within the Project Area is not expected to negatively impact upon the local populations of any of these or other fauna species present in the area.

▶ One threatened fauna species, the Priority 4 *Pomatostomus superciliosus* subsp. *ashbyi* – Whitebrowed Babbler (western wheatbelt), was recorded in the Project Area during the reconnaissance fauna survey. Threatened fauna species known to occur in the general area, as identified in the desktop assessment, are unlikely if present, to be impacted by clearing of vegetation in the Project area;

▶ While the habitat type located in the Project Area is common, limited vegetation surrounding the Project Area exists due to historical clearing for agriculture. The Project Area may provide a habitat linkage between areas of vegetation in the local area; and

▶ Based on the findings of the desktop and field assessment, clearing for the Project is considered to be at variance with Clearing Principle (e), due to the *Vulnerable* status of the vegetation remaining within the Project Area. However, the field survey indicates that the original vegetation type has been altered to such an extent that it no longer resembles the remnant vegetation type described and mapped by Beard (1976).

No environmental impacts identified during the preparation of this EIA and EMP are considered to warrant the referral of the Project to the Commonwealth Minister for Environment under the provision of the *Environmental Protection and Biodiversity Conservation Act, 1999*, or the *West Australian Environmental Protection Act 1986*.

## **1. INTRODUCTION**

### **1.1 Background**

A desktop Preliminary Environmental Impact Assessment (PEIA) has been completed for the proposed project.

A biological survey was also conducted in conjunction with the PEIA. Both assessments indicated that the proposed clearing may be at variance with one or more of the clearing principles.

Where the outcome of the PEIA indicated that the proposed clearing 'may be at variance or seriously at variance with one or more of the clearing principals', Main Roads must undertake an EIA.

This EIA and EMP has been prepared as a result of the PEIA findings for the Site, which indicated that the proposed clearing may be at variance with one or more of the 'Ten Clearing Principles' outlined in Schedule 5 of the Environmental Protection Amendment Act 2003.

### **1.2 Site Location**

The location and boundaries of the study area are shown on Figure 1, Figure 2 and Figure 3.

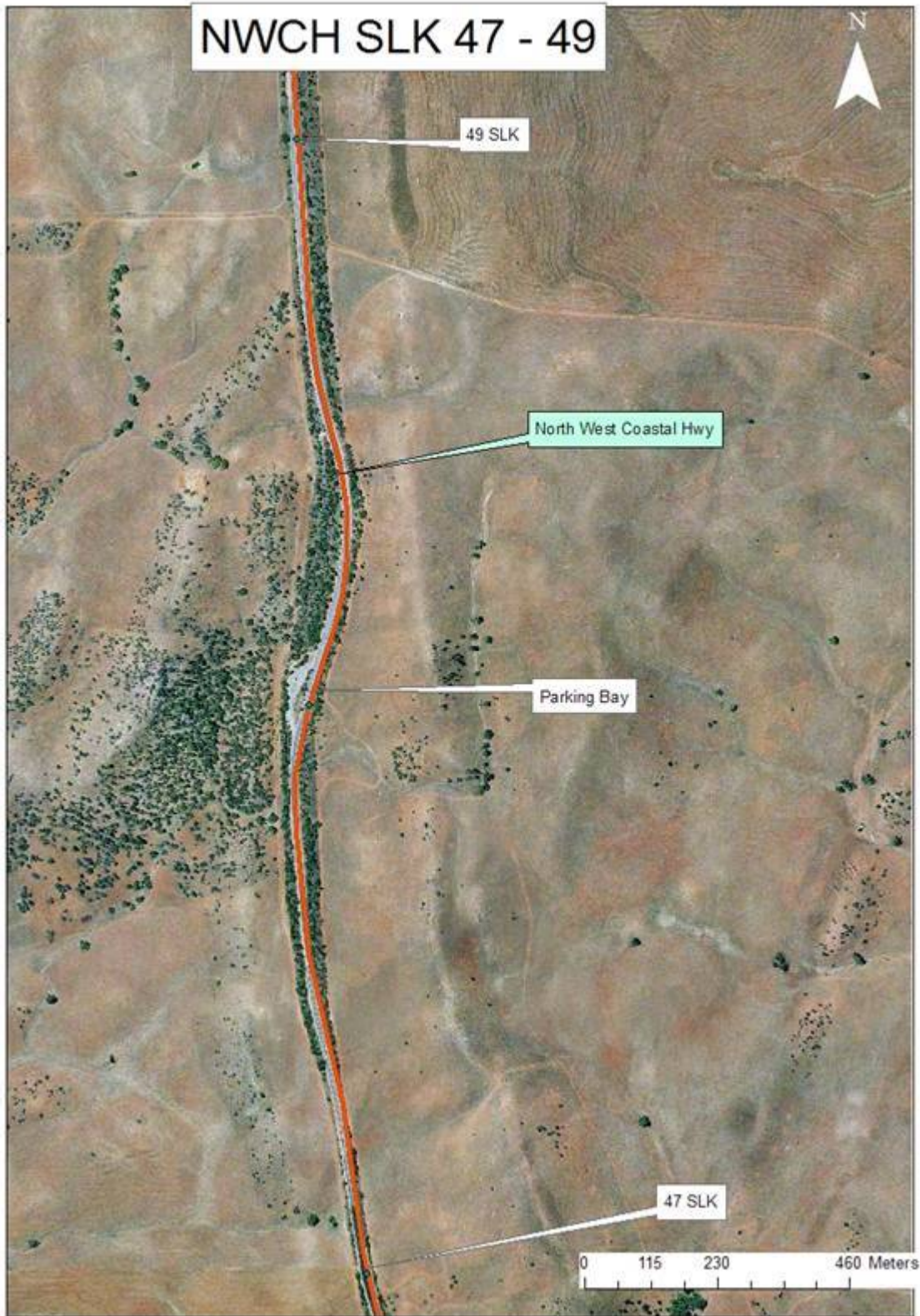


Figure 1: Location of Proposed Works Area



**Figure 2: Location of Proposed Works Area**





**Figure 3: Location of Proposed Crest Realignments**

### 1.3 FIELD SURVEY SCOPE

Suitably qualified GHD Ecologists undertook a flora and vegetation survey on the 16<sup>th</sup> and 17<sup>th</sup> September 2008, with reference to the Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia – Guidance Statement No. 51, EPA, Perth.

The flora survey was undertaken according to the following process (Source: GHD Pty Ltd 2009):

- A 200m *relévé* at 200m intervals was undertaken on both sides of the road in each of the Project Sites to ensure that all vegetation types were covered during the survey;
- The vegetation types and their boundaries were delineated, recording vegetation composition, condition rating, weed species and evidence of disturbance;
- Vegetation was rated according to the Bush Forever vegetation condition scale (Government of Western Australia, 2000);
- The presence of potential Threatened Ecological Communities (TECs) in the area was assessed;
- A search of the Department of Environment and Conservation's (DEC) Declared Rare and Priority Flora database and the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool was undertaken to identify expected significant flora for the area;
- Suitable habitat for Declared Rare and Priority Flora species was searched during the survey to determine the presence of previously recorded and unrecorded threatened flora; and
- Where field identification of plant taxa was not possible, specimens were collected in a systematic manner so that they could be later identified at the West Australian Herbarium by comparison with the reference collection and use of identification keys. Nomenclature of the species follows that of *FloraBase* (2008).

The reconnaissance fauna survey for the presence of fauna was conducted concurrently with the flora survey. A fauna habitat assessment was undertaken within each of the Project Sites. Nomenclature of the species follows that of *FaunaBase* (2008). The fauna survey was limited to terrestrial and vertebrate species.

The field survey included the following with regards to wetlands and drainage:

- An assessment and description of existing drainage patterns with respect to topography, and to flora and fauna communities; and
- An inventory and brief description of wetlands in the Project area, and their conservation value.

### 1.4 Purpose of this Document

This document describes the significant aspects of the existing natural and social environment at the Site and examines the environmental and social impacts of the proposed works.

Actions to manage and minimise the identified impacts have been proposed and incorporated as part of this document with the objective to develop an effective EMP that can be utilised during all phases of the project.

The EIA and EMP have been prepared based on:

- A field based biological survey;
- A review of relevant design documents prepared for the Project;
- Discussions with the MRWA Senior Project Manager; and
- Discussions with officers of the Department of Environment and Conservation.

## 2. PROJECT DETAILS

Main Roads Western Australia (MRWA) has two proposed projects within close proximity of each other, they are:

- Extension of a current passing lane SLK 46.08-46.65; and
- Crest realignments SLK 47-49.

This reconstruction of 2.79 km of road will address the current sub standard horizontal and vertical curves, and passing lane length.

Specifically the two projects consist of the following:

- The proposed extension of the passing lane between SLK 46.08-46.65 involves the extension of the current passing lane length from 480 metres to 950m (excluding tapers). This brings the length to the advised minimum length on a road train route in approximately 100 km/hour operating speed section; and
- The crest realignments, involve the reconstruction of two sections of the highway between SLK 47.0 and 49.0, which will involve the lowering of vertical crests to increase the line of site for vehicles, increasing road safety and reducing the risk of traffic accidents.

The reconstruction will be done under traffic without the use of a side track and, will be cut to fill.

## 3. EXISTING ENVIRONMENT

### 3.1 Climate

The closest operating Bureau of Meteorology station located to the Project Area is at Nokanena. Recorded climatic data is graphically presented in Graph 1 and summarised as follows:

- ▶ Mean Maximum Temperature: 34.6°C (February) to 20°C (July)
- ▶ Mean Minimum Temperature: 18.8°C (Feb) to 7.9°C (August and September)
- ▶ Mean Annual Rainfall: 436.8 mm
- ▶ Mean Annual Rain Days: 74 days.

(Source: Bureau of Meteorology, 2009a)

(Source: GHD Pty Ltd 2009, Section 3.1)

### 3.2 Geology and Soils

The Project Area is located in the Chapman soil landscape zone of the Greenough province: *Dissected lateritic terrain (with hills, sandplains, breakaways and plateaux) on colluvium and deeply weathered mantle over gneiss of the Northampton Complex* characterise this zone. *Yellow deep sands with Red shallow loamy duplexes and some Red shallow sandy duplexes, Red loamy earths and Shallow gravels* are found in this area (Tille, 2006).

The Geological Survey of Western Australia (1971) describes the soils of the Project Area as comprising:

- ▶ **Pm** Granulite – includes cordierite gneisses. Predominantly metasedimentary; and
- ▶ **Pq** Feldsparitic quartzite.

(Source: GHD Pty Ltd 2009, Section 3.2)

### 3.3 Rivers and Wetlands

No rivers or wetlands are located within the Project Area (*WetlandBase*, 2009). Drainage occurs through a series of ephemeral drainage channels and creeks which flow west towards the ocean.

(Source: GHD Pty Ltd 2009, Section 3.3)

### 3.4 Public Drinking Water Supply Areas

The Project Area is situated within the Northampton Water Reserve, a Priority 3 (P3) Public Drinking Water Source Area (PDWSA) (Department of Water, 2009). P3 areas are defined to manage the risk of pollution to the water source from catchment activities. These areas are declared over land where water supply sources coexist with other land uses. Within Priority 3 areas, constraints are made upon land uses with significant pollution potential (Department of Environment, 2004).

The Department of Environment (2004) identifies transport infrastructure land use (i.e. roads) as 'Acceptable2' in P3 areas.

(Source: GHD Pty Ltd 2009, Section 3.4)

### 3.5 Land Use

The land adjacent to the proposed works is considered to be 'agricultural' with wheat and sheep farming the predominant land use.

### 3.6 Reserves and Conservation Areas

There are no conservation reserves within the immediate vicinity of the Project Area. The closest conservation areas are Oakabella Nature Reserve, located approximately 9 km to the south, and Blue Wells Nature Reserve, located approximately 15 km to the northeast.

(Source: GHD Pty Ltd 2009, Section 3.3)

### 3.7 Environmentally Sensitive Areas

No Environmentally Sensitive Areas (ESA's) have been recorded within the Project Area (Department of Environment and Conservation, 2009c). The nearest ESA occurs approximately 3.5 km to the southeast of the Project Area. This ESA forms a buffer area protecting the recorded location of a significant flora species.

(Source: GHD Pty Ltd 2009, Section 3.6)

### 3.8 Contaminated Sites

Given the relatively superficial nature of the required earthworks, there appears to be a low risk of any significant contamination issues.

The works is 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.

(Source: MRWA 2009)

### 3.9 Flora and Vegetation

#### 3.9.1 Vegetation Units

One remnant vegetation type was identified within the Project Area as follows:

► Very open shrubland of *Acacia acuminata*, *A. tetragonophylla* and *Hakea recurva* over weed species (Plate 1). *Eucalyptus camaldulensis* occurs in the lowerlying portions as an emergent tree species.

(Source: GHD Pty Ltd 2009, Section 4.1.1)

### **3.9.2 Priority / Threatened Ecological Communities**

The vegetation type identified during the time of survey is not considered to represent any Threatened or Priority Ecological Community. GHD does not consider vegetation types within the Project Area to hold particular conservation significance

(Source: GHD Pty Ltd 2009, Section 4.1.4)

### **3.9.3 Vegetation Condition**

Vegetation condition throughout the Project Area ranged from Condition 5 (*Degraded*) to Condition 6 (*Completely Degraded*). The main disturbance factor was weed invasion from historical grazing for the purpose of agriculture (also invading the road reserve) and road establishment (refer to Figure 4 for vegetation condition mapping). As indicated, the majority of the Project Area has been previously cleared, with areas of rehabilitation within the road reserve.

(Source: GHD Pty Ltd 2009, Section 4.1.2)

### **3.9.4 Protected Flora Species**

No Declared Rare Flora species were recorded during the field survey. However, one Priority species, *Acanthocarpus parviflorus* (Priority 3) was recorded within the Project Area.

(Source: GHD Pty Ltd 2009)

**FloraBase**  
the Western Australian Flora

Advanced  
Name Quick Search:

Home Themes Find Tools Help

Plants → Asparagaceae → *Acanthocarpus*

## *Acanthocarpus parviflorus* A.S.George

Fl.Australia 46:221 (1986)

Conservation Status: **Priority Three**  
Name Status: **Current**

### Brief Description

Grazyna Paczkowska, Friday 1 July 1994

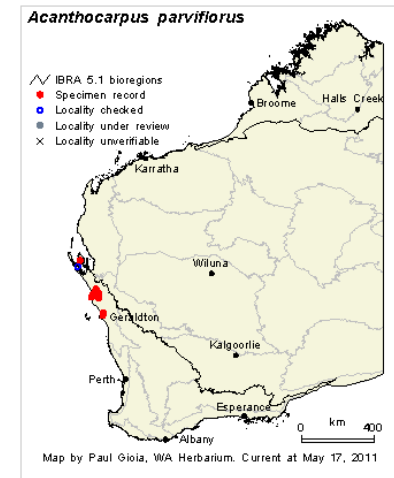
Rhizomatous, tufted perennial, herb, 0.15–0.4 m high. Fl. white, May–Jun. Sand over limestone or sandstone. **Distribution:** ER: CAR; SW: GS.

[Take me back to my last search](#)



*Acanthocarpus parviflorus*

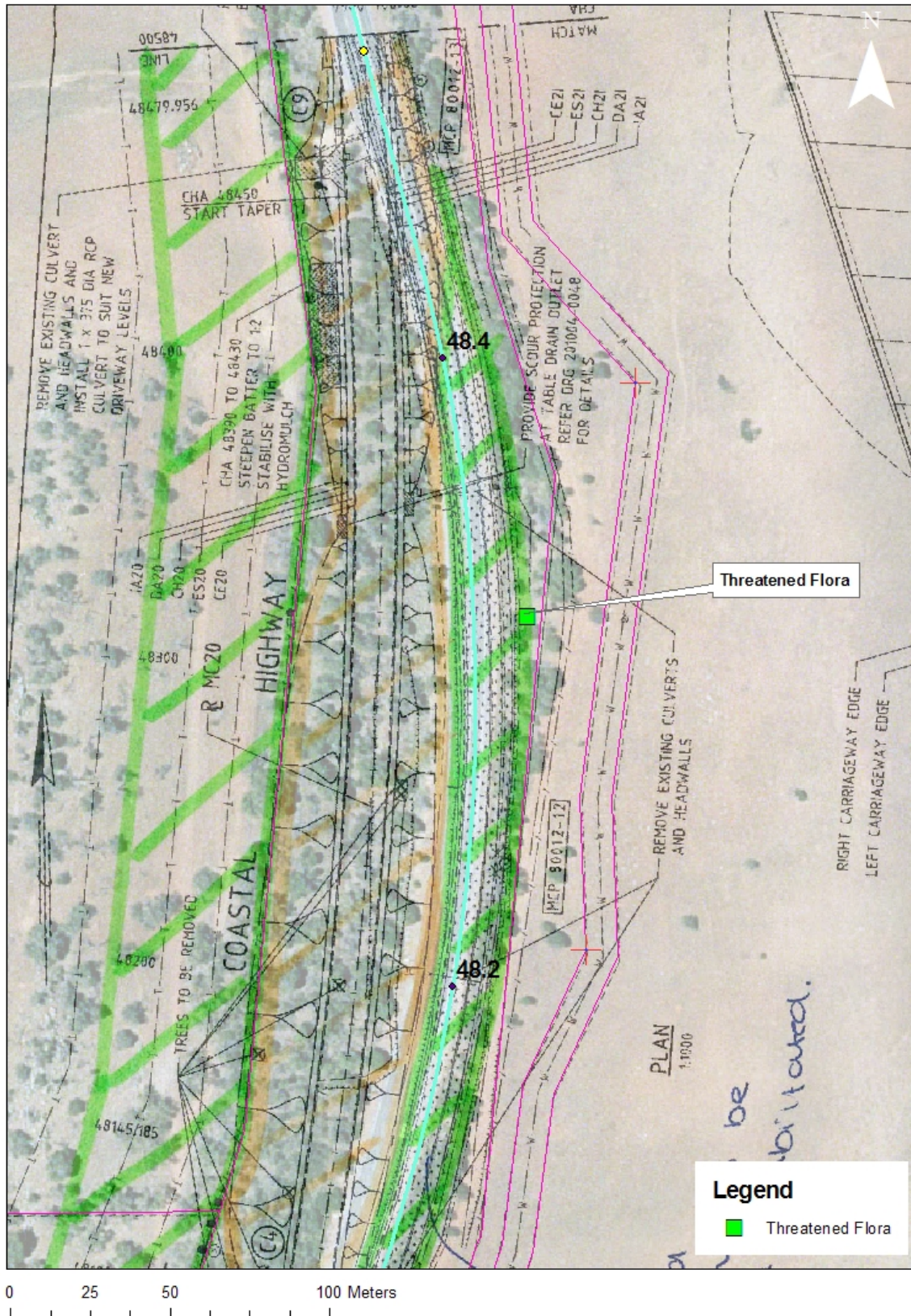
Photos: S.J. Patrick



Department of  
Environment and Conservation  
Western Australian Herbarium



# NWCH Proposed Clearing & THFL Location





### 3.9.5 Locally Significant Flora Species

No species recorded during the survey are considered locally significant. No native species were recorded during the survey exhibiting an extension to their known range. One weed species, *\*Conyza sumatrensis* (Tall Fleabane) was recorded exhibiting an extension to its known range. While this species is known from the Abrolhos Islands, the closest Western Australian Herbarium record in the mainland is from Jurien Bay, approximately 200 km south of the Project Area. However, Hussey *et al.* (2007) indicate that this species shows a range that includes the townsite of Geraldton at its northern extent.

(Source: GHD Pty Ltd 2009, Section 4.2.2)

### 3.9.6 Weed Species

A total of 44 weed species were recorded during the field survey. This represents approximately 46% of the total number of plant species recorded. The dominant weed families included: Poaceae (grasses) and Asteraceae (daisies). The weed species recorded were observed to be in high densities throughout the Project Area, being the dominant ground cover in the Project Area.

#### Weeds Of National Significance (WONS)

Within the Project Area, one species is recognised as having status as a WONS:

- ▶ *\*Lantana camara* (Common Lantana).

#### Declared Plants (DP)

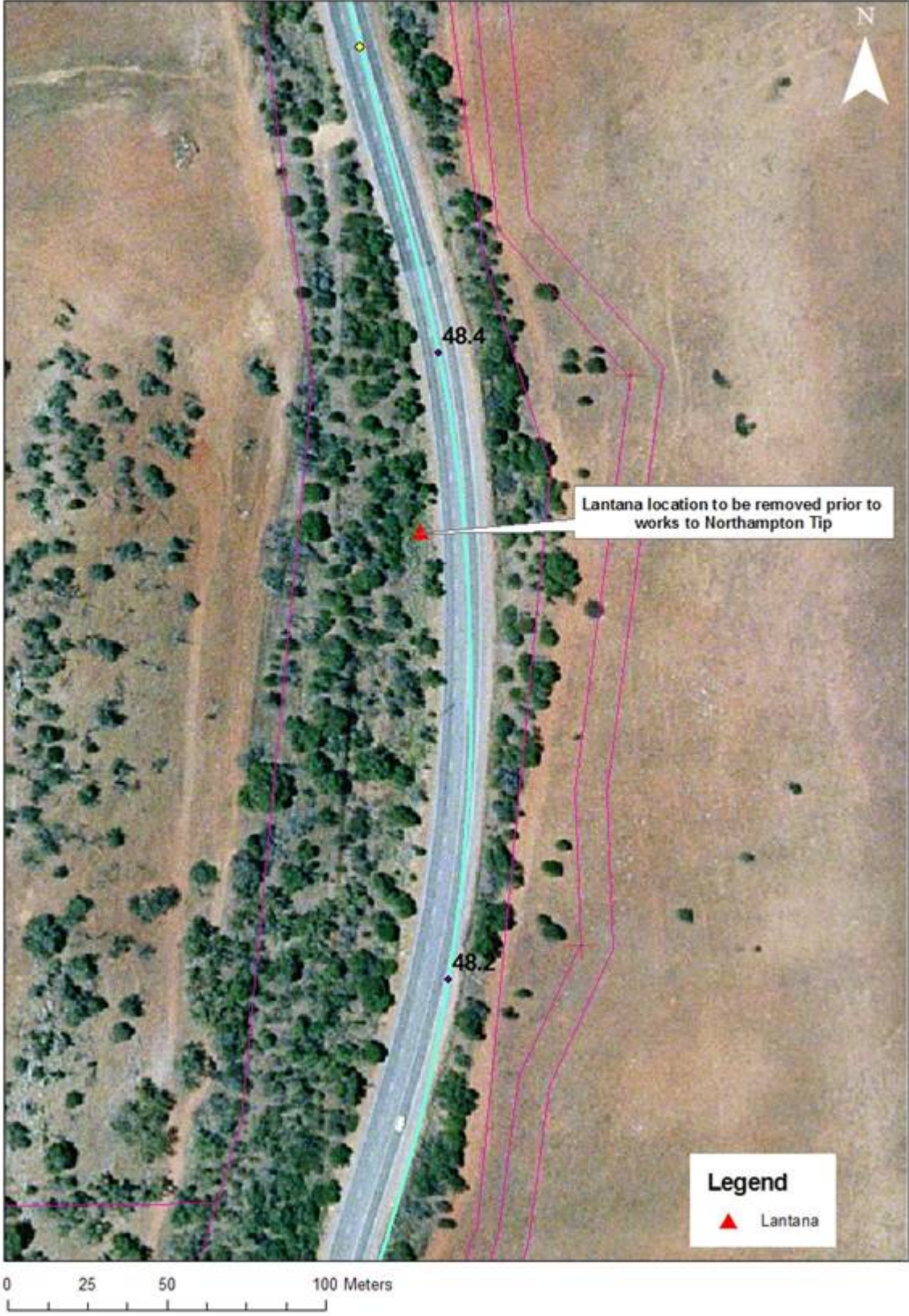
Two species, Declared under the *Agricultural and Related Resources Protection Act 1976*, was recorded in the Project Area:

- ▶ *\*Echium plantagineum* (Paterson's Curse) P1 (for the whole of the State); and
- ▶ *\*Lantana camara* (Common Lantana) P1 (for the whole of the State).

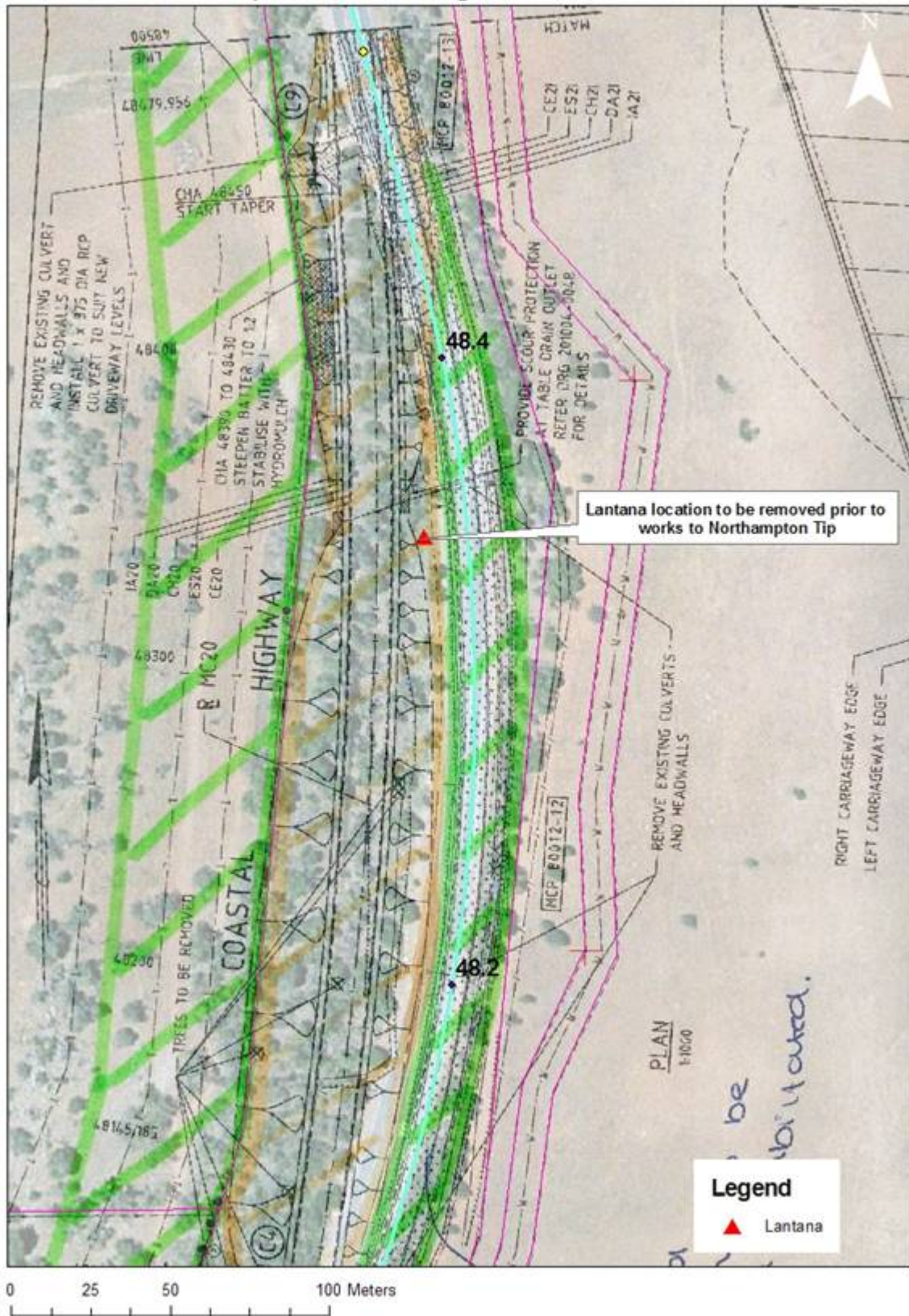
Paterson's Curse was observed to be scattered along the length of the Project Area. Management of weed species during clearing activities will be required for this Project, with particular regard to these two weed species classified as Declared Plants and WONS.

(Source: GHD Pty Ltd 2009, Section 4.2.3)

# NWCH Proposed Clearing & Lantana Location



# NWCH Proposed Clearing & Lantana Location



### 3.9.7 Plant Pests and Diseases

The project areas mean annual rainfall is 436.8 mm

*Phytophthora cinnamomi* (Dieback) has been shown to have the greatest and most widespread impact in areas where the average annual rainfall exceeds 600 mm, but in Western Australia (WA) the pathogen can cause disease in stream zones and watergaining sites in the 400-600 mm zones (CALM, 2003). It is noted that dieback has been recorded as far north as the Kimberley in Kununurra (Centre for Phytophthora Science and Management, 2009) and therefore the location of the Project Area may be considered to be susceptible to the impact of the *Phytophthora cinnamomi* pathogen.

(Source: MRWA PEIA 2009).

### 3.10 Fauna

#### 3.10.1 Fauna Species

The reconnaissance fauna survey recorded 27 fauna species. These included:

- ▶ 22 bird species;
- ▶ 3 mammals; and
- ▶ 2 reptiles.

(Source: GHD Pty Ltd 2009, Section 4.3.1 and Table 18 Appendix B)

#### 3.10.2 Habitat Types and Habitat Linkages

One habitat type was identified in the Project Area (Degraded Shrubland). Based on the field survey, habitat exists for a limited range of fauna species in the Project Area, with a majority of the vegetation degraded from historical clearing. While the habitat type located in the Project Area is common, limited vegetation surrounding the Project Area exists. The Project Area may provide a habitat linkage between areas of vegetation in the local area.

(Source: GHD Pty Ltd 2009, Section 4.3.4)

#### 3.10.3 Threatened Fauna

One threatened fauna species was recorded during the field survey. The DEC listed Priority 4 species Whitebrowed Babbler (western wheatbelt) (*Pomatostomus superciliosus* subsp. *ashbyi*) was observed within the Project Area. No other threatened fauna species were recorded during the field survey.

The desktop assessment indicated that a number of protected fauna may occur within the Project Area (refer to Section 3.10.2). The habitat requirements of these species and the likelihood of their occurrence in the Project Area (with information from the field survey) are considered as follows:

#### **Peregrine Falcon (*Falco peregrinus*) Schedule 4 [WC Act 1950], Listed Migratory [EPBC Act 1999]**

The Peregrine Falcon has a wide global range, occurring in many countries around the world. It is currently assessed as Least Concern in the ICUN Red List of Threatened Species, as global population trends are thought to be relatively stable (Birdlife International, 2008). They live in a wide range of habitats, with a preference for areas near cliffs along coastlines, rivers and ranges.

**Assessment:** This species usually prefers nesting sites along cliff edges. There are no cliff edges located in the Project Area. This species may fly over the Project Area during foraging trips, but is not considered to exclusively use the Project Area for refuge or breeding purposes.

### **Whitebrowed Babbler (western wheatbelt) (*Pomatostomus superciliosus ashbyi*)**

#### **Priority 4 [DEC]**

This species inhabits eucalypt forests and woodlands where they create bulky domed nests for breeding and roosting. They forage near the ground where they forage on insects and seeds. The species is generally restricted to larger fragments of remnant vegetation as they do not seem to cope well with introduced edges (Garnett & Crowley, 2000).

**Assessment:** Suitable habitat for this species was located in the Project Area. In addition, this taxon was recorded from the Project Area. Based on this species being generally restricted to larger fragments of remnant vegetation, the Project is unlikely to have significant impact upon the species at a regional level. The remnant vegetation within the Project Area may provide a corridor to facilitate movement of this species between larger areas of remnant vegetation.

### **Shieldbacked**

#### **Trapdoor Spider (*Idiosoma nigrum*) Schedule 1 [WC Act 1950]**

This species is in decline in its patchy distribution through the northern and central wheatbelt and coastal plain. It is a longlived species that is very sensitive to disturbance. The species burrows in heavy clay soil of York Gum (*Eucalyptus loxophleba*) and jam (*Acacia acuminata*) forests. Their burrows comprise of a thin trapdoor made up of a fan of twiglines in litter (DEWHA, 2009b).

**Assessment:** Based on the disturbed nature of the Project Area, this species is considered unlikely to occur. Note: The reconnaissance fauna survey did not include an assessment of invertebrate species.

### **Marine and Migratory Listed Species**

Eight Marine/Migratory Listed species, protected under the *Environment Protection and Biodiversity Conservation Act 1999*, were recorded during the field survey (Table 14, Appendix B). Vegetation clearing for the Project is considered unlikely to adversely impact on these Migratory and Marine Listed species, based on their mobile nature. Many of these migratory species are considered common in Western Australia and do not have special protection under the Western Australian *Wildlife Conservation Act 1950*.

A number of Marine and Migratory Listed species, protected under the *EPBC Act*, were identified as likely to occur in the Project Area (DEWHA, 2009a). Table 4 provides comment on the likelihood of these species occurring in the Project Area.

- Whitebellied Sea Eagle - *Haliaeetus leucogaster* - Migratory (CAMBA), - Marine - May fly over the Project Area.
- Cattle Egret - *Ardea ibis* - Migratory (CAMBA,JAMBA), Marine - May fly over the Project Area.
- Rainbow Beeeater - *Merops ornatus* - Migratory (JAMBA, - Marine - May occur in the Project Area.
- Great Egret - *Ardea alba* - Migratory (CAMBA,JAMBA), Marine - May fly over the Project Area.
- Forktailed Swift - *Apus pacificus* - Migratory (CAMBA, JAMBA, ROKAMBA), Marine - May fly over the Project Area.

(Source: GHD Pty Ltd 2009, Section 4.3.2)

### **3.10.4 Introduced Fauna**

One introduced species, the European Rabbit (*Oryctolagus cuniculus*), was recorded in the Project Area. The presence of this introduced fauna species has resulted in grazing pressure, which has negatively impacted upon the vegetation condition within the Project Area.

(Source: GHD Pty Ltd 2009, Section 4.3.5)

### 3.10.5 Fauna Impacts

Clearing of vegetation within the Project Area is considered to have minimal impact on fauna species, as no species are thought to use the Project Area exclusively. It is not considered that the clearing of vegetation will significantly alter the fauna habitat of the region. Disturbance is most likely to occur on a local scale, impacting individual animals, rather than a species.

The Project Area however, is not wholly surrounded by similar continuous vegetation, with grazing pressures and historical clearing altering the surrounding vegetation from its pre-European state. While the Project Area does not contain significant habitat for fauna species, it may provide a vegetation corridor for mobile species in the area. Impacts are likely to occur to individual animals and include:

- ▶ Minor loss of habitat and feeding areas. This is not considered to be a substantial impact on current extent of habitat. There will be a minor loss of refuge vegetation and associated foraging resources; and
- ▶ Harm/deaths/displacement of individual animals. This may occur during clearing activities.

(Source: GHD Pty Ltd 2009, Section 4.3.6)

## 4. SOCIAL ENVIRONMENT

### 4.1 Surrounding Land Use

The proposed works area is surrounded by farming.

### 4.2 Aboriginal Heritage

A search of the Department of Indigenous Affairs (DIA) Register of Aboriginal Sites was conducted as part of the PEIA, to determine the likelihood of the project impacting on an Aboriginal Site listed under the *Aboriginal Heritage Act 1972*. The search indicated that no known Aboriginal Heritage sites occur within the vicinity of the site. The proposed works are would have been previously disturbed during road construction and through continual cropping.

Main Roads WA and their contractors will need to be aware of their obligations under the *Aboriginal Heritage Act 1972* during the seal widening works.

(Source: MRWA PEIA 2009)

Aboriginal Heritage Inquiry System - Department of Indigenous Affairs - Microsoft Internet Explorer provided by MRWA . . .

http://www.dia.wa.gov.au/AHIS/default.aspx

File Edit View Favorites Tools Help

Aboriginal Heritage Inquiry System - Department of In...

Home Feeds (J) Print Page Tools

show legend

next map

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golf course Bowes Ondadoo Spring

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BOWES HILL 179

River Walkendyer Pools Cow Pools BALLATARRA

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next map

Street State zoom in zoom out


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Please Note:

**IMPORTANT:** Improvements to The Sites Register which aim to simplify presentation of Aboriginal heritage sites information have been completed. [Read how these important changes affect you.](#)

Getting Started

1. Zoom in to an area of interest by dragging a box with your mouse in the map.
2. Display sites or surveys by selecting the layer and click refresh (under "show on map" box on the screen's left).
3. Search for site or survey report details by selecting from the "What do you want to do" drop down list, selecting the  red arrow and dragging a selection area on the map. Results and links to the PDF reports are displayed on the right.

Works With

Windows using IE6, IE5, Firefox, Netscape Navigator and Opera.  
Mac OS X using Safari, Mozilla Firefox, Opera and IE5 mac.

You can [hide these messages.](#)

### 4.3 European Heritage

The assessment of European Heritage Issues for the proposed sealing works was assessed in the PEIA. This assessment included reviewing the Australian Heritage Places on-line database and the Western Australian Heritage Council on-line register.

(Source: MRWA PEIA 2009)

## 5. ENVIRONMENTAL ASPECTS

The Environmental Aspects considered for this project are listed below. The table details those that required further investigation and management measures. Those items have been further documented in Sections 5.1 – 5.12.

**Table 1: Environmental Aspects Considered for the Project**

Environmental Aspect	Yes	No	Comments
Air Quality		X	Lack of emission sources therefore no impact on regional air quality.
Dust	X		Addressed in EMP Section 17 & 18
Vegetation – threatened species and communities	X		Addressed in EMP Section 14
Vegetation – clearing	X		Addressed in EMP Section 7, 12 & 13
Vegetation – dieback & other diseases or pathogens		X	Addressed in EMP Section 8, 9 & 14.
Vegetation – weeds	X		Addressed in EMP Section 8, 9 & 14.
European Heritage		X	No sites of European Heritage identified within the Site.
Aboriginal Heritage		X	No sites of Aboriginal Heritage identified within the Site.
Surface Waters / Drainage		X	Addressed in EMP Section 11.
Public Drinking Water Source Areas (PDWSA)	X		Site located within a PDWSA.
Ground Water		X	Addressed in EMP Section 4.
Wetlands		X	No actual wetlands occur on site.
Noise & Vibration		X	Lack of sensitive receptors within the area.
Visual Impacts		X	Minimal impact due to the remote location of the Site and the fact that a road already exists in the location.
Public Safety & Risk	X		Addressed in EMP Section 31
Contaminated Sites		X	No contaminated sites identified within the site.
Acid Sulphate Soil		X	As the roadworks associated with the Project are not expected to require deep excavation, it is considered unlikely that Acid Sulphate Soils will be encountered during the project.
Hydrocarbon & Chemical Storage	X		No large quantities are to be stored onsite, but management measures have been addressed in Section 25 & 26.
Reserves & Conservation Areas		X	Addressed in EMP Section 14



## 5.1 Environmental Impacts and Management

Those issues considered relevant for further assessment as identified in Table 1 are discussed below, with a summary of the environmental and social impacts and management measures are detailed in the Environmental Management Plan (EMP) located in Appendix B.

## 5.2 Flora and Vegetation

Main Roads Western Australia (MRWA) has been issued with a statewide vegetation clearing permit (Purpose Permit CPS 818/5), granted under section 51E of the Environmental Protection Act (1986). The Purpose Permit allows MRWA to clear native vegetation for the road realignment projects and associated construction activities. Any clearing of native vegetation must be assessed against the 'Ten Clearing Principles' outlined in the permit.

The permit holder should engage in activities that minimise the amount of vegetation to be cleared and where clearing is assessed as being at variance with one or more of the 'Ten Clearing Principles', then the permit holder must implement an offset in accordance with Part V of the Permit with respect to that native vegetation.

The Purpose Permit requires that MRWA adhere to internal environmental processes as set out in Document Number 6707-001 'Environmental Assessment and Approvals', to ensure that they comply with the requirements of the Permit.

**Table 2: Assessment against the 'Ten Clearing Principles'**

Principle No	Principle	Assessment	Outcome
A	Native vegetation should not be cleared if it comprises of a high level of biological diversity.	GHD – 'Not likely to be at variance'. 96 flora species were recorded during the field survey (52 native and 44 introduced). Vegetation condition throughout the Project Area ranged from Condition 5 (Degraded) to Condition 6 (Completely Degraded). The native vegetation in the area comprises a low degree of native biological diversity that is of a comparable level of diversity to the remaining native vegetation in the area. One Priority species: <i>Acanthocarpus parviflorus</i> (P3) was recorded within the Project Area during the field survey. This species was recorded at only one location within the surveyed area. This area is unlikely to be impacted as it occurs on a small granite outcrop adjacent to the road formation. The vegetation is not considered to be necessary for the continued existence of this Priority species.	The Project is not likely to be at variance with the Principle.
B	Native vegetation should not be cleared if it comprises the whole or part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.	GHD – 'Not likely to be at variance'. The vegetation comprises habitat for a number of fauna species, including the Priority 4 Pomatostomus superciliosus ashbyi (Whitebrowed Babbler (western wheatbelt) but this habitat is not considered significant habitat for fauna indigenous to Western Australia.	The Project is not likely to be at variance with the Principle.
C	Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.	GHD - No Declared Rare Flora species were recorded during the field survey.	The Project is not likely to be at variance with the Principle.
D	Native vegetation should not be	GHD - No Threatened Ecological Communities were recorded during the field survey or	The Project is not likely to be at variance with the

	cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.	identified during from desktop assessment.	Principle.
E	Native vegetation should not be cleared if it is a significant as a remnant of native vegetation in an area that has been extensively cleared.	<p>GHD – ‘The mapped vegetation association in the Project Area retains 10.5% of the preEuropean extent considered to be remaining in the Geraldton Sandplains IBRA region (refer to Section 3.7.2). Based on evidence from the field survey, the original vegetation type has been significantly altered to an extent that it no longer resembles the distinct vegetation type described and mapped by Beard (1976). The vegetation located in the Project Area does not correlate with Vegetation Association 35, and is a combination of natural regrowth and planted vegetation after previous clearing activities. Any vegetation, whether it be remnant or rehabilitated is considered to be of value, particularly in areas where vegetation has been extensively cleared. As such, the Project is considered to be at variance with this principle.</p> <p>DEC – ‘maybe at variance’ I agree with this level of variance due to the degraded to completely degraded condition of the vegetation proposed to be cleared and the lack of resemblance to the mapped Beard vegetation association (Beard 35).’ However, the proposed clearing is to occur within a highly cleared landscape and therefore the proposed clearing maybe at variance to principle e.</p>	The Project is ‘maybe at variance’ with 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 - There are no water courses or wetlands within the Project Area. A number of ephemeral creeklines cross the Project Area through constructed culverts.	The Project is not likely to be at variance with the Principle.
G	Native vegetation should not be cleared if the clearing of vegetation is likely to cause appreciable land degradation.	GHD – Short term soil erosion may occur at the Project site due to excavation requirements. However, any long term soil erosion can be mitigated by use of appropriate design and site management measures.	The Project is not likely to be at variance with the 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 - There are no conservation reserves within the immediate vicinity of the Project Area. The closest conservation areas are Oakabella Nature Reserve, located approximately 9 km to the south, and Blue Wells Nature Reserve, located approximately 15 km to the northeast. These conservation areas are a significant distance from the Project Area. Clearing of vegetation within the Project Area is not likely to have an impact on the environmental values of these conservation areas..	The Project is not likely to be at variance with the Principle.
I	Native vegetation should not be cleared if the clearing of the vegetation is likely to cause	GHD - It is not considered that the proposed vegetation clearing will alter the quality of surface or ground waters within the Project Area.	The Project is not likely to be at variance with the Principle.

	deterioration in the quality of surface or underground water.		
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 - The clearing of native vegetation is not considered to cause any alteration to flood duration or flood height.	The Project is not likely to be at variance with the Principle.

The amount of clearing required for the project is at 56,090m<sup>2</sup> and there is one principal that 'maybe at variance'.

In accordance with Part V of clearing permit CPS 818/5, MRWA will be required to submit an appropriate offset proposal for any clearing that 'maybe at variance' or 'is at variance' with any of the clearing principles in Schedule 5 of the EP Act.

The adjacent land (east and west) of the proposed works has been purchased for the proposed offset revegetation.

### 5.3 Disease Management

Field visits by the MRWA Environmental Officer noted that there were no dieback sensitive flora species are present within the works areas. Dieback was not considered an issue given the project area receives less than 400 mm (332.8mm) of average annual rainfall.

However vehicle hygiene is recommended prior, during and post construction works.

- Clean earth – moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- Avoid the movement of soil in wet conditions;
- Restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

Management measures are included in the Environmental Management Plan provided as Appendix B.

### 5.4 Weed Management

Machinery and vehicles hygiene measures detailed in the Disease Management Section will avoid the inadvertent spread of weeds throughout the site, and from other sites.

Management for this project will also be undertaken in accordance with the MRWA clearing permit.

All topsoil is 'weed free' is to be stored in a weed free location.

### 5.5 Fauna

Clearing of vegetation within the Project Site is considered to have minimal impact on fauna species, as no species are thought to use the Project Site exclusively. It is not considered that the clearing of vegetation will significantly alter the fauna habitat of the region.

Impacts are likely to occur to individual animals and include:

- Minor loss of habitat and feeding areas. This is not considered to be a substantial impact on current extent of habitat. There will be a minor loss of refuge vegetation and associated foraging resources;
- Harm/deaths/displacement of individual animals. This may occur during clearing or construction activities.

GHD recommended land acquisition and rehabilitation be undertaken to increase the width of the road reserve in areas that are being cleared so that there is no net loss of habitat and to compensate for loss of fauna habitat.

## **5.6 Drainage**

No wetlands or rivers are present at the Project Site.

The proposed works will not alter the flow or direction of water through these culverts.

## **5.7 Ground Water**

The proposed works are within a Priority 3 Drinking Water Source Area. As such the Department of Water has recommended that works be conducted in accordance with the Water Quality Protection Note 44 - Roads near Sensitive Water Sources.

## **5.8 Dust**

There is likely to be some dust lift generated during the construction works and from passing traffic, which has the potential to settle on and cause impacts to adjacent vegetation. During construction, regular watering of the road will be undertaken to ensure the base material is at or near the Optimum Moisture Content to achieve sufficient compaction levels. This will assist in reducing dust generation.

The approved contractor will provide for the management of dust such as watering of the works area and other areas immediately adjacent to the works as required.

## **5.9 Aboriginal Heritage**

MRWA and their contractors need to be aware of their obligations under the *Aboriginal Heritage Act 1972* during the road construction.

If during roadworks, the approved contractor, uncovers any materials that could be considered significant to Aboriginal people, works will immediately cease within 50m of the material and the DIA and police will be notified immediately.

## **5.10 Public Safety**

To ensure the safe access of traffic throughout the site during construction, the approved contractor will develop and implement a Traffic Management Plan, congruent with the requirements detailed on the MRWA website.

All traffic control measures will be in place and fully operational before the Shire of Perenjori commences any work activity that affects the existing roadways.

## **5.11 Fire Management**

The approved contractor will conform to any specific requirements for fire prevention requested by MRWA, DEC and/or FESA.

During road construction, the following fire management requirements will be complied with:

- Machines and vehicles will be restricted to designated cleared areas;
- All plant and vehicles operating over vegetation will have exhaust systems in good working order;
- All machinery will shut down during periods of extreme fire hazard as advised by the DEC;
- All machinery will be fitted with fire extinguishers;
- Smoking on site will be controlled and all cigarettes will be disposed of in an appropriate vessel;

- All glass (and other wastes) will be collected and removed off site on a daily basis.

### **5.12 Hydrocarbon and Chemical Storage**

No on-site storage of fuel, oils and other contaminant materials will be permitted during road construction. Equipment required for the cleanup of any accidental spillages will be maintained on-site.

Major vehicle and plant servicing will be not be conducted on-site.

### **5.13 Waste Management**

All domestic and other rubbish will be disposed of on a daily basis. Final disposal of all wastes will be to an authorised offsite waste disposal site or an agreed site with the Shire of Northampton.

## **6. ENVIRONMENTAL MANAGEMENT PLAN**

The Environmental Management Plan (EMP) for this project is presented in Appendix B. The EMP presents commitments and management measures that MRWA and the approved contractor will implement to ensure the project is environmentally responsible.

The EMP details the aspect, management strategies, responsible officer and the project stage the strategies are to be taken.

### **6.1 Environmental Monitoring and Compliance**

All MRWA employees, approved contractors employees and other personnel employed on the Project will be made aware of the EMP through the site induction process.

During the projects construction phase, compliance with the environmental management measures will be regularly monitored.

All incidents will be managed in accordance with the MRWA Environmental Incident Reporting and Investigation Guideline.

### **6.2 Environmental Management and Quality Plan**

The approved contractor shall develop a Contractor's Environmental Management Plan, as detailed in Spec 204, and will address the management strategies which have been assigned to them in the EMP.

## **7. CONSULTATION**

Consultation was undertaken with the following parties, as part of the EIA process:

- Shire of Northampton;
- Department of Water;
- Department of Environment and Conservation – Native Conservation Branch;
- Northern Agricultural Catchment Council;
- Conservation Council;
- Roadside Conservation Council;
- Soil and Land Conservation Council

## 8. CONCLUSIONS

The PEIA, Biological Survey and the results of this assessment concluded that:

- The project is maybe at variance with clearing principle e; An offset package will be required to be developed prior to any clearing being conducted (Refer to Appendix D for proposed offsets);
- One priority three species in adjacent to the proposed project area. This areas are to be avoided at all times of the project construction;
- The proposed works are within a P3 Water Source Area, the project is to comply with Water Quality Protection Note No. 44 – Roads near Sensitive Water Sources;
- Weed management is to be applied prior to, throughout and after the works;
- Other impacts of the proposed works can be managed through appropriate mitigation measures outlined in the Environmental Management Plan.

## 9. REFERENCES

GHD Pty Ltd (2009) *North West Coastal Highway SLK 45.8 – 49.5 Biological Survey December 2009.*

Main Roads Western Australia (2010) *Preliminary Environmental Impact North West Coastal Highway*

10. **APPENDIX A – ENVIRONMENTAL MANAGEMENT PLAN**

## Environmental Management Plan – North West Coastal Highway SLK 47-49

Item No	Commitment	Expected Outcome	Responsibility	Timing
1	The proposed works will implemented in accordance with the environmental management measures detailed in this EIA and EMP.	All issues will be identified and managed to ensure minimal environmental impact.	Project Manger	All of Project
2	Environmental management measures detailed in this EMP will be included in relevant contract documents and Technical Specifications prepared for the project.	The contractor undertaking the construction will be aware of environmental concerns and their obligations, to ensure minimal environmental impact.	Project Manager	Pre -Construction
3	MRWA to obtain approved offset prior to clearing.	Compliance with CPS 818/5	Project Manager	Pre – Construction.
4	Approvals will be sought and conditions applied with, should ground water bore construction and abstraction be required.	Compliance with the <i>Rights in Water and Irrigation Act 1914</i> .	Project Manager	Pre - Construction
5	The Construction Contractor will prepare a Contractors Environmental Management Plan, as detailed in Spec 204, addressing the requirements detailed in this EMP.	Compliance to MRWA Environmental Assessment and Approvals Process.	Project Manager	Pre - Construction
6	The Contractor's Environmental Management Plan, will be approved by the MRWA Project Manager prior to construction.	Compliance to MRWA Environmental Assessment and Approvals Process.	Project Manager	Pre - Construction
7	The clearing line will be marked by the Construction Contractor and approved by the Project Manager prior to any clearing proceeding. Trees to be conserved will be marked with a different color to ensure they are not removed.	Minimise clearing impacts	Construction Contractor	Pre – Construction
8	Clean earth – moving machinery of soil and vegetation prior to entering and leaving the area to be cleared.	Minimise the risk of spread of weeds.	Project Manager and Construction Contractor.	Pre – Construction and Construction.
9	Any declared weeds on Site will be managed as required by the Agriculture and Related Resources Protection Act 1976.	Minimise the risk of spread of weeds.	Project Manager and Construction Contractor.	Pre – Construction and Construction.
10	Clearing of vegetation will be minimised to that which is practical for the safe construction and operation of the road (maximum of 5.6ha)	Minimise the impacts to fauna and fauna habitats.	Project Manager and Construction Contractor.	Pre – Construction and Construction.
11	Existing surface water flows are to be maintained by extending the existing crossroad culvert.	Maintain existing surface water movement.	Project Manger / Construction Contractor.	Design and Construction.
12	Clearing will not impact on the priority three location identified in this document.	Avoidance of Priority Three Species	Construction Contractor	Construction
13	Trees to be removed will be felled in a manner that ensures they fall within the approved clearing area.	Minimise clearing impacts	Construction Contractor	Construction
14	Restrict the movement of machines and other vehicles to the limits of the areas to be cleared.	Minimise the risk of spread of weeds.	Project Manager and Construction Contractor.	Construction.



<b>Item No</b>	<b>Commitment</b>	<b>Expected Outcome</b>	<b>Responsibility</b>	<b>Timing</b>
15	Works will cease on sighting an animal in the construction site. Works will commence once the animal has moved on.	Minimise the impacts to fauna and fauna habitats.	Construction Contractor.	Construction.
16	The work will be left in a safe condition at the end of the working day to ensure that animals are not subject to harm from the site works.	Minimise the impacts to fauna and fauna habitats.	Construction Contractor.	Construction.
17	The Construction Contractor will employ construction methods that will keep dust lift to a minimum, and as required provide for the management of dust such as by watering of the works area and other areas adjacent to the works.	Dust lift will be minimised, minimising impacts to surrounding vegetation and reducing risks to the travelling public.	Construction Contractor.	Construction.
18	Where it is found that vehicles leaving the site have dropped excessive soil material onto adjacent sections of the North West Coastal Highway these sections will be swept to reduce the potential for dust generation and maintain traffic safety.	Dust lift will be minimised, minimising impacts to surrounding vegetation and reducing risks to the travelling public.	Construction Contractor.	Construction.
19	Cleared vegetation suitable for the rehabilitation of any degraded locations on/or adjacent to the site will be re-used and stored in a weed free location.	Minimise clearing impacts	Construction Contractor	Construction/Post Construction
20	Environmental issues and management measures will be included in site inductions for MRWA staff and contract staff.	The staff involved with the project will be aware of their environmental concerns and their obligations, to ensure minimal environmental impact.	Project Manger	All of Project
21	No vegetation is to be disturbed for set down areas, spoil sites or site offices. Vehicles and equipment will be not be parked or driven over tree roots.	Minimise clearing impacts	Construction Contractor	All of Project
22	No burning is permitted within the Project Area.	No fires occur as a result of the Project.	Construction Contractor	All of project
23	Machines and vehicles will be restricted to designated cleared areas,	Reduce the fire risk as a result of the Project.	Construction Contractor	All of project
24	The Construction Contractor will conform to any specific requirements for fire prevention requested by MRWA, DEC and / or FESA.	Comply with local fire management requirements.	Construction Contractor	All of project
25	No storage of large quantities of fuel, oils or chemicals within the Project Area.  Spill containment equipment will be available in the event of a spill of minor fuels stored in vehicles and equipment.	No site contamination will occur as a result of this Project.	Construction Contractor.	All of Project.
26	Major vehicle and plant servicing will not be conducted on site.	No site contamination will occur as a result of this Project.	Construction Contractor.	All of Project.

Item No	Commitment	Expected Outcome	Responsibility	Timing
27	<p>During road construction activities, the following fire management requirements will be complied with:</p> <ul style="list-style-type: none"> <li>• All plant and vehicles operating over vegetation will have exhaust systems in good working order.</li> <li>• All machinery will be shutdown in periods of extreme fire hazard as advised by the DEC or MRWA or FESA;</li> <li>• All machinery to be fitted with fire extinguishers;</li> <li>• Smoking on site will be controlled and all cigarettes will be disposed of in an appropriate vessel;</li> <li>• All glass (and other wastes) will be collected and removed off site on a daily basis.</li> </ul>	Reduce the fire risk as a result of the Project.	Construction Contractor	All of project
28	All rubbish will be disposed of on a daily basis offsite for final disposal to an authorised waste disposal site.	Waste is disposed and contained of appropriately in order to prevent contamination of the environment.	Construction Contractor.	All of Project.
29	If during road works, any materials of significance to Aboriginal people are uncovered by the Construction Contractor, works will immediately cease within 50m of the material and the DIA notified as soon as practicable.	Aboriginal Heritage sites are not disturbed without appropriate approvals.	Project Manager and Construction Contractor.	All of Project
30	If skeletal material is uncovered during the works then the WA Police Service will be advised immediately.	Aboriginal Heritage sites are not disturbed without appropriate approvals.	Project Manager and Construction Contractor.	All of Project
31	Traffic Management Plan is developed and implemented in accordance with the requirements detailed on the MRWA Internet Site.	Maintain safe access for through traffic movements.	Construction Contractor	All of Project
32	During the project compliance with environmental management measures will be regularly monitored. All incidents are to be managed in accordance with the MRWA Environmental Incident Investigation and Reporting Guideline.	Compliance with this EMP and relevant legislation.	Project Manager and Construction Contractor.	All of Project
33	Any damage caused by the Construction Contractor to vegetation, landforms or fauna habitat outside the works area will be rehabilitated at the Contractor's cost.	Minimise clearing impacts	Construction Contractor	Post Construction

11. APPENDIX C – CONSULTATION RESULTS



Government of Western Australia  
Department of Environment and Conservation

Your ref: 06/1565-02 D10#52202  
Our ref: CPS 818/4  
Enquiries: Jeremy Quartermaine  
Phone: 9219 8766  
Fax: 9219 8701  
Email: jeremy.quartermaine@dec.wa.gov.au

Mr Tim Glenister  
Regional Manager  
Midwest Region  
Main Roads Western Australia  
PO Box 165  
Geraldton WA 6531

MAIN ROADS WA  
INWARDS  
  
~ 4 MAY 2010  
  
MIDWEST  
REGION

Dear Mr Glenister

**CPS 818/4 – UPDATE TO SCOPE OF WORKS - SUBMISSION – NORTH WEST COASTAL HIGHWAY – EXTENSION OF PASSING LANE AND CREST REALIGNMENTS**

Thank you for your email dated 30 March 2010, providing additional information in relation to Main Roads Western Australia's (MRWA) proposal to extend a current passing lane and crest realignments within North West Coastal Highway, Northampton. I understand that the proposal will now involve the clearing of approximately 5.6 hectares of native vegetation.

Submissions are invited in accordance with condition 8 of clearing permit CPS 818/4 for any clearing that 'may be at variance', 'is at variance' or 'is seriously at variance' with the clearing principles contained within Schedule 5 of the *Environmental Protection Act 1986* (EP Act).

Further to the desktop survey undertaken on the initial proposal for the clearing of 1.22ha of native vegetation, the Department of Environment and Conservation (DEC) has undertaken a desktop survey of the updated proposal against the clearing principles in Schedule 5 of the EP Act.

In relation to the proposed clearing of 1.22ha of native vegetation, DEC provided advice on 7 April 2010 agreeing with the level of variance for principle (e) as being 'may be at variance'.

While the area proposed to be cleared has increased to 5.6ha, DEC remain of the view that in relation to clearing principle (e), the proposal 'may be at variance,' given that the proposed clearing is to occur within a highly cleared landscape with approximately 10% remaining native vegetation within a 10km radius.

In accordance with conditions 5(a)(ii) and 9(c) and Part V of clearing permit CPS 818/4, MRWA is required to submit for approval an offset proposal as the clearing 'may be at variance' to clearing principle (e) in Schedule 5 of the EP Act. Please note that this requirement will need to be addressed before clearing proceeds.

Native Vegetation Conservation Branch  
Phone: (08) 9219 8700 or (08) 9219 8744 Fax: (08) 9219 8701 Email: nvp@dec.wa.gov.au  
Postal Address: Locked Bag 104, Bentley Delivery Centre, BENTLEY WA 6983  
www.dec.wa.gov.au/nvc  
wa.gov.au

XDEC1009

If you have any queries regarding the matters raised above, please contact Jeremy Quartermaine at DEC's Native Vegetation Conservation Branch on (08) 9219 8766.

Yours sincerely



Kelly Faulkner  
MANAGER  
NATIVE VEGETATION CONSERVATION BRANCH

*Officer delegated under Section 20  
of the Environmental Protection Act 1986*

29 April 2010

Cc: Mr Murray Limb, Manager, Main Roads WA, PO Box 6202, East Perth 6892



D10# 52223

## CONSERVATION COUNCIL

OF WESTERN AUSTRALIA INC.

19 April 2010

Tim Glenister  
Regional Manager, Mid West Region  
Main Roads WA  
PO Box 165  
Geraldton, WA 6531



Dear Tim,

### Proposed road works on North West Coastal Highway SLK 46.08 - 46.65 and 47- 49

Thank you for the opportunity to comment on the clearing requirements for the road works on the North West Coastal Highway. As mentioned in your letter, the proposed project may be at variance with clearing principle e) of Schedule 5 of the *Environmental Protection Act 1986*, which states that clearing should not occur "if it is significant as a remnant of native vegetation in an area that has been extensively cleared". The biological survey found that the vegetation in the area is so degraded that it no longer represents the original vegetation. The regrowth is still considered valuable although the region has been extensively cleared for agriculture.

It is also noted that initially 1.2ha of clearing was required which has now increased to 5.6ha under the new project scope. Main Roads has offered to offset this by replanting only 6ha. Ideally offset ratios should be at least 2:1 thereby requiring this figure to be 11.2ha as a minimum. In addition, for offsets to be acceptable revegetation must be "like for like" or better, which may prove difficult in an agricultural landscape. Additional land adjacent to the road reserve should be purchased and where possible, provide linkages between larger areas of remnant vegetation. Management of the revegetation program should continue until planting is well-established.

To minimise the impact of the project on the vegetation:

- Clear vegetation on the most degraded side of the road and avoid priority flora where possible.
- Planting should include Priority 3 species and those species identified under the Vegetation Association 35 (i.e. jam scrub and York gum).

CITY WEST LOTTERIES HOUSE, 2 DELHI STREET, WEST PERTH, WA 6005 PHONE (08) 9420 7266 FAX (08) 9420 7273  
WEBSITE: [www.conservationwa.asn.au](http://www.conservationwa.asn.au) E-MAIL: [conswa@conservationwa.asn.au](mailto:conswa@conservationwa.asn.au)  
ABN 35 987 476 107

- Revegetation plans should aim to improve habitat for the White-browed babbler, Peregrine falcon and the trap door spider.
- The road reserve is very weedy and degraded. An effective, ongoing weed management plan should be implemented.
- Lowering the speed limit instead of 'realigning crests' would reduce the amount of clearing and increase safety for road users.

CCWA is concerned that the cumulative effects of ongoing road upgrades will undoubtedly lead to the decline in the biodiversity and conservation of fauna and flora within road reserves. This is of particular concern where vegetation association 35 identified along the route is said to have 10.5% of the pre-European extent remaining – which by now may well be classified as endangered.

We are increasingly concerned that Main Roads is not genuine about achieving sustainable outcomes on road projects, or about taking community views into account.

MRWA's own Environmental Policy Statement states they are committed to:

- *Protecting and enhancing the environmental values of road reserves;*
- *Minimising the impact on the natural environment of roads and road use; and*
- *Conserving natural resources and minimising energy consumption and waste.*

Main Roads' Strategic Plan (2k12) also includes a number of statements regarding community engagement and relationships.

CCWA is routinely asked to comment on proposals that contravene one or more of the above policies. When such submissions are made, often little or no response is received. This suggests that MRWA does not intend on taking the above policies seriously and that consultation with CCWA is considered little more than a 'tick-box' exercise.

As a consequence, CCWA believes that continually making submissions of this nature to MRWA is of very little value until and unless MRWA undertake to give effect to the above policy statements.

Yours Sincerely



Piers Verstegen  
DIRECTOR

Cc: Antony Missikos - Director Strategic Relationships

**Email received 01/06/2010**

Dear Anna

I refer to your letter of 15 March and email advice of scope change of 30 March regarding the proposed passing lane extension SLK 46.08-46.55 and proposed crest realignments SLK 47-49.

Please accept my apologies for not responding to you before now. Both projects involve minor linear clearing and are unlikely to constitute a land degradation hazard if carried out in accordance with established practice.

Therefore, these proposals are unlikely to be at variance with principle g of the Native Vegetation Clearing Regulations of the *Environmental Protection Act 1986*.

Should you require further information in relation to this advice, please contact me on 9368 3997.

Yours sincerely

Andrew Watson  
Commissioner of Soil and Land Conservation

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## 12. APPENDIX D PROPOSED OFFSETS

- Species selected for the revegetation:
- *Inclusion of lower storey species*
  - *As the following species were not recorded in the Biological Survey these were not included in our current tubestock order, however we will endeavour to source the seed of these species:*
    - *Acacia pulchella;*
    - *Glischrocaryon flavescens;*
    - *Keraudrenia integrifolia*
    - *Banksia sp.*
    - *Verticordia sp;*
    - *Calothamnus;and*
    - *Daviesia.*
  - *The following species that were recorded in the Biological Survey will also try to be sourced prior to the revegetation works commencing:*
    - *Grevillea intricata* – source to be identified;
    - *Hakea preseii* – from either Trannen or Kim Seed;
    - *Hakea recurva* – from either Trannen or Kim Seed;
    - *Gastrolobium oxylobioides* – source to be identified.

### Attachment 8 – Species purchased for Western Aide Planting 2011

<b>Yetna</b>	
<i>Acacia acuminata X 4000</i>	4000
<i>Acacia tetragonophylla X 4000</i>	4000
<i>Eucalyptus camuldensis x 1000</i>	4000
<i>Melaleuca viminea X 4000</i>	4000
<i>Acacia rostellifera x 4000</i>	4000
<i>Quandong tree</i>	100
<b>Greenoil</b>	
<i>Eucalyptus leptopoda subsp. Elevate</i>	1000
<i>Acacia saligna</i>	4000

#### Yilgarn Nurseries

*Euc. loxaphleba var. supralaevis*

#### Seed Purchased for 2011 planting (Trannen)

*Hakea Preisii* 25g

*Acacia pulchella* 1kg

*Rhodanthe chlorocephala* 1kg Pink and white everlastings)1kg

*Chamaescilla corymbosa* 2g

*Calothamnus quadrifus* (500g

#### Seed Purchased for 2011 planting (Kim Seed)

*Hakea recurva* 25g

*Banksia victoriae* (2000 seeds)



## Seed Purchased for 2011 planting (Seed shed)

*Keraudrenia integrifolia*

## Seed to be sourced for 2011 Planting

*Glischrocaryon flavescens*

*Keraudrenia integrifolia*

*Grevillea intricate*

*Gastrolobium oxylobiodes*

## Site Photos (Eastern side of road) (07/01/2011)





**Attachment 11: Western Portion of Land SLK 46.05 – 49 (07/01/11)**





**MAIN ROADS WA - OFFSET PROPOSAL**  
**Condition 16(b), CPS 818/5**

<b>Project:</b>	North West Coastal Highway Crest Realignments and Passing Lane Extension –SLK 46.08 - 49	
<b>Date:</b>	February 2011	
<b>Manager:</b>	Peter Swaan Senior Project Manager	
<b>Clearing location:</b>	North West Coastal Highway Passing Lane Extension – SLK 46.08-46.65 North West Coastal Highway Crest Realignments – SLK 47-49	
<b>Offset location:</b>	NWCH SLK 46.08 – 49 on both sides of the road. The total area to be revegetated is approximately 11 ha made up of: new road batters, existing road reserve a, redundant road alignment and, acquired farmland on both sides of the road and infill planting.	
<b>Offset description:</b>	<ul style="list-style-type: none"> <li>• Purchase of 15.03 hectares of adjacent land.</li> <li>• Revegetation / Infill Planting of 11ha of North West Coastal Highway Road Reserve between SLK 46.08 – 49.</li> </ul>	
<b>Reason for offset &amp; description of impacts:</b>	<p>The proposed clearing of 56,090m<sup>2</sup> is likely to be:</p> <ul style="list-style-type: none"> <li>• e1 – Native vegetation should not be cleared if the remaining native vegetation represents less than 30%, or the clearing would reduce the representation of remaining native vegetation to less than 30% in the Bioregion (or sub region where applicable).</li> </ul>	
<b>Offset Principles addressed:</b>	<b>Direct offsets:</b>	Revegetation of 11 hectares of adjacent land, to offset 5.69 hectares of underrepresented vegetation (principle e)
	<b>Contributing offsets:</b>	<ul style="list-style-type: none"> <li>• All cleared vegetation will be mulched and placed on the ripped site;</li> <li>• Top soil cleared as part of the works will also be spread over the ripped areas; and</li> <li>• The newly acquired land will be fenced to protect vegetation from stock.</li> </ul>
	<b>Hierarchy of avoidance, minimisation, rectification, mitigation:</b>	For road safety reasons the clearing native vegetation could not be avoided. However, designs for the proposed projects have taken into account the minimal impact to vegetation. The rectification and mitigation will occur through the purchase and revegetation of adjacent land.
	<b>Like for like or better:</b>	<p>The offset proposal will enhance the existing road reserve by reinstating vegetation to previously disturbed areas.</p> <p>The rehabilitation will increase the connectivity, value and buffer function of the nature and road reserves and also reduce weed invasion.</p> <p>The offset area has been chosen because of the similarity to the vegetation to be cleared, condition and location in relation to the cleared areas.</p>

**MAIN ROADS WA - OFFSET PROPOSAL**  
**Condition 16(b), CPS 818/5**

<b>Ratio greater than 1:1 :</b>	<p>An area of 56,090m<sup>2</sup> ha has been assessed as the area proposed to be cleared, based on the project's "footprint". The vegetation throughout the project area ranges from a Degraded to Completely Degraded condition (GHD Biological Survey September 2009).</p> <p>Main Roads proposes to conduct revegetation / infill planting of the North West Coastal Highway 46.8-49.5 which equates to approximately 10 hectares.</p> <p>The offset proposal provides for a ratio that is higher than 1:1.</p>
<b>Robust, consistent assessment:</b>	<p>The assessment process has followed Main Roads' Environmental Assessment and Approval Process (EMS certified to ISO 14001) and includes environmental impact assessments and management plans.</p> <p>Suitably qualified and experienced consultants carried out assessments in accordance with best practice for undertaking environmental investigations.</p> <p>A Biological Survey covering the proposed project area Environmental was assessed independently by GHD (refer to attached).</p> <p>Funds have been allocated to the implementation of the offset package.</p>
<b>Appropriateness :</b>	<p>The proposed offset area is within and adjacent to the proposed clearing areas. The offset aims to enhance the current value of this reserve by restoring the area to ensure that it is an intact section of vegetation.</p> <p>The offset proposal is considered an appropriate means of enhancing mitigating all vegetation impacts.</p>
<b>No net loss / net gain:</b>	<p>With the clearing ration applied to this project there is a net gain and no net loss of vegetation meeting Main Roads' Objective number five (Environmental Objective Targets and Indicators 6707/024).</p>
<b>Statutory requirements met:</b>	<p>All planning, statutory and regulatory requirements have been met.</p>
<b>Defined, documented, audited:</b>	<p>Offsets will be as defined in the Environmental Impact Assessment and Environmental Management Plan – North West Coastal Highway 46.08 to 49 SLK.</p>
<b>Long-term benefit:</b>	<p>The revegetation / infill planting will improve the connectivity of the road reserve.</p>
<b>Environmental specialist advice:</b>	<p>Suitably qualified and experienced GHD environmental staff conducted the Biological Survey in September 2009 (refer to attached biological survey).</p> <p>The Environmental Officer for the Mid West Region developed the PEIA, the EIA / EMP and identified the offset site. The Environmental Officer will also be involved in implementing the offset package.</p>

**MAIN ROADS WA - OFFSET PROPOSAL**  
**Condition 16(b), CPS 818/5**

Offset comparison:	Proposed clearing	Proposed offset
Area:	5.6ha	11 ha
Species:	Refer to Biological Survey	Refer to Biological Survey
Community Type:	Vegetation Association 35 (Shrublands; jam scrub with scattered York gum), which is considered to be under-represented (<30%) as it retains 10.5% of its pre-European extent within the Geraldton Sandplains IBRA region.	Vegetation Association 35 (Shrublands; jam scrub with scattered York gum), which is considered to be under-represented (<30%) as it retains 10.5% of its pre-European extent within the Geraldton Sandplains IBRA region.
Condition:	Degraded to completely degraded.	Degraded to completely degraded
Ecological function:	This section of road is classified as road reserve, for the purposes of road construction.	Roadside vegetation acts as corridors for flora and fauna to migrate.
Other values:	Increased road safety for the travelling public.	Wind protection to adjacent farms will protect from soil from wind erosion.
<b>Monitoring commitments</b> :	<p>Ongoing monitoring will ensure the successful establishment of the revegetated / rehabilitated areas. Monitoring and associated infill planting and weed control will occur prior, during and after clearing for the duration 5 years.</p> <p>Criteria for success: Follow-up herbicide treatment will take place when the weed cover (non-indigenous species) exceeds 30% and these weed species are assessed by the Main Roads' Environment Officer during the ongoing monitoring (up to 2016) are deemed to be having a detrimental impact on the survival of the revegetation that will result in the quantity and species diversity dropping below the set completion criteria.</p> <p>Target composition: 10 indigenous species present consistent with mapped vegetation 3 years after establishment.</p> <p>Target density: 17 stems per 100m<sup>2</sup>, with a 75% survival rate five years after establishment.</p> <p>Target composition: 10 indigenous species present consistent with mapped vegetation 5 years after establishment. It is aimed to have 10% Upper Story and 70% Mid Story and 20% Low Story.</p> <p>The revegetated areas will be fenced to ensure protection from pests and the areas will be monitored for evidence of pests and control applied when required.</p>	

**MAIN ROADS WA - OFFSET PROPOSAL**  
**Condition 16(b), CPS 818/5**

<b>Management commitments :</b>	<p>A site specific revegetation plan will be developed and will include the following management commitments:</p> <ul style="list-style-type: none"> <li>• Weed control after the first rains of 2011, followed by the ripping of soil and a follow-up weed spray prior to planting;</li> <li>• Seeding of species listed in Attachment 8;</li> <li>• The planting of the species listed in attachment 8, which have been ordered from two local nurseries.</li> <li>• In addition to this tubestock, all cleared vegetation will be mulched and placed on the ripped site. The weed uninfested top soil, removed as part of the works, will also be spread over the ripped areas.</li> <li>• The offset site will use the photo point monitoring sheet attached (refer to attachment 7). This form will be used quarterly to monitor the progress of the revegetation.</li> <li>• The site’s criteria for success will be based on the following: <ul style="list-style-type: none"> <li>○ “By 2016, there should be 1,750 stems per hectare (70 % survival from the 2,500 stems per hectare planted) and no less than 6 different species present per 100m<sup>2</sup>”.</li> <li>○ Follow up weed control will occur if the weed load is determined to be detrimental to maintaining species density and diversity in the future, this herbicide treatment allow native seedlings to develop without competing with weeds.</li> </ul> </li> <li>• Lastly, the newly acquired land will be fenced to protect vegetation from stock.</li> </ul> <p><i>* We have had to leave room either side of the easement for the water pipeline.</i></p>
<b>Agencies consulted &amp; submissions received:</b>	<p>The following agencies were consulted by MRWA has consulted with regards to the proposed clearing and offset proposal:</p> <ul style="list-style-type: none"> <li>• Northern Agricultural Catchment Council;</li> <li>• Department of Environment and Conservation Native Conservation Branch;</li> <li>• Shire of Northampton</li> <li>• Department of Water;</li> <li>• Roadside Conservation Committee;</li> <li>• Department of Agriculture and Food (Soil and Land Conservation Commission);</li> <li>• Department of Environment and Conservation – Geraldton Branch; and</li> <li>• Conservation Council Western Australia.</li> </ul> <p>Submissions received regarding the offset proposal are attached (attachment 9).</p>





Government of Western Australia  
Department of Environment and Conservation

Your ref: 06/1565-02 D11#4395  
Our ref: CPS 818/5  
Enquiries: Chloe Sykes  
Phone: 9219 8744  
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Email: [nvp@dec.wa.gov.au](mailto:nvp@dec.wa.gov.au)

Mr Mark Salt  
A/ Regional Manager (Mid West Region)  
Main Roads Western Australia  
PO Box 165  
GERALDTON WA 6531

Attention: Ms Anna Sutherland



Dear Mr Salt

**CPS 818/5 – NORTH WEST COASTAL HIGHWAY EXTENSION TO PASSING LANE AND CREST REALIGNMENTS – OFFSET PROPOSAL**

Thank you for your letter dated 29 March 2011 providing Main Roads Western Australia's (MRWA) updated offset proposal for the "North West Coastal Highway Extension to Passing Lane and Crest Realignment Proposed Offset". This offset proposal is to meet the requirements of conditions 5(a)(ii), 9(c) and Part V of clearing permit CPS 818/5 for the purpose of MRWA's proposed passing lane extension and crest realignment.

As indicated in the Department of Environment and Conservation's (DEC) letter dated 3 March 2011, the offset proposal submitted by Main Roads for this project required additional information including measurable components prior to making a final decision.

Main Road's updated offset proposal has been assessed and I consider that it now meets the requirements of an offset in respects to your Clearing Permit (CPS 818/5) conditions 5(a)(ii), 9(c) and Part V for the Indian Ocean Drive Road Realignment project.

If you have any queries, please contact Chloe Sykes at DEC's Native Vegetation Conservation Branch on (08) 9219 8744.

Yours sincerely

Kelly Faulkner  
MANAGER  
NATIVE VEGETATION CONSERVATION BRANCH

*Officer delegated under Section 20  
of the Environmental Protection Act 1986*

31 May 2011

Att: Department of Environment and Conservation Letter dated 3 March 2011  
Main Roads "Indian Ocean Drive Road Realignment Proposed Offset" (29 March 2011)

Native Vegetation Conservation Branch  
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## 13. APPENDIX E – WATER QUALITY PROTECTION NOTES