New Perth Bunbury Highway Project

Fiegerts Road Upgrade – Clearing Permit Offset Proposal

Section 1: Contact Details

Date: 01/04/2008

Purpose permit holder contact person:

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Section 2: Clearing Permit Information

Purpose permit Number: CPS 818/4

Permit holder: Main Roads WA

Purpose of permit: Clearing for project activities including upgrade of Fiegerts Road (refer to Section 1(a) of CPS 818/4). Upgrade of Fiegerts Road, Barragup (See Figure 1) - the upgrade to this local government authority road is required to provide private property access, as a consequence of the New Perth Bunbury Highway (NPBH) severing existing property access.

Land on which clearing is to be done (including number of hectares):

The total clearing area is 0.21 hectares situated in vegetated sections along 600m on both sides of Fiegerts Road, within the Shire of Murray. All clearing is within the designated road reserve. 0.036 hectares of this clearing requires an offset in accordance with condition 9(c) Part III of Main Roads Statewide Purpose Clearing Permit (MRWA Clearing Permit).

Section 3: Assessment of application against Clearing Principles

State the clearing principle/s your clearing is at, or may be at, variance to:

The clearing is at variance, but not seriously at variance, with clearing principles (f) and (h). These variances are associated with the presence of a Conservation Category Wetland (also identified as an Environmentally Sensitive Area) in close proximity to the project site.

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.

The project area is situated within 20m of a CCW located to the north of the site. Approximately 0.036ha. of clearing for these works is located within an ESA associated with this CCW wetland buffer. Due to the small quantity of degraded vegetation (condition rating 5) to be cleared, impacts to this wetland will be negligible.

SGA do not consider that these works are significantly at variance with this principle, nor threaten the ongoing survival of this wetland.

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.

As discussed under principle (f) above, there is a clearing impact of 0.036ha. to an ESA associated with the buffer of the CCW wetland buffer located to the north of the project area. Vegetation within this area is rated as 5.

Impact to this wetland will be mitigated by managing the road drainage according to the NPBH Surface Water Management Plan to ensure that there is no direct runoff to the wetland or wetland buffer. Due to the small quantity of degraded vegetation to be cleared, impacts to this wetland will be negligible.

As the wetland is already impacted by the presence of the existing informal track. It is unlikely that there will be any significant additional impacts due to erosion, sedimentation, dieback or weed spread from the proposed works. A Construction Environmental Management Plan has been developed for these works which addresses management of these issues. This plan is included in the Environmental Assessment Report attached.

MRWA recognizes that the clearing required for the Fiegerts Road upgrade is at variance with clearing principles (f) and (h) and proposes to offer a direct offset of 0.21 ha. of unused road reserve for addition into Nature Reserve R35283 as an offset for this clearing. This offset is discussed in section 4.

Impact of the clearing on the environment:

The clearing impact along Fiegerts Road is detailed in the following table. The vegetation to be impacted and it's condition rating was mapped by GHD in November, 2007. Commonly listed flora species observed in site surveys are listed in Attachment 1 (the attachment in this document refers to the offset flora list not the commonly listed flora species), no DRF, Priority or Regionally significant flora were identified during these surveys. No nesting hollows for threatened cockatoo species were observed in any of the trees to be removed for these works (SGA, 2007).

Vegetation Type	Equivalent Vegetation Complex	%extent remaining (1997/98)	Vegetation Condition	Location	Potential Impact to vegetation from road works	Area of native vegetation to be cleared (ha)
1. Eucalyptus rudis, Melaleuca rhaphiophylla lining streams and swamps, isolated tuarts	Bassendean Complex – Central & South (44)	**27.0**	5 – 6 (Degraded – Completely Degraded)	Regrowth mainly associated with eastern drainage line. Weeds prevalent	Yes - a small amount of vegetation is required to be cleared to widen the road corridor	0.07
2. Kunzea shrubland, no dominant overstorey species, some isolated jarrah adjacent to the project area.	Bassendean Complex – Central & South (44)	**27.0**	5 (Degraded)	Weed prevalent. Possibly lost Banksias at some stage.	Yes - a small amount of vegetation is required to be cleared to widen the road corridor	0.14

Section 4: Developing the Offset Proposal

Description of the proposed offset site prior to revegetation and why it is suitable to offset the vegetation that will be lost due to the above clearing:

As discussed above, MRWA proposes to offer a direct offset of 0.21 ha. of surplus NPBH road reserve for addition to Nature Reserve R35283 as an offset for this clearing (see Figure 2). The land proposed for addition to Reserve R35283 has the following environmental values (see Figure 3):

- The entire area to be returned is classified as both EPP Lake (1992) and Conservation Category wetland
- The offset land is considered to be suitable habitat for the DRF species *Drakaea elastica*
- The offset area is immediately adjacent to the proposed Daley Road Offset currently being assessed by DEC, both of which will be incorporated into Reserve R35283 and will enhance the environmental values of the reserve
- The 0.21 hectares of vegetation in the offset area has a Vegetation Condition Rating of 3-4. The vegetation to be cleared is rated as follows:

Vegetation Condition Rating	% of clearing
5	67
5-6	13

The 0.21 ha. offset area is of significantly higher condition rating than the vegetation to be cleared. In addition, the area requiring offset relates only to clearing of 0.036 ha. associated with the CCW buffer. MRWA propose to offset the entire clearing area along Fiegerts Road, which comprises an area almost six times the area (5.83x) required under condition 9(c) of the MRWA Clearing Permit.

SGA considers that the proposed transfer of 0.21 ha. of unused road reserve for inclusion into Reserve R35283 to be a suitable offset for the clearing impacts at Fiegerts Road. It provides an environmental benefit in securing 0.21 ha. Very Good to Good quality vegetation (Condition Rating 3-4) with similar environmental characteristics to offset 0.036 ha. of lesser quality vegetation.

Secondary offsets proposed include:

SGA also propose to conduct a detailed field survey of the proposed offset area to determine the presence of the DRF species *Drakaea elastica*.

Following the discovery of *D. elastica* in both the Paganoni Reserve and Lakes Road Interchange sections of the NPBH, extensive field studies were undertaken by SGA in 2006/7. This study significantly added to the knowledge base of DEC in relation to *D. elastica* regarding the size and location of populations in proximity to the NPBH. The offset land proposed for the clearing at Fiegerts Road has been identified as potential *D. elastica* habitat and SGA will undertake a winter survey in 2008 when the basal leaves are apparent and *D. elastica* is most readily identified.

Description of the process of achieving the offset and what you expect the offset will consist of when complete:

MRWA will request an amendment to the Peel Region Scheme (PRS) to re-zone 0.21 ha. of land currently zoned Rural and owned freehold by the Commissioner of Main Roads to Regional Open Space, and the inclusion of this land into the adjacent 137ha. Reserve R35283. This reserve is vested with the Conservation Commission for the conservation of flora and fauna. It is proposed that this offset will be achieved concurrent with the offset for clearing at Daley Road currently under evaluation by DEC.

Section 5: Verification that all Twelve Offset Principles have been Addressed

1. Direct offsets should directly counterbalance the loss of the native vegetation.

The proposed PRS rezoning and inclusion of 0.21 ha. of land for inclusion into Nature Reserve R35283 (in conjunction with the proposed offset for Daley Road) is considered to be a suitable offset for the clearing impacts at Fiegerts Road as it provides an environmental benefit in securing 0.21 hectares of Very Good to Good quality vegetation (Condition Rating 3-4) to offset 0.036 hectares of lesser quality vegetation (Condition rating 5). The proposed offset is approximately six times the area of the clearing area that requires offset under condition 9(c) of the MRWA Clearing Permit.

2. Contributing offsets should complement and enhance the direct offset.

The proposed *D. elastica* surveys in the offset land will further increase the knowledge base of this DRF in the area. In addition, the clarification of the presence of *D. elastica* in the offset land will allow protection measures to be implemented in the area, if required.

3. Offsets are implemented only once all avenues to avoid, minimize, rectify or reduce environmental impacts have been exhausted.

The design of the Fiegerts Road upgrade has been minimised to the greatest extent possible to reduce clearing impacts by lifting the profile of the road to reduce the width required. Assessment of an alternative alignment north through to Lakelands Road, via a cleared paddock to the east of the existing road reserve, has been undertaken with the Shire of Murray with the objective of reducing vegetation and wetland impacts along the existing road reserve. This assessment found that any new alignment would require an additional crossing of Nambeelup Brook, for which a crossing already exists on the current alignment. As Nambeelup Brook is a CCW, Aboriginal Heritage site, and proclaimed under *Rights in Water and Irrigation Act* 1914, it is considered that the impacts of an additional crossing would be greater than those on the existing degraded vegetation along the Fiegerts Road Reserve, which is already impacted by the presence of an informal track.

4. The environmental values, habitat, species, ecological community, physical area, ecosystem, landscape, and hydrology of the offset should be the same as, or better than, that of the area of native vegetation being offset.

0.21 hectares of Very Good to Good quality vegetation (Condition Rating 3-4) is proposed to offset 0.036 hectares of degraded vegetation (Condition Rating 5). The offset vegetation includes both CCW wetland and wetland buffer in the same wetland where the clearing of the wetland buffer occurs. Both the cleared area and offset are part of the Bassendean complex – central and south.

5. A ratio greater than 1:1 should be applied to the size of the area of native vegetation that is offset to compensate for the risk that the offset may fail.

The offset offered by MRWA is approximately six times (5.83x) the area required to be offset. SGA believes that the risk of failure of this offset is low as no revegetation works are planned; it will be protected by incorporation into the adjacent to Reserve R35283; it has current conservation status in relation to being a Conservation Category and EPP wetland, which will ensure that any works in the area are assessed for their impact on the wetland.

6. Offsets must entail a robust and consistent assessment process.

The impact assessment of the Fiegerts Road upgrade was conducted by experienced professionals from SGA and GHD. The proposed offsets have been developed by MRWA and SGA, and assessed by GHD. These organisations and the individuals involved are considered suitable professionals in their fields.

7. In determining an appropriate offset, consideration should be given to ecosystem function, rarity and type of ecological community, vegetation condition, habitat quality and area of native vegetation cleared.

- The impact of the road upgrade will not impact on any Declared Rare Flora, Priority Flora or Threatened Ecological Communities. The offset has been identified as potential *D. elastica* habitat, which will be further investigated in a winter flora survey of the area.
- The area to be cleared has a vegetation condition rating of 5, to be offset by vegetation with a condition rating of 3-4.
- The offset land is located in the same physical wetland/buffer as the land to be cleared.
- Both the land to be cleared and the offset are located in the Bassendean – central and south vegetation complex, which at 27%, is considered Vulnerable.

The direct offset is considered to have better overall ecosystem function, vegetation condition and habitat quality, and is approximately six times the area of the land to be cleared.

8. The offset should either result in no net loss of native vegetation, or lead to a net gain in native vegetation and improve the condition of the natural environment.

The proposed direct offset for the clearing of the ESA will result in a net gain of native vegetation within the conservation estate of 1.174 hectares.

9. Offsets must satisfy all statutory requirements.

Clearing for Fiegerts Road is being undertaken under the Main Roads Statewide Purpose Clearing Permit (818/4). This offset proposal has been developed in line with the requirements of this permit.

10. Offsets must be clearly defined, documented and audited.

The proposed offsets are considered to be clearly defined and documented:

» The area of land shown at Figure 2 will be supported for rezoning in the PRS and transferred into the adjacent Reserve R35283.

» The *D. elastica* surveys will be completed in winter, 2008 and the results of these surveys provided to DEC Species and Communities Branch.

These offsets will be assessed and reported in line with Part VI of Main Roads Clearing Permit CPS 818/4.

11. Offset must be a long term (10-30 year) benefit.

The land proposed for incorporation into Reserve R35283 will secure this vegetation in the long term.

The *D elastica* surveys will be completed during winter, 2008.

12. An environmental specialist must be involved in the design, assessment and monitoring of offsets.

Officers from the following organizations have been involved in the development of the assessment and offset package:

- MRWA – offset package, monitoring of offset
- Southern Gateway Alliance – community consultation, road design, document preparation
- GHD – site flora surveys and vegetation assessment

Section 6: Commitments and consultation

Monitoring Commitment:

The offset will be incorporated into the reporting requirements by MRWA as detailed in Part VI of Clearing Permit CPS 818/4.

Management Commitment:

Agencies consulted and submissions received:

As per CPS 818/4, SGA has consulted with the following agencies regarding the Fiegerts Road Upgrade:

- DEC Vegetation Protection Branch
- Shire of Murray
- Commissioner for Soil and Land Conservation
- Conservation Council of Western Australia, and

Details of the responses of these stakeholders are included in the Fiegerts Road Environmental Assessment. A copy is attached for reference.

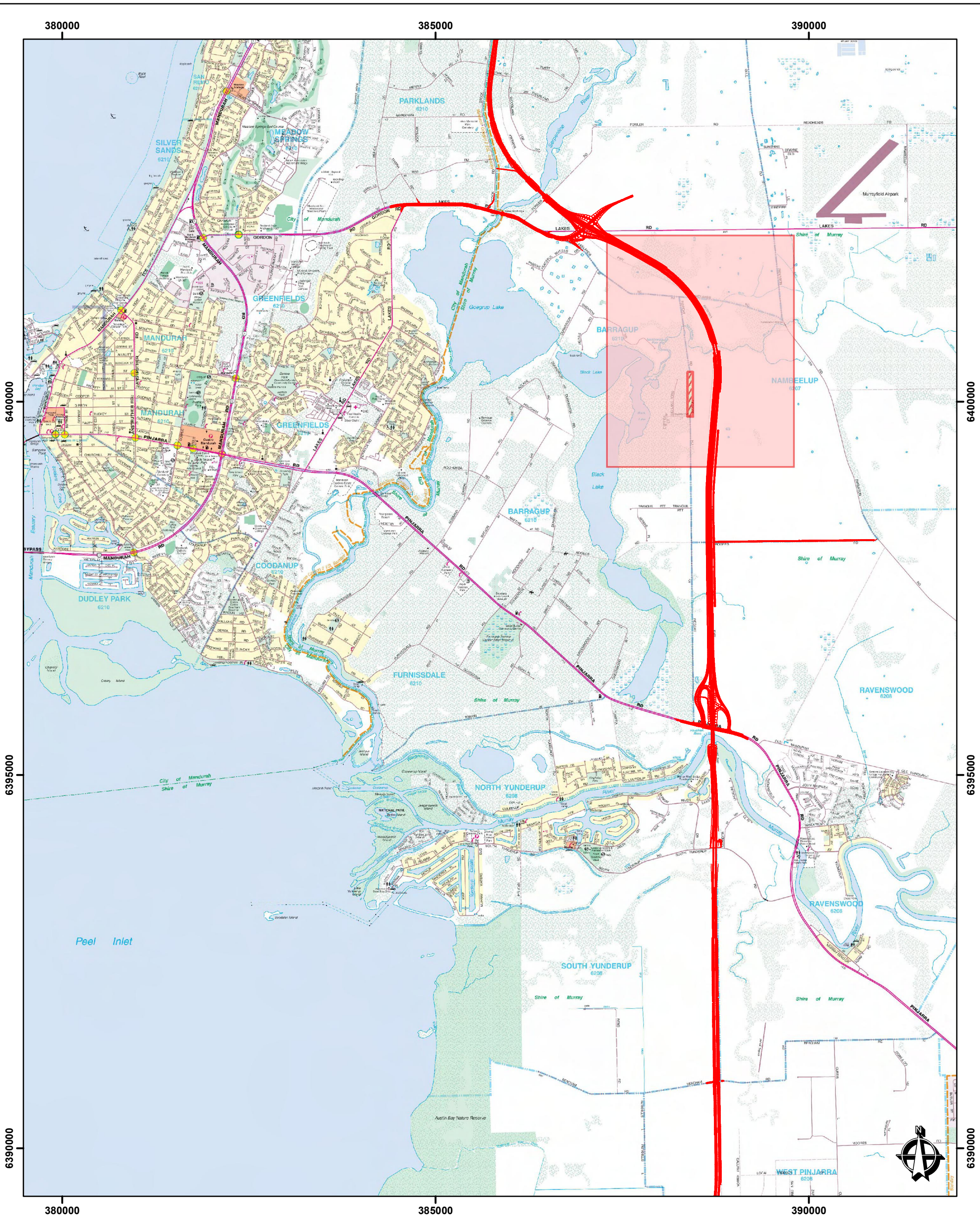
Section 8: Supporting Information (Attachments)

» Fiegerts Road Environmental Assessment enclosed as separate document

» Offset Flora Species List

Figure 1

Locality Plan



LEGEND

- Proposed NPBH Alignment - GHD - 20071005
- Fiegert Road (Area of Interest) - GHD - 20071213
- 1:10,000 Map Sheet - GHD - 20071213

Note that positional errors can be > 5m in some areas
Dataset names include published date where available.
Background taken from Streetsmart Streetexpress 2007 edition. Current to 2006 only.

SCALE

500 0 500 1,000 1,500m

1:50,000 at A3

LOCALITY MAP

Mandurah - South

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HORIZONTAL DATUM: GDA 94 **PROJECTION:** MGA ZONE 50
HEIGHT DATUM: NA **METADATA RECORDED:** NA

DATE	FILE LOCATION
17.12.2007	G:\61\18783\GIS\mxds\6118783-G237.mxd
REVISION	**DRAWING NO**
0	6118783-G237

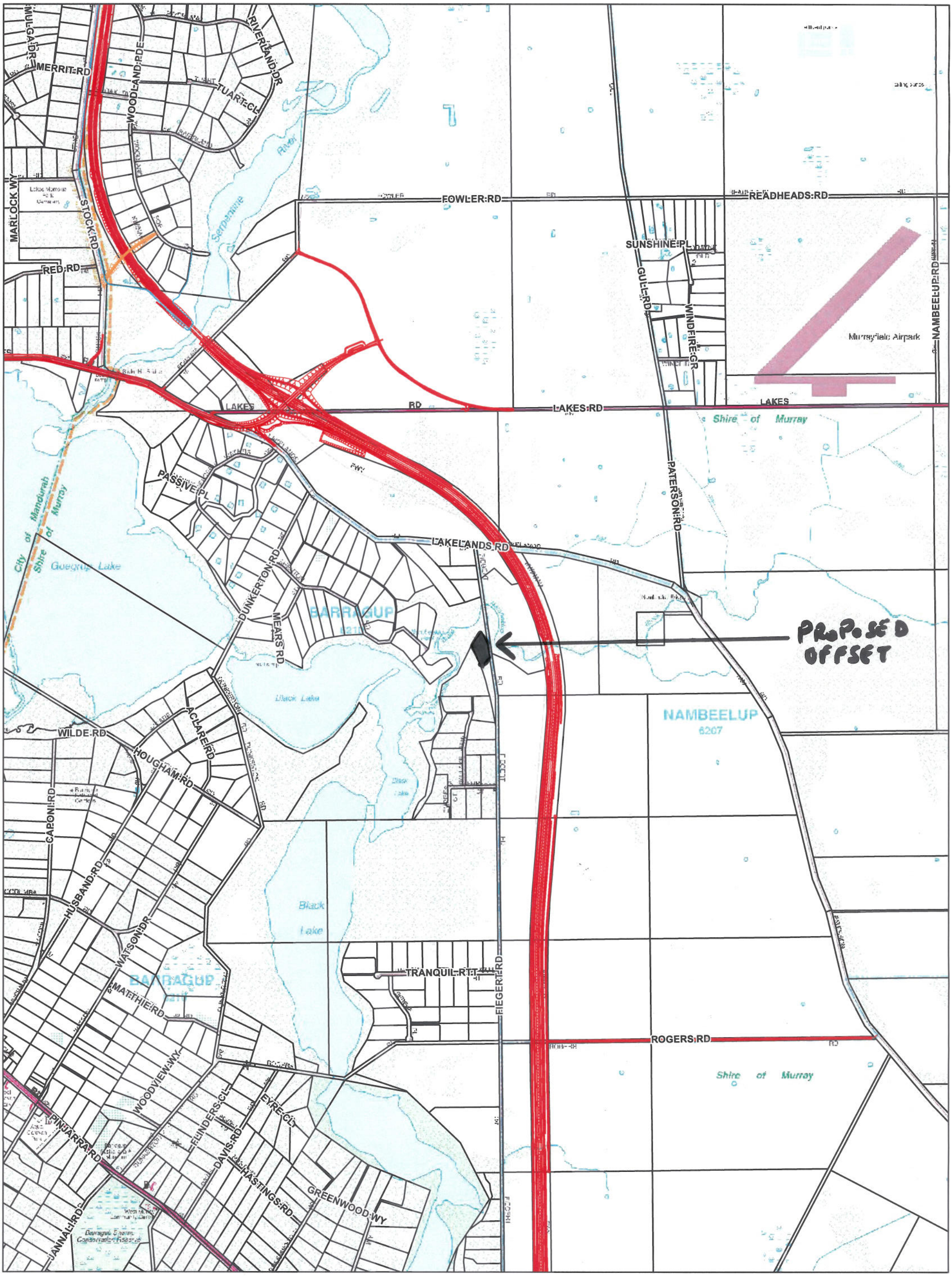
SOUTHERNGATEWAY ALLIANCE

NEW PERTH - BUNBURY HIGHWAY

Figure 1
Locality Plan - Kwinana Freeway Detour Design

Figure 2

Offset Site Locality Plan



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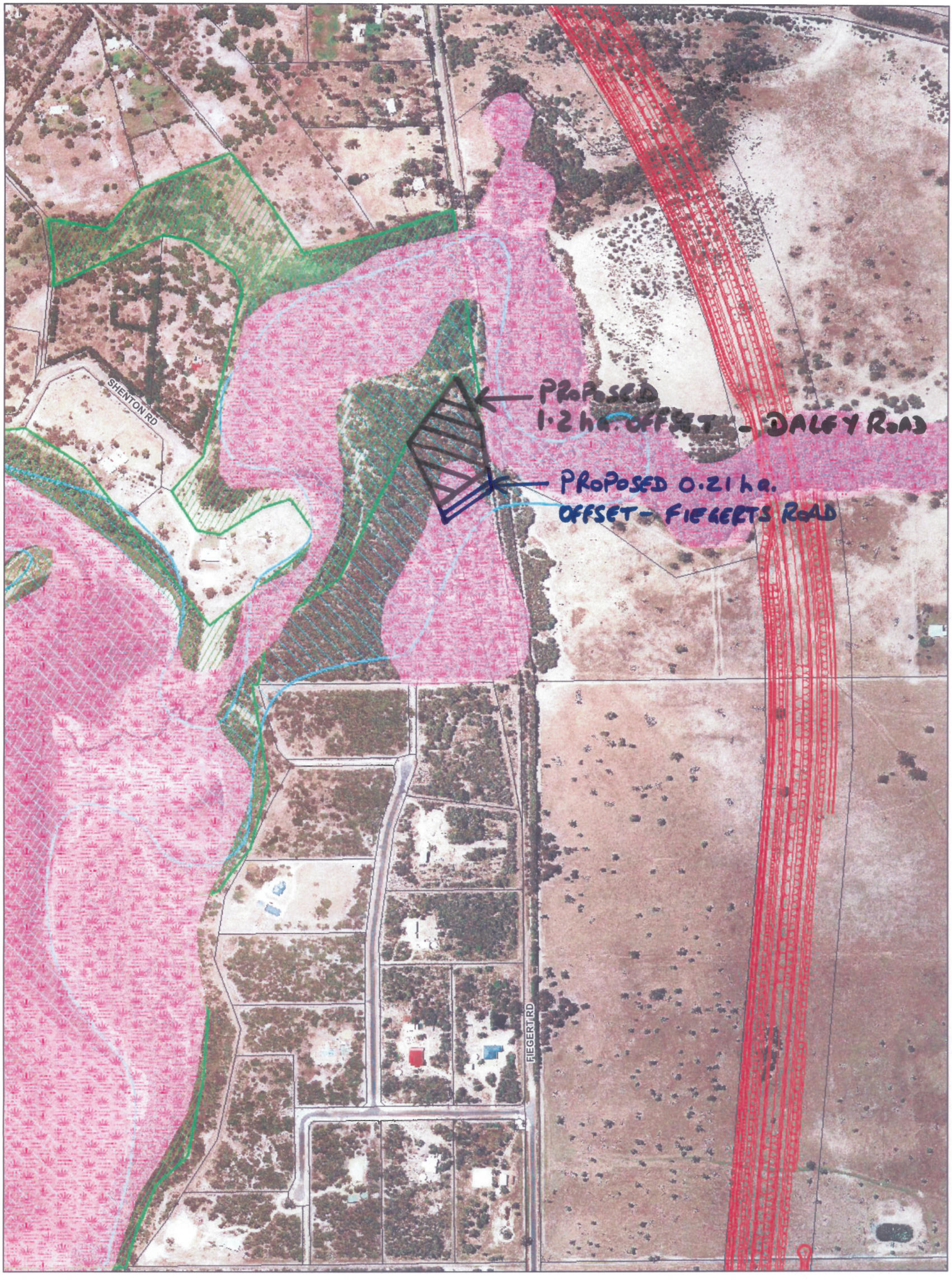
SOUTHERNGATEWAY ALLIANCE

FOR GHD INTERNAL PURPOSES ONLY
* Design under development, therefore may be subject to change.

Figure 3

Proposed Offset Site showing Environmental Values



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SOUTHERNGATEWAY ALLIANCE

FOR GHD INTERNAL PURPOSES ONLY
* Design under development, therefore may be subject to change.

Attachment 1

Offset Site Flora Species List

Species List for Offset Land

Site 6: Scattered *Eucalyptus rudis* over dense *Jacksonia furcellata* heath

Date:	14/11/95
Topography:	Flat
Slope:	Flat
Surface Soil:	Brown Sand
Drainage:	Moderate
Leaf Litter:	15%
Vegetation Condition:	3
Total Vegetation Cover:	90%
Disturbance:	Many weeds in open part of heath
Trees 15-30 m 0-2%:	*Eucalyptus rudis*
Shrubs >2m 30-70%:	*Kunzea ericifolia, Jacksonia furcellata, Acacia saligna*
Shrubs 0.5-1 m 10-30%:	*Macrozamia riedlii, Pteridium esculentum*
Shrubs 0-0.5m 0-2%:	*Leucopogon conostephioides, Acacia hueglii, Bossiaea eriocarpa, Gompholobium tomentosum, Hemiandra pungens*
Sedge like plants 0-2%:	*Leptocarpus tenax, Loxocarya flexuosa, Lomandra hermaphrodita, Lomandra sp. 2, Conostylis aculeata*
Soft grasses 0-2%	Introduced spp.
Herbs/creepers 2-10%	*Hardenbergia comptoniana, Corynotheca micrantha, Cartonema philydroides*

Source: Perth Bunbury Highway: Peel Deviation – Biological Assessment Survey. Ecologia 1996.

A resurvey of this land in 2007 (GHD) and 2008 (SGA) confirmed the above species list was still current. However, the vegetation condition was downgraded from 3 to 3-4.