



**Main Roads Western Australia**  
Mitchell Freeway Extension Hester Avenue to Romeo Road  
Remote Fauna Camera Survey

February 2020

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# 1. Introduction

## 1.1 Project background

Main Roads Western Australia (Main Roads) proposes to extend Mitchell Freeway north from Hester Avenue to Romeo Road, including an upgrade to Wanneroo Road from Dunstan Road to Triana Road (the Proposal).

Mitchell Freeway is the main arterial road that connects the northern suburban areas with Perth's central business district. The freeway currently terminates at Hester Avenue. Perth's northern suburbs have experienced continuing strong growth, with the population of Yanchep, Alkimos and Eglinton forecast to reach 118,000 by 2031<sup>1</sup>.

The Proposal will extend the Mitchell Freeway a further 5.6 kilometres (km) from Hester Avenue to Romeo Road, as well as upgrading Wanneroo Road to a dual carriageway for 5.5 km from Dunstan Road to Triana 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.

To inform the Proposal design and approval, GHD Pty Ltd (GHD) was commissioned to undertake a Level 2 fauna survey within the proposed Proposal footprint (survey area) and an extended survey area in spring 2018. The extended survey area covers a larger area and extends between the two road alignments within the Neerabup National Park, between Hester Avenue and Karaborup Road and includes a part of the Neerabup Nature Reserve, east of Wanneroo Road and a larger area around Romeo Road in the north.

As part of this assessment (GHD 2019) remote cameras were set to supplement and increase survey effort. Within the survey area 124 vertebrate fauna species were recorded, including 17 mammals, 74 birds, 32 reptiles and one amphibian. Five conservation significant fauna species were identified as present and a further two likely to be present in the survey area based on a combination of observations and habitat assessment. The five conservation significant fauna species recorded within the survey area included:

- Carnaby's Cockatoo (*Calyptorhynchus latirostris*) – listed as Endangered under the BC Act and Endangered under the EPBC Act
- Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso*) – listed as Vulnerable under the BC Act and Vulnerable under the EPBC Act
- Peregrine Falcon (*Falco peregrinus*) – listed as Other specially protected fauna under the BC Act
- Southern Brown Bandicoot / Quenda (*Isodon fusciventer*) – listed as P4 by DBCA
- Western Brush Wallaby (*Notamacropus irma*) – listed as P4 by DBCA.

Species likely to be present in the survey area included:

- Black-striped Snake (*Neelaps calonotos*) – listed as P3 by DBCA
- Jewelled southwest Ctenotus (Swan Coastal Plain population) (*Ctenotus gemmula*) – listed as P3 by DBCA.

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<sup>1</sup> <https://www.mediastatements.wa.gov.au/Pages/McGowan/2019/03/Mitchell-Freeway-extension-to-Romeo-Road-to-start-next-year.aspx>

## **1.2 Purpose of this report**

GHD was commissioned by Main Roads to undertake additional remote fauna camera monitoring within the survey area. The purpose of this report is to present the findings from this additional remote camera deployment during spring 2019.

The outcome of the survey will be used to inform the environmental assessment and approvals process. The results of the survey may also assist in the preparation of a Clearing Impact Assessment and Vegetation Management Plan and may be used in State or Commonwealth approval documentation.

## **1.3 Survey area**

The survey area includes the proposed road corridors for Mitchell Freeway extension and Wanneroo Road upgrade plus a 50 metre (m) buffer, located approximately 35 km north of Perth in the City of Wanneroo.

The freeway extension works are located between Hester Avenue, Clarkson and Romeo Road, Alkimos. The Wanneroo Road upgrade works are located from Dunstan Road to Trian Road Straight Line Kilometre (SLK) 35.50-40.40. The survey area boundary is shown on Figure 1, Appendix A.

## **1.4 Scope of works**

The scope of works was to undertake additional remote fauna camera monitoring of the survey area. The following actions were completed to fulfil the scope:

- A review of the spring 2018 detailed flora, vegetation and targeted fauna survey (GHD 2019)
- Deployment and collection of remote fauna cameras
- Analyse the camera images and identify the fauna captured
- A concise report (this document) on the findings of the survey.

## **1.5 Report limitations and assumptions**

This report has been prepared by GHD for Main Roads and may only be used and relied on by Main Roads for the purpose agreed between GHD and the Main Roads as set out in section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than Main Roads arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report (including species listings). GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on information obtained from specific sample points. Site conditions at other parts of the site may be different from the site conditions found at the specific sample points.



Site conditions may change after the date of the field survey. GHD does not accept responsibility arising from, or in connection with, any change to the site conditions. GHD is also not responsible for updating this report if the site conditions change.

## 2. Methodology

### 2.1 Survey approach

Remote cameras were deployed between 4 October and 1 November 2019 by Ecologists Madison Roberts and Nicola Barrett.

#### *Permits and ethics*

A Regulation 17 licence to Take Fauna for Scientific Purposes was obtained from the DBCA prior to undertaking the fauna survey (Licence Number: BA27000144). The fauna survey (specifically trapping and animal handling) was undertaken in accordance with Standard Operating Procedures, which were required to be followed under the conditions of GHD's fauna trapping permit.

#### *Guiding documents*

The fauna survey was undertaken with reference to the EPA *Technical Guidance – Sampling methods for terrestrial vertebrate fauna* (EPA 2016a) and *Technical Guidance – Terrestrial Fauna Surveys* (EPA 2016b).

#### *Camera traps*

Ten remote sensor cameras (Reconyx-Hyperfire) were deployed for a period of 28 nights within the survey area. Cameras were positioned in areas where potentially significant species might be recorded i.e. logs or utilising species access tracks. Cameras were baited with sardines to attract fauna species within the survey area. A GPS location was recorded for each camera as well as the date deployed and recovered. Camera locations are depicted in Table 1 and Figure 1, Appendix A. Data from the cameras were downloaded to a computer and analysed for the presence of animals following the field survey.

**Table 1 Camera trap locations**

Camera number	Habitat type	Location		Camera deployment days
		Easting	Northing	
CAM A	Banksia Woodland	377639.9	6500273	28
CAM 24	Banksia Woodland	377769.1	6499969	28
CAM 28	Jarrah-Marri Woodland	377913	6499350	28
CAM SG3	Tuart Woodland	377972.4	6499160	28
CAM 16	Mixed Jarrah Woodland	378061.2	6499049	28
CAM 15B	Banksia Woodland	377987.2	6498936	28
CAM B	Banksia sessilis Closed Tall Scrub	378225	6498550	28
CAM 27	Banksia Woodland	377169.2	6500650	28
CAM 5SG	Scattered natives over weeds	376929.2	6500847	28
CAM 166	Banksia Woodland	377679.2	6499771	28
<b>Total</b>				<b>280</b>

### 3. Results

Fifteen species of fauna were recorded on the remote cameras during the 280 camera deployment days. This comprised nine mammals, four reptiles and two birds. Two conservation significant mammals were detected during the survey, these were:

- Southern Brown Bandicoot (*Isodon fusciventer*) – listed as P4 by DBCA
- Western Brush Wallaby (*Notamacropus irma*) – listed as P4 by DBCA.

Six introduced (feral) fauna were detected during the survey. All species detected are presented below in Table 2.

No new species were detected during the current survey, with all species observed or detected previously within the survey area or extended survey area (GHD 2019).

**Table 2 Fauna list of this survey and number of hits per camera**

Common name	Taxa	Listing	Camera									
			3SG	5SG	Cam 15	Cam 16	Cam 24	Cam 27	Cam 28	Cam 166	Cam A	Cam B
<b>Mammal</b>												
Western Grey Kangaroo	<i>Macropus fuliginosus</i>		1		1	3	2		2	2	1	1
Southern Brown Bandicoot	<i>Isodooon obesulus fuciventer</i>	P4		29			15	23	20	34	30	11
Rat	<i>Rattus rattus</i>	intr		1								
Cat	<i>Felis catus</i>	intr		1			1		1		3	1
Western Brush-wallaby	<i>Notamacropus Irma</i>	P4								1		
Rabbit	<i>Oryctolagus cuniculus</i>	intr					6			2	3	
Fox	<i>Vulpes vulpes</i>	intr					1	1				1
Dog	<i>Canis domesticus</i>	intr						1				
House Mouse	<i>Mous musculus</i>	intr						1				
<b>Bird</b>												
Painted Button-quail	<i>Turnix varius</i>								1			
Splendid Fairy-wren	<i>Malurus splendens</i>				2							
<b>Reptile</b>												
Bobtail	<i>Tiliqua rugosa</i>		7	11	24	13	5	12	12	7	8	6
South-western Crevice Skink	<i>Egernia napoleonis</i>			3								
West Coast Long-tailed Ctenotus	<i>Ctenotus australis</i>				2							
Gould's Goanna	<i>Varanus gouldii</i>				2							

\* intr = introduced

\*\* P4 = Priority 4 (DBCA)

## 4. Conclusions

The spring 2019 remote fauna camera monitoring of the survey area identified the presence of 15 fauna species including two conservation significant species: Western Brush Wallaby (P4) and Southern Brown Bandicoot (P4). Six introduced (feral) species were also recorded during the survey. The additional survey did not identify any species which were not identified in the spring 2018 detailed flora, vegetation and targeted fauna survey (GHD 2019).

## 5. References

Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) 2012, *Environment Protection and Biodiversity Act 1999 referral guidelines for three threatened black cockatoo species: Carnaby's Black Cockatoo (endangered) *Calyptorhynchus latirostris*, Baudin's Black Cockatoo (vulnerable) *Calyptorhynchus baudinii* and Forest Red-tailed Black Cockatoo (vulnerable) *Calyptorhynchus banksia naso**, Australian Government Canberra.

EPA 2016a, Technical Guidance – Sampling methods for terrestrial vertebrate fauna, Perth, Environmental Protection Authority.

EPA 2016b, Technical Guidance, Terrestrial Fauna Surveys, Perth, Environmental Protection Authority.

GHD 2019, Mitchell Freeway Extension Hester Avenue to Romeo Road Biological Survey, Unpublished report for Main Roads Western Australia, June 2019

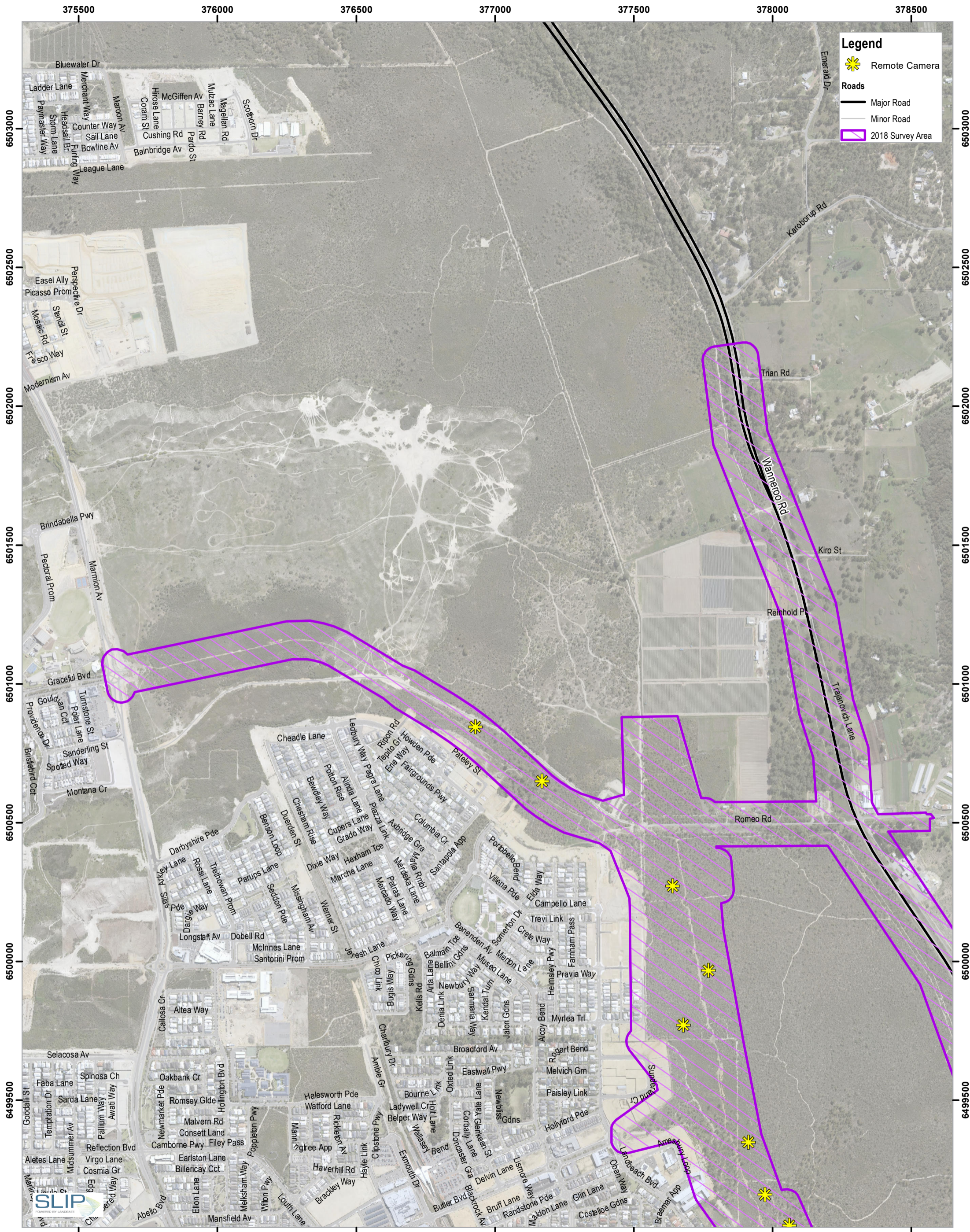
# Appendices



# Appendix A – Figure

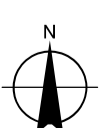
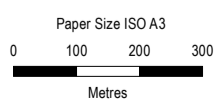
## Figure 1 Remote Camera Locations





**Legend**

- Remote Camera
- Roads**
  - Major Road
  - Minor Road
  - 2018 Survey Area



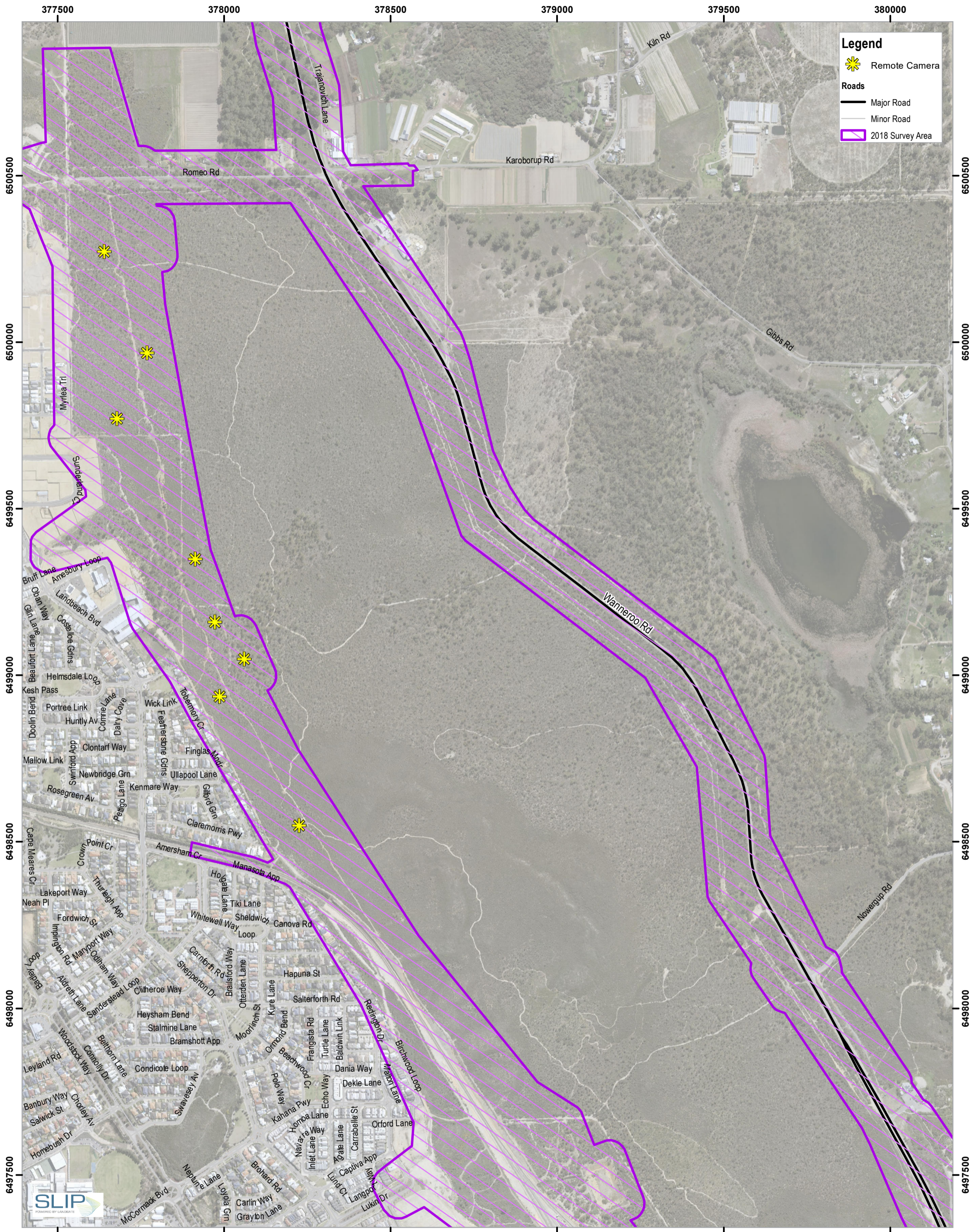
**Main Roads WA**  
**Main Roads WA Mitchell Freeway Extension**  
**Hester Avenue to Romeo Road**  
**Remote Fauna Camera Monitoring**

Project No. 12516238  
 Revision No. 0  
 Date 18/02/2020

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

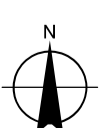
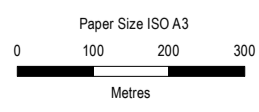
**Remote Camera Locations**





**Legend**

- Remote Camera
- Roads**
- Major Road
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**Remote Camera Locations**



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379000

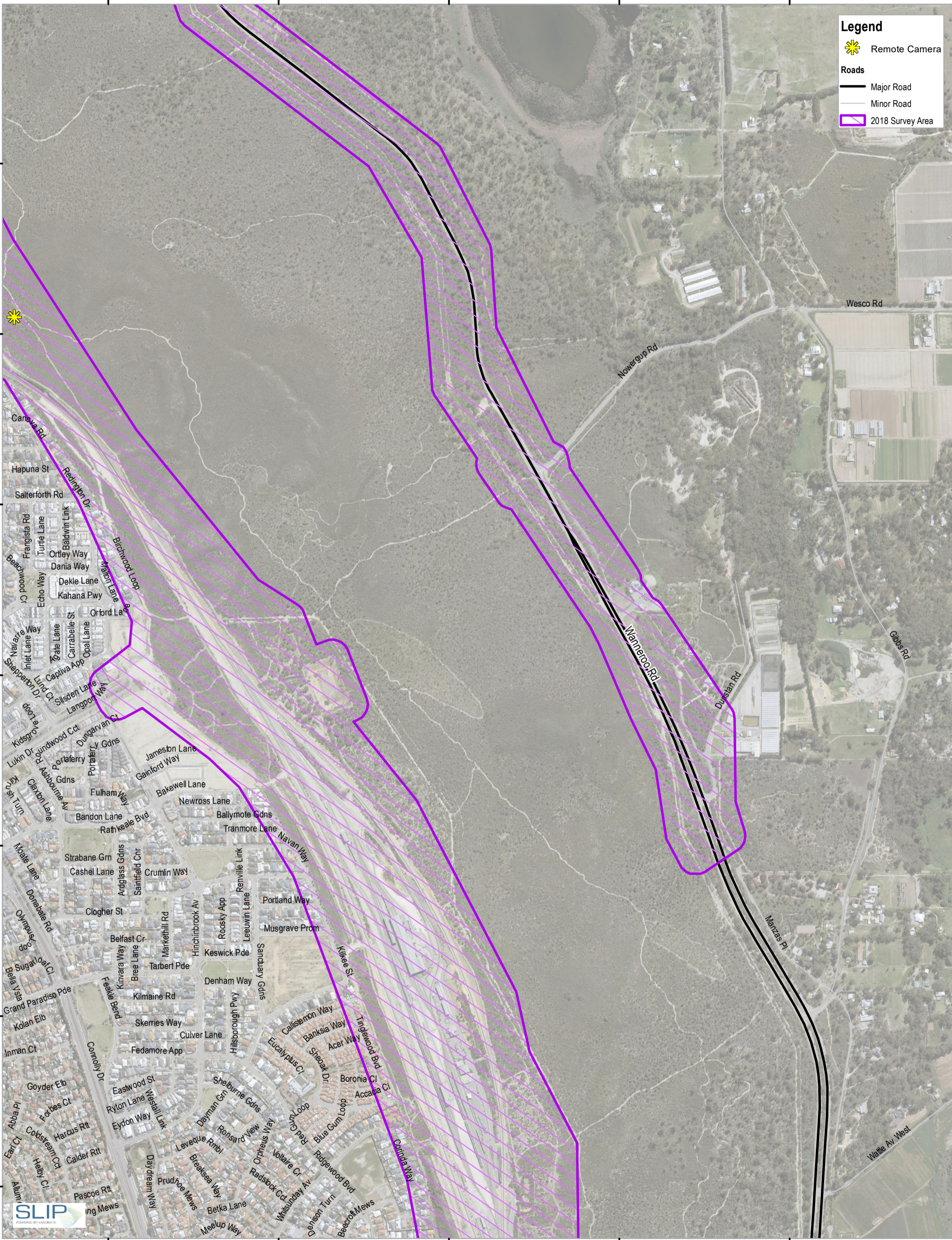
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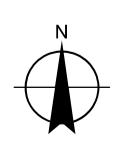
- Remote Camera

**Roads**

- Major Road
- Minor Road
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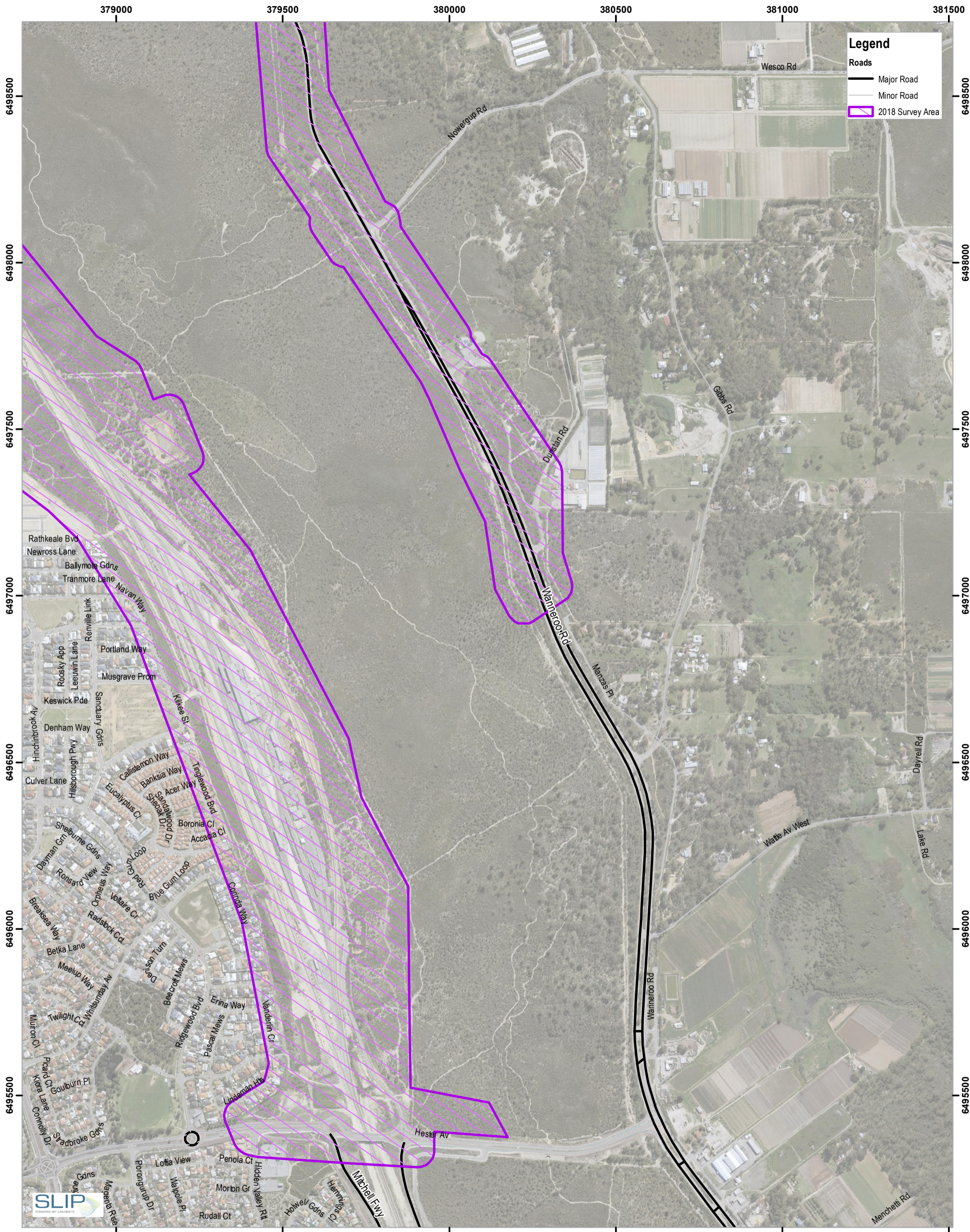
**Remote Camera Locations**

**FIGURE 1**  
**Page 3 of 4**

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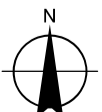
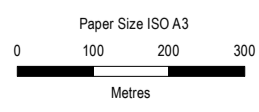




**Legend**

Roads

-  Major Road
-  Minor Road
-  2018 Survey Area



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



**Main Roads WA**  
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**Remote Camera Locations**



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87528/[https://projectsportal.ghd.com/sites/pp18\\_03/mfehr2019biologicals/ProjectDocs/12516238-REP-MFE remote camera fauna assessment 2019.docx](https://projectsportal.ghd.com/sites/pp18_03/mfehr2019biologicals/ProjectDocs/12516238-REP-MFE_remote_camera_fauna_assessment_2019.docx)

Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	M. Roberts	G Gaikhorst		D Farrar		25/02/2020

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