Appendix C – Offset Strategy

Main Roads Western Australia

Romeo Road and Wanneroo Road Upgrade
Offset Proposal

November 2019

Executive summary

Main Roads Western Australia (Main Roads) proposes to undertake clearing in association with road upgrade works to Romeo Road and Wanneroo Road (from Dunstan Road to Trian Road). These works are associated with the extension of the Mitchell Freeway, which has been approved under Ministerial Statement (MS) 629. A summary of the proposal and expected offset is detailed below.

Aspect	Comments
Proposal Details	Main Roads proposes to undertake clearing in association with road upgrade works to Romeo Road and Wanneroo Road (from Dunstan Road to Trian Road).
Proposal Requirement	Main Roads proposes to undertake clearing in association with road upgrade works to Romeo Road and Wanneroo Road (from Dunstan Road to Trian Road). The proposal will improve accessibility, travel times and road safety as well as sustaining jobs and enabling regional development in Perth's northern suburbs.
Measures to avoid, reduce, mitigate and manage proposal impacts	All strategies to avoid and mitigate environmental impacts have been explored and implemented, including the following: • The upgrade of Romeo Road will prevent the more extensive clearing of a greenfield road corridor • The proposal has been designed to impact degraded vegetation and avoid better condition vegetation in the vicinity • Using the existing road of Wanneroo Road as part of the duplication works. The following will be considered during proposal design: • Excluding a median to minimise the proposal footprint • Steepening of batters • Minimising clearing, and avoiding bisection of, patches of native vegetation, including Neerabup National Park and Neerabup Nature Reserve • Implementation of drainage control measures to manage surface water runoff, to maintain existing hydrological regime.
Related Documents	A biological assessment was undertaken for the proposal area by GHD Pty Ltd in June 2019. An Environmental Impact Assessment was completed for the proposal in October 2019.
Clearing Impacts	Clearing impacts will include the loss of: • Up to 32.86 ha of native vegetation • 20.9 ha of vegetation in Good or better condition • 6.58 ha of class A Neerabup National park • 9 ha of Bush Forever Site 383 (this includes the 6.58 ha in Neerabup National Park) • 1.56 ha of Northern Spearwood shrublands and woodlands PEC • 19.31 ha of *Banksia* woodlands of the Swan Coastal Plain PEC. This includes 16.66 ha of the EPBC Act listed *Banksia* woodlands of the Swan Coastal Plain TEC • 2.57 ha of Tuart (*Eucalyptus gomphocephala*) woodlands of the Swan Coastal Plain PEC. This is likely to represent the EPBC Act listed Tuart Woodlands and Forests of the Swan Coastal Plain TEC

	• 29.39 ha of foraging habitat for Carnaby's Cockatoo and Forest Red-tailed Black Cockatoo, as well as 230 potential breeding trees, six with hollows • 29.39 ha of habitat for the Peregrine Falcon • 24.29 ha of habitat for the Southern Brown Bandicoot • 20.34 ha of habitat for the Western Brush Wallaby • Up to 20.34 ha of habitat for the Black-striped Snake.
Offset Type	Financial contribution to the Department of Water Environment Regulation (DWER) to mitigate significant residual impacts associated with the proposal activities. A total of $492,800 is proposed, to be used for the purposes of purchasing 140 ha for the conservation estate.
Offset Purpose	Whilst the majority of the Mitchell Freeway Extension proposal is covered by MS 629, there are some areas outside of the MS 629 boundary that contain native vegetation, which must be cleared for proposal construction. These areas will require a native vegetation clearing permit under the *Environmental Protection Act 1986* (EP Act). An Environmental Impact Assessment was conducted for the proposal and identified residual impacts remaining, after the application of the mitigation hierarchy. The purpose of this document is to outline the offset proposed for the proposal in accordance with the WA Environmental Offsets Guidelines, as a response to the residual impacts remaining.
Offset Proposal	It is assumed that a 140 ha rural freehold property will be acquired by DWER on the northern Swan Coastal Plain. The value of un-improved (vegetated) rural land in the Shire of Gingin is estimated by the Valuer-General at $3,520/hectare, which for 140 ha equates to sum of $492,800.

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1. Introduction

1.1 Proposal background

Main Roads Western Australia (Main Roads) proposes to undertake clearing in association with road upgrade works to Romeo Road and Wanneroo Road (from Dunstan Road to Trian Road) (the proposal). These works are associated with the extension of the Mitchell Freeway, which has been approved under Ministerial Statement (MS) 629. The proposal will result in upgrading Wanneroo Road to a dual carriageway for 5.5 kilometres (km) from Dunstan Road to Trian Road. The proposal will improve accessibility, travel times and road safety as well as sustaining jobs and enabling regional development in Perth's northern suburbs.

1.2 Purpose

Whilst the majority of the proposal is covered by MS 629, there are some areas outside of the MS 629 boundary that contain native vegetation, which must be cleared for proposal construction. These areas will require a native vegetation clearing permit under the *Environmental Protection Act 1986* (EP Act).

The purpose of this document is to outline the offset proposed for the native vegetation clearing permit in accordance with the WA Environmental Offsets Guidelines (Government of Western Australia (GoWA) 2011), as a response to the residual impacts remaining.

1.3 Proposal location

The proposal includes upgrade works to Romeo Road, including an upgrade to Wanneroo Road from Dunstan Road to Trian Road. These works are associated with the extension of the Mitchell Freeway, which has been approved under MS 629 (Appendix A, Figure 1). The proposal area is 53 hectares (ha) in size, with 32.86 ha of native vegetation.

1.4 Clearing principles likely to be at variance

Schedule 5 of the EP Act defines Ten Clearing Principles for native vegetation. These principles aim to ensure that all potential impacts resulting from removal of native vegetation can be assessed in an integrated way. Clearing required for construction of proposal has been assessed against the Ten Clearing Principles, with each principle being assessed in accordance with the DWER's A Guide to the Assessment of Applications to Clear Native Vegetation (Department of Environment Regulation 2014) to determine whether the application is at variance to the principles. The assessment indicates that the proposal is at variance with principles a, b and h (Table 1).

Table 1 Principles at variance

Principle		Assessment	Outcome
A	Native vegetation should not be cleared if it comprises a high level of biological diversity.	The majority of native vegetation in the proposal area is mapped as *Banksia* low woodland (54%), with six additional vegetation types identified. The proposal area has a high level of biodiversity, commensurate with the surrounding region. Vegetation was mainly in Good (22%) and Very Good condition (27%), with sections of Degraded (13.4%) or Degraded to Completely Degraded (19%). This reflects the context of the site, between an existing road and conservation areas. A total of 20.9 ha of vegetation is in Good or better condition and represents high biodiversity vegetation. Class A Neerabup National Park is located along the western edge of the proposal area. A total of 6.58 ha of vegetation in the Neerabup National Park is in the proposal area. Targeted flora survey (GHD 2019) did not identify any conservation significant flora in the proposal area. The closest recorded conservation significant taxon is Priority 3 *Leucopogon* sp. Yanchep (M. Hislop 1986), located 30 m from the proposal area. One Bush Forever site occurs within the proposal area, Site 383 Neerabup National Park, Lake Nowergup Nature Reserve and adjacent bushland. Approximately 9 ha of Site 383 is within the proposal area. The majority of the proposal area (23.44 ha) is representative of three State listed Priority Ecological Communities (PECs), these include: • 1.56 ha of Northern Spearwood shrublands and woodlands PEC • 19.31 ha of *Banksia* woodlands of the Swan Coastal Plain PEC. This includes 16.66 ha of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) listed *Banksia* woodlands of the Swan Coastal Plain TEC • 2.57 ha of Tuart (*Eucalyptus gomphocephala*) woodlands of the Swan Coastal Plain PEC. This is likely to represent the EPBC Act listed Tuart Woodlands and Forests of the Swan Coastal Plain TEC. In addition to the direct impacts discussed above, indirect impacts are expected to result to adjacent vegetation including dust and weed invasion. The proposed action will clear vegetation in an area of high biological diversity. The proposal is at variance to this principle.	At Variance to this Principle

Principle		Assessment	Outcome
B	Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia	The proposal area contains habitat suitable for six conservation significant fauna species including: • Carnaby's Cockatoo (*Calyptorhynchus latirostris*) – Endangered under the EPBC Act and *Biodiversity Conservation Act 2016* (BC Act) • Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) – Vulnerable under the EPBC Act and BC Act • Peregrine Falcon (*Falco peregrinus*) – Other specially protected fauna under the BC Act • Southern Brown Bandicoot (*Isoodon fusciventer*) – Priority 4 • Western Brush Wallaby (*Notamacropus Irma*) – Priority 4 • Black-striped Snake (*Neelaps calonotos*) – Priority 3 • *Ctenotus gemmula* (Swan Coastal Plain population) – Priority 3. The proposal will result in clearing of vegetation that provides habitat for conservation significant species. The majority of the proposal area provides habitat for Black Cockatoo species. There is 29.39 ha of foraging habitat for Carnaby's and Forest Red-tailed Black Cockatoos present within the proposal area (GHD 2019). The proposal area also contains 230 potential breeding trees, of which 6 contain hollows. There is approximately 6,047 ha of Carnaby's Cockatoo habitat remaining within 5 km of the proposal area, of which 3,060 ha (50.6%) is protected in Bush Forever sites and/or Department of Biodiversity, Conservation and Attractions (DBCA) managed lands. The proposal represents approximately 0.48% of available Carnaby's Cockatoo habitat. The proposal lies well within the range of the species distribution within the northern Perth metropolitan region. Clearing of the proposal area will also result in the loss of: • 29.39 ha of habitat for the Peregrine Falcon • 24.29 ha of habitat for the Southern Brown Bandicoot • 20.34 ha of habitat for the Western Brush Wallaby • 20.34 ha of habitat for the Black-striped Snake • 20.34 ha of habitat for *Ctenotus gemmula* (Swan Coastal Plain population). One Regional Ecological Linkage intersects the proposal area, which provides for movement of fauna through the landscape. The proposal area intersects Regional Ecological Linkage ID 6, which links Neerabup National Park (Bush Forever Site 383) to Lake Joondalup (Bush Forever Site 299) in the	At Variance to this Principle

Principle		Assessment	Outcome
		south and Yanchep and Neerabup National Parks (Bush Forever Site 130) in the north. The proposal area is located on an existing road, therefore the impacts are expected to be less significant than bisecting contiguous vegetation. The proposal is considered to be at variance to 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.	Class A Neerabup National Park is located along the western edge of the proposal area. Up to 6.58 ha of Neerabup National Park will be cleared. One Bush Forever site occurs within the proposal area, Site 383 Neerabup National Park, Lake Nowergup Nature Reserve and adjacent bushland. Approximately 9 ha of Site 383 is within the proposal area (this includes the 6.58 ha in Neerabup National Park). One Regional Ecological Linkage intersects the proposal area. Greenways linkage I.D number 6 and is part of a regionally significant contiguous bushland/wetland linkage (GoWA 2000). Greenways linkage I.D number 6 links Neerabup National Park (Bush Forever Site 383) to Lake Joondalup (Bush Forever Site 299) in the south and Yanchep and Neerabup National Parks (Bush Forever Site 130) in the north. The proposal is at variance to this principle.	At variance to this principle.

1.5 Residual impacts associated with specific clearing principles

The residual impacts associated with the proposal include the loss of 32.86 ha of native vegetation. Vegetation was mainly in Good (22%) and Very Good condition (27%), with sections of Degraded (13.4%) or Degraded to Completely Degraded (19%). This reflects the context of the site, between an existing road and conservation areas. A total of 20.9 ha of vegetation is in Good or better condition and represents high biodiversity vegetation.

Clearing impacts will include the loss of:

- 20.9 ha of vegetation in Good or better condition
- 6.58 ha of class A Neerabup National Park
- 9 ha of Bush Forever Site 383 (this includes the 6.58 ha in Neerabup National Park)
- 23.44 ha of PECs as summarised below:
  - 1.56 ha of Northern Spearwood shrublands and woodlands PEC
  - 19.31 ha of *Banksia* woodlands of the Swan Coastal Plain PEC. This includes 16.66 ha of the EPBC Act listed Banksia woodlands of the Swan Coastal Plain TEC
  - 2.57 ha of Tuart (*Eucalyptus gomphocephala*) woodlands of the Swan Coastal Plain PEC. This is likely to represent the EPBC listed Tuart Woodlands and Forests of the Swan Coastal Plain TEC.
- Up to 29.39 ha of habitat for conservation significant fauna, specifically:
  - 29.39 ha of foraging habitat for Carnaby's Cockatoo and Forest Red-tailed Black Cockatoo, as well as 230 potential breeding trees, six with hollows.
  - 29.39 ha of habitat for the Peregrine Falcon
  - 24.29 ha of habitat for the Southern Brown Bandicoot
  - 20.34 ha of habitat for the Western Brush Wallaby
  - Up to 20.34 ha of habitat for the Black-striped Snake
  - 20.34 ha of habitat for *Ctenotus gemmula* (Swan Coastal Plain population).

2. Offset proposal requirements

2.1 Summary of offsets proposed

The principle offset for the proposal relates to residual impacts to Black Cockatoo habitat. The offsets calculation has determined that 140 ha of land is required to offset this residual impact.

For the purposes of providing a financial offset for this project, it is assumed that a 140 ha rural freehold property will be acquired on the northern Swan Coastal Plain. The value of un-improved (vegetated) rural land in the Shire of Gingin is estimated by the Valuer-General at $3,520/hectare, which for 140 ha equates to sum of $492,800. A summary of the offset proposed is provided in Table 2 below.

Table 2 Summary of residual impacts, offset type, size of offset and percentage of residual impact offset

Residual Impact		Details	Temporary clearing revegetation (Y/N)	Offset Type (Other)	Residual impact (ha)	Offset size (ha)	% of residual impact offset
1	Loss of high biodiversity vegetation	• 20.9 ha of vegetation in Good or better condition • 6.58 ha of class A Neerabup National Park • 9 ha of Bush Forever Site 383 • 23.44 ha of PECs	N	Financial Contribution to a fund established by DWER	23.44 ha	60 ha	103.6
2	Loss of habitat necessary for the maintenance of indigenous fauna	• 29.39 ha of foraging habitat for Carnaby's Cockatoo and Forest Red-tailed Black Cockatoo, as well as 230 potential breeding trees, six with hollows. • 29.39 ha of habitat for the Peregrine Falcon • 24.29 ha of habitat for the Southern Brown Bandicoot • 20.34 ha of habitat for the Western Brush Wallaby • Up to 20.34 ha of habitat for the Black-striped Snake • 20.34 ha of habitat for *Ctenotus gemmula* (Swan Coastal Plain population).	N	Financial Contribution to a fund established by DWER	29.39 ha	140 ha	101.3
3	Clearing of vegetation associated with a conservation reserve	• 6.58 ha of class A Neerabup National Park • 9 ha of Bush Forever Site 383 (this includes the 6.58 ha in Neerabup National Park)	N	Financial Contribution to a fund established by DWER	9 ha	23 ha	103.5

2.2 Justification for the Offset Proposal

The EPBC Offset Calculator Tool was used to evaluate proposal impacts for biodiversity clearing principles (principles a - f, h) with significant residual impacts in accordance with the requirements of the WA Environmental Offsets Guidelines (GoWA 2014). The calculations for Principles a, b and h and are provided in Appendix B. Copies of the EPBC Offset Calculator Tool worksheets for the residual impacts to Clearing Principles a, b and h for the proposal are included in Appendix C.

2.3 Calculation of financial contribution

A total offset of 140 ha will be required for this proposal, taking the largest result from the offset calculations (Black Cockatoo). It is assumed that land purchased for offset purposes will include suitable land for the other environmental factors impacted.

The financial contribution was calculated using the EPBC Offset Calculator Tool to determine the area of the offset required in hectares (140 ha total) multiplied by the market valuation of the unimproved (vegetated) land $3,520 for a land parcel size of 100 ha within the Shire of Gingin obtained from the Valuer-General (Landgate 2016).

The market valuation of the vegetated land was based on the valuation obtained from the Valuer-General (on a $/ha basis) for unimproved (vegetated) land within the Local Government Area (LGA) (Landgate 2016). As the Valuer-General's market valuation ($/ha) of vegetated land differs according to the size of the land parcel, the valuation of the closest 'standard parcels' of land (i.e. 10, 50, 100, 200 or 500 ha) was used to determine the market valuation of the offset area. In cases where a proposal is located in more than one LGA, the valuation is based on the market value of the land in the LGA containing the majority of the proposal clearing impact.

2.4 Offset Condition Milestones

Condition Milestone 1 – Main Roads shall provide documentary evidence to the CEO of DWER that funding of $492,800 has been transferred to the Department.

Timeframe for Completion – Prior to undertaking any clearing for Mitchell Freeway Extension authorised under the proposal clearing permit.

3. Application of Environmental Offset Policy Principles

The WA Environmental Offsets Policy (GoWA 2011) states that environmental offsets are to be used as a last resort, and details six principles to be applied in the assessment and decision making with respect to offsets.

The application of the environmental offset policy principles to the proposal Offset Proposal is provided in Table 3.

Table 3 Application of the WA Environmental Offset Policy Principles to the Offset Proposal

Principle No.	Principle	Comment
1.	Environmental offsets will only be considered after avoidance and mitigation options have been pursued.	All strategies to avoid and mitigate environmental impacts have been explored and implemented, including the following: All strategies to avoid and mitigate environmental impacts have been explored and implemented, including the following: • The upgrade of Romeo Road will prevent the more extensive clearing of a greenfield road corridor • The proposal has been designed to avoid better condition vegetation in the vicinity and impact degraded vegetation. The following will be considered during proposal design: • Excluding a median to minimise the proposal footprint • Steepening of batters • Minimising clearing, and avoiding bisection of, patches of native vegetation, including Neerabup National Park and Neerabup Nature Reserve. • Implementation of drainage control measures to manage surface water runoff, to maintain existing hydrological regime.
2	Environmental offsets are not appropriate for all proposals.	Environmental offsets are considered an appropriate form of mitigation for biological impacts including the clearing of native vegetation.
3	Environmental Offsets will be cost effective, as well as relevant and proportionate to the significance of the environmental value being impacted.	Main Roads believes that the proposed offset represents a cost-effective solution that is relevant and proportionate to the environmental value being impacted by the proposal. The area to be purchased with the financial contribution will consist of environmental values that are equal or of higher value than the vegetation proposed to be cleared within the proposal footprint.
4	Environmental offsets will be based on sound environmental information and knowledge.	The selection and management of land to be purchased will be based on sound environmental information and knowledge.
5	Environmental offsets will be applied within a framework of adaptive management.	The offset land acquired will be added to the conservation estate and will be managed within an adaptive management framework utilising the State's environmental knowledge and understanding.

Principle No.	Principle	Comment
6	Environmental offsets will be focussed on longer term strategic outcomes.	The proposed offset will contribute to the Offset Fund established by DWER under the EP Act for the acquisition of offset sites. Land to be purchased will be added to the conservation estate.

4. References

Department of Environment Regulation 2014, A Guide to the Assessment of Applications to Clear Native Vegetation. Government of Western Australia, Perth.

GHD 2019, Mitchell Freeway Extension Hester Avenue to Romeo Road Biological Survey, prepared for Main Roads WA June 2019.

Government of Western Australia (GoWA) 2000, Bush Forever, Perth, Department of Environmental Protection.

Government of Western Australia (GoWA) 2011, WA Environmental Offset Policy (September 2011). Perth, WA. Available online: http://www.epa.wa.gov.au/EPADocLib/WAEnvOffsetsPolicy-270911.pdf

Keighery, BJ 1994, Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, WA.

Land Information Authority, WA (Landgate) 2016, Landgate Land Valuations of Unimproved Land, 2016-2017 – *Confidential. Unpublished report prepared for Main Road's WA. Perth, WA.

Appendices

Appendix A – Figures

Figure 1 Proposal location

Paper Size ISO A3

0 100 200 300 400

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 50

N

GHD

Main Roads Western Australia
Romeo Road and Wanneroo Road Upgrade

Proposal Location

Project No. **12510021**
Revision No. **0**
Date **15 Oct 2019**

FIGURE 1

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Print date: 15 Oct 2019 - 14:13

Data source: GHD: NVCP area; Landgate: Roads - 20190128, Imagery: 20190410 (accessed: 20190731); GA: Natmap Geodata Topo 250k Series 3. Created by: cgwerzosa