GOVERNMENT OF WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 8681/1
Permit Holder:	Commissioner of Main Roads Western Australia
Duration of Permit:	21 May 2020 to 21 May 2035

ADVICE NOTE

The funds referred to in condition 11 of this permit are intended for contributing towards the purchase of 164 hectares of native vegetation with habitat for Carnaby's cockatoo (*Calyptorhynchus latirostris*) and 136 hectares of native vegetation that is representative of the 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' ecological community.

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I –CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purposes of road reconstruction, widening and associated activities.

2. Land on which clearing is to be done

Property Details	Locality
Lot 6936 on Plan 170070	Green Range
Lot 6492 on Plan 208293	Green Range
Lot 600 on Plan 76866	Manypeaks
Lot 570 on Plan 76866	Manypeaks
Lot 4 on Plan 40753	Green Range
Lot 3 on Plan 40753	Green Range
Crown Reserve 26650 – PIN 624073, 624075, 624042, 624189, 624192	Green Range
Crown Reserve 26650 – PIN 624071, 12296747	Manypeaks
Crown Reserve 26650 – PIN 600885	Cheynes
Road Reserve – PIN 11747911	Green Range
Road Reserve - PIN 11644273	Green Range
Road Reserve - PIN 11644274	Green Range
Road Reserve - PIN 11364311	Green Range
Road Reserve - PIN 11644275	Green Range
Road Reserve - PIN 11644272	Green Range
Road Reserve - PIN 11644276	Green Range
Road Reserve - PIN 11644271	Green Range
Road Reserve - PIN 11644277	Green Range
Road Reserve - PIN 11644278	Green Range
Road Reserve - PIN 11642410	Green Range
Road Reserve - PIN 11642409	Cheynes
Road Reserve – PIN 11642411	Cheynes
Road Reserve - PIN 11747912	Manypeaks
Road Reserve – PIN 11642412	Manypeaks

3. Area of clearing

The Permit Holder must not clear more than 31 hectares of native vegetation within the areas shaded yellow on attached Plan 8681/1(a), Plan 8681/1(b), Plan 8681/1(c), Plan 8681(d), Plan 8681(e), Plan 8681(f), Plan 8681(g).

4. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

5. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for the activities described in condition 1 of this Permit to the extent that the Permit Holder has the power to carry out work involving clearing for those activities under the *Main Roads Act 1930* or any other written law.

6. Period in which clearing is authorised

The Permit Holder shall not clear any native vegetation after 21 May 2025.

PART II –MANAGEMENT CONDITIONS

7. Avoid, minimise and reduce the impacts and extent of clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

(a) avoid the clearing of native vegetation
(b) minimise the amount of native vegetation to be cleared
(c) reduce the impact of clearing on any environmental value.

8. Dieback and weed control

When undertaking any clearing authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds* and *dieback*:

(a) clean machines and other vehicles of soil and vegetation prior to entering and leaving the area to be cleared
(b) prohibit the movement of machines and other vehicles between dieback infested and non-infested areas as identified in the report titled 'H008 South Coast Highway Kojaneerup Section SLK 46-66 *Phytophthora* Dieback Assessment' (Astron, 2019) unless the machines and other vehicles have been cleaned of soil and vegetation
(c) ensure that no known *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared
(d) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

9. Fauna management - direction of clearing

The Permit Holder shall conduct clearing in a slow progressive manner from one direction to the other (e.g. east to west) to allow fauna to move into adjacent native vegetation ahead of the clearing activity.

10. Wind erosion management

The Permit Holder must ensure that road widening and associated activities commence within three months of the authorised clearing being undertaken, to reduce the risk of soil erosion by minimising the exposure time of soils prior to construction.

11. Monetary contributions to a fund maintained for the purpose of establishing or maintaining vegetation (offset)

Prior to undertaking any clearing authorised under this Permit and no later than 21 May 2021, the Permit Holder shall provide documentary evidence to the *CEO* that funding of $293,560 has been transferred to the Department of Water and Environmental Regulation to purchase land for the purpose of establishing or maintaining native vegetation.

12. Threatened ecological community management

The Permit Holder shall not clear more than 25 hectares of native vegetation representative of the 'Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (*Kwongkan Shrublands*) ecological community.#

13. Carnaby's cockatoo habitat management

The Permit Holder shall not clear more than 29 hectares of native vegetation that provides suitable *foraging habitat for Carnaby's cockatoo* (*Calyptorhynchus latirostris*).

14. Revegetation plan

(a) Within 24 months of clearing commencing, the Permit Holder must submit a Project Revegetation Plan to the *CEO* for approval for the areas shaded red on attached Plan 8681/1(h), Plan 8681/1(i), Plan 8681/1(j), Plan 8681/1(k), Plan 8681/1(l), Plan 8681/1(m), Plan 8681/1(n), Plan 8681/1(o), Plan 8681/1(p), Plan 8681/1(q), and Plan 8681/1(r), which shall be developed in accordance with *A Guide to Preparing Revegetation Plans for Clearing Permits* (Department of Water and Environmental Regulation (DWER) 2018).

(b) The Project Revegetation Plan must be prepared by an *environmental specialist*.

(c) The Project Revegetation Plan must include the following:
   (i) *site preparation*
   (ii) *weed* control
   (iii) *regeneration, direct seeding* or *planting*, at an *optimal time*
   (iv) a *vegetation establishment period*
   (v) *revegetation* success *completion criteria* based on selected *reference sites*, including but not limited to target weed cover, target vegetation condition, target density and target structure
   (vi) remedial actions to be undertaken if *completion criteria* are not met
   (vii) ongoing maintenance and monitoring of the area to be *revegetated* and *rehabilitated*
   (viii) timeframes for completion of the activities
   (ix) management commitments that will be achieved.

(d) The Permit Holder shall implement the Project Revegetation Plan as approved by the *CEO*.

PART III - RECORD KEEPING AND REPORTING

15. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

(a) In relation to the clearing of native vegetation authorised under this Permit:
   (i) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings
   (ii) the date that the area was cleared
   (iii) the size of the area cleared (in hectares)
   (iv) the purpose for which clearing was undertaken.
   (v) actions taken in accordance with condition 6 of this Permit
   (vi) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 7 of this Permit;
   (vii) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 8 of this Permit;
   (viii) activities taken in accordance with condition 9 of this Permit;
   (ix) activities taken in accordance with condition 10 of this Permit;
   (x) actions taken in accordance with condition 11 of this Permit;
   (xi) activities taken in accordance with condition 12 of this Permit;
   (xii) activities taken in accordance with condition 13 of this Permit;

(b) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 14 of this Permit:
   (i) a description of the *revegetation* and *rehabilitation* activities undertaken;
   (ii) the size of the areas *revegetated* and *rehabilitated* (in hectares);
   (iii) the date that *revegetation* and *rehabilitation* works began; and
   (iv) actions taken in accordance with condition 14 of this Permit.

16. Reporting

(a) The Permit Holder must provide to the *CEO* on or before 30 June of each year, a written report:
   (i) of records required under condition 15 of this Permit; and
   (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.

(b) If no clearing authorised under this Permit has been undertaken, a written report confirming that no clearing under this Permit has been undertaken, must be provided to the *CEO* on or before 30 June of each year.

(c) Prior to 21 February 2025, the Permit Holder must provide to the *CEO* a written report of records required under condition 15 of this Permit where these records have not already been provided under condition 16(a) of this Permit.

DEFINITIONS

The following meanings are given to terms used in this Permit:

CEO means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*

completion criteria means a measurable outcome based on suitable *reference sites*, used to determine revegetation/*rehabilitation* success

dieback means the effect of *Phytophthora* species on native vegetation

direct seeding means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species;

environmental specialist means a person who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit, or who is approved by the CEO as a suitable environmental specialist

fill means material used to increase the ground level, or fill a hollow

foraging habitat for Carnaby's cockatoo means the foraging habitat that was mapped in Main Roads (2019) South Coast Highway Kojaneerup Project 46 to 66 SLK Environmental Impact Assessment Clearing Permit Supporting Information.

Kwongkan Shrublands means the Kwongkan Shrublands that was mapped in Main Roads (2019) South Coast Highway Kojaneerup Project 46 to 66 SLK Environmental Impact Assessment Clearing Permit Supporting Information.

local provenance means native vegetation seeds and propagating material from natural sources within 100 kilometres and the same Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the area cleared

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation

optimal time means the optimal time for undertaking direct seeding and planting as set out in the table in Schedule 2 of this Permit;

planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species

quadrat means a sample plot established for the purpose of data collection and monitoring vegetation characteristics, for example species composition, structure, density and condition

reference sites means nearby sites used to provide baseline data for planning a revegetation project. Measurements from fixed reference points or plots where biodiversity components are measured are used to set measurable completion criteria for revegetation projects. The *reference sites* must contain the following values:

(a) Suitable foraging habitat for Carnaby's cockatoo (*Calyptorhynchus latirostris*)
(b) Vegetation that is representative of the 'Kwongkan Shrublands' ecological community
(c) Vegetation in a good (Keighery, 1994) or better condition

rehabilitate/ed/ion/ing means actively managing an area containing native vegetation in order to improve the ecological function of that area

revegetate/ed/ion/ing means the re-establishment of a cover of *local provenance* native vegetation in an area using methods such as natural *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area

regeneration means revegetation that can be established from in situ seed banks contained either within the topsoil or seed-bearing mulch;

site preparation means management of existing site topsoil and preparation of the finished soil surface for revegetation, for example by ripping or tilling the soil surface and respreading site topsoil and chipped native vegetation;

vegetation condition means the rating given to native vegetation which refers to the impact of disturbance on each of the layers and the ability of the community to regenerate (Keighery 1994)

vegetation establishment period means a period of at least two summers after the revegetation during which time replacement and infill revegetation works may be required for areas in which revegetation has been unsuccessful, and involves regular inspections of revegetation sites to monitor the success of revegetation;

weed/s means any plant -

(a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
(b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or
(c) not indigenous to the area concerned.

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Adrian Wiley
SENIOR MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

21 April 2020

Plan 8681/1(a)

Legend

- Area Approved to Clear
- Road Centrelines

LGA Boundaries (LGATE-233)

N

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Officer delegated under section 20 of the Environmental Protection Act 1986

0 0.75 1.5 km

GOVERNMENT OF WESTERN AUSTRALIA

Plan 8681/1(b)

Legend

- Area Approved to Clear
- Road Centrelines

LGA Boundaries (LGATE-233)

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Officer delegated under section 20 of the Environmental Protection Act 1986

0 0.75 1.5 km

GOVERNMENT OF WESTERN AUSTRALIA

Plan 8681/1(c)

Legend

Area Approved to Clear

Road Centrelines

LGA Boundaries (LGATE-233)

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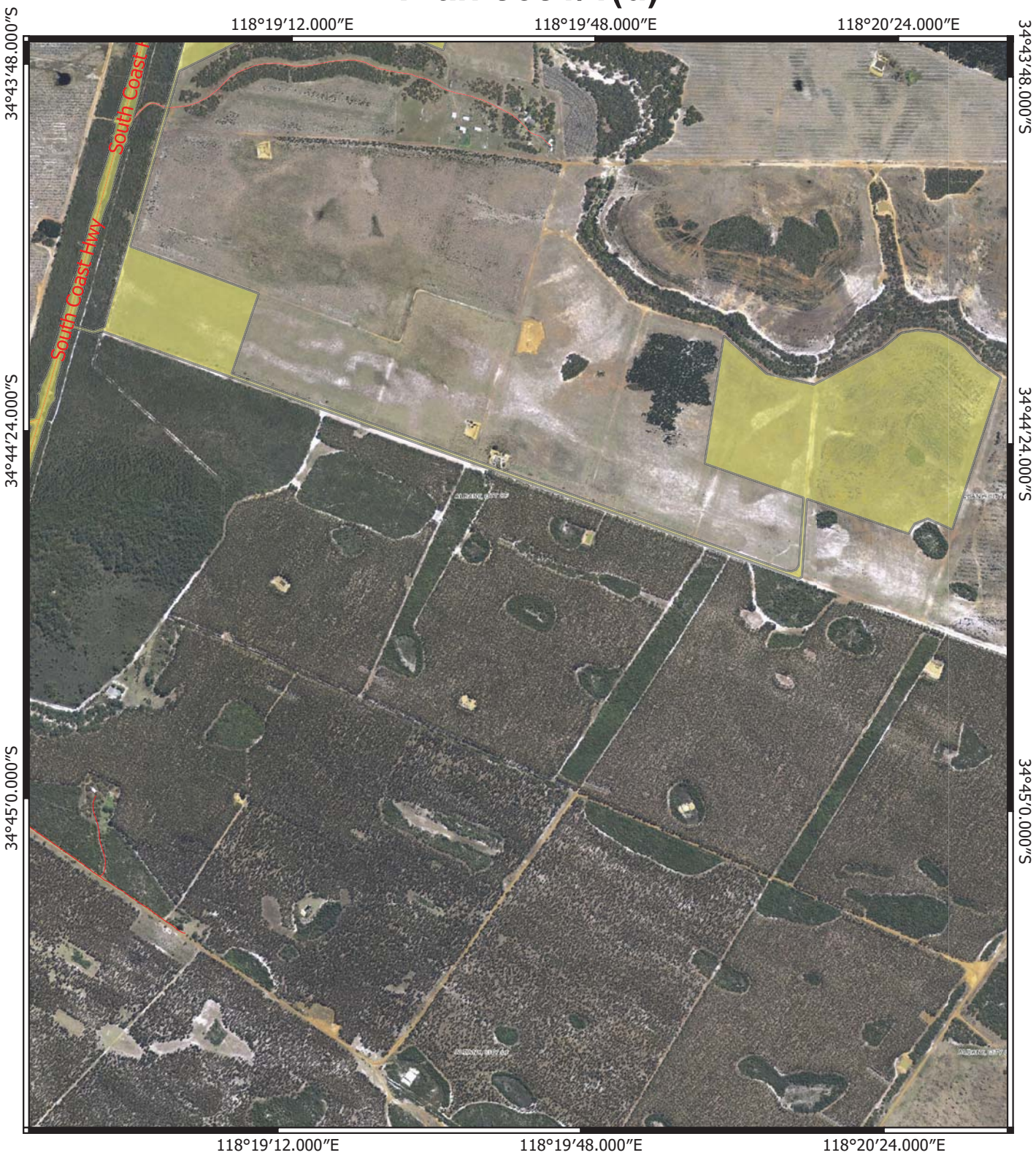
Officer delegated under section 20 of the Environmental Protection Act 1986

0 0.75 1.5 km

GOVERNMENT OF WESTERN AUSTRALIA

Plan 8681/1(d)



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Area Approved to Clear

Road Centrelines

LGA Boundaries (LGATE-233)

N

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Officer delegated under section 20 of the Environmental Protection Act 1986

0 0.75 1.5 km

GOVERNMENT OF WESTERN AUSTRALIA

Plan 8681/1(e)

Legend

Area Approved to Clear

Road Centrelines

LGA Boundaries (LGATE-233)

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Officer delegated under section 20 of the Environmental Protection Act 1986

0 0.75 1.5 km

GOVERNMENT OF WESTERN AUSTRALIA

Plan 8681/1(f)

Legend

Area Approved to Clear

Road Centrelines

LGA Boundaries (LGATE-233)

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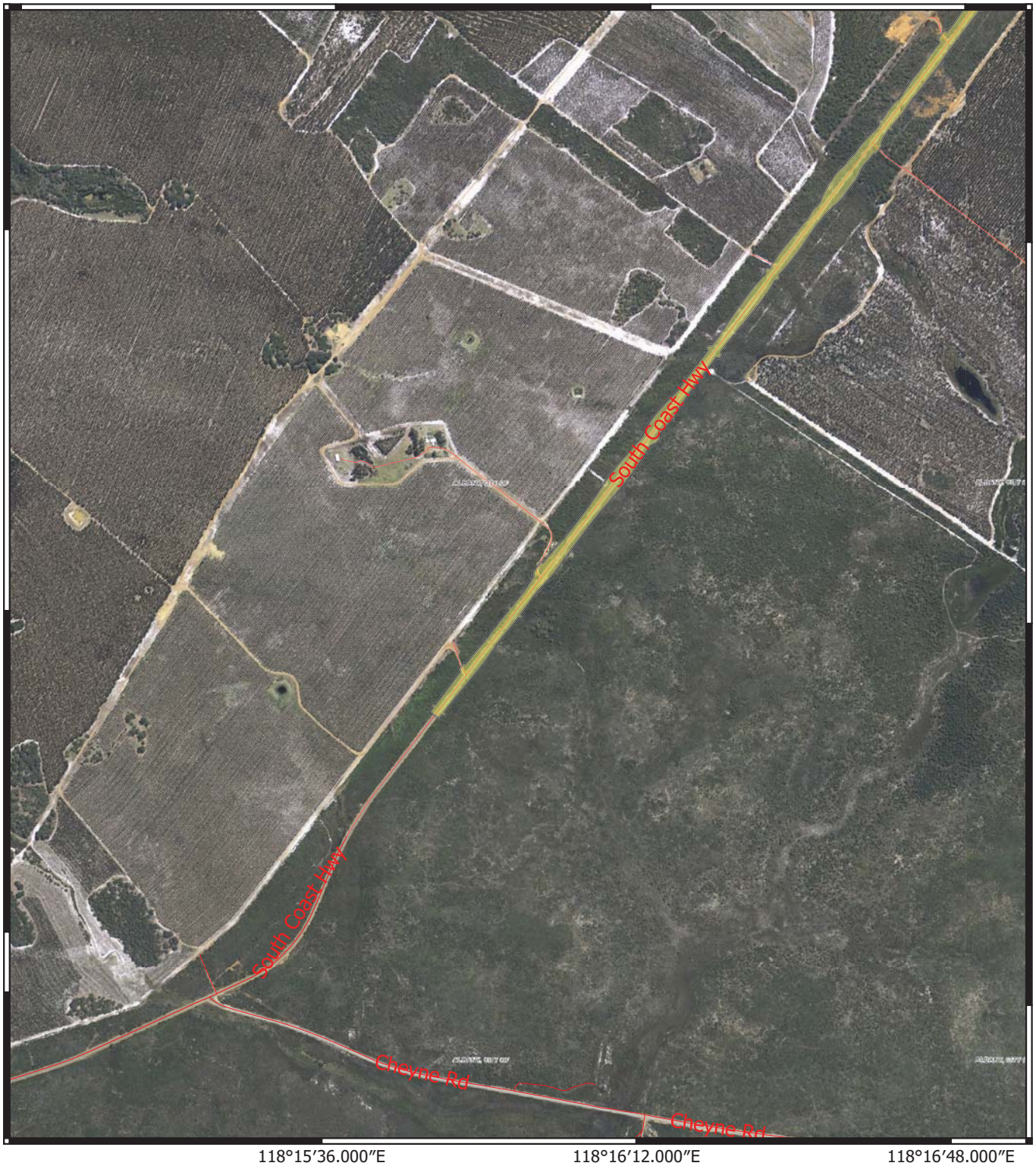
Officer delegated under section 20 of the Environmental Protection Act 1986

0 0.75 1.5 km

GOVERNMENT OF WESTERN AUSTRALIA

Plan 8681/1(g)



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Area Approved to Clear

Road Centrelines

LGA Boundaries (LGATE-233)

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0 0.75 1.5 km

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Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Plan 8681/1(h)

118°19′48.000″E

34°40′12.000″S

34°40′48.000″S

118°19′48.000″E

Legend

Areas Subject to Conditions
Areas Subject to Conditions

base layers
Road Centrelines

LGA Boundaries (LGATE-233)

N

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Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

0 0.25 0.5 km

Plan 8681/1(i)

118°19′12.000″E 118°20′6.000″E

34°41′42.000″S

34°41′42.000″S

118°19′12.000″E 118°20′6.000″E

Legend

Area Subject to Conditions
Area Subject to Conditions
Road Centrelines

LGA Boundaries (LGATE-233)

0 100 200 m

N

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Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Plan 8681/1(j)

118°19′12.000″E

34°42′36.000″S

34°42′36.000″S

118°19′12.000″E

Legend

Area Subject to Conditions
Area Subject to Conditions
Road Centrelines

LGA Boundaries (LGATE-233)

0 100 200 m

N

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Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Plan 8681/1(k)

118°19′12.000″E

34°43′30.000″S

34°43′30.000″S

118°19′12.000″E

Legend

Area Subject to Conditions

Road Centrelines

LGA Boundaries (LGATE-233)

N

0 100 200 m

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Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Plan 8681/1(I)

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34°45′18.000″S

34°45′18.000″S

118°18′18.000″E

Legend

Area Subject to Conditions
Area Subject to Conditions
Road Centrelines

LGA Boundaries (LGATE-233)

0 100 200 m

N

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Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Plan 8681/1(m)

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34°46′12.000″S

34°47′6.000″S

118°17′24.000″E

Legend

Area Subject to Conditions

Road Centrelines

LGA Boundaries (LGATE-233)

N

0 100 200 m

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Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Plan 8681/1(n)

118°16′30.000″E

34°48′0.000″S

34°48′0.000″S

118°16′30.000″E

Legend

Area Subject to Conditions
Area Subject to Conditions
Road Centrelines

LGA Boundaries (LGATE-233)

0 100 200 m

N

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Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Plan 8681/1(o)

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34°35′24.000″S

34°36′18.000″S

34°35′24.000″S

34°36′18.000″S

118°28′12.000″E 118°29′6.000″E

Legend

Area Subject to Conditions

Road Centrelines

LGA Boundaries (LGATE-233)

0 0.25 0.5 km

N

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Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Plan 8681/1(p)

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34°40′48.000″S

34°41′42.000″S

118°19′12.000″E 118°20′6.000″E

Legend

Area Subject to Conditions

Road Centrelines

LGA Boundaries (LGATE-233)

0 0.25 0.5 km

N

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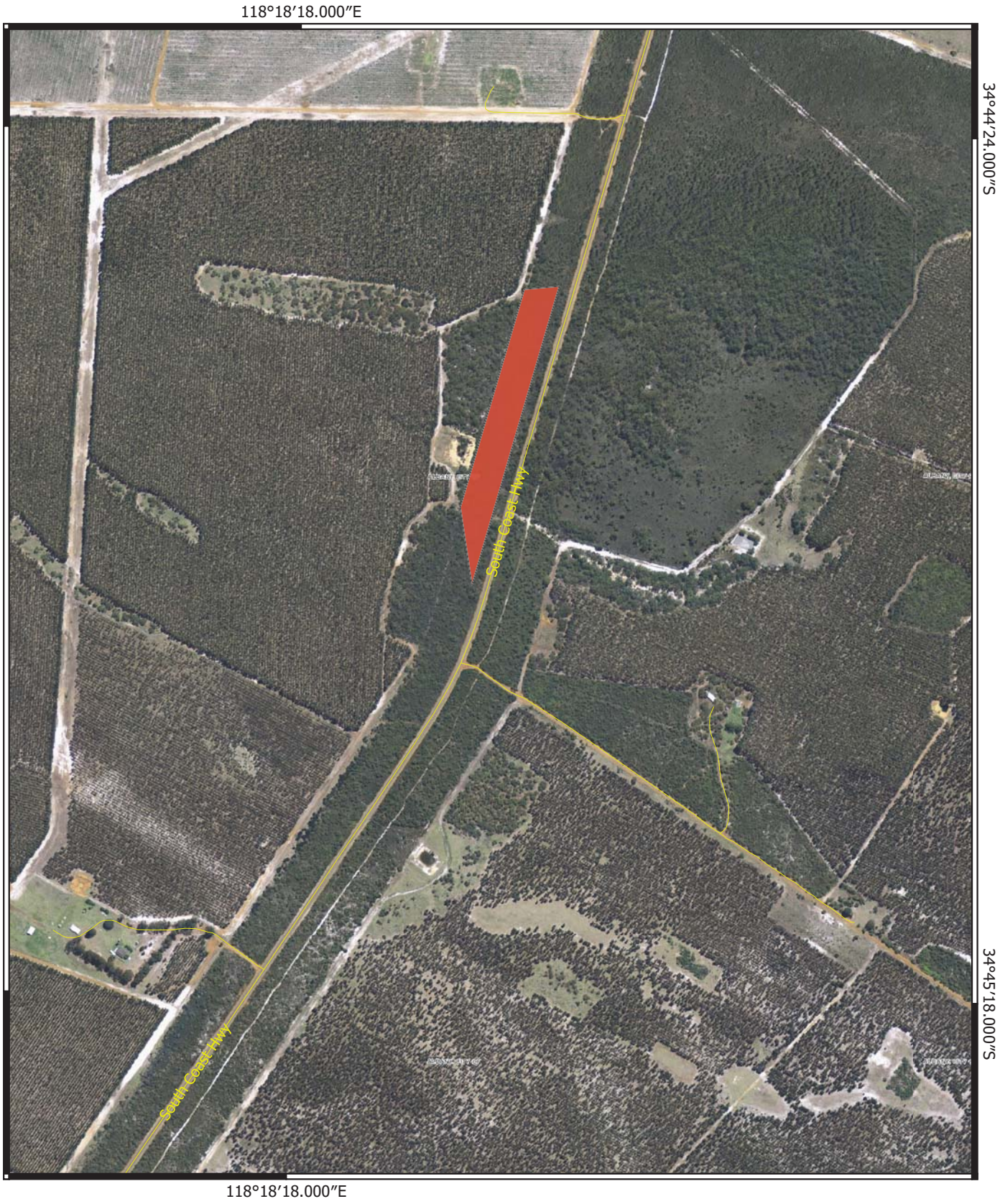
Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Plan 8681/1(q)



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Area Subject to Conditions

Road Centrelines

LGA Boundaries (LGATE-233)

N

0 0.25 0.5 km

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Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Plan 8681/1(r)

Legend

Area Subject to Conditions

Road Centrelines

LGA Boundaries (LGATE-233)

0 0.25 0.5 km

N

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Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8681/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: Commissioner of Main Roads WA
Application received date: 23 September 2019

1.3. Property details

Property: Kojaneerup Section of the South Coast Highway road reserve and various associated properties, between straight line kilometre (SLK) 46.4 and 65.7
Local Government Authority: City of Albany
Localities: Cheynes, Green Range and Manypeaks

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
31		Mechanical Removal	Road construction or upgrades

1.5 Application Decision on application

Decision on Permit Application: Grant
Decision Date: 21 April 2020

Reasons for Decision

The clearing permit application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986* (EP Act). It has been concluded that the proposed clearing is at variance with Principles (a), (b), (f), (e) and (h), may be at variance with Principle (i), and is not likely to be at variance with the remaining Clearing Principles.

The applicant has implemented or committed to a number of minimisation and mitigation measures, including the following:

- Use of existing cleared areas for 70 per cent of the total project area
- Reduction of 25.6 hectares of proposed clearing from the initial design to the final design
- Revegetation/rehabilitation of 26.12 hectares within and adjacent to the South Coast Highway road reserve, with 18.3 hectares to be transferred into Hassell National Park
- 1.5 hectares of targeted weed control along South Coast Highway
- Avoidance of a number of priority flora individuals in developing the initial project design, and a further reduction of impacts to seven priority flora species from the initial project design to the final design.

The applicant has submitted a revegetation strategy, which outlines the revegetation/rehabilitation proposed. A condition has been placed on the clearing permit which requires the applicant to submit a comprehensive revegetation plan which includes target completion criteria for DWER's approval.

Taking into account the above measures, the Delegated Officer considers that the following significant residual impacts remain:

- Loss of 29 hectares of foraging habitat for Carnaby's cockatoo (*Calyptorhynchus latirostris*)
- Loss of 25 hectares of native vegetation that is representative of the Kwongkan shrublands federally listed threatened ecological community (TEC)
- Loss of 31 hectares of native vegetation that is a significant remnant within a highly cleared area

The Delegated Officer considers that the acquisition and conservation of 164 hectares of native vegetation, within the general vicinity of the application area, containing the following values is sufficient to counterbalance the significant residual impacts:

- 164 hectares of foraging habitat for Carnaby's cockatoo
- 136 hectares of native vegetation representative of the Kwongkan Shrublands TEC
- 133 hectares of significant remnant vegetation within a highly cleared area

As a condition of the clearing permit, the applicant is required to provide a monetary offset contribution, which will be used to acquire 164 hectares of native vegetation that includes the above values. Based on a desktop analysis, it is considered that acquisition of an appropriate offset site utilising these funds is achievable.

To minimise other potential impacts, as a condition of the clearing permit the applicant will be required to undertake the following measures:

- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity

- implement weed and dieback management measures to reduce the risk of spread, including;
  - cleaning machines of soil and vegetation before entering and leaving the application area
  - prohibiting the movement of machines between dieback infested and non-infested areas until those machines have been cleaned of soil and vegetation
  - ensuring that no known dieback or weed-affected soil, mulch, fill or other material is brought into the application area
  - restricting the movement of machines and other vehicles to the limits of the areas to be cleared.

- undertake road upgrade activities within three months of clearing to reduce the exposure time of bare sandy soils and minimise the risk of land degradation through wind erosion

The Delegated Officer took into consideration that the road upgrades are required to improve road safety for passenger and heavy-haulage vehicles and to align with current road safety design standards. The applicant has advised that there have been three serious crashes within the project area in the last five years. The applicant notes that the age, design and condition of the South Coast Highway is causing significant safety issues, higher than necessary operating costs and increasing asset preservation requirements. The applicant further advised that continued road condition decline, steady population growth, and increases in freight volumes and tourism activity will further exacerbate these problems into the future.

In granting a clearing permit subject to the above requirements, the Delegated Officer determined that the proposed clearing is unlikely to lead to an unacceptable risk to the environment.

2. Site Information

Clearing Description

The proposed clearing involves reconstruction of the Kojaneerup Section of the South Coast Highway, between straight line kilometre (SLK) 46.4 and 65.7 (Cheyne Road (south) and Kojaneerup West Road (north)). The application area is located around 40 kilometres northeast of the City of Albany in the localities of Manypeaks and Green Range (see Figures 1 and 2) (Main Roads Western Australia (MRWA), 2019).

The applicant advised that the reconstruction works will involve the following (MRWA, 2019):

- removal of the existing road formation
- re-establishment of a new road structure, including a widened road formation, passing lanes and intersection improvements
- minor realignment of a section of the South Coast Highway to improve road curvature and sight-lines
- establishing borrow pits within largely cleared paddocks

The applicant advised that the purpose of the clearing is to improve road safety for passenger and heavy-haulage vehicles, and align to current road safety design standards (MRWA, 2019). The upgrades form part of a broader $30 million State Government commitment to upgrade the South Coast Highway to improve road safety (MRWA, 2019)

The total footprint of the larger project area is 136 hectares, comprising 41 hectares of native vegetation and 95 hectares of cleared land (MRWA, 2019). Of the 41 hectares of native vegetation within the footprint, clearing of up to 31 hectares of native vegetation is proposed (MRWA, 2019). The clearing would occur as a linear strip following the existing South Coast Highway, between 5 and 15 metres width over a length of around 19 kilometres (MRWA, 2019).

Biological Surveys

The larger project area encompassing the application area has been subject to several biological surveys including:

- GHD (2016) *South Coast Highway Kojaneerup Biological Survey*. The assessment delineated key flora, vegetation, fauna, soil, and hydrology values within a larger 221 hectare survey area. The survey comprised a single season Level 1 vegetation and flora assessment from 12 to 22 October 2015. Searches for conservation significant ecological communities and flora taxa were undertaken. The survey methodology was undertaken in accordance with EPA *Guidance Statement No. 51 Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia*.

- Southern Ecology (2018) *Interim Report Biological Survey Kojaneerup Project South Coast Highway 46.4 to 65.7 SLK*. This survey covered two small additional survey areas not included within GHD's survey (totalling 2.4 hectares) and included an infill targeted flora survey over approximately 145 hectares.

  The survey included a targeted search for potential Threatened and Priority flora, conducted in the appropriate season to detect most species considered possible or likely to occur. The survey was undertaken in accordance with the Environmental Protection Authority (EPA) *Technical Guidance – Flora and*

Vegetation Surveys for Environmental Impact Assessment (Environmental Protection Authority 2016).

- Astron Environmental Services (2019a) *H008 South Coast Hwy Kojaneerup - Targeted Significant Flora Survey*. The survey involved an additional targeted infill survey for conservation significant flora of the larger project area in 2017 and 2018 and regional extension surveys for conservation significant flora in 2018. The targeted flora field survey was conducted over 16 days in spring 2018. The timing of the survey is considered appropriate for botanical surveys in the bioregion (Esperance Sandplains/Jarrah Forest). The survey was undertaken in accordance with The Environmental Protection Authority (EPA) *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment* (Environmental Protection Authority 2016).

Vegetation Description

The application area has been mapped as the following broad scale vegetation associations (Shepherd et.al, 2001):

- Beard Vegetation Association 980, described as shrublands; Jarrah mallee heath (comprises around 77 per cent of the application area footprint)
- Beard Vegetation Association 994, described as low forest; jarrah and *Casuarina* (comprises around 23 per cent of the application area footprint)

The surveys identified several vegetation types within the application area (four Hakea Shrubland sub types have been referred to as vegetation types in this section), as shown in the below table (GHD, 2016; Southern Ecology, 2018):

Table 1: Vegetation types recorded in a larger area (around 41 hectares) encompassing the application area (GHD, 2016; Southern Ecology, 2018).

Vegetation Type (VT)	Vegetation Description
***Hakea* Shrublands (VT1a – d)** **Comprises 30.7 hectares of the larger 41 hectare footprint**	This is the most structurally and floristically diverse vegetation type within the application area which has been divided into four sub-types based on species dominance and location in the landscape. This vegetation type is described as Shrubland to Open Shrubland dominated or co-dominated by one or more of *Hakea cucullata, H. trifurcata* and *H. ferruginea* over a diverse Mid Shrubland typically dominated by *Taxandria spathulata, Agonis theiformis* and *Melaleuca striata* with a Low Sedgeland of *Mesomelaena tetragona, Lepidosperma drummondii* and *Anarthria prolifera.* This vegetation type comprises around **30.7 hectares** of the larger 41 hectare vegetated portion of the project area, of which 31 hectares is proposed for clearing. The vegetation sub types comprise the following: (a) Dominated by *H. cucullata* and *H. ferruginea* on impeded drainage (b) *Hakea* spp. with *Taxandria parviceps* on low lying flats / transitional areas. This is ecotonal with the *Taxandria* drainage and transitional areas vegetation type (c) *Hakea* spp. in damp areas – *Hakea corymbosa* and *H. ceratophylla* present. (d) *Hakea* spp. with dominance / co-dominance of *Taxandria spathulata* with *Banksia* species in shrub layer (*Banksia mucronata* and *B. biterax*).
***Banksia* Shrubland (VT2)** **5.07 hectares**	This vegetation type is described as Tall / Mid Shrubland to Open Shrubland dominated / co-dominated by *Banksia baxteri, B. attenuate* and *B. coccinea* over a Mid Open Shrubland of *Melaleuca striata, M. thymoides* and *Jacksonia spinosa* over a Sedgeland of *Anarthria scabra, A. prolifera* and *Cyathochaeta equitans.*
***Eucalyptus marginata* and *Corymbia calophylla* Woodland (VT3)** **0.98 hectares**	This vegetation type is described as Mid Woodland of *Eucalyptus marginata* and *Corymbia calophylla* over Tall Shrubland of *Bossiaea linophylla, Xanthorrhoea platyphylla* and *Agonis theiformis* over a Low Open Sedgeland *Cyathochaeta avenacea, Tetraria* sp. Jarrah Forrest and *Anarthria prolifera*.
Mixed Mallee Woodland (VT4) **1.15 hectares**	This vegetation type is described as Mixed Low Open Mallee Forest to Woodland with dominance or co-dominance of *Eucalyptus angulosa, E lehmannii* and *E preissiana* subsp. *preissiana* an Open Mid Shrubland of *Taxandria spathulata, Banksia tenuis* and *Banksia dryandroides* over a Sedgeland dominated by *Tetraria* sp. Jarrah Forest, *Desmocladus fascicularis* and *Chordifex laxus.*

***Eucalyptus* Mallee Woodland over Sedgeland (VT5)** **0.06 hectares**	This vegetation type is described as Low Mallee Woodland with *Eucalyptus adesmophloia* over a Low Open Shrubland with *Hakea corymbosa, Hakea florida* and *Taxandria spathulata* over a Mid Sedgeland with *Anarthria laevis, Chordifex laxus* and *Desmocladus fascicularis.*
***Actinodium* Heath (VT6)** **0.57 hectares**	This vegetation type is described as Low very diverse Open Heathland dominated by *Actinodium* sp. Fitzgerald River, *Adenanthos cuneatus* and *Astartea* sp. over a Low Open Herbland / Sedgeland of *Schoenus efoliatus, Anarthria scabra* and *Dasypogon bromeliifolius*.
***Taxandria* drainage and transitional areas (VT7)** **0.96 hectares**	This vegetation type is described as Tall Shrubland to Open Shrubland dominated by *Taxandria parviceps* with occasional *T. linearifolia* over a Low to Mid Sparse Shrubland with *Adenanthos obovatus, Kunzea recurva* and *Hakea ceratophylla* over a mixed Mid Sedgeland with *Schoenus laevigatus, S. efoliatus* and *Meeboldina scariosa.*
Kunzea Swamps (VT8) **0.12 hectares**	This vegetation type is described as Mid Open Shrubland with *Kunzea recurva, Pericalymma spongiocaule* and *Petrophile squamata* over Mid Sedgeland of *Mesomelaena tetragona, Cyathochaeta avenacea* and *Lepyrodia muirii.*
Sedgeland Swamps (VT9) **0.35 hectares**	This vegetation type is described as Closed Sedgeland with one or more of the following usually dominant *Chorizandra enodis, Baumea articulata* or *Chordifex laxus.* Other sedges include*: Schoenus laevigatus, Ficinia nodosa, Tricostularia exsul, T. compressa*, T. sp. Wellstead, *Anarthria laevis* and *Lepidosperma striatum*.
***Melaleuca* Swamps (VT10)** **0.75 hectares**	This vegetation type is described as Low Open Woodland dominated / co-dominated by *Melaleuca preissiana* and/or, *Melaleuca cuticularis* with Mid Shrubland to Open Shrubland usually dominated by one of the following of *Boronia denticulata*, *Melaleuca densa* and *Kunzea recurve* over Low Sedgeland with *Lepidosperma striatum, Meeboldina kraussii* and *Schoenus laevigatus.*
***Eucalyptus occidentalis* Swamp (VT11)** **0.29 hectares**	This vegetation type is described as *Eucalyptus occidentalis* Mid Open Forest over Isolated Shrubs of *Melaleuca cuticularis* over a Low Closed Sedgeland of L*epidosperma striatum, Anarthria laevis.*
***Eucalyptus goniantha* Woodland (VT12)** **0.19 hectares**	This vegetation type is described as Open Mallee Woodland with *Eucalyptus goniantha* / *E. falcata* over Mid Open Shrubland of *Templetonia retusa, Spyridium majoranifolium* and *Acacia leioderma* over Open Herb/Sedgeland with *Opercularia hispidula, Billardiera fusiformis* and *Lepidosperma striatum*.

Vegetation Condition

The majority of the vegetation within the application area is considered to be in the following condition (GHD 2016; Southern Ecology, 2018):

- Excellent: Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species (Keighery, 1994);
  To
- Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).

Soils and Landform

The application area occurs in an area mapped as undulating plain with gentle rises and lower lying flats and drainage depressions (MRWA, 2019). The application area has been mapped as the following land subsystems (DPIRD, 2017):

- Takalarup Subsystem comprising broadly undulating plateau; lakes; depressions; hummocks; scattered siltstone. Gravelly yellow duplex soils on plains, yellow solonetzic soils in depressions, podzols in sands of hummocks.
- Minor Valleys 6 Subsystem comprising narrow V-shaped valleys, in sedimentary rocks; less than 10 metres relief. Sandy yellow duplex soils on slopes; Jarrah-Marri low forest. Deep sands on narrow swampy floor; sedges and reeds.

- Chillinup Subsystem comprising level to gently undulating sandplain with scattered small lakes and depressions. Some lunettes and linear dunes. Lower slopes are often saline. Mallee-heath and yate and banksia woodlands.
- Chillinup 5 Subsystem comprising gentle gravelly rises with some areas of deep sand sheet deposits.

The majority of the application area is mapped as the Chillinup Subsystem.

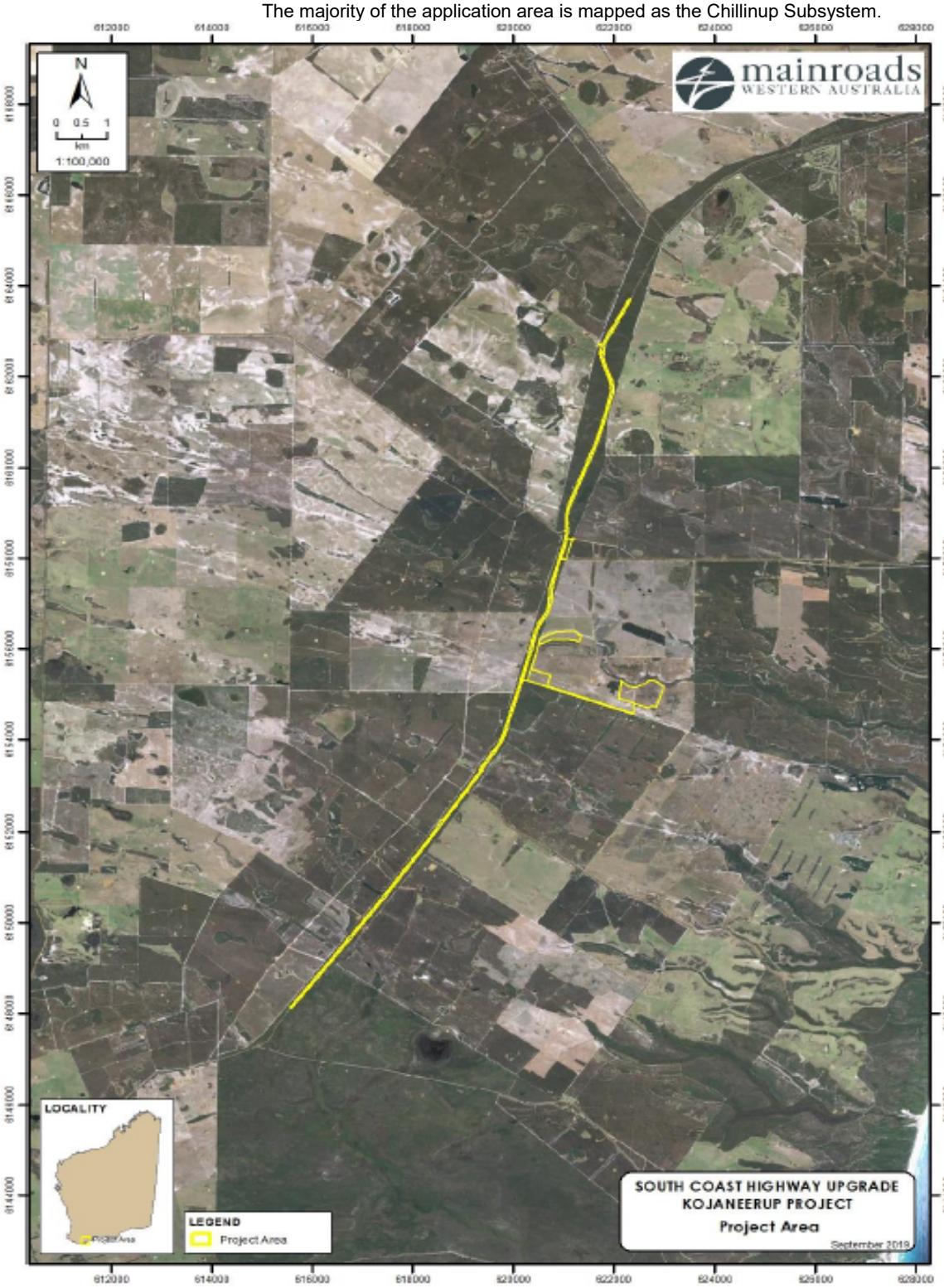


Figure 1: Proposed clearing area

Comments
The local area referred to in the assessment of this application is defined as a 10 kilometre radius measured from the perimeter of the application area.

3. Minimisation and mitigation measures

The applicant advised that it has investigated opportunities to reduce the clearing footprint by restricting earthwork limits, steepening batters, installing barriers, establishing borrow pits in cleared paddocks and avoiding temporary clearing for storage, stockpiles and turn around bays (MRWA, 2019).

The applicant advised that the design of the project has sought to minimise the extent of native vegetation required for clearing through the use of existing cleared areas where possible, with around 70 per cent of the total project area comprising cleared land (MRWA, 2019). These measures are detailed in the below figure provided by MRWA.

DESIGN / MANAGEMENT MEASURE	DESCRIPTION
Steepen batter slopes and installation of safety barriers	Approximately 2km of steepened side batters with a 1:2 'fill' slope with a safety barrier (guard rail) has been incorporated into the Project design in order to reduce the road construction (fill) width. This approach compares to the preferred road engineering approach of 1:6 fill slopes that have a gentler profile to allow for driver recovery in the event of vehicle road run-off. For the remaining 17km of the Project length, 'fill' slopes have been steepened from a 1:6 slope to a 1:4 slope to further reduce the road construction (fill) width. Similarly, areas of 'cut' backslopes for the Project have been steepened with a 1:2 'cut' slope in order to reduce the construction (cut) width. This approach compares to the preferred 1:3 cut slopes profile.
Road alignment to existing road	The Project largely follows the existing South Coast Highway road alignment, except at the northern end where road safety standards dictate the road requires realignment to improve road curvature and sight-lines. This approach of following the existing South Coast Highway road alignment has resulted in approximately 70% of the Project occurring within existing cleared land areas, with the extent of new land areas requiring native vegetation clearing limited to approximately 30% of the Project area.
Preferential use of existing cleared areas for access tracks, construction storage and stockpiling	The Project largely follows the existing South Coast Highway road alignment, except at the northern end where sections of the road will be realigned to improve road curvature and sight-lines. This approach of following the existing South Coast Highway road alignment has resulted in approximately 70% of the Project occurring within existing cleared land areas, with the extent of new land areas requiring native vegetation clearing limited to approximately 30% of the Project area. Consistent with standard Main Roads practices, the locations for raw materials sources and equipment laydown (e.g. machinery, offices) have been identified within adjacent cleared agricultural lands to avoid the need to clear native vegetation for such purposes. Following construction of the Project, the agricultural lands used will be rehabilitated to a standard suitable for continued agricultural use in consultation with the Landowner. Temporary by-pass roads (commonly termed 'side tracks'), which typically require additional native vegetation clearing for construction, will be avoided through a temporary diversion of traffic through local roads as agreed with the City of Albany.
Other design treatments considered as part of the mitigation/avoidance measures during the project design process.	The vertical design parameters of the road design have been reduced with the 'K' values for vertical curves at 83 for crest curves and 51 for sag curves. This compares with the preferred values of 97 for crest curves and 61 for sag curves. Whilst this modification of the vertical design parameters results in the road having greater vertical deviations, this modification allows for a reduced Project width in both 'fill' and 'cut' areas.

Figure 2. Applicants Proposed Avoidance and Minimisation Measures (MRWA, 2019)

In addition to the above, the applicant advised that there has been a proposed clearing reduction of 25.6 hectares from the initial concept design to the final design which is the subject of this application. This includes a reduction in impacts to a number of priority flora species (see Principle (a) for more information) (MRWA, 2019).

During the assessment the applicant has also committed to undertaking 26.12 hectares of revegetation/rehabilitation as a mitigation measure to address the residual impacts of clearing. This includes the following, as detailed within the applicants Revegetation Strategy (MRWA, 2020d):

- 18.3 hectares of revegetation/rehabilitation of redundant roads within a portion of road reserve being transferred into Hassell National Park. These areas contain a mixture of high quality vegetation and smaller degraded portions associated with historical clearing activities and edge effects.
- 7.82 hectares of revegetation for proposed batters
- Targeted weed control along South Coast Highway (outside of the road reserve) in consultation with DBCA. This work includes the blanket spraying of blackberry (0.5 hectares) and the removal of more than one hectare of other weed species
- One hectare of revegetation associated with historically cleared redundant driveways and crossovers

4. Assessment of application against clearing principles, planning instruments and other relevant matters

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

Proposed clearing is at variance with this Principle

Delegated Officers Key Considerations

The proposed clearing is at variance with this Principle as the application area contains the following values, which are considered to indicate a high level of biodiversity:

- 14 priority flora species
- 29 hectares of significant foraging habitat for Carnaby's cockatoo
- 25 hectares of native vegetation that is representative of the federally listed Kwongkan Shrublands TEC

The applicant has committed to avoiding impacts to a number of priority flora species with the remaining impacts considered acceptable as they are unlikely to impact on the species conservation status. In reaching this view, the Delegated Officer has considered:

- the extent of impact relative to the total number of individuals recorded within the larger survey area
- the total number of known records of each species
- the extent to which known records of each species are protected within DBCA managed tenure

The applicant has provided the following mitigation measures to address impacts to the Kwongkan Shrublands TEC and Carnaby's cockatoo habitat:

- Revegetation/rehabilitation of 26.12 hectares within and adjacent to the South Coast Highway road reserve

The applicant has agreed to provide an offset to address the remaining residual impacts to Carnaby's cockatoo and Kwongkan Shrublands TEC (see Section 5).

In considering impacts to biodiversity the Delegated Officer took into account that the road upgrades are required to improve road safety for passenger and heavy-haulage vehicles and to align with current road safety design standards.

Background

The larger project area encompassing the application area has been subject to three flora surveys as described under Section 2. The surveys identified five broad floristic formations containing 11 vegetation types which included (see Section 2 for a more detailed description of vegetation types) (GHD, 2016; Southern Ecology, 2018):

- *Hakea* Shrublands (including 4 vegetation subtypes for this formation)
- *Banksia* Shrubland
- *Eucalyptus* Woodlands
- *Actinodium* Heath
- Swamps, Drainage Lines and Sumps

Hakea Shrublands was the dominant vegetation type identified (GHD, 2016, Southern Ecology, 2018).

Threatened and Priority Flora

The surveys recorded 15 priority flora species within the application area, with impacts to these species summarised in Table 1 below, including the extent of species avoided within the final design of the application area (MRWA, 2020a):

		No. Impacted Individuals within Survey Area (% Impact on Total Surveyed)		
Priority Flora Species Recorded	**Total Individuals Surveyed (Number of Populations)**	**Initial Design**	**Final Design**	**Net impact to Individuals within Survey Area (% of Total Surveyed) Figure No.**
Leucopogon sp.Manypeaks(P1)	1094 (9)	22 (2%)	13 (1%)	9 avoided
Petrophile carduacea (P2)	2 (1)	2 (100%)	2 (100%)	No change
Spyridium riparium (P2)	201 (3)	1 (0.5%)	0 (0%)	1 avoided
Stenanthemum sublineare(P2)	51 (5)	1 (2%)	3 (6%)	2 more unavoidable
Stylidium daphne (P2)	98 (6)	16 (16%)	5 (5%)	11 avoided
Sphaerolobium validum (P3)	7(1)	7 (100%)	7 (100%)	No change
Synaphea incurva (P3)	301(7)	136 (45%)	136 (45%)	No change

Synaphea preissii (P3)	33(3)	5 (15%)	5 (15%)	No change
Leucopogon altissimus (P3)	33(2)	8 (24%)	8 (24%)	No change
Gonocarpus trichostachyus (P3)	377(1)	28 (7%)	48 (13%)	20 more unavoidable
Latrobea recurva (P3)	102(3)	5 (5%)	3 (3%)	2 avoided
Tetraria sp.Blackwood River (P3)	136(2)	44 (32%)	20 (15%)	24 avoided
Stylidum gloeophyllum (P4)	1222(3)	170 (14%)	156 (13%)	14 avoided
Xanthosia eichleri (P4)	35(3)	26 (74%)	27 (77%)	1 more unavoidable
Drosera fimbriata (P4)	354 (4)	29 (8%)	12 (3%)	17 avoided

DBCA provided comment on the impact of the proposed clearing to *Leucopogon* sp Manypeaks and advised that "this species has been nominated for listing as Threatened due to the threats of past and proposed clearing, disease, weeds, small population size and area of occupancy and fire. It is currently persisting largely within dieback-free remnants on road verges and tree farms. Any disturbance to sub-populations due to the upgrade is likely to have impacts beyond the immediate area to be cleared due to further fragmentation and the spread of disease (Phytophthora dieback due to the root pathogen *Phytophthora cinnamomi*)" (DBCA, 2019).

The proposed clearing will impact on around one per cent of the total *Leucopogon sp. Manypeaks* individuals recorded within surveys of the larger surrounding area, and the applicant has committed to reducing impacts to this species by 9 individuals from the initial design to the final design (MRWA, 2020a). The proposed clearing is not likely to impact on the conservation status of this species.

With regard to the impact of dieback on *Leucopogon sp. Manypeaks*, the applicant engaged Astron to undertake a *Phytophthora* dieback occurrence survey of the application area with an aim to identify protectable areas (Astron, 2019). Ten 'Preliminary Protectable Areas' comprising a total of 36 hectares were identified, of which 7.8 hectares corresponds with supporting habitat for *Leucopogon sp. Manypeaks* (Astron, 2019). The applicant has committed to undertaking dieback hygiene protocols in accordance with an Environment Management Plan (EMP), a draft of which has been provided by the applicant. The draft EMP outlines the following measures (MRWA, 2019):

Site Specific Management Requirements

Pre-Construction

- Contractors to install signage indicating 'Dieback Free' and the SLK range to identify 'Protectable Areas' at the start and end locations, as identified within Astron's Dieback survey, with these areas referred to as 'hold points'.

During Construction

- Contractors to undertake the clearing of native vegetation and topsoil in the 'dieback free' areas as identified within Astron's Dieback survey
- Contractors to separately stockpile native vegetation and topsoil from the 'dieback free' areas at a 'dieback-free' stockpiling location
- Contractors to not undertake the clearing of native vegetation or topsoil within 'dieback infested' areas until the Superintendent has released the Contractor from the Hold Points (no direct movement of machinery between dieback free and dieback infested areas).

The dieback management measures proposed by the applicant will assist in minimising the spread of dieback and the potential for this to impact on *Leucopogon sp. Manypeaks* individuals. Dieback and weed management measures will also be conditioned on the clearing permit. These measures will require the cleaning of machinery when moving between infested and non-infested areas.

It is considered that impacts to *Spyridium riparium, Stenanthemum sublineare, Stylidium daphne, Synaphea preissii, Leucopogon altissimus, Latrobea recurva, Tetraria sp. Blackwood River (A.R. Annels 3043), Stylidum gloeophyllum, Gonocarpus trichostachyus* and *Drosera fimbriata,* are acceptable relative to the extent of individuals recorded outside of the application area. The proposed clearing is unlikely to impact on the conservation status of any of these species.

The remaining priority flora species identified are summarised below:

- *Petrophile carduacea (P2)* is known from 16 records (populations) over a range of 82 kilometres. Of the 16 records, 14 occur within DBCA tenure. The application area is at the south eastern most range of this species current known distribution.
- *Sphaerolobium validum (P3)* is known from 21 records over a range of 221 kilometres. Of the 21 records, three occur within DBCA tenure. The application area is at the south western most range of this species current known distribution.
- *Synaphea incurva (P3)* is known from 19 records over a range of 75 kilometres. Of the 19 records, four occur within DBCA tenure. The application area is at the eastern most range of this species current known distribution.
- *Xanthosia eichleri (P4)* is known from 55 records over a range of 160 kilometres. Of the 55 records, 40 occur within DBCA estate. The application area is at the eastern most range of this species current known distribution.

While the identified records of the above species are at the extent of the species range, noting the number of known records of these species, including the number of records within conservation estate, the proposed clearing is unlikely to impact on their conservation status.

As discussed under Principle (c), the surveys did not identify any threatened flora species within the application area, and the proposed clearing is not likely to impact on any threatened flora.

Threatened and Priority Ecological Communities

Surveys identified that 25 hectares of the vegetation within the application area is representative of the Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia' (herein referred to as the Kwongkan Shrublands') (MRWA, 2019, GHD, 2016, Southern Ecology, 2018). The Kwongkan Shrublands are listed as endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and as a priority (Priority 3) ecological community (PEC) at a state level.

The applicant has advised that it modified the concept design envelope area to reduce the impact to the Kwongkan Shrublands by around 21 per cent (from 41.77 hectares to 32.92 hectares). While the larger application footprint comprises 32.92 hectares of this community, the applicant has committed to clearing a maximum of 25 hectares (MRWA, 2019). The applicant noted that the Kwongkan Shrublands has been mapped as extending over an area of greater than 1,180,000 hectares across the south coast of Western Australia, with 18,700 hectares occurring in the local area (MRWA, 2019). The applicant further advised that the impact of the proposed clearing to the larger Kwongkan Shrublands occurrence equates to around 0.2 per cent of its mapped local distribution and less than 0.01 per cent of its mapped regional distribution (MRWA, 2019).

The surveys identified that a small portion (0.3 hectares) of the application area is representative of the 'Swamp Yate (*Eucalyptus occidentalis*) woodland in seasonally-inundated clay basins (South Coast)' (Priority 3) PEC. DBCA provided comment with regard to this PEC and advised that "a small area of the PEC in the southern area of the survey area is proposed to be cleared. There are no records of *Tetraria sp* Blackwood (P3) in this occurrence and DBCA does not consider the impact to be significant" (DBCA, 2019). Noting the small extent of clearing proposed within this PEC, the proposed clearing is not likely to significantly impact on the greater PEC occurrence, particularly noting that weed and dieback management measures will be undertaken by the applicant.

As discussed under Principle (d), the proposed clearing is not likely to impact on any state listed TEC's.

Threatened and Priority Fauna

As discussed under Principle (b), the surveys identified evidence of two conservation significant fauna species utilising the application area, being Carnaby's cockatoo (endangered under the EPBC Act and the *Biodiversity Conservation Act 2016* (*BC Act*)) and quenda (listed as Priority 4 by DBCA).

The application area contains 29 hectares of significant foraging habitat for Carnaby's cockatoo and suitable habitat for quenda, Baudin's cockatoo, forest red-tailed black cockatoo, western whipbird, and western brush wallaby.

Conservation Areas

As discussed under Principle (h), approximately five kilometres of the 19 kilometre long application area occurs within Hassell National Park. The corresponding area of Road Reserve within the National Park remains vegetated and without a constructed road (MRWA, 2019). Therefore the application area includes a portion of native vegetation within the National Park. The applicant is currently in the process of finalising the excision of this portion of the road reserve from the National Park through DPLH with ongoing consultation from DBCA.

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.

Proposed clearing is at variance with this Principle

Delegated Officers Key Considerations

The proposed clearing is at variance with this Principle as the application area contains 29 hectares of significant foraging habitat for Carnaby's cockatoo. The proposed clearing will also impact upon an identified ecological linkage, but is not considered to significantly reduce or sever the linkage.

The applicant has provided the following mitigation measures to address impacts to Carnaby's cockatoo habitat:

- Revegetation/rehabilitation of 26.12 hectares within and adjacent to the South Coast Highway road reserve

The applicant has agreed to provide an offset to address the remaining residual impacts to Carnaby's cockatoo (see Section 5).

Fauna Habitat Types
GHD's survey of a larger 222 hectare area encompassing the application area identified seven native fauna habitat types (GHD, 2016):

- Proteaceous Shrublands
- Jarrah-Marri Woodlands
- Mixed Mallee Woodlands
- Low Heathlands
- Sedgelands
- *Melaleuca* Swamp
- *Eucalyptus* Swamp

There are records of 20 species of conservation significant fauna within the local area. Based on the fauna habitat types, the GHD Survey identified that the larger survey area may be utilised by five of these species (GHD, 2016):

- Carnaby's cockatoo (*Calyptorhynchus latirostris*), listed as endangered under the EPBC and BC Act
- Forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*), listed as vulnerable under the EPBC Act and BC Act
- Baudin's cockatoo (*Calyptorhynchus baudinii*) – listed as endangered under the EPBC and BC Act
- Western whipbird (western heath) (*Psophodes nigrogularis nigrogularis*), listed as Priority 4 by DBCA
- Western brush wallaby (*Macropus irma*), listed as Priority 4 by DBCA
- Quenda (*Isodoon obesulus fusciventerI*), listed as Priority 4 by DBCA

Of the above species, evidence of Carnaby's cockatoo and quenda was identified within the survey area (GHD, 2016). Based on the habitat types recorded, the application area is considered to provide suitable habitat for all six species listed above.

Carnaby's cockatoo

The application area occurs within the known distribution and predicted breeding range of this species. This species forages on the seeds, flowers and nectar of native proteaceous plant species (e.g. *Banksia*, *Hakea* and *Grevillea* species), *Eucalyptus* and *Callistemon* species. Carnaby's cockatoo generally forages within six kilometres of a night roost site and, while nesting, within a 12 kilometre radius of their nest site (Commonwealth of Australia, 2012). This species nests in hollows in live or dead trees of marri, karri, wandoo, tuart, salmon gum, jarrah, flooded gum, York gum, powder bark, bullich and blackbutt (Commonwealth of Australia, 2012).

Of the vegetation types recorded in the application area it is considered that the *Hakea* shrublands (dominant vegetation type– see Section 2), *Banksia* woodland and *Eucalyptus* dominated vegetation types provide suitable foraging habitat for this species (totalling 29 hectares).

The survey undertaken by GHD (2016) recorded this species flying over the application area and resting in surrounding trees. Foraging evidence of this species was also recorded throughout the survey area (GHD, 2016). Supporting information provided by the applicant noted that "the foraging habitat in the region supports large flocks of C. latirostris (approximately 400 individuals) which visit the area annually" (MRWA, 2019).

A total of 10 trees with a diameter at breast height of 500 millimetres or greater were recorded in the application area. No trees with hollows of a suitable size for Carnaby's cockatoo nesting were identified within the application area (GHD, 2016).

The applicant's supporting information noted that unpublished data from Birdlife Australia (2016) (provided by DBCA) identifies the nearest nesting-roosting locations around 1.7 and 3.2 kilometres south of the application area, with a number of other nesting-roosting sites located between 6 kilometres to 16 kilometres from the application area (MRWA, 2019). Noting the proximity of this nesting-roosting habitat, the foraging habitat within the application area may support breeding for this species.

The applicant advised that based on remnant vegetation mapping, there is greater than 7,700 hectares of remnant native vegetation within a 12 kilometre radius of the nesting-roosting sites, which is likely to be suitable for Carnaby's cockatoo foraging (MRWA, 2019). Based on this, the proposed clearing would impact on around 0.3 per cent of the potential foraging habitat available for this species within a 12 kilometre radius.

While it is acknowledged that all habitat for Carnaby's cockatoo is important, the Delegated Officer notes advice from DBCA that "the removal of 29 hectares of cockatoo foraging habitat is unlikely to be environmentally significant to the conservation of this species but does constitute a reduction of foraging habitat at a local scale" (DBCA, 2019).

Carnaby's cockatoo has been significantly impacted by historical clearing of its habitat and as a result it is estimated that this species has disappeared from more than one-third of its historical breeding range (EPA, 2019). Broad-scale clearing of native vegetation has resulted in fragmentation of breeding and foraging habitat, loss of breeding hollows, changes in the species distribution, and genetic partitioning (EPA, 2019). The EPA's technical guidance notes that "this species is reliant on the maintenance of resources over multiple bioregions, which adds an extra complexity to its conservation. To address this, mitigation must be applied across the species range" (EPA, 2019). Noting this, it is considered that the remaining suitable habitat for this species within its current range is likely to be significant.

Specifically, it is considered that the foraging habitat for within the application area is significant for Carnaby's cockatoo due to the following reasons:

- the extent of foraging habitat within the application area (29 hectares)
- the dominance of Hakea shrubland and Banksia woodland which are preferred foraging species
- the very good to excellent condition of the vegetation
- the presence of (albeit unpublished) nesting-roosting sites within 12 kilometres
- Carnaby's cockatoo foraging evidence was identified within the application
- The local area surrounding the application area has been extensively cleared and retains around 30 per cent native vegetation

Forest Red-tailed black cockatoo

The application area is within the south-eastern most extent of the modelled distribution of this species (Commonwealth of Australia, 2012).

This species forages within jarrah and marri woodlands and forest, and edges of karri forests including wandoo and blackbutt, within the range of the subspecies. This species largely feeds on seeds of marri and jarrah, as well as other *Eucalyptus* species and *Allocasuarina* cones (Commonwealth of Australia, 2012).

While there is some preferred foraging habitat within the application area for this species, noting that this is largely limited to the *Eucalyptus marginata* and *Corymbia calophylla* woodland vegetation type (comprises less than one hectare), and absence of suitable breeding habitat, the application area is not likely to contain significant habitat for this species.

Baudin's cockatoo

The application area is at the south-eastern extent of this species modelled distribution and outside of its predicted breeding range. There are two records of this species within five kilometres of the application area. This species forages within Eucalypt woodlands and forest, and proteaceous woodland and heath. During the breeding season this species has a preference for marri seeds, however will feed on other items should marri be unavailable (Commonwealth of Australia, 2012).

This species may occasionally forage within the application area, however noting that its preferred foraging habitat during the breeding season is marri which comprises less than one hectare within the application area, and that the application area is outside of the breeding range of this species, it is not considered to contain significant habitat for this species.

Western Whipbird

The western whipbird (western mallee) is confined to coastal or near-coastal regions of south-west Western Australia. This species occurs in mallee, often in open mallee vegetation with a dense, tall shrub layer up to 1.5 metres tall, and dominated by such species as *Hakea, Lambertia, Dryandra* or *Banksia.*

There is one previous record (in 2000) of this species within the larger project area with the next closest records five kilometres and 13 kilometres from the application area (GHD, 2016). This species is generally restricted to dense coastal heath in the Two-Peoples Bay and Mount Manypeaks region (GHD, 2016), and the application area is unlikely to provide significant habitat for this species.

Western Brush Wallaby

The western brush wallaby inhabits open forest or woodland, particularly favouring open, seasonally wet flats with low grasses and open scrubby thickets. It is also found in some areas of mallee and heathland (GHD, 2016). This species has previously been recorded within one kilometre of the application area with other scattered records in the local region and the application area provides suitable habitat for this species.

Noting that this species is highly mobile and doesn't rely on specialist niche habitats, the proposed clearing is not likely to impact on significant habitat for this species.

Quenda

Quenda prefers dense scrubby, often swampy, vegetation with dense cover up to one metre high. It also occurs in woodlands, and may use less ideal habitat where this habitat occurs adjacent to the thicker, more desirable vegetation (GHD, 2016).

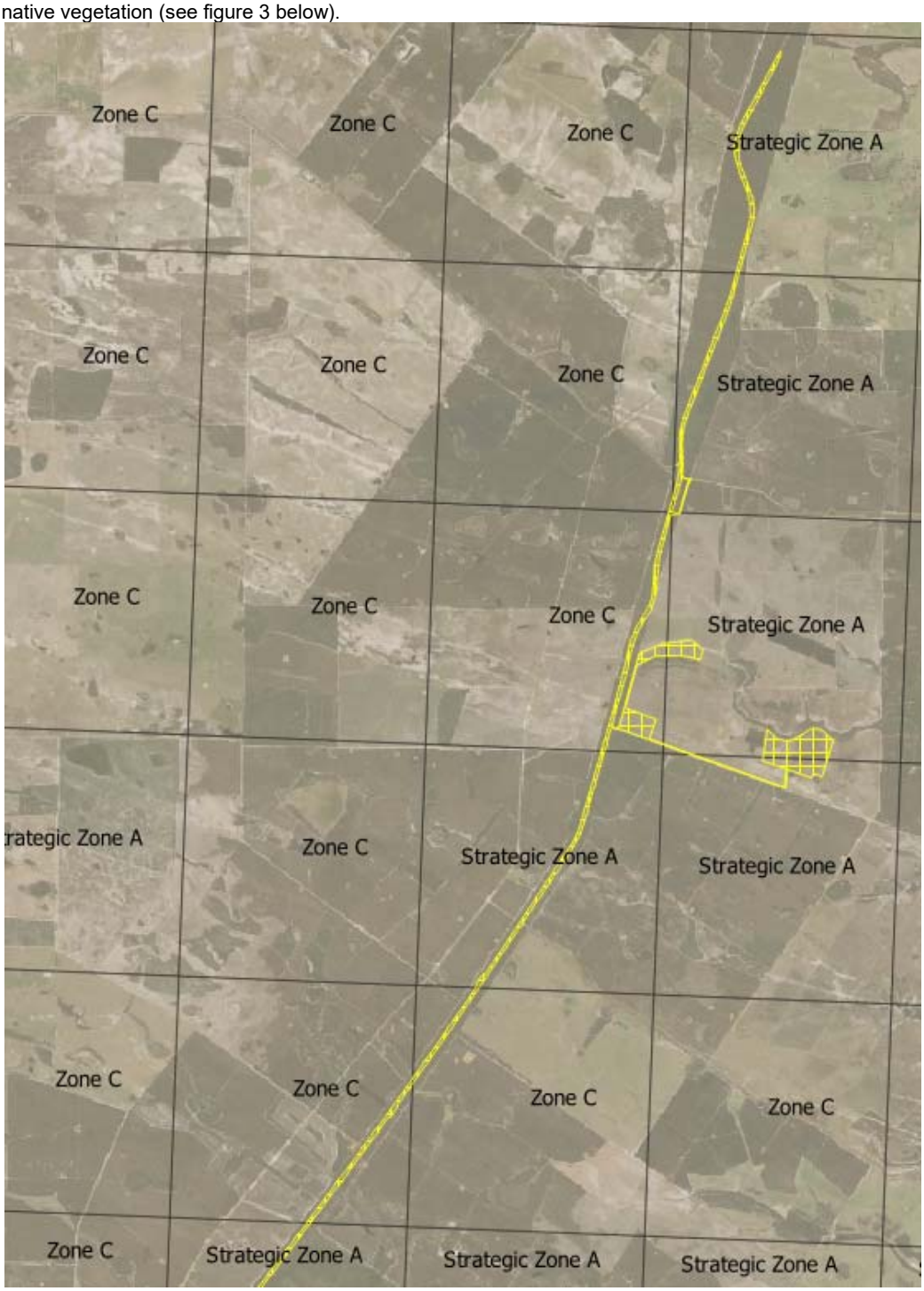
This species has previously been recorded within one kilometre of the application area. Several diggings attributed to this species were observed within the application area (GHD, 2016), and the majority of the application area is considered to provide suitable habitat for this species, with the dense riparian habitat types providing the highest quality habitat (such as those areas mapped as kunzea swamps).

DBCA provided comment on the impact to quenda and advised that it "does not consider the proposed vegetation clearing will have a significant impact on *I. fusciventer*" (DBCA, 2019).

While the proposed clearing is not likely to impact on significant habitat for the quenda, western brush wallaby or western whipbird, individuals of these species may be harmed should they be present at the time of clearing.

Slow progressive one directional clearing will help to allow these species to disperse ahead of the clearing activity should they occur on site at the time of clearing.

Ecological linkages
The application area is within Strategic Zones A and C (around 6 and 13 kilometres of the alignment respectively) of the Western Australian South Coast Macro Corridor Network, which was designed to identify a regional-scale Macro Corridor Network of native vegetation (see figure 3 below).



This network extends from around 700 kilometres from Israelite Bay, east of Esperance and westwards through Albany along Western Australia's southern coastline (CALM, 2006). The document that outlines this Network notes that the vegetation within Zone C potentially provides habitat for wildlife at the local scale, but requires closer assessment to determine its value for a regional scale Macro Corridor Network (CALM, 2006).

The vegetation in Zone A is considered to potentially form the most strategic link between major protected areas, and are thus of potentially higher vale and significance for fauna movement across the landscape (CALM, 2006).

While the proposed clearing will impact on vegetation recognised for its importance as a fauna corridor, noting that the proposed clearing will not sever the corridor, and is surrounded by vegetation in similar condition on either side throughout its length, impacts to the corridor are not expected to be significant.

As discussed under Section 3, the applicant has committed to revegetating/rehabilitating 26.12 hectares within and adjacent to the south coast highway road reserve, and these areas are included within the mapped Macro Corridor network, including around 70 per cent within Zone A. This revegetation will aid in mitigating the impacts of the proposed clearing on the corridor.

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

Proposed clearing is not likely to be at variance with this Principle

The closest threatened flora record occurs around 950 metres south west of the southernmost portion of the application area.

Three historical flora surveys (including a targeted survey) have been undertaken within the application and surrounding area (more detail provided within Section 2). These surveys did not identify any threatened flora species within the application or surrounding area (Astron, 2019, GHD, 2016, Southern Ecology, 2018).

The timing and method of the surveys is considered adequate to have successfully identified threatened flora species, should they have occurred within the application area.

Noting the above, the application area is not likely to contain any threatened flora species.

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

Proposed clearing is not likely to be at variance with this Principle

Based on available datasets, there are no state listed threatened ecological communities (TEC) mapped within the local area. The closest state listed TEC occurs around 31 kilometres north of the application area.

The three flora surveys encompassing the application area did not identify any known state listed TEC's (Astron, 2019, GHD, 2016, Southern Ecology, 2018).

The Kwongkan Shrublands, which is federally listed as an endangered TEC, has been recorded within the application area. Noting that this is not a state listed TEC, impacts to this community have been considered under Principle (a).

Noting that the vegetation within the application area is unlikely to represent any known state listed TEC's (Astron, 2019, GHD, 2016, Southern Ecology, 2018), and given the distance to the closest known record, the application area is not considered to comprise or be necessary for the maintenance of any state listed TEC's.

(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.

Proposed clearing is at variance with this Principle

Delegated Officers Key Considerations

The proposed clearing is at variance with this Principle as the application area contains:

- A local area with 30 per cent remnant native vegetation remaining
- A mapped vegetation association with 28 per cent of its pre-European vegetation extent remaining
- Native vegetation adjacent to an extensively cleared belt of agricultural land
- Significant remnant vegetation which provides 29 hectares of foraging habitat for Carnaby's cockatoo of which 25 hectares is representative of the federally listed Kwongkan Shrublands TEC

The applicant has provided the following mitigation measures to address impacts to clearing significant vegetation within a highly cleared area:

- Revegetation/rehabilitation of 26.12 hectares within and adjacent to the South Coast Highway road reserve

The applicant has also agreed to provide an offset to address the remaining residual impacts (see Section 5).

The national objectives and targets for biodiversity conservation in Australia include a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

As indicated in Table 3, the application area occurs within the Jarrah Forest and Esperance Plains bioregions and includes two mapped vegetation associations, being Beard Vegetation Association (BVA) 994 and 980.

These BVA's occur in the Jarrah Forest and Esperance Plains Bioregions respectively. Both bioregions and one of the mapped BVA's (980) retain greater than 30 per cent of their pre-European vegetation extents (Government of Western Australia, 2018).

BVA 994 retains less than the 30 per cent threshold (28 per cent) within the Jarrah Forest Bioregion. This BVA retains 4,527 hectares of its pre-European vegetation extent and the proposed clearing of around seven hectares of vegetation mapped as BVA 994 would reduce its current extent by around 0.15 per cent.

The local area retains around 30 per cent native vegetation cover (20,830 hectares). The application area represents approximately 0.15 per cent of the remaining native vegetation within the local area and the proposed clearing would reduce the extent of native vegetation within the local area to 20,799 hectares.

The application area is located on the eastern border of a highly cleared belt of land (around 18 kilometres wide at the point adjacent to the application area) between Stirling Ranges National Park and vegetation extending back from the south coast. This belt has been subject to extensive clearing for agricultural purposes.

The vegetation within the application area is a significant remnant as it contains significant foraging habitat for Carnaby's cockatoo, a high level of biodiversity (including conservation significant flora and ecological communities) and macro corridor values. Noting this, the pre-European extent of the mapped BVA (28 per cent), the extent of native vegetation within the local area (30 per cent), and adjacent belt of highly cleared agricultural land, the proposed clearing is considered to be within an extensively cleared area.

The applicant has provided an offset to address the impact of clearing significant remnant vegetation within a highly cleared landscape, which is outlined in Section 5.

The proposed clearing is at variance to this Principle.

Table 1 – Remnant Vegetation Statistics (Government of Western Australia, 2018).

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent of pre-European extent in DBCA Managed Lands (%)
IBRA Bioregion				
Jarrah Forest	4,506,660	2,406,939	53	39
Esperance Plains	2,889,941	1,494,449	52	28
Vegetation Associations				
Beard Vegetation Association 994	16,408	4,527	28	9
Beard Vegetation Association 980	160,410	65,822	41	19

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

Proposed clearing is at variance with this Principle

Delegated Officers Key Considerations

The proposed clearing is at variance with this Principle as the application area contains around 2.47 hectares of riparian vegetation.

The impact to riparian habitat is limited to scattered segments along the application area, and the proposed clearing is not expected to significantly impact on riparian habitat within the local area.

As a condition of the clearing permit the applicant will be required to undertake weed and dieback management measures to reduce the risk of weeds and dieback spreading into Sunday Swamp. These measures are outlined under Section 1.5.

The applicant advised that the project has been designed to follow its existing drainage structures, and is not expected to result in any hydrological change.

The application area crosses over the mapped boundaries of four non-perennial watercourses. The application area also occurs around 10 metres from 'Sunday Swamp' at its closest point, which is recognised within the South Coast Significant Wetlands dataset maintained by DBCA. The swamp occupies an area of around 31 hectares.

The surveys of the application area identified four vegetation types that are commonly associated with watercourses or wetlands, which include the following (GHD, 2016, Southern Ecology, 2018):

- *Kunzea* Swamps (comprising around 0.12 hectares of the larger 41 hectare footprint)
- *Taxandria* transitional areas and drainage (0.96 hectares)
- *Melaleuca* Swamps (0.35 hectares)
- Sedgeland Swamps (0.75 hectares)
- *Eucalyptus occidentalis* Swamp (0.29 hectares, adjacent to Sunday Swamp)

These riparian vegetation types total 2.47 hectares and occur as relatively small patches throughout the application area. Noting that the application area includes vegetation that is growing in, or in association with a watercourse or wetland, the proposed clearing is at variance with this Principle. The extent of clearing within these larger riparian habitats is considered to be minimal and is not likely to significantly impact on the larger extent of riparian habitat associated with these watercourses.

The applicant has advised that drainage for the project will be managed through standard engineering design including the use of culverts under the road to ensure that no change to local drainage water flows to either the minor non-perennial watercourses, Sunday Swamp, or to the vegetation it supports (MRWA, 2019). The applicant summarised that through designing the project to follow the existing drainage structures, there is not expected to be any changes in hydrology as a result of clearing.

There is a risk of weeds and dieback spreading into the riparian vegetation within Sunday Swamp and the applicant will be required to adhere to weed and dieback management measures (as conditioned on the clearing permit) to minimise this risk.

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

Proposed clearing is not likely to be at variance with this Principle

The application area occurs in an area mapped as undulating plains with gentle rises and lower lying flats and drainage depressions (GHD, 2016). The application area has been mapped as the following land unit subsystems (DPIRD, 2017):

- **Takalarup Subsystem** comprising broadly undulating plateau; lakes; depressions; hummocks; scattered siltstone. Gravelly yellow duplex soils on plains, yellow solonetzic soils in depressions, podzols in sands of hummocks.
- **Minor Valleys 6 Subsystem** comprising narrow V-shaped valleys, in sedimentary rocks; less than 10 metres relief. Sandy yellow duplex soils on slopes; Jarrah-Marri low forest. Deep sands on narrow swampy floor; sedges and reeds.
- **Chillinup Subsystem** comprising level to gently undulating sandplain with scattered small lakes and depressions. Some lunettes and linear dunes. Lower slopes are often saline. Mallee-heath and yate and banksia woodlands.
- **Chillinup 5 Subsystem** comprising gentle gravelly rises with some areas of deep sand sheet deposits.

The majority of the application area is mapped as the Chillinup Subsystem.

The minor areas of duplex soils associated with the Takalarup Subsystem and the Minor Valleys 6 Subsystem, which occur as a result of minor drainage lines, may be susceptible to water erosion. However, noting the linearity of the application area, and the minimal extent of clearing proposed within these subsystems, the proposed clearing is not likely to result in appreciable land degradation via water erosion.

The sandy soils of the Chillinup subsystem would be prone to wind erosion if left bare for extended periods of time. Noting the linearity of the application area, and that soils will be exposed on a short term basis, with cleared areas to be covered by bitumen and gravel, any wind erosion is likely to be minimal maintaining that soil exposure is short term. As a condition of the permit, the applicant will be required to commence road upgrade activities within three months of clearing.

Noting the above, the proposed clearing is not likely to result in appreciable land degradation and the proposed clearing is not likely to be at variance with this Principle.

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Proposed clearing is at variance with this Principle

Delegated Officers Key Considerations

The proposed clearing is at variance with this Principle as the proposed clearing will:

- Impact on native vegetation that currently sits within the boundary of Hassell National Park (National Park)
- Increase the risk of weeds and dieback spreading into the National Park
- Increase the separation distance between vegetated areas of the National Park.

The portion of the road reserve associated with the application area is in the final processes of being excised from the National Park.

The applicant has committed to the following measures to minimise impacts to the National Park:

- Revegetation/rehabilitation of 26.12 hectares within and adjacent to the South Coast Highway road reserve of which 18.3 hectares will be added to the National Park tenure as part of the excision/addition

As a condition of the clearing permit the applicant will be required to undertake weed and dieback management measures. These measures are outlined under Section 1.5.

The applicant has advised that a portion of the application area (around five kilometres of the 19 kilometre upgrade) currently coincides with part of the Hassell National Park, which is a narrow linear park that follows the alignment of part of the South Coast Highway, generally 200 metres to 600 metres in width and 39 kilometres in length.
While there is a dedicated Road Reserve for the South Coast Highway, the as-built South Coast Highway, in parts, meanders between the Road Reserve and the Hassell National Park (MRWA, 2019).

The applicant advised that the land tenure boundaries for the road reserve and the Hassell National Park are currently being administratively reconsidered by the Department of Planning, Lands and Heritage (DPLH) in consultation with Main Roads and DBCA (on behalf of the Conservation and Parks Commission). The land tenure boundaries are proposed to be adjusted such that the South Coast Highway will occur wholly within a revised road reserve. The vegetated areas within the current road reserve that occur outside of the revised road reserve will concurrently be incorporated into the Hassell National Park. The totals associated with this excision/addition is summarised below:

- the proposed excision of approximately 68 hectares from Hassell National Park (class A, Reserve 26650);
- the proposed addition of approximately 18.3 hectares of redundant road reserve to Hassell National Park (class A, Reserve 26650), which will be revegetated by the applicant.

DBCA and the Minister for Environment have consented to the proposed excision/addition and the process is in its final stages with DPLH.

The applicant has advised that the proposed clearing of those portions within the current National Park boundaries will not occur until the excision has been finalised.

The application area is proposed to be excised from National Park tenure, after which there would be no direct impact to native vegetation as a result of the proposed clearing. However, the existing South Coast Highway traverses the length of the Hassell National Park, generally being around 15 to 20 metres width and the proposed clearing will extend this by an additional 5 to 10 metres on either side. This is considered to be a minimal impact noting the presence of the existing road.

The proposed clearing will increase the risk of weeds and dieback spreading into uninfected portions of the National Park. As discussed under Principle (a), the applicant commissioned a Dieback occurrence survey, and based on that survey has developed dieback hygiene protocols in accordance with a draft Environment Management Plan (EMP). The draft EMP outlines measures relating to a number of standard and site specific management measures to minimise the spread of dieback.

As a condition of the Clearing Permit, the applicant will required to adhere to weed and dieback management measures.

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Proposed clearing may be at variance with this Principle

According to available datasets, groundwater salinity within the application area is mapped at between 1000 and 7000 total dissolved solids, milligrams per litre. This level of groundwater salinity is classified as 'marginal' to 'brackish'. Given that the application area comprises a relatively thin linear strip over 19 kilometres, the proposed clearing is not likely to substantially increase groundwater levels or increase the risk of salinity surface expression impacting surface water.

As discussed under Principle (f), the application area crosses over the mapped boundaries of four non-perennial watercourses and occurs around 20 metres from 'Sunday Swamp'. The proposed clearing may increase short term sedimentation of these watercourses, particularly if there is any surface water flow at the time of clearing.

The applicant has advised that drainage for the project will be managed through standard engineering design including the use of culverts under the road to ensure that no change to local drainage water flows to either the minor non-perennial watercourses, Sunday Swamp, or to the vegetation it supports (MRWA, 2019).

Given the above, and noting the minimal extent of clearing associated with the minor non perennial watercourses, which are spread over the length of the application area, it is expected that impacts of sedimentation will be short term and localised.

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

Proposed clearing is not likely to be at variance with this Principle

The City of Albany, located around 48 kilometres from the application area, reports a mean annual rainfall of 605.8 millimetres (GHD, 2016).

The applicant advised that the project has been designed to follow its existing drainage structures, resulting in no hydrological change to the surroundings (MRWA, 2020c).

While the application area intersects four watercourses, noting the above advice and that the watercourses are non-perennial, the application area is subject to relatively moderate rainfall events and largely contains well-draining soils, the proposed clearing is not likely to exacerbate or increase the incidence or intensity of flooding.

The proposed clearing is not likely to be at variance with this Principle.

Planning instruments and other relevant matters.

Submissions

The clearing permit application was advertised on the DWER website on 22 October 2019 with a 21 day submission period. One public submission was received. The submission noted the following concerns (Submission, 2019):

- impacts to Priority flora species
- significance of impacts to the Kwongkan Shrublands TEC
- the Hassell National Park has high biodiversity, and high tourist potential, which should be retained and enhanced
- further minimisation measures should be required
- an environmental offset should be provided
- revegetation of the slopes should be done wherever possible
- impacts on drainage should be appropriately managed
- this Project should be assessed under an EPBC Act accredited process acknowledging that it will have significant environmental impact

The submission summarised that if a Clearing Permit is granted, the following should occur (Submission, 2019):

- further efforts to avoid an minimise clearing
- an environmental offset be required as a condition of the permit
- the offset should consist of revegetation of cleared land adjacent to the road reserve and Hassell National Park
- revegetation of the areas disturbed during construction should be required as a condition of the permit
- MRWA should undertake seed collection and rescue Conservation Priority (and other) plants
- MRWA should undertake wider consultation, including with Tourism WA and conservation groups, before final design
- MRWA should engage with community groups and individuals to assist with the rescue and translocation of Conservation Priority (and other) plants well in advance of any clearing works.

Considering the comments made in the submission, the Delegated Officer noted that the applicant has demonstrated efforts to avoid and minimise environmental impacts, has committed to undertaking 26.12 hectares of revegetation/rehabilitation, and has committed to providing an offset to address impacts to Carnaby's cockatoo, Kwongkan Shrubland TEC and clearing significant remnant vegetation within an extensively cleared landscape.

Planning

As discussed under Principle (h), a portion of the application area currently coincides with part of the Hassell National Park, which is a narrow linear park that follows the alignment of part of the South Coast Highway, generally 200 metres to 600 metres in width and 39 kilometres in length. Whilst there is a dedicated road reserve for the South Coast Highway, the as-built highway meanders between the road reserve and the Hassell National Park (MRWA, 2019).

The applicant advised that the land tenure boundaries are in the process of being adjusted such that the South Coast Highway will occur wholly within a revised road reserve (with no overlap with Hassell National Park). Several areas within the current road reserve that occur outside of the revised proposed road reserve will be revegetated/rehabilitated and concurrently be incorporated into the Hassell National Park. The totals associated with this excision/addition is summarised below:

- the proposed excision of approximately 68 hectares from Hassell National Park (class A, Reserve 26650);
- the proposed addition of approximately 18.3 hectares of redundant road reserve to Hassell National Park (class A, Reserve 26650)

The applicant has advised that the excision/addition is close to being finalised. The Minister for Environment and DBCA have consented to the proposed excision.

The City of Albany provided comment on the proposed clearing and advised the following (City of Albany, 2019):

- "The City has a preference that existing disturbed areas and areas of lower conservation value be utilised for the project;
- According to data provided by DBCA, a large amount of the project area supports the Threatened Ecological Community, Proteacea Dominated Kwongkan Shrubland of the southwest province of WA. If this TEC is there, Main Roads need to determine if this project needs to be referred under the EPBC Act. It is noted that the application for the clearing permit indicates that it will not be referred.
- There are Black Cockatoo habitat trees in the vicinity of the proposed works. Are these being avoided, or likewise with the TEC, will the project will be referred under the EPBC Act? It is noted that the application for the clearing permit indicates that it will not be referred.
- Where works will occur on City managed road reserves, clearing of vegetation must be minimised and all cleared material must be removed from City managed land and disposed of appropriately.
- Vegetation to be retained is not to be disturbed.
- Work sites are to be left tidy at the end of the project".

There are no Aboriginal sites of significance mapped within the application area.

Other Approvals

The application was referred to the Environmental Protection Authority (EPA) on 18 November 2019. On 7 January 2020, the EPA decided not to assess the proposal and advised that "the EPA considers that the likely environmental effects of the proposal are not so significant as to warrant formal assessment because the scale of the direct and indirect impacts to Flora and Vegetation and Terrestrial Fauna are small and will occur in a narrow linear corridor adjacent to the existing South Coast Highway. The EPA is of the view that the potential impacts of the proposal can be adequately managed through the implementation of the proposal in accordance with the proponent's management and mitigation measures. In addition, the proposal will require a clearing permit and regulation under Part V of the Environmental Protection Act 1986" (EPA, 2019).

The applicant has liaised with the Department of Water, Agriculture and the Environment in determining whether the application should be referred for assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The applicant has advised that based on those discussions and a site inspection of the application area with DoWAE staff, it was determined that referral under the EPBC Act was not required.

Offset Consideration

Offset Proposal

After consideration of the proposed avoidance and minimisation measures, the proposed clearing will result in the following significant residual impacts:

- Loss of 29 hectares of foraging habitat for Carnaby's cockatoo (*Calyptorhynchus latirostris*).
- Loss of 25 hectares of native vegetation that is representative of the Kwongkan Shrublands federally listed TEC
- Loss of 31 hectares of native vegetation that is a significant remnant within a highly cleared area

To counterbalance the above impacts, the applicant has committed to the following offset/mitigation measures:

- Revegetation/rehabilitation of 26.12 hectares within and adjacent to the South Coast Highway road reserve (as described under Section 3), with 18.3 hectares to be transferred into Hassell National Park as defined within a revegetation strategy submitted by the applicant (MRWA, 2020d).
- Providing a monetary offset contribution of $293,560 for the purchase of 164 hectares of land within the vicinity of the application area.

With regard to the revegetation measures, the applicant has advised that a comprehensive revegetation plan will be developed, in consultation with DBCA.

Offset Adequacy

In assessing whether the proposed offset is adequately proportionate to the significance of the habitat values being impacted, DWER undertook a calculation using the Commonwealth Offsets Assessment Guide.

Revegetation

It was determined that the proposed revegetation/rehabilitation would mitigate 19.72 per cent of the total residual impacts to Carnaby's cockatoo habitat, 22.88 per cent of the impact to Kwongkan Shrubland TEC, and 22.83 per cent of the impact to significant remnant vegetation within a highly cleared area.

Monetary Contribution for Land Acquisition

The calculation determined that the allocation of the following areas of native vegetation to be put to conservation estate is adequate to counterbalance the significant residual impacts (taking into account the above revegetation measures):

- 164 hectares of native vegetation in a good to excellent condition that provides suitable foraging habitat for Carnaby's cockatoo
- 136 hectares of native vegetation in a good to excellent condition that is representative of the Kwongkan Shrublands ecological community
- 133 hectares of native vegetation in a good to excellent condition that is a significant remnant within a highly cleared area

The cost of acquiring a 164 hectare parcel of land equates to a monetary contribution of $293,560, determined based on the estimated value per hectare of a 200 hectare vegetated parcel of land in the city of Albany. This figure was obtained using values determined by Western Australia's Valuer-General.

Given the above, a monetary contribution of $293,560 for the acquisition of 164 hectares of native vegetation for conservation, and the revegetation/rehabilitation of 26.12 hectares is considered adequate to counterbalance the remaining significant residual impacts of, consistent with the *WA Environmental Offsets Policy September 2011*.

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