

New Perth Bunbury Highway Project

Daley Road Upgrade – Clearing Permit Offset Proposal

Section 1: Contact Details

Date: 25/03/2008

Purpose permit holder contact person:

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Section 2: Clearing Permit Information

Purpose permit Number: CPS 818/4

Permit holder: Main Road WA

Purpose of permit: Clearing for project activities including upgrade of Daley Road (refer to Section 1(a) of CPS 818/4). Upgrade of Daley Road, West Pinjarra - 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 1.17 hectares situated in vegetated sections along 3.2 km on both sides of Daley Road, within the Shire of Murray. All clearing is within the designated road reserve.

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 (a), (e), (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; and impact on the extensively cleared Cannington and Guildford vegetation complexes within the project area.

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

The clearing is likely to be at variance with this principle as 65% of the 1.17 ha clearing area is of good or better condition in an area that has been extensively cleared. However, given the extent of clearing at 1.17 ha. of which only 0.76 ha. is in good or better condition, SGA do not consider that these works are significantly at variance with this principle. In addition, flora and fauna surveys of the project area (GHD 2006 and 2007, SGA 2008) did not identify the occurrence of any Declared Rare, Priority or regionally significant flora species. Although the area is identified as potential habitat for endangered black cockatoo species, no trees with nesting hollows will be impacted by the works.

Principle (e) - Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

The clearing is at variance with clearing principle (e) in that it is significant as a remnant of native vegetation in an area that has been extensively cleared. The two vegetation complexes (Cannington and Guildford) in the project area that will be affected by clearing contain less than 30% of their original representation on the Swan Coastal Plain at 10% and 5% respectively. However, given the extent of clearing at 1.17 ha. of which only 0.76 ha. is in good or better condition, and the 0.14 hectares of Guildford complex vegetation to be cleared being rated as 5-6, SGA do not consider that these works are significantly at variance with this principle.

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 predominantly situated within a multiple use wetland. A 0.6ha Conservation Category Wetland is situated adjacent to the Daley Road road reserve. Planned works will entail clearing of 0.16 ha. of vegetation of condition rating 2-3 growing in, or within a 50m buffer of this wetland. Given the extent of clearing, which will upgrade an existing track through this wetland, 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 0.16 ha. on the 0.6ha conservation wetland situated adjacent to the project area. Increased runoff is unlikely into the wetland due to the unsealed surface and road design which incorporates a one-way cross-fall away from the wetland. In addition, 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.

Main Roads recognizes that the clearing required for the Daley Road upgrade is at variance with clearing principles (a), (e), (f) and (h) and proposes to offer a direct offset of 1.2 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 Daley Road is detailed in the following table. The vegetation to be impacted and its condition rating was mapped by GHD in April 2006 and June 2007. Commonly listed flora species observed in site surveys are listed in Attachment 1, 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, 2008).

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: <i>Eucalyptus marginata</i> – <i>Corymbia calophylla</i> – <i>Banksia attenuata</i> – <i>Banksia grandis</i> – <i>Allocasuarina fraseriana</i> woodland on sand dune	Cannington Complex	10.0	3 – 4 (Very Good – Good)	On sand dune	Yes - a small amount of vegetation is required to be cleared to widen the road corridor	0.34
2: <i>Eucalyptus marginata</i> – <i>Corymbia calophylla</i> – <i>Banksia attenuata</i> – <i>Banksia ilicifolia</i> woodland over <i>Kunzea glabrescens</i> on low lying sandy soils	Cannington Complex	10.0	4 – 5 (Good – Degraded) – Does contain areas of Dieback	On low lying areas east of sand dune either side of wetland	Yes - a small amount of vegetation is required to be cleared to widen the road corridor	0.53
3: <i>Melaleuca preissiana</i> – <i>Kunzea glabrescens</i> - <i>Hakea varia</i> – <i>Pericalymma ellipticum</i> <i>Baeckea camphorosmae</i> – dense shrub wetland	Cannington Complex	10.0	2 – 3 (Excellent - Very Good) Does contain Dieback	Conservation Category Wetland.	Yes - a small amount of vegetation is required to be cleared to widen the road corridor	0.16
45: Mixed low shrubland in road reserve. Contains isolated <i>Corymbia calophylla</i> and <i>Kingia australis</i> on slightly higher ground west of intersection with Mills Road	Guildford Complex	5.0	5 – 6 (Degraded – Completely Degraded)	East of narrow section of Daley Road to intersection of Mills Road	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, Main Roads proposes to offer a direct offset of 1.2 ha. of surplus NPBH road reserve for addition to Nature Reserve R35283 as an offset for this clearing. The land proposed for addition to Reserve R35283 has the following environmental attributes:

- The entire area to be returned is classified as an EPP Lake (1992)
- 0.31 ha. of the 1.2 ha offset is classified as a 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 Reserve R35283 and will enhance the environmental values of the reserve
- The 1.2 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
2-3	14
3-4	29
4-5	45
5-6	12

Although 14% of the vegetation (0.16 ha.) of the vegetation to be impacted is of a slightly higher condition rating than the offset land, the remaining 86% (1.01 ha.) is of the same or lesser condition. In addition, the offset is marginally greater than the clearing area, and is mapped as an EPP lake.

SGA considers the proposed transfer of 1.2 ha of unused road reserve for inclusion into Reserve R35283 to be a suitable offset for the clearing impacts at Daley Road as it provides an environmental benefit in securing 1.2 hectares of Very Good to Good quality vegetation (Condition Rating 3-4) to offset 1.17 hectares of mixed condition 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 Daley 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:

Main Roads will request an amendment to the Peel Region Scheme (PRS) to re-zone 1.2 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 137 ha Reserve R35283. This reserve is vested with the Conservation Commission for the conservation of flora and fauna.

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 1.2 ha of land for inclusion into Nature Reserve R35283 is considered to be a suitable offset for the clearing impacts at Daley Road as it provides an environmental benefit in securing 1.2 hectares of Very Good to Good quality vegetation (Condition Rating 3-4) to offset 1.17 hectares of mixed condition vegetation, of which 86% is of the same or lesser value than the offset.

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 Daley Road upgrade has been minimised to the greatest extent possible to reduce clearing impacts. This has been undertaken in consultation with the Shire of Murray and the Conservation Council of Western Australia. The original clearing extent was estimated to be 5.64 ha, the final design has reduced this impact to 1.17 ha.

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.

1.2 hectares of Very Good to Good quality vegetation (Condition Rating 3-4) is proposed to offset 1.17 hectares of mixed condition vegetation of which 86% is of the same or lesser value than the offset.

The highest value vegetation to be cleared along Daley Road is growing in association with a 0.6 hectare Conservation Category sumpland that has already been substantially impacted by disturbance associated with the informal track along the Daley Road road reserve. The offset provides approximately 0.30 hectares of Conservation Category Sumpland to replace the 0.11 hectares lost to clearing.

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 MainRoads is marginally greater in size (at 1.20 hectares) than the clearing area (1.17 hectares). 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 Daley Road upgrade was conducted by experienced professionals from SGA and GHD. The proposed offsets have been developed by Main

Roads 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. 0.14 hectares of the land to be cleared consists of Guildford Complex vegetation, which is considered to be Endangered. However, the condition rating of 5-6 associated with this section and the very small area to be cleared suggests that this clearing will not have a significant effect on this complex. The remaining vegetation is Cannington complex, which with 10% remaining is considered Vulnerable. The offset comprises Bassendean vegetation complex, which at 27% is also considered Vulnerable.

The direct offset is considered to have better overall ecosystem function, vegetation condition and habitat quality, and is marginally greater in area than 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 will result in a net gain of native vegetation of 0.03 hectares.

9. Offsets must satisfy all statutory requirements.

Clearing for Daley 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 1 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 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:

- Main Roads WA – 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 Main Roads 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 Daley 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 Daley Road Environmental Assessment. A copy is attached for reference.

Section 8: Supporting Information (appendices)

- » Daley Road Environmental Assessment
- » Location Plan for Offset
- » Environmental Aspects of Offset Land

Figure 1
Locality Plan

Figure 2
Offset site Locality Plan

Figure 3

Proposed Offset Site showing Environmental Values

Attachment 1
Daley Road Environmental Assessment

Attachment 2
Offset Site Vegetation Species List

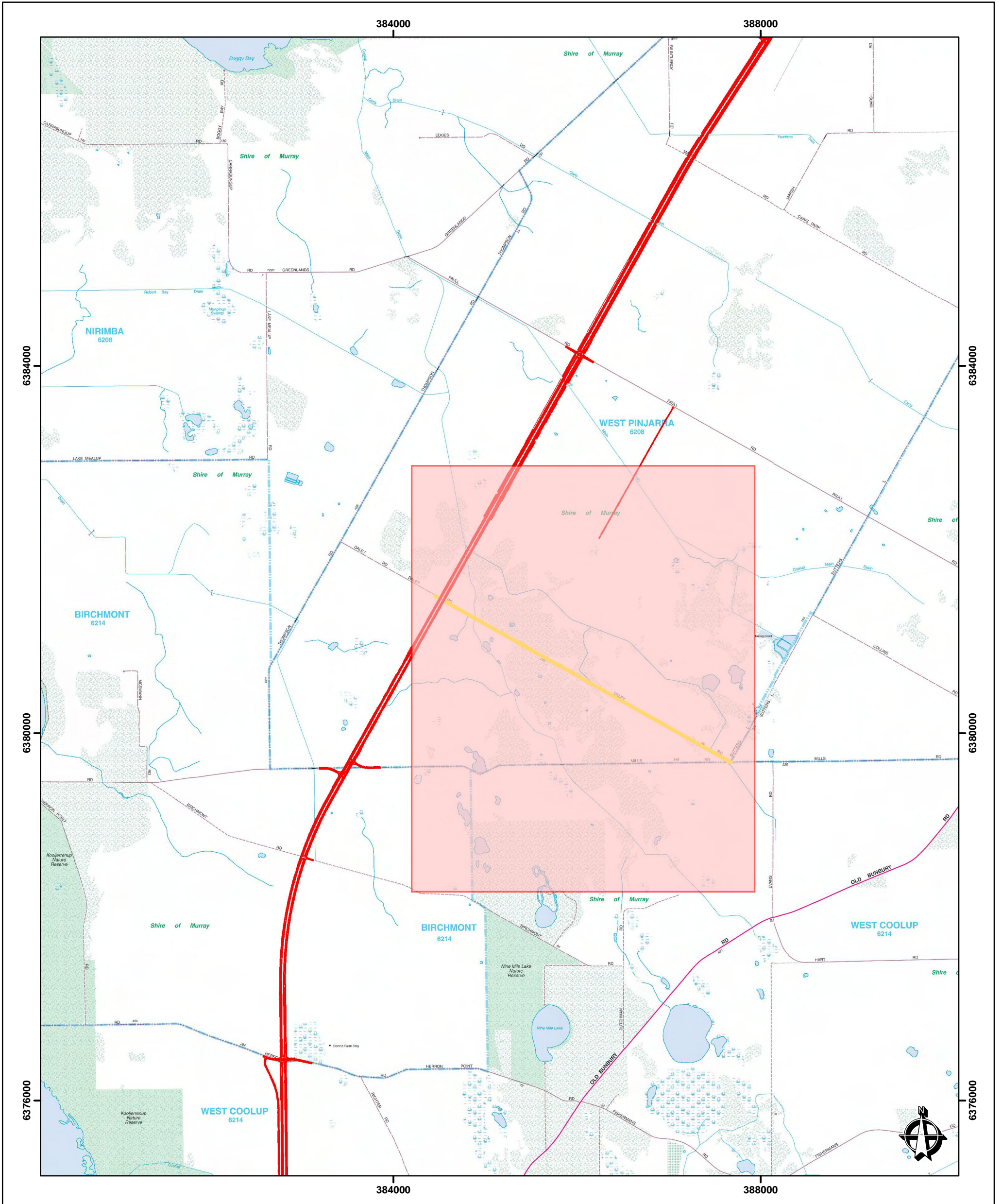
Species List for Offset Land

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%:	<i>Eucalyptus rudis</i>
Shrubs >2m 30-70%:	<i>Kunzea ericifolia</i> , <i>Jacksonia furcellata</i> , <i>Acacia saligna</i>
Shrubs 0.5-1 m 10-30%:	<i>Macrozamia riedlii</i> , <i>Pteridium esculentum</i>
Shrubs 0-0.5m 0-2%:	<i>Leucopogon conostephioides</i> , <i>Acacia huegii</i> , <i>Bossiaea eriocarpa</i> , <i>Gompholobium tomentosum</i> , <i>Hemiandra pungens</i>
Sedge like plants 0-2%:	<i>Leptocarpus tenax</i> , <i>Loxocarya flexuosa</i> , <i>Lomandra hermaphrodita</i> , <i>Lomandra sp. 2</i> , <i>Conostylis aculeata</i>
Soft grasses 0-2%	Introduced spp.
Herbs/creepers 2-10%	<i>Hardenbergia comptoniana</i> , <i>Corynotheca micrantha</i> , <i>Cartonema philydroides</i>

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

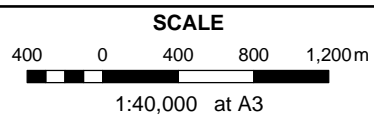
A resurvey of this land in 2007 (GHD) and 2008 (SGA) confirmed the above species list was still current. However, the vegetation condition was downgraded from 3 to 3-4.



LEGEND

- Daley Road (Concept Design only) - GHD - 20070823
- Proposed NPBH Alignment - GHD - 20071005
- Area of Interest - Daley Road

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.



LOCALITY MAP



Perth - South Metro.

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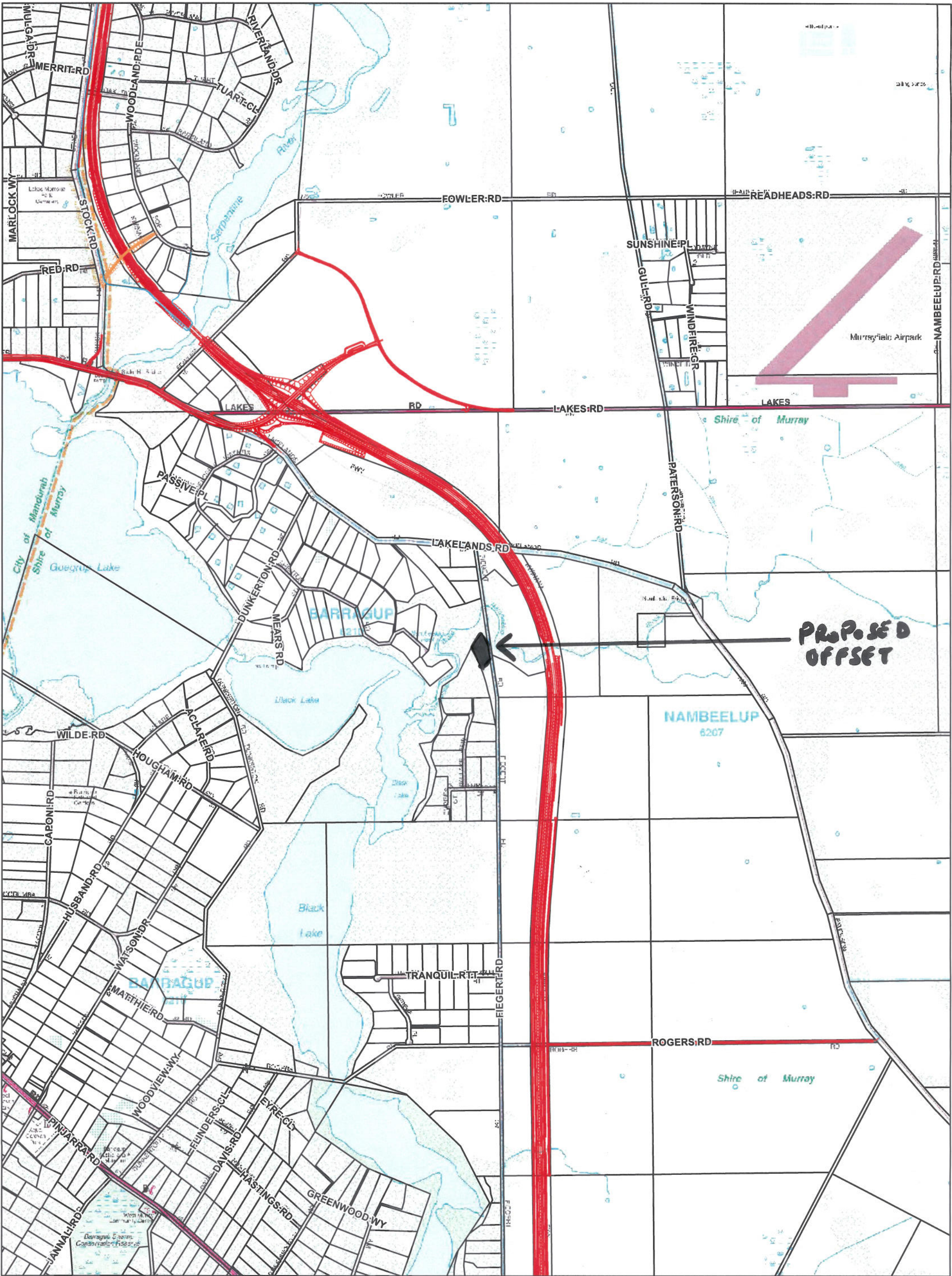
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HORIZONTAL DATUM: GDA 94		PROJECTION: MGA ZONE 50
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NEW PERTH - BUNBURY HIGHWAY

Figure 1
 Daley Road - Locality Plan



360 180 0 360 720 1,080m

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at A3

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* Design under development, therefore may be subject to change.



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