Title of Proposal - Mitchell Freeway Extension Hester Avenue to Romeo Road

Section 1 - Summary of your proposed action

Provide a summary of your proposed action, including any consultations undertaken.

1.1 Project Industry Type

Transport - Land

1.2 Provide a detailed description of the proposed action, including all proposed activities.

The proposed action involves extension of Mitchell Freeway from Hester Avenue to Romeo Road, including an upgrade to Wanneroo Road from Dunstan Road to Trian Road. The proposed action is located within the City of Wanneroo and spans the suburbs of Alkimos, Butler, Ridgewood, Nowergup and Carabooda.

The freeway extension component of the proposed action comprises the following design features:
- Constructing a 5.6 km four lane freeway (two lanes in each direction)
- Completion of northbound on ramp and southbound off ramp at Hester Avenue interchange
- Grade separated interchange at Lukin Drive
- Rail tunnel for the existing rail to exit the freeway median to Butler train station
- Terminate freeway at Romeo Road with at grade intersection or grade separated interchange (to be confirmed)
- Principal Shared Path on the western side of the freeway.
- Romeo Road constructed as dual carriageway with 2 lanes east to Wanneroo Road. Footpaths/shared paths proposed for Romeo Road
- New/upgraded at-grade intersections at Romeo Rd/Wanneroo Rd

The Wanneroo Road upgrade component of the proposed action comprises the following design features:
- Constructing a 5.5 km dual carriageway from Dunstan Road to Trian Road. Existing carriageway to be used where possible
- Intersection improvement to Wanneroo Road and Nowergup Road
- Improvements to the old Wanneroo Road alignment currently acting as a service road
- Modifications to formalise the service road providing safe access and egress to adjoining properties.

The extension of the Mitchell Freeway will involve the construction of new roads, whereas the duplication of Wanneroo Road will involve the widening of the existing road. The proposed action will require the installation of signs and lights, road furniture, noise walls, drainage basins, upgrade of services and access roads.

1.3 What is the extent and location of your proposed action? Use the polygon tool on the map below to mark the location of your proposed action.

Area	Point	Latitude	Longitude
MFE Proposed Action Development Envelope	1	-31.669877975411	115.72779873143
MFE Proposed Action Development Envelope	2	-31.669413188272	115.72873493239
MFE Proposed Action Development Envelope	3	-31.668483261472	115.72904692516
MFE Proposed Action Development Envelope	4	-31.663535786302	115.72787619331
MFE Proposed Action Development Envelope	5	-31.658620924753	115.72561369762
MFE Proposed Action Development Envelope	6	-31.654270565819	115.72327266611
MFE Proposed Action Development Envelope	7	-31.651646885929	115.71991754482
MFE Proposed Action Development Envelope	8	-31.65194607932	115.7190201835
MFE Proposed Action Development Envelope	9	-31.651481029666	115.71870819073
MFE Proposed Action Development Envelope	10	-31.650750388095	115.71983943857
MFE Proposed Action Development Envelope	11	-31.649687660928	115.71960554942
MFE Proposed Action Development Envelope	12	-31.642912069832	115.71507969628
MFE Proposed Action Development Envelope	13	-31.636302236543	115.711022051
MFE Proposed Action Development Envelope	14	-31.634442072223	115.71012469231
MFE Proposed Action Development Envelope	15	-31.634010186571	115.70965691401
MFE Proposed Action Development Envelope	16	-31.634342322422	115.70762787528
MFE Proposed Action Development Envelope	17	-31.634010186571	115.70754977165
MFE Proposed Action Development Envelope	18	-31.633080266785	115.70907154808
MFE Proposed Action Development Envelope	19	-31.632216480829	115.70907154808
MFE Proposed Action Development Envelope	20	-31.631220042485	115.70852523659
MFE Proposed Action Development Envelope	21	-31.6257721511	115.70848618216
MFE Proposed Action Development Envelope	22	-31.624609739532	115.70731631208
MFE Proposed Action Development Envelope	23	-31.62417780823	115.70673094615

Area	Point	Latitude	Longitude
MFE Proposed Action Development Envelope	24	-31.623480207443	115.70719915403
MFE Proposed Action Development Envelope	25	-31.623480207443	115.70790124843
MFE Proposed Action Development Envelope	26	-31.623513458297	115.71117869306
MFE Proposed Action Development Envelope	27	-31.623878886811	115.71137352778
MFE Proposed Action Development Envelope	28	-31.623945031359	115.71593843274
MFE Proposed Action Development Envelope	29	-31.623712619691	115.71593843274
MFE Proposed Action Development Envelope	30	-31.622549816603	115.7156650622
MFE Proposed Action Development Envelope	31	-31.621054821339	115.71511918028
MFE Proposed Action Development Envelope	32	-31.615905278268	115.71379266552
MFE Proposed Action Development Envelope	33	-31.611951655712	115.71219278285
MFE Proposed Action Development Envelope	34	-31.609326781871	115.7117245776
MFE Proposed Action Development Envelope	35	-31.609194110566	115.71277814878
MFE Proposed Action Development Envelope	36	-31.611685959024	115.71320730222
MFE Proposed Action Development Envelope	37	-31.61547366792	115.71500202223
MFE Proposed Action Development Envelope	38	-31.622151131541	115.71691347072
MFE Proposed Action Development Envelope	39	-31.623779125682	115.71691347072
MFE Proposed Action Development Envelope	40	-31.628761972712	115.72081533308
MFE Proposed Action Development Envelope	41	-31.63314677054	115.72218047008
MFE Proposed Action Development Envelope	42	-31.637531363898	115.72861777172
MFE Proposed Action Development Envelope	43	-31.640122197274	115.73025670882
MFE Proposed Action Development Envelope	44	-31.642812699287	115.73049059797
MFE Proposed Action Development Envelope	45	-31.652809690923	115.73755231734
MFE Proposed Action Development Envelope	46	-31.655068033455	115.73743515667
MFE Proposed Action Development Envelope	47	-31.655798641082	115.73778620387

Area	Point	Latitude	Longitude
MFE Proposed Action Development Envelope	48	-31.656296547068	115.73657684978
MFE Proposed Action Development Envelope	49	-31.655665674846	115.73618675077
MFE Proposed Action Development Envelope	50	-31.653340857572	115.73567949109
MFE Proposed Action Development Envelope	51	-31.651813107572	115.73493834225
MFE Proposed Action Development Envelope	52	-31.649388825952	115.73341656582
MFE Proposed Action Development Envelope	53	-31.643775763137	115.72912546097
MFE Proposed Action Development Envelope	54	-31.640321686599	115.72896924849
MFE Proposed Action Development Envelope	55	-31.637764109003	115.72725263472
MFE Proposed Action Development Envelope	56	-31.633761178686	115.72157600651
MFE Proposed Action Development Envelope	57	-31.629226955353	115.71970318157
MFE Proposed Action Development Envelope	58	-31.624559678712	115.71613348355
MFE Proposed Action Development Envelope	59	-31.624509798527	115.71059354192
MFE Proposed Action Development Envelope	60	-31.625523116702	115.7107300124
MFE Proposed Action Development Envelope	61	-31.625473237033	115.71123727208
MFE Proposed Action Development Envelope	62	-31.626204077231	115.71141279569
MFE Proposed Action Development Envelope	63	-31.626253956508	115.71096411503
MFE Proposed Action Development Envelope	64	-31.6320173421	115.71219299633
MFE Proposed Action Development Envelope	65	-31.634209689008	115.71234899402
MFE Proposed Action Development Envelope	66	-31.636983303263	115.71299293766
MFE Proposed Action Development Envelope	67	-31.636767365473	115.71346114423
MFE Proposed Action Development Envelope	68	-31.637414993357	115.71387077176
MFE Proposed Action Development Envelope	69	-31.637614305626	115.71346114423
MFE Proposed Action Development Envelope	70	-31.642629838429	115.71689437177
MFE Proposed Action Development Envelope	71	-31.645353332537	115.71911803043

Area	Point	Latitude	Longitude
MFE Proposed Action Development Envelope	72	-31.649073182973	115.72237573306
MFE Proposed Action Development Envelope	73	-31.649770595157	115.72389729733
MFE Proposed Action Development Envelope	74	-31.651215265256	115.72452150158
MFE Proposed Action Development Envelope	75	-31.650849944145	115.7254579134
MFE Proposed Action Development Envelope	76	-31.652095499507	115.72612117078
MFE Proposed Action Development Envelope	77	-31.652410950501	115.7252823898
MFE Proposed Action Development Envelope	78	-31.654602819934	115.72715521605
MFE Proposed Action Development Envelope	79	-31.657209796977	115.7290083003
MFE Proposed Action Development Envelope	80	-31.660281526005	115.73076396719
MFE Proposed Action Development Envelope	81	-31.663651948018	115.73121264654
MFE Proposed Action Development Envelope	82	-31.666989190811	115.7313100639
MFE Proposed Action Development Envelope	83	-31.66936333995	115.7325389452
MFE Proposed Action Development Envelope	84	-31.670259838782	115.73296809864
MFE Proposed Action Development Envelope	85	-31.67075785007	115.73294857143
MFE Proposed Action Development Envelope	86	-31.670608466582	115.73049081013
MFE Proposed Action Development Envelope	87	-31.670459080624	115.72801330815
MFE Proposed Action Development Envelope	88	-31.669877975411	115.72779873143

1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for off-shore actions, shortest distance to mainland).

The proposed action is located approximately 30km north of Perth central business district and 12km south of the coastal suburb of Yanchep. West of the proposed Mitchell Freeway extension are the suburbs of Butler, Ridgewood and Merriwa which provide a mix of residential subdivisions and urban development. The Public Transport Authority railway network runs

adjacent to the proposed action connecting Clarkson train station (located south of the proposed action) to Butler train station (west of the proposed action) and the proposed Alkimos train station (located immediately north of the proposed action). Alkimos train station is planned for construction by 2021 to serve the future Alkimos City Centre. Alkimos City Centre aims to provide a town centre which will include residential, retail, business, recreation and education amenities. Neerabup National Park (A Class Nature Reserve) lies to the eastern and southern boundary of the proposed Mitchell Freeway Extension.

Wanneroo Road and Romeo Road are existing transport networks that require upgrade. Neerabup National Park is located to the west of Wanneroo Road, and Neerabup Nature Reserve is located to the east of Wanneroo Road. Rural subdivisions and market gardens are also located to the east of Wanneroo Road and north of Romeo Road.

1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?

The development footprint is approximately 250 hectares.

1.7 Is the proposed action a street address or lot?

Street Address

Hester Avenue / Wanneroo Road
Nowergup WA 6032
Australia

1.8 Primary Jurisdiction.

Western Australia

1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?

Yes

1.9.1 Please provide details.

The proposed action received Australian Government funding of $107.50m (to equally match the State Government contribution). The current cash flows (at 8 May 2018 for Aust. Govt funding only) are:

2018/19 - $17.50m

2019/20 - $55.00m

2020/21 - $32.50m

2021/22 - $2.50m

1.10 Is the proposed action subject to local government planning approval?

No

1.11 Provide an estimated start and estimated end date for the proposed action.

Start date 06/2021

End date 04/2024

1.12 Provide details of the context, planning framework and State and/or Local government requirements.

The Mitchell Freeway provides the primary road access route from the Perth north-west corridor towards the city of Perth. The freeway currently terminates at Hester Avenue. The freeway has been constructed in several stages since the 1960s, with further extension from Hester Avenue to Romeo Road proposed. Upgrade of Wanneroo Road to dual carriageway in both directions, extending from Dunstan Road to Trian Road is also proposed.

On Friday 27 April 2018, the Federal and State governments issued a joint media statement committing funding to construct the Mitchell Freeway Extension from Hester Avenue to Romeo Road. As of September 2018, Commonwealth funding has been committed to the proposed action.

The suburbs of Ridgewood, Butler and Merriwa are located to the west of the proposed action. Alkimos City Centre is proposed to the north of Romeo Road and is designed to be a vibrant mix of residential, retail and commercial properties. Significant developments have taken place over the last ten years including the construction and opening of various shopping precints, Butler train station, residential dwellings, schools and amenities.

The proposed action is predominantly zoned as Primary Regional Road under the Metropolitan Region Scheme (MRS). Areas that are not zoned Primary Regional Road will require a Development Application prior to construction and a subsequent amendment to the MRS.

1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders.

In May 2018, Main Roads commenced project development and consultation with key project stakeholders to help inform the concept design. To date consultation has taken place with the following stakeholders: City of Wanneroo, Services Authorities (Water Corporation), Landowners/Land Developers (Landcorp), Public Transport Authority and METRONET, Department of Biodiversity, Conservation and Attractions, Department of the Premier and Cabinet and Department of Water and Environmental Regulation.

Communication and stakeholder liaison regarding the extension of the Mitchell Freeway extends

back a number of years. In 2012, the Mitchell Freeway Extension Community Working Group (CWG) was established to assist Government to better understand local community priorities to address the growth of Perth's north metropolitan area in the next 20 years, including the timeline for the extension of the Mitchell Freeway north. Further consultation with the CWG was undertaken as part of the freeway extension project from Burns Beach Road to Hester Avenue, which opened in August 2017.

A communications and stakeholder engagement program for the next stage of the extension of the Mitchell Freeway from Hester Avenue to Romeo Road is now being developed. The key components of the community consultation program will include:

- Continuing the targeted engagement with the City of Wanneroo and other key stakeholders via meetings and briefings to discuss the project, stakeholders' preferences and issues to provide a clear understanding of any competing issues and interests.

- Inviting feedback from the local community, businesses, road users and industry on the draft concept for the Mitchell Freeway Extension Project via:

1) Letter box drop to houses within the project area to provide information and seek feedback on the proposed concept design.

2) Community drop-in information sessions and displays inviting the community to discuss the design with the project team

3) Dedicated project email address for queries and project subscriber database for electronic communications

- Dissemination of information via a range of communication channels including:

1) Formal State Government media statement

2) Newsletters – emailed to project subscriber list, letterbox dropped to local residents and mail out to directly impacted landowners

3) Digital media – website updates and social media posts on Main Roads, City of Wanneroo and State Government channels.

The consultation program will inform and refine the final concept designand scope of works.

Community and stakeholder engagement will continue throughout the lifecycle of the proposed action with the objectives to ensure a high level of stakeholder engagement and support for the action, raise awareness of the action amongst a diverse range of stakeholders and the broader public and to develop and deliver the proposed action in a socially sensitive manner.

1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the

project.

Extensive flora, vegetation and fauna surveys have been completed for the project during 2013 and 2014 as part of the Mitchell Freeway Extension Burns Beach to Romeo Road project. Main Roads has commissioned surveys for 2018-2019 including detailed flora, vegetation and fauna surveys; targeted Black Cockatoo survey; detailed Black Cockatoo hollow survey; desktop assessment for subterranean fauna and karst systems. Survey for indigenous and non-indigenous heritage, dieback, air quality and noise will be undertaken early 2019. Further flora, vegetation and fauna surveys will be undertaken during 2019.

The Western Australian Planning Commission (WAPC) initiated Metropolitan Region Scheme (MRS) Amendment 992/33 Clarkson-Butler, Wanneroo, which contained 11 amendments for rezoning and reservation in the north-west corridor of the metropolitan region. Environmental conditions relevant to MRS Amendment 992/33 were incorporated into Ministerial Statement (MS) 629, gazetted on 23 January 2004. The majority of the proposed action is covered by MS 629 and therefore has already undergone environmental assessment by the Environmental Protection Authority (EPA). Main Roads has consulted with Department of Water and Environmental Regulation (DWER; EPA Services) September 2018. EPA Services advised there was no requirement to refer the areas outside MS 629 under part IV of the EP Act. Vegetation clearing outside MS 629 could be assessed through the native vegetation clearing provisions under Part V of the EP Act. Areas covered by MS 629 require the development of a Construction Environment Management Plan (CEMP), Noise, Vibration and Light Management Plan (NVLMP) and Flora & Fauna Management Plan (FFMP), to be approved by Western Australian Planning Commission (WAPC).

The proposed action has not previously been referred to the Department of Environment and Energy (DoEE) for a decision on whether approval under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) is required. Relevant impacts associated with the proposed action include clearing of native vegetation, impacts to Black Cockatoo foraging and breeding habitat and loss of vegetation associated with a Threatened Ecological Community (TEC).

1.15 Is this action part of a staged development (or a component of a larger project)?

Yes

1.15.1 Provide information about the larger action and details of any interdependency between the stages/components and the larger action.

Mitchell Freeway and the duplication of Wanneroo Road between Burns Beach Road and Romeo Road was divided into three stages as follows:

Stage 1 – Freeway extension from Burns Beach Road to Hester Avenue and the connecting roads (Neerabup Road and Hester Avenue) (construction completed August 2017)

Stage 2 – Freeway extension from Hester Avenue to Romeo Road and connecting road (Romeo Road) (this proposed action)

Stage 3 – Wanneroo Road duplication from Joondalup Drive to Hall Road (partially constructed; construction expected to finish December 2018)

Stages 1 and 3 were referred to the DoEE for assessment under the EPBC Act. Stage 1 was determined to be a "Controlled Action" and was assessed through Preliminary Documentation. Stage 1 was approved September 2014 (EPBC 2013/7091) and included a number of conditions that Main Roads was required to fulfil. Stage 3 was determined to be "Not a Controlled Action" December 2015 (EPBC 2015/7632).

1.16 Is the proposed action related to other actions or proposals in the region?

No

Section 2 - Matters of National Environmental Significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The interactive map tool can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest. Consideration of likely impacts should include both direct and indirect impacts.

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The following resources can assist you in your assessment of likely impacts:

• Profiles of relevant species/communities (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;

• Significant Impact Guidelines 1.1 – Matters of National Environmental Significance;

• Significant Impact Guideline 1.2 – Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies.

2.1 Is the proposed action likely to have ANY direct or indirect impact on the values of any World Heritage properties?

No

2.2 Is the proposed action likely to have ANY direct or indirect impact on the values of any National Heritage places?

No

2.3 Is the proposed action likely to have ANY direct or indirect impact on the ecological character of a Ramsar wetland?

No

2.4 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?

Yes

2.4.1 Impact table

Species	Impact
Banksia Woodlands of the Swan Coastal Plain TEC	Impact likely to be significant. The proposed action involves clearing of native vegetation of which a large proportion could be Banksia

Species	Impact
	woodland vegetation type representative of the TEC "Banksia Woodlands of the Swan Coastal Plain". Detailed flora and vegetation survey is currently underway to confirm the presence, extent and quality of conservation significant vegetation community types.
Calyptorhynchus latirostris (Carnaby's Black Cockatoo)	Impact likely to be significant. All of the vegetation types present within the proposed action footprint represent suitable foraging habitat for the Carnaby's Black Cockatoo as they contain plant species documented as foraging habitat. The most dominant/obvious species include Eucalyptus gomphocephala (tuart), Banksia spp., E. marginata (jarrah), Corymbia calophylla (marri) and Allocasuarina fraseriana. The Carnaby's Black Cockatoo and evidence of their feeding was recorded within the proposed action during previous fauna surveys (GHD 2013; GHD 2014). The proposed action also provides suitable roosting habitat based on the presence of suitable roosting trees and close proximity of known roosting sites. Further survey is currently underway to identify and map the extent of Black Cockatoo foraging habitat and the location of potential breeding and roosting habitat.
Calyptorhynchus banksii naso (Forest Red-tailed Black Cockatoo)	Impact likely to be significant. The proposed action is located outside the current modelled distribution for the Forest Red-tailed Black Cockatoo; however the species has been observed in the proposed action footprint indicating that distribution patterns and habitat use of the Forest Red-tailed Black Cockatoo is known to be changing. The proposed action contains suitable foraging habitat and it is likely that individuals observed in the proposed action are vagrant visitors, utilising the foraging resources available. While there is no breeding evidence or permanent surface water present within the proposed action area; Marri, Karri and Jarrah are present and the mean annual rainfall is greater than 600 mm, so the habitat could be considered critical.
Eucalyptus argutifolia (Yanchep Mallee)	Impact unlikely to be significant. Yanchep Mallee and species habitat may occur 1-3 km east of the proposed action. Previous flora and vegetation survey (GHD 2014) did not identify the presence of this species in the proposed

Species	Impact
	action footprint. Detailed flora survey is currently underway to confirm the presence and extent of conservation significant flora species; however it is unlikely the species occurs in the proposed action.
Aquatic Root Mat Community Number 1 of Caves of the Swan Coastal Plain TEC	Impact unlikely to be significant. The proposed action will not reduce the extent or condition of the ecological community. Furthermore, there is a negligible risk the proposed action will introduce additional or new threats that will adversely impact the ecological community. The closest extent of the proposed action is approximately 4 km south south-east of the 1000 m buffer of the cave entrances, with no to limited impacts to groundwater, so there is no impact pathway present. Previous survey in the vicinity of the proposed action found that caves in the area were all dry and contained relatively low biodiversity. Ministerial Statement 629 requires an investigation for the presence of caves before and during clearing for construction, and management of discovery. Additionally Ministerial Statement 629 requires investigations for the presence of subterranean fauna within any cave of karst system encountered in areas cleared or cut during construction.

2.4.2 Do you consider this impact to be significant?

Yes

2.5 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed migratory species, or their habitat?

No

2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?

No

2.7 Is the proposed action to be taken on or near Commonwealth land?

No

2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?

No

2.9 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?

No

2.10 Is the proposed action a nuclear action?

No

2.11 Is the proposed action to be taken by the Commonwealth agency?

No

2.12 Is the proposed action to be undertaken in a Commonwealth Heritage Place Overseas?

No

2.13 Is the proposed action likely to have ANY direct or indirect impact on any part of the environment in the Commonwealth marine area?

No

Section 3 - Description of the project area

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed in Section 2).

3.1 Describe the flora and fauna relevant to the project area.

The proposed action comprises both remnant native vegetation and previously cleared or highly degraded areas. The remnant vegetation consists predominantly of a combination of mixed Eucalyptus woodlands, Banksia woodlands and low heathland. The woodland habitat types consist of a dominant overstorey of *Eucalyptus gomphocephala* (Tuart), *E. marginata* (Jarrah), *Corymbia calophylla* (Marri), *Banksia attenuata* and *B. menziesii* and are generally associated with grey sandy soils on plains or low undulating dune systems. The vegetation within the proposed action footprint ranges from Excellent to Completely Degraded condition. GHD (2014) biological survey did not identify any threatened flora species listed under the EPBC Act or Wildlife Conservation Act 1950 (WC Act). However, four Priority Flora species listed by DBCA were identified within the proposed action footprint: *Acacia ?benthamii* (Priority 2), *Jacksonia sericea* (Priority 4), *Pimelea calcicola* (Priority 3), *Stylidium maritimum* (Priority 3).

Spatial data identified the potential presence of four TECs and four PECs within 5 km of the proposed action. These conservation significant communities are listed as follows:

- *Melaleuca huegelii-Melaleuca systena* shrublands on limestone ridges (SCP26a) (State listed TEC) - multiple occurrences within the proposed action footprint

- Aquatic Root Mat Community Number 1 in caves of the Swan Coastal Plain (SCP01) (EPBC Act and State listed TEC) – multiple occurrences north of the proposed action

- Sedgelands in Holocene dune swales of the southern Swan Coastal Plain (SCP19b) (EPBC Act listed TEC) – 11 occurrences approximately 3 km north of the proposed action

- Banksia woodlands of the Swan Coastal Plain (EPBC Act listed TEC) – multiple occurrences within the proposed action footprint

- Northern Spearwood shrubland and woodlands (SCP24) (Priority 3 PEC) (can be a component of the Endangered Banksia Woodlands of the Swan Coastal Plain EPBC listed TEC) – multiple occurrences in the southern portion of the proposed action

- Quindalup *Eucalyptus gomphocephala* and/ or *Agonis flexuosa* (SCP30b) (when the canopy is dominated by Tuart this community can be synonymous with Tuart (*Eucalyptus gomphocephala*) Woodlands of the Swan Coastal Plain (both Priority 3 PEC) – one occurrence approximately 4 km north of the proposed action

- Banksia dominated woodlands of the Swan Coastal Plain IBRA region (Priority 3 PEC) - multiple occurrences approximately 4 km north and east of the proposed action

- Coastal shrublands on shallow sands (SCP 29a) (Priority 3 PEC) – 24 occurrences approximately 4 km south west of the proposed action

The presence of Tuart, Jarrah, Marri, *Banksia spp*., and other proteaceous species throughout the Eucalyptus and Banksia woodlands provides foraging habitat for the conservation significant Black Cockatoo species. Fauna survey undertaken by GHD (2014) confirmed the presence of Carnaby's Black Cockatoo within the proposed action footprint. *Eucalyptus spp*. within the proposed action footprint including Tuart, Jarrah and Marri, may also provide potential breeding and roosting habitat for Black Cockatoos.

GHD field assessment (2014) identified the Carpet Python (*Morelia spilota imbricata*) (Schedule 4 WC Act) adjacent to Neerabup National Park and the likely presence of DBCA Priority 4 species Quenda/Southern Brown bandicoot (*Isoodon fusciventer*) from potential diggings. According to GHD (2014) the woodland habitat types present within the proposed action would be expected to support a high diversity of bird species. Across these woodlands are areas of loose sands that are particularly suitable for burrowing reptiles. The woodlands range from an open to closed canopy with a relatively sparse mid-storey and thick ground cover in some areas. This ground cover would provide foraging opportunities and refuge areas for ground-dwelling mammals such as the Echidna, Southern Brown Bandicoot/Quenda and Western Brush Wallaby and reptiles such as goannas and skinks. Microhabitat features such as tree hollows and cavities provide habitat for a number of birds, reptiles and small mammal species.

3.2 Describe the hydrology relevant to the project area (including water flows).

No Surface Water Areas, Irrigation Districts, Rivers or Waterway Management Areas protected under the *Rights in Water and Irrigation Action 1914* (RIWI Act) are present within the proposed action footprint. Depth from ground level to the water table ranges from 22 m to 45 m approximately. The proposed action footprint is located in the Perth RIWI Act Groundwater Area and the Perth Coastal and Gwelup Underground Pollution Control Area PDWSA, which is a Priority 3 Protection Zone.

The proposed action does not intersect any wetlands or watercourses. One geomorphic wetland, Carabooda Lake (Resource Enhancement Wetland), is located east of Romeo Road. No direct impacts are expected to occur within this wetland as a result of the proposed action. There is a low risk of indirect impacts, such as changes to hydrology and changes to surface water flows to these wetlands. It is expected that the surface water hydrology can be maintained in its current regime with appropriate drainage design.

3.3 Describe the soil and vegetation characteristics relevant to the project area.

Broadscale vegetation mapping of the area (Beard 1979) identified the following vegetation associations within the proposed action footprint:

- Mosaic: Shrublands; *Acacia lasiocarpa & Melaleuca systens* (formerly *M. acerosa*) heath / Shrublands; *Acacia rostellifera* & *Acacia cyclops* thicket (association 1007)

- Low woodland; banksia (association 949)

- Medium woodland; tuart [*E. gomphocephala*] (association 998).

The vegetation within the proposed action has been mapped by Heddle et al. (1980) based on major geomorphic units on the Swan Coastal Plain. The mapping by Heddle et al. (1980) identified the following vegetation complexes on Aeolian deposits of the Swan Coastal Plain within the proposed action:

- The Cottesloe complex- central and south: Mosaic of woodland of Eucalyptus gomphocephala (Tuart) and open forest of *E. gomphocephala – E. marginata* (Jarrah) – *Corymbia calophylla* (Marri); closed heath on the limestone outcrops

GoWA (2018a) have assessed the vegetation complexes mapped by Heddle et al. (1980) against presumed pre-European extents within the SCP IBRA bioregion and the City of Wanneroo (Table 2). The Cottesloe Complex – central and south has 32.17% remaining on the Swan Coastal Plain and 41.63% remaining in the City of Wanneroo.

The proposed action generally consists of a combination of deep brown, yellow or calcareous sands with occasional bare rock and stony soils. The sands within the proposed action are relatively porous and well drained and therefore there is little overland surface water flow, which minimises the risk of water erosion. The ASRIS database indicates that the proposed action is located within an area that has an extremely low probability of ASS.

3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area.

No further outstanding natural features and/or any other important or unique values are relevant to the Project.

3.5 Describe the status of native vegetation relevant to the project area.

The vegetation types within the proposed action consist of *Banksia sessilis* closed tall scrub, Banksia woodland, Tuart woodland, Mixed low heath on limestone, Jarrah-Banksia woodland, planted vegetation and highly degraded/cleared areas. The woodland habitat types consist of a dominant overstorey of *Eucalyptus gomphocephala* (Tuart), *E. marginata* (Jarrah), *Corymbia calophylla* (Marri), *Banksia attenuata* and *B. menziesii*. The condition of vegetation within the proposed action ranged from Excellent to Completely Degraded.

3.6 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The proposed action generally consists of a combination of low hilly to gently undulating terrain with yellow sand over limestone at 1-2 m and irregular banks of karst depressions with some limestone outcrop over shallow brown sands.

3.7 Describe the current condition of the environment relevant to the project area.

The proposed action footprint comprises approximately 165 ha native vegetation in Excellent to Completely Degraded condition (GHD 2014). Portions of the proposed action are cleared as a result of existing and proposed road and railway infrastructure.

EPBC Act PMST and DBCA NatureMap records identified the presence/potential presence of 77 introduced taxa within the study area. This total included 15 Declared Pests and/or WoNS. Previous surveys undertaken within the project area (GHD 2014) and immediate surrounds have identified three Declared Plant species; **Asparagus asparagoides* (bridal creeper), **Solanum linnaeanum* (apple of Sodom) and **Zantedeschia aethiopica* (arum lily). Bridal creeper is also listed as a WONS. All weeds identified during the construction works will be removed.

3.8 Describe any Commonwealth Heritage Places or other places recognised as having heritage values relevant to the project area.

No Commonwealth Heritage Places will be impacted.

Main Roads commissioned archaeological and ethnographic heritage surveys 2013. No significant indigenous heritage issues were identified during the 2013 surveys. Main Roads has commissioned an archaeological and ethnographic survey to commence in January 2019. It is believed the risk of impacting an indigenous heritage site or the buffer of a site is low.

The State Heritage Register (inherit database) and the City of Wanneroo Municipal Inventory (MI) identified no State Registered Places within the proposed action footprint.

A desktop assessment of non-indigenous heritage places completed by Nayton (2013) from Burns Beach Road to Romeo Road of the Mitchell Freeway did not identify any sites of European heritage significance within the proposed action. Main Roads has commissioned a non-indigenous heritage survey January 2019 which will inform Main Roads of any potential non-indigenous heritage issues related to the proposed action.

3.9 Describe any Indigenous heritage values relevant to the project area.

A search of the Department of Planning, Lands and Heritage (DPLH) Aboriginal Heritage Inquiry System did not identify any occurrences of Aboriginal heritage sites occurring within the proposed action footprint. Heritage sites located within a 1 km radius of the proposed action are listed as follows:

- Orchestra Shell Cave (ID 4404); Artefacts

- Nowergup Lake (ID 17450); Mythological

- Jindalee (ID 20772); Mythological.

Seven other heritage places have been recorded within a 1 km radius of the proposed

action, listed as follows:

- Lake Neerabup (ID 3693) – adjacent to the south eastern extent of the proposed action

- Romeo Road Pinnacles (ID. 37478) – west of Romeo Rd

- SBJ09 (ID 20769)

- Butler-FS04 (ID 20600)

- Butler-FS03 (ID 20598)

- Butler-FS02 (ID 20597)

- Butler-FS01 (ID 20596).

Main Roads has commissioned an archaeological and ethnographic survey to commence in January 2019. It is believed the risk of impacting an indigenous heritage site or the buffer of a site is low.

3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area.

Land tenures within the proposed action comprise freehold land (both private owned and Government owned) and reserves under Crown control.

3.11 Describe any existing or any proposed uses relevant to the project area.

The proposed action is mainly zoned as Primary Regional Road under the MRS.

Section 4 - Measures to avoid or reduce impacts

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action.

Since the proposed action is at concept stage with no detailed design, Main Roads is submitting a proposed action footprint extending to the MRS boundary from Hester to Romeo Road; Wanneroo Road from Dunstan Road to Trian Road; Romeo Road extending to Wanneroo Road. The proposed action incudes some extensions beyond the MRS to allow any potential design modifications; however, the final design will endeavor to avoid deviating outside the MRS.

The proposed action footprint is approximately 250 ha in size. The total quantity of native vegetation within the proposed action footprint is approximately 165 ha. A preliminary design for the proposed alignment is currently being developed and expected to be finalised May 2019. Once Main Roads has a preliminary design and results from flora and fauna surveys (currently being undertaken), the impact area and extent of impacts to MNES can be quantified. Various design and engineering controls will be implemented to reduce ground disturbance, minimise the clearing of native vegetation and, where possible, avoid any potential and/or known Black Cockatoo nesting hollows. Design or engineering controls to avoid and/or minimise impacts to MNES include steepening of batter slopes to reduce the earthworks footprint, particularly in areas where known nesting trees occur, designing private driveways to avoid clearing of large trees where practicable, and providing property access via areas that have previously been cleared. Detailed design will seek to reduce impacts to conservation significant flora, vegetation communities and fauna habitats.

An Environmental Management Plan (EMP) will be prepared to minimise the environmental impacts associated with the proposed action as well as identifying areas of responsibilities required for the implementation of management strategies. The EMP will be implemented prior to construction, during construction and post construction works.

4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved.

Carnaby's Black Cockatoo. The criteria used to assess significant impact to Carnaby's Black Cockatoo are listed in the Significant Impact Guidelines 1.1 (DotE 2013). It is expected the proposed action is likely to have a significant impact on the EPBC Act listed Carnaby’s Black

Cockatoo given the following:

• Lead to a long-term decrease in the size of a population: The species was observed within the proposed action area, with foraging, roosting and breeding habitat present. The proposed action is part of a 1500 ha strip of vegetation along the Swan Coastal Plain adjacent to housing estates and other land disturbance. Neerabup National park (937 ha) lies adjacent to the proposed action. While there is an abundance of alternative habitat available in the immediate region, approximately 570 trees were recorded that meet the criteria as potential breeding habitat. Of these, approximately 15% had hollows, although only 16 hollows are currently of suitable size to support Black Cockatoo breeding. Although there is no breeding evidence within the proposed action, breeding is known to occur within the immediate region, therefore the foraging habitat could be significant to support breeding activity. The reduction in foraging, roosting and breeding habitat may contribute to a long-term decrease of the population.

• Reduce the area of occupancy of the species: The proposed action is within the modelled distribution of this species (DSEWPaC 2012, DEE 2017a), with its occupancy confirmed in the field. The prposed action area contains approximately 570 trees that meet the criteria as potential breeding habitat, with only 16 hollows currently of suitable size to support Black Cockatoo breeding. Approximately 90% and 50% of the referral area may be considered foraging and roosting habitat, respectively. The proposed action will reduce the available area of occupancy for the species.

• Fragment an existing population into two or more populations: The proposed action involves clearing along the edges of the existing wide vegetated corridor. The gap created by the proposed action will be less than 4 km between patches, therefore the impact is unlikely to fragment an existing population into two or more populations.

• Adversely affect habitat critical to the survival of a species: The species was observed within the proposed action area, with foraging, roosting and potential breeding habitat present. While there is an abundance of alternative habitat available in the immediate region, approximately 570 trees were recorded that meet the criteria as potential breeding habitat. Of these, approximately 15% had hollows, although only 16 hollows are currently of suitable size to support Black Cockatoo breeding. There is no breeding evidence within the proposed action area, but there is known breeding within the immediate region. Similarly, there is no permanent surface water in the proposed action, but there is in the immediate region. Therefore the foraging habitat within the proposed action could be significant to support breeding activity. The proposed action, which may remove 16 hollows of suitable size to support Black Cockatoo breeding and foraging habitat may directly and/or indirectly impact habitat critical to the survival of the species.

• Disrupt the breeding cycle of a population: Although there is no breeding evidence within the proposed action, breeding is known to occur within the immediate region, with the species utilising foraging habitat in the referral area. The removal of potential breeding trees, foraging and roosting habitat will reduce the amount of habitat present in the region. Decreasing the amount of food available to breeding birds can reduce chick survival rates, which could disrupt the breeding cycle. The significance of the impact is likely to be reduced by Neerabup National park (937 ha) occurring adjacent to the proposed action. This area is expected to have habitat in similar or better condition than the proposed action area. Depending upon the project final footprint, some disruption to the species breeding cycle may occur.

• Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline: The removal of potential breeding trees, foraging and roosting habitat will decrease the availability of habitat present in the region. The significance of the impact is likely to be reduced by Neerabup National park (937 ha) occurring adjacent to the proposed action. This area is expected to have habitat in similar or better condition than the proposed action area. Although there is no breeding evidence within the proposed action, breeding is known to occur within the immediate region, with the species utilising foraging habitat in the referral area. Decreasing the amount of food available to breeding birds can reduce chick survival rates, which could cause a gradual decline in the species. Depending upon the project final footprint, species decline could result from the proposed action.

• Result in invasive species that are harmful to an endangered species becoming established in the endangered species' habitat: The proposed action involves the upgrade and extension of existing roads, which will include freight traffic. Existing biosecurity measures and protocols within the freight industry will minimise the risk of invasive species introduction. There are approximately 570 trees within the proposed area that meet the criteria as potential breeding habitat. Of these, approximately 15% had hollows, although only 16 hollows are currently of suitable size to support Black Cockatoo breeding. Competition currently exists for nest hollows with European honeybees and invading bird species. Continued loss of hollows in general will increase the competition for remaining hollows by a variety of species. Black Cockatoos are generally less resilient to these pressures and can be displaced by other native and invasive species. Therefore, although the proposed action is not likely to introduce, establish or increase invasive species presence; the removal of hollows may increase the competition for remaining habitat.

• Introduce disease that may cause the species to decline: Loss and degradation of habitat by secondary impacts such as introduction of *Phytophtora cinnamomi* or weed invasion could result from the proposed action. These aspects are managed as part of Main Roads standard practice and significant impacts are considered unlikely.

• Interfere with the recovery of the species: Species recovery, as defined by the Recovery Plan (DPaW 2013), is dependent upon stopping the further decline in the distribution and abundance of Carnaby's Black Cockatoo by protecting the birds throughout their life stages and enhancing habitat critical for survival throughout their breeding and non-breeding range, ensuring that the reproductive capacity of the species remains stable or increases. The proposed action is likely to involve the removal of critical habitat including potential breeding and foraging habitat.

Forest Red-tailed Black Cockatoo. The criteria used to assess significant impact to Forest Red-tailed Black Cockatoo are listed in the Significant Impact Guidelines 1.1 (DotE 2013). It is expected the proposed action is likely to have a significant impact on the EPBC Act listed Forest Red-tailed Black Cockatoo given the following:

• Lead to a long-term decrease in the size of an important population of a species: While outside the modelled distribution of this species in the current Black Cockatoo referral guidelines (DSEWPaC 2012) this mapping has been updated to include the proposed action area in the revised draft Black Cockatoo referral guidelines (DEE 2017a). Forest Red-tailed Black Cockatoo were recorded in the proposed actin area and it is therefore assumed the area of occupancy of the species includes the proposed action. The location of the proposed action is nearing the modelled distribution limit of the species range, which may make this an important population

(DotE 2013). The proposed action is part of a 1500 ha strip of vegetation along the Swan Coastal Plain adjacent to housing estates and other land disturbance. Neerabup National park (937 ha) lies adjacent to the proposed action. While there is an abundance of alternative habitat available, approximately 570 trees were recorded that meet the criteria as potential breeding habitat. Of these, approximately 15% had, although only 16 hollows are currently of suitable size to support Black Cockatoo breeding. Depending upon the project final footprint, a decrease in the population of Black Cockatoo is possible.

• Reduce the area of occupancy of an important population: Forest Red-tailed Black Cockatoo were recorded in the survey area and the location of the proposed action is nearing the modelled distribution limit of the species range, which may make this an important population (DotE 2013). Approximately 570 trees were recorded within the prposed action area that meet the potential breeding habitat criteria. Approximately 60% and 50% of the proposed action area contains foraging and roosting habitat, respectively for the Forest Red-tail Black Cockatoo. The proposed action will reduce the available area of occupancy for this species.

• Fragment an existing population into two or more populations: The proposed action involves clearing along the edges of the existing wide vegetated corridor. The gap created by the proposed action will be less than 4 km between patched, therefore the impact is unlikely to fragment an existing population into two or more populations.

• Adversely affect habitat critical to an important population: The species was observed within the proposed action, with foraging, roosting and potential breeding habitat present. While there is no breeding evidence or permanent surface water present within the proposed action; Marri, Karri and Jarrah are present and the mean annual rainfall is greater than 600 mm, so the habitat could be considered critical (DEC 2008). The location of the proposed action is nearing the modelled distribution limit of the species range, which may also make this an important population (DotE 2013), noting the limitation around defining a population for Black Cockatoos. The proposed action, which may remove 16 hollows of suitable size to support Black Cockatoo breeding and foraging habitat may impact habitat critical to the survival of the species.

• Disrupt the breeding cycle of an important population: There is no breeding evidence within the proposed action area. The removal of potential breeding trees, foraging and roosting habitat will reduce the amount of habitat present in the region. Decreasing the amount of food available to breeding birds can reduce chick survival rates, which could disrupt the breeding cycle. The significance of the impact is likely to be reduced by Neerabup National park (937 ha) occurring adjacent to the proposed action. This area is expected to have habitat in similar or better condition than the proposed action area. Depending upon the project final footprint, some disruption to the species breeding cycle may occur.

• Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline: There is no breeding evidence within the proposed action. The removal of potential breeding trees, foraging and roosting habitat will decrease the availability of habitat present in the region. However, the significance of the impact is likely to be reduced by Neerabup National park (937 ha) occurring adjacent to the referral area. This area is expected to have habitat in similar or better condition than the prposed action area. Depending upon the project final footprint, species decline could result from the proposed action.

• Result in invasive species that are harmful to a vulnerable species becoming established in

the vulnerable species' habitat: The proposed action involves the upgrade and extension of existing roads, which will include freight traffic. Existing biosecurity measures and protocols within the freight industry will minimise the risk of invasive species introduction. There are approximately 570 trees within the referral area that meet the criteria as potential breeding habitat. Of these, approximately 15% had hollows, although only 16 hollows are currently of suitable size to support Black Cockatoo breeding. Competition currently exists for nest hollows with European honeybees and invading bird species. Continued loss of hollows in general will increase the competition for remaining hollows by a variety of species. Black Cockatoos are generally less resilient to these pressures and can be displaced by other native and invasive species. Therefore, although the proposed action is not likely to introduce, establish or increase invasive species presence; the removal of hollows may increase the competition for remaining habitat.

• Introduce disease that may cause the species to decline: Loss and degradation of habitat by secondary impacts such as introduction of Phytophtora cinnamomi or weed invasion could result from the proposed action. These aspects are managed as part of Main Roads standard practice and significant impacts are considered unlikely.

• Interfere substantially with the recovery of the species: Species recovery objective, as defined by the Recovery Plan (DEC 2008), is to stop further decline in the breeding populations of Forest Red-tailed Black Cockatoo and to ensure their persistence throughout their current range in the south-west of Western Australia. The proposed action is likely to impact the species, which may interfere with the recovery of the species, although this is unlikely to be substantial.

Banksia Woodlands of the Swan Coastal Plain TEC. It is expected the proposed action is likely to have a significant impact on the EPBC Act listed Banksia Woodlands of the Swan Coastal Plain TEC given the following:

• The Banksia woodland vegetation type throughout the proposed action footprint is likely to be representative of Banksia woodland TEC. Detailed flora and vegetation surveys are currently underway to confirm the presence, extent and quality of conservation significant vegetation community types in the project area

• Potential impacts from the proposed action include loss of vegetation associated with a TEC and/or PEC, potential for weed incursion and dieback into the ecological communities.

Eucalyptus argutifolia. The proposed action is not likely to have a significant impact on the EPBC Act listed *Eucalyptus argutifolia* given the following:

• *Eucalyptus argutifolia* and species habitat may occur 1-3 km east of the proposed action, specifically east of Wanneroo Road. Previous flora and vegetation survey (GHD 2014) did not identify the presence of this species in the proposed action footprint and it is unlikely the species will be impacted by the proposed action since the design along Wanneroo Road involves widening an existing road alignment to dual carriageway in an area not known to support *Eucalyptus argutifolia* and species habitat.

Aquatic Root Mat Community Number 1 of Caves of the Swan Coastal Plain. The proposed action was assessed against the Significant Impact Criteria 1.1 for the Aquatic Root Mat Community in Caves of the Swan Coastal Plain. The proposed action is not likely to have a

significant impact on the EPBC Act listed Aquatic Root Mat Community Number 1 of Caves of the Swan Coastal Plain TEC given the following:

• Reduce the extent of an ecological community: The closest extent of the proposed action is approximately 4 km south south-east of a 1000 m buffer area of the cave entrances. The caves occur where there are cave streams and the roots of tuart trees that extend into each of the caves and streams. There is no evidence to indicate the ecological community occurs within the proposed action or that the proposed action will introduce threatening process that would result in an indirect impact. The extent of the ecological community will not be reduced by the proposed action.

• Fragment or increase fragmentation of an ecological community: The proposed action will not fragment the existing populations, which occurs in a very restricted distribution within the Yanchep National Park (DEE 2017b). The closest extent of the prposed action is approximately 4 km south south-east of a 1000 m buffer area of the cave entrances.

• Adversely affect habitat critical to the survival of an ecological community: The critical habitat for the ecological community is within the seven individual caves, where there are cave streams, and the roots of tuart trees that extend into each of the caves and streams, plus the catchments for the streams that flow through the caves. This includes areas of the Gnangara mound catchment between the caves and the top of the mound, and the superficial water table that supplies the water to the cave-streams. The closest extent of the proposed action is approximately 4 km south south-east of a 1000 m buffer area of the cave entrances. The proposed action will not adversely impact (i.e. decline) the water table levels, nor destroy the tuart vegetation or caves associated with the ecological community.

• Modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns: Modifications to the root mat community are not expected as a result of the proposed action. The proposed action will not adversely impact (i.e. decline) the water table levels, nor destroy the tuart vegetation or caves associated with the ecological community. Furthermore, the risk of longer term threats such as pollution of groundwater will avoided through standard stormwater system design for roadside drainage.

• Cause a substantial change in the species composition of an occurrence of an ecological community: There is a negligible risk the proposed action will cause a substantial change in the species composition of the ecological community. The proposed action is not connected with threatening process, such as regular burning or clearing of tuart vegetation associated with the ecological community, which could change the species composition of the caves.

• Cause a substantial reduction in the quality or integrity of an occurrence of an ecological community: There is a negligible risk the proposed action will assist invasive species that are harmful to the listed ecological community, to become established, or cause mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which might kill or inhibit the growth of species in the ecological community.

• Interfere with the recovery of an ecological community: The four key approaches to achieve the recovery of the ecological community include:

- Protection - preventing further loss of extent and condition

- Restoration - active abatement of threats, recovering natural biological and non-biological attributes of the sites and the current area covered by the ecological community

- Communicate - increase public understanding of the value and function of the ecological community and encourage their efforts in its protection and recovery

- Research - improve understanding and methods for restoration and protection.

The proposed action will not reduce the extent or condition of the ecological community. Furthermore, there is a negligible risk the proposed action will introduce additional or new threats that will adversely impact the ecological community. The proposed action is approximately 4 km from a 1000 m buffer of the cave entrances, with no to limited impacts to groundwater, so there is no impact pathway present. The proposed action will not interfere with communication or research surrounding the ecological community.

Section 5 – Conclusion on the likelihood of significant impacts

A checkbox tick identifies each of the matters of National Environmental Significance you identified in section 2 of this application as likely to be a significant impact.

Review the matters you have identified below. If a matter ticked below has been incorrectly identified you will need to return to Section 2 to edit.

5.1.1 World Heritage Properties

No

5.1.2 National Heritage Places

No

5.1.3 Wetlands of International Importance (declared Ramsar Wetlands)

No

5.1.4 Listed threatened species or any threatened ecological community

Listed threatened species and communities - Yes

5.1.5 Listed migratory species

No

5.1.6 Commonwealth marine environment

No

5.1.7 Protection of the environment from actions involving Commonwealth land

No

5.1.8 Great Barrier Reef Marine Park

No

5.1.9 A water resource, in relation to coal/gas/mining

No

5.1.10 Protection of the environment from nuclear actions

No

5.1.11 Protection of the environment from Commonwealth actions

No

5.1.12 Commonwealth Heritage places overseas

No

5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action.

Not relevant.

Section 6 – Environmental record of the person proposing to take the action

Provide details of any proceedings under Commonwealth, State or Territory law against the person proposing to take the action that pertain to the protection of the environment or the conservation and sustainable use of natural resources.

6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Please explain in further detail.

Main Roads is a State agency with an assured record of responsible environmental management and environmental management systems.

Main Roads recognises the importance of the natural environmental and social values and the broader benefits that these values provide to the community. Main Roads is committed to protecting the natural environmental and social values in all of their activities. All work undertaken by Main Roads is completed in accordance with their Environmental Policy and Environmental Management System (EMS) that is implemented, maintained, continually improved and compliant with ISO 14001:2015.

Main Roads EMS holds Certificate No. MRWQ51–CCE04 which complies with the requirements of ISO 14001:2015 environmental management systems comprising ‘Activities, products and services associated with delivering Road Management (planning, building and maintaining) on Western Australia’s State Road Network’. The EMS was certified in 8 January 2008 and expires on 8 June 2019.

6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application.

Not relevant.

6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation’s environmental policy and framework?

Yes

6.3.1 If the person taking the action is a corporation, please provide details of the corporation's environmental policy and planning framework.

Main Roads' EMS is independently certified and covers all of their processes and activities that have the potential to impact on the environment. The EMS ensures compliance with Main

Roads' environment and heritage compliance obligations, providing the framework for driving environmental requirements throughout leadership, planning, support, operation, performance evaluation and improvement actions. The action, therefore, will be undertaken, monitored and measured in accordance with the Main Roads EMS.

Main Roads Environmental Policy commits to protecting and enhancing the natural environmental and social values in all Main Roads activities.

6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?

Yes

6.4.1 EPBC Act No and/or Name of Proposal.

EPBC 2015/7532

EPBC 2016/7777

EPBC 2016/7762

EPBC 2016/7761

EPBC 2016/7740

EPBC 2016/7732

EPBC 2016/7714

EPBC 2016/7698

EPBC 2016/7664

EPBC 2016/7656

EPBC 2016/7633

EPBC 2016/7761

EPBC 2016/7656

EPBC 2017/8110

EPBC 2017/7972

EPBC 2017/7907

EPBC 2017/8035

EPBC 2017/8009

EPBC 2018/8315

EPBC 2018/8284

EPBC 2018/8279

Section 7 – Information sources

You are required to provide the references used in preparing the referral including the reliability of the source.

7.1 List references used in preparing the referral (please provide the reference source reliability and any uncertainties of source).

Reference Source	Reliability	Uncertainties
GHD (2018). Mitchell Freeway Extension & Wanneroo Road Duplication Preliminary Environmental Impact Assessment and Gap Analysis.	Information is reliable.	There are no uncertainties.
O'Connor R. & E. (2013). Aboriginal Heritage Desktop Assessment: Mitchell Freeway Extension from Burns Beach Road to Romeo Road and Associated Projects. Unpublished report for GHD Pty Ltd.	Information is reliable.	There are no uncertainties.
Goode (2013). Report of an Ethnographic Aboriginal Heritage Survey of the Mitchell Freeway Extension, from Burns Beach Road (SLK 29900) in Kinross to Romeo Road (SLK 41600) in Alkimos, Perth Western Australia. Unpublished report prepared for Main Roads.	Information is reliable.	There are no uncertainties.
Nayton (2013). Desktop Assessment of Non-Indigenous Heritage Places within Study Area Associated with the Mitchell Freeway Extension Between Burns Beach Road and Romeo Road. Unpublished report for Main Roads and GHD.	Information is reliable.	There are no uncertainties.
Nayton (2013). Archaeological Survey of Non-Indigenous Heritage Places within the Stage 1 Construction Area Associated with the Mitchell	Information is reliable.	There are no uncertainties.

Reference Source	Reliability	Uncertainties
Freeway Extension from Burns Beach Road to Hester Avenue. Unpublished report for Main Roads and GHD.		
Glevan Consulting (2013). Mitchell Freeway Extension Dieback Assessment. Unpublished report for Main Roads.	Information is reliable.	There are no uncertainties.
GHD (2013). Mitchell Freeway Extension Black Cockatoo Assessment. Unpublished report for Main Roads.	Information is reliable.	There are no uncertainties.
GHD (2014). Mitchell Freeway extension: Burns Beach Road to Romeo Rd Level 2 Flora & Level 1 Fauna Assessment. Unpublished report for Main Roads.	Information is reliable.	There are no uncertainties.
GHD (2014). Neerabup Road Extension Fauna Movement Study. Unpublished report for Main Roads.	Information is reliable.	There are no uncertainties.
GHD (2014). Neerabup Road Extension Level 2 Fauna Survey. Unpublished report for Main Roads.	Information is reliable.	There are no uncertainties.
GHD (2013). Mitchell Freeway Extension Preliminary Site Investigation. Unpublished report prepared for Main Roads.	Information is reliable.	There are no uncertainties.
GHD (2018). Wanneroo Road Widening Ocean View Tavern to Karaborup Road Preliminary Environmental Impact Assessment and Environmental Management Plan. Unpublished report for Main Roads.	Information is reliable.	There are no uncertainties.
360 Environmental (2014). Mitchell Freeway (Stage 2) Hester Avenue to Romeo Road New Access Road Preliminary Environmental Impact Assessment. Unpublished report for Main Roads.	Information is reliable.	There are no uncertainties.
GHD (2014). Mitchell Freeway	Information is reliable.	There are no uncertainties.

Reference Source	Reliability	Uncertainties
Extension – Burns Beach Road to Romeo Road Environmental Impact Assessment. Unpublished report for Main Roads.		
Main Roads (2014). Clearing Impact Assessment Mitchell Freeway Extension Stage 1 Burns Beach Road to Hester Avenue. Unpublished report for Main Roads.	Information is reliable.	There are no uncertainties.
EPA (2000). Metropolitan Region Scheme Amendment No. 992/33 Clarkson-Butler, Wanneroo Bulletin 971.	Information is reliable.	There are no uncertainties.
EPA (2003). Metropolitan Region Scheme Amendment No. 992/33 Clarkson-Butler (Assessment No. 1139) MS 629.	Information is reliable.	There are no uncertainties.

Section 8 – Proposed alternatives

You are required to complete this section if you have any feasible alternatives to taking the proposed action (including not taking the action) that were considered but not proposed.

8.0 Provide a description of the feasible alternative?

There are no proposed alternatives to undertaking the proposed action.

8.1 Select the relevant alternatives related to your proposed action.

Timeframes

8.2 Provide an estimated start and estimated end date for the proposed alternative action.

Start 06/2021

End 04/2024

8.27 Do you have another alternative?

No

Section 9 – Contacts, signatures and declarations

Where applicable, you must provide the contact details of each of the following entities: Person Proposing the Action; Proposed Designated Proponent and; Person Preparing the Referral. You will also be required to provide signed declarations from each of the identified entities.

9.0 Is the person proposing to take the action an Organisation or an Individual?

Organisation

9.2 Organisation

9.2.1 Job Title

Project Director

9.2.2 First Name

Sergio

9.2.3 Last Name

Martinez

9.2.4 E-mail

sergio.martinez@mainroads.wa.gov.au

9.2.5 Postal Address

Waterloo Crescent
East Perth WA 6004
Australia

9.2.6 ABN/ACN

ABN

50860676021 - MAIN ROADS

9.2.7 Organisation Telephone

91584318

9.2.8 Organisation E-mail

sergio.martinez@mainroads.wa.gov.au

9.2.9 I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

Not applicable

Small Business Declaration

I have read the Department of the Environment and Energy's guidance in the online form concerning the definition of a small a business entity and confirm that I qualify for a small business exemption.

Signature:..... Date: .....

9.2.9.2 I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations

No

9.2.9.3 Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made

Person proposing the action - Declaration

I, Sergio Martinez, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature: Sergio J. Martinez Date: 18/12/18

I, Sergio Martinez, the person proposing the action, consent to the designation of Sergio Martinez as the proponent of the purposes of the action describe in this EPBC Act Referral.

Signature: Sergio J. Martinez Date: 18/12/18

9.3 Is the Proposed Designated Proponent an Organisation or Individual?

Organisation

9.5 Organisation

9.5.1 Job Title

Project Director

9.5.2 First Name

Sergio

9.5.3 Last Name

Martinez

9.5.4 E-mail

sergio.martinez@mainroads.wa.gov.au

9.5.5 Postal Address

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East Perth WA 6004
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9.5.8 Organisation E-mail

sergio.martinez@mainroads.wa.gov.au

Proposed designated proponent - Declaration

I, Sergio Martinez, the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this EPBC Act Referral.

Signature: Sergio Martinez Date: 18/12/18

9.6 Is the Referring Party an Organisation or Individual?

Organisation

9.8 Organisation

9.8.1 Job Title

Project Director

9.8.2 First Name

Sergio

9.8.3 Last Name

Martinez

9.8.4 E-mail

sergio.martinez@mainroads.wa.gov.au

9.8.5 Postal Address

Waterloo Crescent
East Perth WA 6004
Australia

9.8.6 ABN/ACN

ABN

50860676021 - MAIN ROADS

9.8.7 Organisation Telephone

91584318

9.8.8 Organisation E-mail

sergio.martinez@mainroads.wa.gov.au

Referring Party - Declaration

I, Sergio Martinez, I declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence.

Signature: ..... Date: 18/12/18

Appendix A - Attachments

The following attachments have been supplied with this EPBC Act Referral:

1. MFE EBPC Proposed Action Development Envelope.zip
2. Main Roads Environmental Policy.pdf
3. Ministerial Statement 629 2003.pdf
4. Mitchell Freeway Ext BB to RR Flora and Fauna Assessment_GHD 2014_Part1.pdf
5. Mitchell Freeway Ext BB to RR Flora and Fauna Assessment_GHD 2014_Part2.pdf
6. Mitchell Freeway Ext BB to RR Flora and Fauna Assessment_GHD 2014_Part3.pdf
7. Mitchell Freeway Ext BB to RR Flora and Fauna Assessment_GHD 2014_Part4.pdf
8. Mitchell Freeway Ext BB to RR Flora and Fauna Assessment_GHD 2014_Part5.pdf
9. Mitchell Freeway Ext BB to RR Flora and Fauna Assessment_GHD 2014_Part6.pdf
10. Mitchell Fwy Ext Hester to Romeo PEIA & Gap Analysis Aug18 Final_Part1.pdf
11. Mitchell Fwy Ext Hester to Romeo PEIA & Gap Analysis Aug18 Final_Part2.pdf
12. Neerabup karst environments MFE.pdf
13. Prelim Karst Feature Assessment at Wanneroo Road Realignment.pdf