



Roe Highway Widening

Targeted Black Cockatoo Survey

Main Roads Western Australia

16 January 2026

→ The Power of Commitment



Project name		Roe Hwy Widening Flora and Fauna Assessment					
Document title		Roe Highway Widening Targeted Black Cockatoo Survey					
Project number		12634226					
File name		12634226-REP- REV0_Main Roads Roe Highway Widening - Targeted Black Cockatoo Survey.docx					
Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
S3	A	S Flemington R Browne-Cooper	M Toner				
S3	B	P Patterson	S Brown		S Brown		10/10/2025
S4	0	P Patterson	D Farrar		D Farrar		28/1/2026

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Executive Summary

Main Roads Western Australia has identified Roe Highway as a future Smart Freeway and has commenced planning for the widening of the southern portion of Roe Highway from 4-lane to 8-lane configuration by 2036. GHD was commissioned by Main Roads to complete a Black Cockatoo assessment focussing on foraging, roosting and breeding habitat within the survey area. The purpose of this report is to document the results of the assessment. The outcome of the survey and information supplied in this report will be used to inform the environmental assessment and approvals process and refinement of the proposed road design. The results of the biological survey may also assist in the preparation of environmental impact assessment documentation.

The survey area is located within the Perth Metropolitan Area and includes the southern portion of Roe Highway between Kwinana Freeway and Tonkin Highway. It is approximately 19 km long and approximately 337.9 hectares and is comprised of a development envelope and five road offset areas that partially intersecting with development envelope.

Eight broad fauna habitat types were identified and mapped across the survey area, including cleared areas which accounts for nearly half of the survey. The habitats are generally highly degraded and fragmented in most areas is due to the survey area location in an extensively developed metropolitan area subject to long-term degradation from the effects of weed invasion, landscape modification, and broad-scale vegetation loss.

Some areas of habitat are considered high value and provide suitable foraging and shelter for several locally occurring significant fauna. These areas include several patches of either Banksia woodland, or Eucalyptus woodland over Banksia habitats assessed as very good to excellent condition and with some habitat continuity beyond the survey area. These high-quality / high value habitat portions include Main Roads WA proposed Road Offset areas.

No roosting evidence was recorded, and the habitat was assessed as low to moderate for roosting, and no known roost sites are documented within the survey area however known roosting sites occur in proximity.

Suitable Black Cockatoo breeding trees (category 7) for Forest Red-tailed Black Cockatoo and Carnaby's Cockatoo occur scattered across the survey area, and one tree was assessed as having a potentially suitable hollow (category 2) based on signs of breeding use by Forest Red-tailed Black Cockatoo located within Road Offset Area D. It is recommended that this tree is revisited during spring 2025 coinciding with nesting to determine to further investigate breeding activity, as this may represent an important breeding record for Forest Red-tailed Black Cockatoo.

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1. Introduction

1.1 Background

Roe Highway is a strategic freight route carrying high freight volumes and has been identified as a future Smart Freeway, to be implemented based on Maximum Sustainable Flow Rate requirements contained in the Smart Freeways guidelines. Main Roads Western Australia (Main Roads) has commenced planning for the widening of Roe Highway (H018) between Kwinana Freeway and Tonkin Highway from its current four lanes configuration to an eight lane (four lanes in each direction) configuration by 2036..

1.2 Purpose of this report

GHD Pty Ltd (GHD) was commissioned by Main Roads to undertake a targeted Black Cockatoo Habitat Assessment. The outcome of the survey and information supplied in this report will be used to inform the environmental assessment and approvals process and refinement of the proposed road design. The results of the biological survey may also assist in the preparation of environmental impact assessment documentation.

1.3 Project location

1.3.1 Survey area

The survey area extends approximately 19 kilometres (km) along Roe Highway between Kwinana Freeway and Tonkin Highway (9.88 to 29.26 straight line kilometres, SLK) and includes five Road Offset areas . The survey area is approximately 330 hectares (ha). The survey area is shown in Figure 1, Appendix A.

1.3.2 Study area

The desktop study area includes the survey area and a 5 km buffer. Within the study area is the proposal context area which includes a 500 meter (m) boundary either side of the survey area (Figure 1, Appendix A).

1.4 Scope of works

The scope of works was to undertake a Targeted Black Cockatoo assessment and the following actions were completed to fulfill the scope:

- A desktop assessment of the study area, prior to the field survey component work to identify Black Cockatoo attributes
- A field survey targeting Black Cockatoo habitat focussing on breeding, foraging and roosting habitat completed with reference to Main Roads technical guidance (Main Roads, 2023) and EPBC Act referral guidelines (DAWE, 2022).
- A technical report covering the Black Cockatoo assessment
- Survey data in a format consistent with Index of Biodiversity Surveys for Assessments (IBSA) and Main Roads data standards.

1.5 Limitations and assumptions

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

GHD otherwise disclaims responsibility to any person other than Main Roads Western Australia 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. 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 assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by Main Roads and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

The opinions, conclusions and any recommendations in this report are based on information obtained from, and testing undertaken at or in connection with, 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 this report. 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.

This report has assessed desktop environmental aspects and biological factors in the field for the survey area. Should these areas change or be refined, further assessment may be required.

1.6 Relevant legislation, conservation codes and background information

In Western Australia (WA) significant fauna are protected under both Federal and State Government legislation. In addition, regulatory bodies also provide a range of guidance and information on expected standards and protocols for environmental surveys. Conservation codes and terms are defined in section **Error! Reference source not found.**

The following legislation is applicable to this assessment:

- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
- *Environmental Protection Act 1986* (EP Act)
- *Biodiversity Conservation Act 2016* (BC Act).

2. Methods

2.1 Desktop assessment

This report assesses the desktop component for three species of Threatened Black Cockatoos. Specifically, this includes a review of:

- The Department of Biodiversity Conservation and Attractions (DBCA) datasets from Data WA: Black Cockatoo Breeding sites buffered (DBCA-064) (GoWA, 2025a) and Black Cockatoo Roosting sites buffered (DBCA-063) (GoWA, 2025b)
- The DBCA provided datasets: Black Cockatoo Roosting Sites and Compiled White-Tailed Black Cockatoo Breeding Site locations for confirmed and unconfirmed roosting and nesting sites (DBCA, 2025).

The Black Cockatoo desktop assessment results are shown in Figure 2, Appendix A.

GHD has also completed vegetation, flora and wetlands assessments (GHD, 2025a) and a basic fauna and short-range endemic assessment (GHD, 2025b) of the survey area. These reports provide supplementary information on the biological aspects within the survey, context and study areas. The fauna habitat mapping in GHD (2025b) has been used to map the Black Cockatoo habitat areas.

2.2 Field survey

2.2.1 Guiding documents and data collection

The survey methodology and data collection were consistent with relevant aspects of the following documents, noting that Main Roads (2023) was requested as the primary source of reference for this assessment taking precedence over Commonwealth guidelines:

- Environmental Factsheet Technical Guidance Protecting Black Cockatoos – Baudin’s Cockatoo, Carnaby’s Cockatoo and Forest Red-tailed Black Cockatoo (Main Roads 2023)
- Referral guideline for 3 WA threatened Black Cockatoo species Carnaby’s Cockatoo (*Zanda latirostris*), Baudin’s Cockatoo (*Zanda baudinii*) and the Forest Red-tailed Black-cockatoo (*Calyptorhynchus banksii naso*) (DAWE 2022)
- Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) Survey guidelines for Australia’s threatened birds (DSEWPC 2010)
- Scoring system for the assessment of foraging value of vegetation for Black-Cockatoos. Revised 11th February 2022. Bamford Consulting Ecologists, (BCE 2022).

2.2.2 Survey timing and personnel

GHD Senior Zoologist Robert Browne-Cooper and Zoologist Melissa Wood completed the Targeted Black Cockatoo Assessment, and Principal Zoologist Glen Gaikhorst completed the follow-up hollow assessment of the survey area. This was completed concurrently with the basic fauna and short-range endemic survey (GHD, 2025b). In total 12 person days were expended for the fauna assessments (Table 1). The survey effort is shown in Figure 3, Appendix A.

Table 1 *Survey timing*

Date	Survey type	Survey effort
26 – 27 September	Basic Fauna Survey, Targeted SRE survey and Targeted Black Cockatoo Habitat Assessment	4 person days
30 September – 3 October	Basic Fauna Survey, Targeted SRE survey and Targeted Black Cockatoo Habitat Assessment	8 person days
4 February 2025	Black Cockatoo follow-up hollow assessment	1 day

2.2.3 Data collection and storage

Field data collection for the survey was undertaken using Global Positioning System (GPS) enabled Samsung field tablets using electronic forms in Collector. Data was synced to the cloud at the conclusion of each field day. GPS devices were used to capture survey effort (track logs). For walk tracks where track log was not saved, walk transect lines were added to approximate walk tracks location.

2.2.4 Black Cockatoo Habitat Assessment

The Black Cockatoo habitat assessment considered Baudin's Cockatoo (*Zanda baudinii*), Carnaby's Cockatoo (*Zanda latirostris*) and Forest Red-tailed Black Cockatoo (*Calyptrorhynchus banksii naso*), which are all known from the Swan Coastal Plain. The assessment approach was carried out based on Main Roads (2023) technical guidance in accordance with the project scope, and with nominal reference to Commonwealth referral guidelines (DAWE 2022), noting that some universally agreed terminology follows the Commonwealth guidelines. The assessment approach is explained in further detail below.

Breeding habitat

The breeding habitat assessment methodology applied in this survey is based on Main Roads environmental factsheet (Main Roads, 2023) that uses a system where trees are assigned a category number according to degree of suitability of the tree hollow. Table 2 presents the seven categories for assessing suitable diameter at breast height (DBH) trees that has been adopted this assessment (Main Roads, 2023).

The survey area was traversed on foot to record all potential trees with suitable DBH for Black Cockatoos. For each suitable DBH tree (DBH $\geq$ 500 mm), a ground-based assessment using binoculars was completed to detect presence of suitable nesting hollows (taking into account the hollow orientation, diameter and possible cockatoo activity). All suitable DBH tree locations were recorded using georeferenced field tablet together with tree species, DBH, size and numbers of hollows where present, any evidence of actual Black Cockatoo activity. Breeding trees assessed as category 2 or 3 were revisited by Glen Gaikhorst (GHD principal Zoologist) and re-assessed using drone or pole camera to confirm tree category. Data collected is presented in Appendix B.

Table 2 Suitable DBH Tree Categories for Black Cockatoos (Main Roads, 2023)

Category No.	Tree category	Description	DAWE (2022) equivalent category
1	Suitable DBH Tree with Known Nesting Hollows – hollows where breeding has been recorded or there is evidence of previous use.	Hollow where breeding has been recorded (i.e. bird/s observed in hollow) or there is evidence of previous use (i.e. hollow contains Black Cockatoo feathers or eggs).	Known nesting tree: previous breeding confirmed or evidence of breeding: feathers, shells, chew marks.
2	Suitable DBH Tree with a potential suitably hollow with signs of use (not confirmed).	Hollows that appear to have a suitably sized entry and display signs of use, however internal dimensions have not been assessed. Although signs of use may be present, the signs, such as chew marks, could be from prospecting Black Cockatoos or other birds such as Galahs, which leave very distinctive marks on hollow and trees (impacted potentially suitably sized hollows should be confirmed by competent observer). Where hollows cannot be avoided, the status of Category 2 hollows must be reassessed during the assessment process to determine whether it is Category 1, 3, 4 or 6.	
3	Suitable DBH Tree with a suitable hollow	Hollows that appear to have a suitably sized entry, with internal dimensions assessed. Category usually based on follow up hollow assessment with pole camera or drone. Although hollow appears to be suitable, there is no evidence of Black Cockatoo use.	Suitable nesting tree: suitable-sized hollow present but no signs of Black Cockatoo use.

Category No.	Tree category	Description	DAWE (2022) equivalent category
	with no signs of use (confirmed).	Where hollows cannot be avoided, status of Category 3 hollows should be reassessed immediately prior to clearing.	
4	Suitable DBH Tree with a marginally unsuitable hollow with no signs of use (confirmed)	Hollows that are not currently suitable but have the potential to become suitable within five years. Where hollows cannot be avoided and have not been checked within 5 years, the hollow status must be reassessed to determine whether it has become suitable (Category 3 hollows) or a Known Nesting Hollow (Category 1 hollows).	
5	Suitable DBH Tree with a potential suitable hollow with no signs of use (not confirmed).	Hollows that appear to have a suitably sized entry, however internal dimensions have not been assessed. Category usually based on ground observation only. Where hollows cannot be avoided, status of Category 5 hollows must be reassessed during the assessment process to determine whether it is Category 1, 3, 4 or 6.	
6	Suitable DBH Tree with unsuitable hollows.	Hollows that have entry greater than 50 mm that is not suitable due to the size of its entry, internal dimensions, angle and/or height off ground.	Potential nest tree: no suitably sized hollow present
7	Suitable DBH Tree without hollows.	Trees with a 500 mm DBH (or 300 mm for Wandoo or Salmon Gum) that do not have visible hollows (hollows with an entry opening below 50 mm not considered a hollow). Note – multiple stemmed trees that branch above DBH may not be suitable	

Foraging habitat

The foraging score approach favoured by Main Roads and used in this assessment is the method developed by Bamford (2022). The foraging scoring system established by Bamford are shown in Table 3 through to Table 7.

Foraging habitat is defined by DAWE (2022) as 'Plant species known to support foraging within the range of the Black Cockatoo species'. Foraging habitat was assessed to quantify the value of each GHD (2025b) habitat type within the survey area. Plants were classified as foraging species according to established cockatoo food plant species in literature (Valentine and Stock 2008, DAWE 2022). As part of the foraging assessment, the ground below known food plants and trees was searched for evidence of Black Cockatoo foraging residue such as chewed Marri seed pods, Banksia cones and fresh foliage snippings. Opportunistic sightings of foraging cockatoos were also recorded as part of the assessment. Vegetation and foraging data were used to calculate foraging quality score for each mapped habitat type.

Table 3 Black Cockatoo foraging scoring – Scoring summary (Bamford, 2022)

Component	BCE system
Site condition	Out of 6
Site context	Out of 3
Species density (stocking rate)	Out of 1
Total score	Out of 10
Moderation of score	-/+
Final score	Out of 10

Table 4 *Black Cockatoo foraging scoring –site condition (Bamford, 2022)*

Site condition	Score	Description (Carnaby's Cockatoo)	Description (FRTBC)	Description (Baudin's Cockatoo)
High	6	Banksia Low Forest (of key species <i>B. attenuata</i> and <i>B. menziesii</i>) with > 60% projected foliage cover and vegetation condition good with low weed invasion and/or low tree deaths (indicating it is robust and unlikely to decline in the medium term).	Marri-Jarrah Forest with > 60% projected foliage cover and vegetation condition good with low weed invasion and/or low tree deaths (indicating it is robust and unlikely to decline in the medium term).	Marri-Jarrah Forest with > 60% projected foliage cover and vegetation condition good with low weed invasion and/or low tree deaths (indicating it is robust and unlikely to decline in the medium term).
Moderate to high	5	– Banksia Low Forest (of key species <i>B. attenuata</i> and <i>B. menziesii</i>) with 40-60% projected foliage cover – Banksia Low Forest (of key species <i>B. attenuata</i> and <i>B. menziesii</i>) with > 60% projected foliage cover but vegetation condition reduced due to weed invasion and/or some tree deaths – Pine plantations with trees more than 10 years old (but see pine note below in moderation section).	– Marri-Jarrah Forest with 40-60% projected foliage cover – Marri-Jarrah Forest with > 60% projected foliage cover but vegetation condition reduced due to weed invasion and/or some tree death – Sheoak Forest with > 60% projected foliage cover.	– Marri-Jarrah Forest with 40-60% projected foliage cover – Marri-Jarrah Forest with > 60% projected foliage cover but vegetation condition reduced due to weed invasion and/or some tree deaths.
Moderate	4	– Woodland/low forest with tree banksias (of key species <i>B. attenuata</i> and <i>B. menziesii</i>) 20-40% projected foliage cover – Kwongan/ Shrubland in which species of foraging value, such as shrubby banksias, have 20-40% projected foliage cover – Eucalypt Woodland/Forest with Marri 20-60% projected foliage cover.	– Marri-Jarrah Woodland/Forest with 20-40% projected foliage cover – Marri-Jarrah Forest with 40-60% projected foliage cover but vegetation condition reduced due to weed invasion and/or some tree deaths – Sheoak Forest with 40-60% projected foliage cover.	– Marri-Jarrah Woodland/Forest with 20-40% projected foliage cover – Marri-Jarrah Forest with 40-60% projected foliage cover but vegetation condition reduced due to weed invasion and/or some tree deaths – Eucalypt Woodland/Forest with diverse, healthy understorey and known food trees (especially Marri) 10-20% projected foliage cover – Orchards with highly desirable food sources (e.g. apples, pears, some stone fruits).
Low to moderate	3	– Shrubland in which species of foraging value, such as shrubby banksias, have 10-20% projected foliage cover – Woodland with tree banksias 5-20% projected foliage cover – Eucalypt woodland/mallee of small-fruited species – Eucalypt Woodland with Marri <10% projected foliage cover.	– Eucalypt Woodland with known food plants (especially Marri and Jarrah) 5- 20% projected foliage cover – Parkland-cleared Eucalypt Woodland/Forest with known food plants such as Marri 10-40% projected foliage cover but badly-degraded understorey (poor long-term viability without management) – Younger areas of (managed) revegetation with known food plants 10-	– Eucalypt Woodland with known food plants (especially Marri) 5-20% projected foliage cover – Parkland-cleared Eucalypt – Woodland/Forest with known food plants 10-40% projected foliage cover (poor long-term viability without management); – Younger areas of (managed) revegetation with known food plants 10-40% projected foliage cover (establishing food sources

Site condition	Score	Description (Carnaby's Cockatoo)	Description (FRTBC)	Description (Baudin's Cockatoo)
			40% projected foliage cover (establishing food sources with good long-term viability).	with good long-term viability).
Low	2	- Shrubland in which species of foraging value, such as shrubby banksias, have < 10% projected foliage cover - Woodland with tree banksias 2-5% projected foliage cover - Eucalypt woodland/mallee of small-fruited species - Paddocks that are densely vegetated with melons or other known food-source weeds (e.g. <i>Erodium</i> spp.) that represent a short-term and/or seasonal food source	- Woodland with scattered specimens of known food plants (e.g. Marri, Jarrah or Sheoak) 1-5% projected foliage cover - Urban areas with scattered food plants such as Cape Lilac, <i>Eucalyptus caesia</i> and <i>E. erythrocorys</i> - Paddocks with <i>Erodium</i> spp. and other weeds.	- Woodland with scattered specimens of known food plants (e.g. Marri and Jarrah) 1-5% projected foliage cover - Urban areas with scattered foraging trees.
Negligible to low	1	- Scattered specimens of known food plants but projected foliage cover of these is < 2%. This could include urban areas with scattered foraging trees; - Paddocks that are lightly vegetated with melons or other known food-source weeds (e.g. <i>Erodium</i> spp.) that represent a short-term and/or seasonal food source; - Blue Gum plantations (foraging by Carnaby's Cockatoos has been reported but appears to be unusual).	Scattered specimens of known food plants but projected foliage cover of these < 1%. Could include urban areas with scattered foraging trees.	Scattered specimens of known food plants but projected foliage cover of these < 1%. This could include urban areas with scattered foraging trees.
No foraging value	0	No Proteaceae, eucalypts or other potential sources of food. Examples: - Water bodies (e.g. salt lakes, dams, rivers) - Bare ground - Developed sites devoid of vegetation (e.g. infrastructure, roads, gravel pits) or with vegetation of no food value, such as some suburban landscapes - Mown grass.	No eucalypts or other potential sources of food. Examples: - Water bodies (e.g. dams, rivers) - Bare ground - Developed sites devoid of vegetation (e.g. infrastructure, roads, gravel pits)	No eucalypts or other potential sources of food. Examples: - Water bodies (e.g. dams, rivers) - Bare ground - Developed sites devoid of vegetation (e.g. infrastructure, roads, gravel pits).

Table 5 *Black Cockatoo foraging scoring – site context scoring (Bamford, 2022)*

Percentage of existing native vegetation within the 'local' area ¹ that the study site represents		
Score	Description	
	"Local" breeding known/likely	"Local" breeding unlikely
3	> 5 %	> 10 %
2	1-5 %	5-10 %
1	0.1-1 %	1-5 %
0	<0.1 %	< 1%

Table 6 *Black Cockatoo foraging scoring - Stocking Density and Species Presence Score - Bamford (2022)*

Presence/absence of species	
Score	Description
1	Species is reported regularly and/or there is abundant foraging evidence (seen at intervals of every few days or weeks for at least several months of the year).
0	Species is recorded or reported very infrequently and there is little or no foraging evidence.

Table 7 *Black Cockatoo foraging scoring- Moderation of scores (Bamford, 2022)*

Moderation of site context and species density scores for site condition ²		
Score	Context score	Species density score
3-6 (low/moderate to high value)	Assessed as per Bamford (2022)	Assessed as Bamford (2022)
0-2 (no to low value)	0	0

Roosting habitat

Based on the referral guidelines, night roosts for Black Cockatoo species tend to be the tallest trees of an area, and usually close to a source of drinking water and in proximity to quality foraging habitat (DAWE, 2022). The survey area was visually surveyed for trees or stands of trees that matched these descriptions, and for any evidence of recent use as a roost site (feathers and droppings). DBCA and Birdlife roost data was checked to determine proximity of any known roost locations (Birdlife WA, 2023).

2.3 Limitations

2.3.1 Desktop limitations

The EPBC Act PMST is based on bioclimatic modelling for the potential presence of species. As such, this does not represent actual records of the species within the study area. The records from the DBCA searches provide more accurate information for the study area and local occurrence.

2.3.2 Field survey limitations

The EPA (2020) Technical Guidance states that terrestrial vertebrate fauna survey reports for environmental impact assessment in WA should contain a section describing the limitations of the survey methods used. The limitations and constraints associated with this field survey are discussed in Table 8. Based on this assessment,

¹ "Local" area is defined as within a 15 km radius of the centre point of the study site.

² Note that this moderation approach may require interpretation depending on the context. For example, vegetation with a condition score of 2 could be given a context score of 1 under special circumstances, such as when very close to a major breeding area or if strategically located along a movement corridor.

the survey effort has not been subject to any constraints that affect the thoroughness of the assessment, and the conclusions formed.

Table 8 *Field survey limitations*

Aspect	Constraint	Comment
Sources of information and availability of contextual information.	Nil	Adequate information is available for the survey area, this includes: DBCA fauna database searches (DBCA 2025) and mapping by GHD (2025a and 2025b) GHD (2025a) vegetation mapping and GHD (2025b) fauna assessment
Scope (what life forms were sampled etc.)	Nil	The three species of Black Cockatoo were surveyed for.
Proportion of fauna collected and identified (based on sampling, timing and intensity)	Nil	All three Threatened Black Cockatoo species relevant to the survey area and study area, were assessed according to the requested level of detail, during the field survey via on-ground searches and habitat assessments.
Completeness and further work which might be needed (e.g. was the relevant area fully surveyed)	Nil	The survey area was accessed by vehicle and on foot. The survey area was adequately surveyed during the survey in line with the scope. The survey area was traversed to identify potential nesting trees.
Mapping reliability	Nil	The survey was conducted using high-resolution aerial imagery obtained from Landgate and field data. Data was recorded in the field using hand-held GPS tools (e.g. Samsung tablet, and Garmin GPS. Certain atmospheric factors and other sources of error can affect the accuracy of GPS receivers, including tree canopies. The Garmin GPS units used for fauna component are accurate to within ± 5 metres on average. Therefore, data points consisting of coordinates recorded from the GPS may contain minor inaccuracies. Site specific vegetation and habitat mapping by GHD (2025a and 2025b) for an adjacent Kwinana Freeway survey area was applied to and integrated into the survey area.
Timing/weather/season/cycle	Nil	The field survey was conducted during spring (September and October 2024). In the three months prior to the survey (Jun - Aug) 534.6 mm of rainfall was recorded at Jandakot Airport weather station (site number: 009172). Comparable to the long-term average for the same period (Jun - Aug) of 453.5 mm (BoM, 2024), the site experienced wetter on average conditions and therefore the season is not considered to be a limitation.
Disturbances (e.g. fire, flood, accidental human intervention)	Nil	The majority of the survey area has been subjected to urban development; however, these disturbances did not affect the results of the survey.
Intensity (in retrospect, was the intensity adequate)	Nil	The fauna survey was sampled in accordance with EPA (2020). The survey area was sufficiently covered by the field team during the survey over 12 person days.
Resources	Nil	Adequate resources were employed during the field survey. One Senior Zoologist and one Zoologist undertook the field survey over 12 person days.
Access restrictions	Minor	Some parts of the survey area were unable to be accessed on foot due to the freeway restrictions (e.g. lack of safe parking, no pedestrian access). In these areas assessments of fauna habitat and habitat suitability for significant fauna were made from the vehicle travelling as slow as safely possible. Fauna habitat mapping was also completed by reviewing aerial imagery and extrapolation from adjacent areas (i.e. assessing the plants present, and the height and canopy cover range for the patches of Banksia woodland adjacent the freeway). Some areas of the survey area were unable to be reached due to high security fencing or sound-blocking walls for the freeway. In these cases, the zoologists would park as close as was possible and utilise binoculars to make an assessment of the habitat that was present. Full detailed searches for signs of fauna were not possible in these areas. These areas are only small areas amounting to a few hectares across the site, rather than large un-surveyed areas. All suitable habitat types were targeted and therefore detection of fauna signs would have been possible if present. Based on visual

Aspect	Constraint	Comment
		assessment of inaccessible portions, no suitable DBH trees were overlooked. Refer to Figure 3, Appendix A for the tracklog effort of transects searched for signs of fauna.
Experience level	Nil	The zoologists who completed the survey are practitioners suitably qualified and experienced in their respective fields: – Senior Zoologist Robert Browne-Cooper has 20 years of experience leading and conducting fauna surveys including 15 years of Black Cockatoo assessment experience across Southwest WA. – Zoologist Melissa Wood has 2 year experience in undertaking fauna surveys throughout WA and on the SCP. – Principle Zoologist Glen Gaikhorst has 30 year's experience leading and conducting fauna surveys including Black Cockatoo assessment experience across Southwest WA.

3. Desktop assessment

3.1 Black Cockatoos

All three Black Cockatoo species are endemic to the south-west of Western Australia (WA) and are listed under both the EPBC Act and the BC Act:

- Carnaby's Cockatoo (*Zanda latirostris*) – Endangered
- Baudin's Cockatoo (*Zanda baudinii*) - Endangered
- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) – Vulnerable.

The survey area is within the modelled distribution for all three Black Cockatoo species, including within the modelled breeding range for Carnaby's Cockatoo (DAWE, 2022). They are likely to occur at least on an occasional basis based on previous database records and distribution patterns.

A review of the Black Cockatoo breeding sites buffered dataset (DBCA-063) (GoWA, 2024a) identified that the nearest Carnaby's Cockatoo breeding site is located at the Murdoch University campus, approximately 3 km northwest of the survey area. The majority of the breeding sites are from artificial hollows but there is one confirmed natural hollow.

The survey area is located outside the known and predicted breeding range for Baudin's Cockatoo, however this species is known to forage and roost regionally i.e. eastern parts of Perth Swan Coastal Plain and Scarp approximately 15 km east of the survey area.

A review of the Black Cockatoo Roosting Sites – Buffered (DBCA-064) (GoWA, 2024b) identified twelve (12) roost site buffers intersecting the survey area, and two roost sites intersecting the survey area. Black Cockatoos are known to roost locally based on unpublished spatial data (GoWA, 2024b), and Birdlike WA (2023). There are numerous confirmed and un-confirmed roosts of Carnaby's and Forest Red-tailed Black Cockatoo within the western portion of the Swan Coastal Plain including within 10 km radius of the survey area. The nearest confirmed roost site for Forest Red-tailed Black Cockatoo is approximately 0.35 km east of the survey area, and another roost site with records of white-tailed Black Cockatoo roost located approximately 0.9 km north of the survey area in Leeming. A summary of roost sites is provided in Table 9 including four confirmed Black Cockatoo roosts in proximity of the survey area. Figure 2, Appendix A shows the location of local roost sites.

Table 9 Roost data (DBCA-064) for roost site buffers intersecting the survey area

Site Code	Coordinates	Location from survey area	Survey years	Bird count
KALFORR003	-31.995523 115.999431	1.5 km east of survey area	2018 – 2019	White-tailed Black Cockatoo – 0 Forest Red-tailed Black Cockatoo – 2018: 31 birds 2019: 10 birds
GOSKENR001	-32.013766 115.975475	0.35 km east of survey area	2017 – 2019	White-tailed Black Cockatoo – 0 Forest Red-tailed Black Cockatoo – 2017: 51 birds 2018: 334 birds 2019: 35 birds
GOSKENR002	-32.016537 115.979008	0.62 km east of survey area	2018 – 2019	White-tailed Black Cockatoo – 0 Forest Red-tailed Black Cockatoo – 2018: 72 birds 2019: 0 birds
GOSLANR002	-32.042887	N.A.	2017	White-tailed Black Cockatoo – 0

Site Code	Coordinates	Location from survey area	Survey years	Bird count
	115.939512			Forest Red-tailed Black Cockatoo – 0
CANPARR001 ³	-32.054444 115.919444	N.A.	2010, 2012, 2013, 2015 – 2018 for White-tailed Black Cockatoo 2015-2018 for Forest Red-tailed Black Cockatoo	White-tailed Black Cockatoo – 0 Forest Red-tailed Black Cockatoo – 0
CANWILR003	-32.050556 115.896111	N.A.	2010-2017 for White-tailed Black Cockatoo 2014 – 2017 Forest Red-tailed Black Cockatoo	White-tailed Black Cockatoo – 0 Forest Red-tailed Black Cockatoo – 0
CANCNVR001	-32.080833 115.891944	N.A.	2010 - 2011	White-tailed Black Cockatoo – 0 Forest Red-tailed Black Cockatoo – 0
MELLEER001	-32.076944 115.868333	0.80 km north of survey area	2010 – 2019 for White-tailed Black Cockatoo 2014 - 2019 Forest Red-tailed Black Cockatoo	White-tailed Black Cockatoo 2012: 12 birds 2014: 70 birds 2018: 15 birds 2019: 2 birds Forest Red-tailed Black Cockatoo 2016: 11 birds 2017: 25 birds 2018: 5 birds
MELLEER002	-32.084944 115.862897	N.A.	2016 – 2017	White-tailed Black Cockatoo – 0 Forest Red-tailed Black Cockatoo – 0 birds
COCJANR002 ⁴	-32.088333 115.853611	N.A.	2010 and 2016	White-tailed Black Cockatoo – 0 Forest Red-tailed Black Cockatoo – 0
COCBIBR003	-32.090556 115.846667	N.A.	2010, 2011, 2013 – 2017 White-tailed Black Cockatoo 2014 – 2017 for Forest Red-tailed Black Cockatoo	White-tailed Black Cockatoo – 0 Forest Red-tailed Black Cockatoo – 0
COCBIBR004	-32.086111 115.838889	N.A.	2016 – 2017	White-tailed Black Cockatoo – 0 Forest Red-tailed Black Cockatoo – 0

³ This roost site intersects the survey area north of Roe Highway in Parkwood.

⁴ This roost site intersects the survey area at the intersection of Kwinana Freeway and Roe Highway.

4. Field survey results

4.1 Habitat types

Eight broad fauna habitat types including cleared areas were described and mapped by GHD (2025b). Table 10 provides a summary of the fauna habitat types and lists their Black Cockatoo attributes, which are discussed in further detail in section 4.2. The fauna habitat types are mapped in Figure 4, Appendix A.

Table 10 Habitat types within the survey area

Habitat Type	Description	Extent of survey area	Representative photograph								
1.Banksia woodland	This habitat is present in southern portion and includes remnant patches bordering Roe Hwy and Kwinana Fwy. Floristically it is characterised by <i>Banksia attenuata</i>, <i>B. menziesii</i> and scattered areas of <i>B. ilicifolia</i> woodland over a mixed Shrub – layer with sedges, grasses and herbs in the ground layer. It occurs on pale grey deep sand. Habitat condition varies widely from good to excellent with diverse intact vegetation assemblages across strata. High to moderate density of mixed proteaceous species are high value foraging habitat for Carnaby's Cockatoo. Moderate to low for other Black Cockatoo species. Suitable DBH trees for cockatoo breeding are sparse to occasional. Not suitable for Black Cockatoo roosting. <table> <tr> <th></th><th>Baudin's Cockatoo</th><th>Carnaby's Cockatoo</th><th>FRTB Cockatoo</th></tr> <tr> <td>Foraging score</td><td>2 low</td><td>6 mod-high</td><td>2 low</td></tr> </table>		Baudin's Cockatoo	Carnaby's Cockatoo	FRTB Cockatoo	Foraging score	2 low	6 mod-high	2 low	59.27ha 18.1%	
	Baudin's Cockatoo	Carnaby's Cockatoo	FRTB Cockatoo								
Foraging score	2 low	6 mod-high	2 low								
2.Eucalyptus woodland over Banksia	This habitat is characterised as emergent open to patchy Tuart over <i>Banksia attenuata</i> and <i>B. menziesii</i> woodland over a low shrubland over weedy sedgeland/ grassland. Substrate is deep pale grey sandy soil. Habitat condition varies widely from degraded to very good with retention of sparse emergent eucalypts and mid-story Banksia maintains good habitat structure. This habitat has moderate to high density of mixed proteaceous species and is high value foraging habitat for Carnaby's Cockatoo. Moderate to low for other Black Cockatoo species. Suitable DBH trees for cockatoo breeding such as Tuart and Jarrah occur within this habitat. Marginally suitable for Black Cockatoo roosting. <table> <tr> <th></th><th>Baudin's Cockatoo</th><th>Carnaby's Cockatoo</th><th>FRTB Cockatoo</th></tr> <tr> <td>Foraging score</td><td>3 mod-low</td><td>6 mod-high</td><td>4 mod</td></tr> </table>		Baudin's Cockatoo	Carnaby's Cockatoo	FRTB Cockatoo	Foraging score	3 mod-low	6 mod-high	4 mod	6.14 ha 1.9%	
	Baudin's Cockatoo	Carnaby's Cockatoo	FRTB Cockatoo								
Foraging score	3 mod-low	6 mod-high	4 mod								

Habitat Type	Description	Extent of survey area	Representative photograph								
3. Melaleuca dampland and sparse flooded gum	This habitat is comprised of occasional to sparse Flooded Gum over <i>Melaleuca raphiophylla</i> and / or <i>M. preissiana</i> over <i>Kunzea glabrescens</i>, <i>Xanthorrhoea</i> and <i>Lepidosperma longitudinale</i>. Soil is sandy grey Bassendean formation but tends to be poor draining and relatively flat and low elevation. Foraging plant species for Black Cockatoos are scattered to low density, consequently, foraging value is moderate to low for Black Cockatoo species. Habitat condition varies from degraded to good however the lower stratum vegetation tends to retain high density of native shrubs and naturalised annual species. Total extent of area is limited to few relatively small patches across the survey area. Suitable DBH trees for Black Cockatoo breeding are absent, to very sparse (potential occasional Flooded Gum) within this habitat. Marginally suitable for Black Cockatoo roosting. <table> <tr> <th></th><th>Baudin's Cockatoo</th><th>Carnaby's Cockatoo</th><th>FRTB Cockatoo</th></tr> <tr> <td>Foraging score</td><td>1 neg-low</td><td>1 neg-low</td><td>1 neg-low</td></tr> </table>		Baudin's Cockatoo	Carnaby's Cockatoo	FRTB Cockatoo	Foraging score	1 neg-low	1 neg-low	1 neg-low	4.64 ha 1.4	
	Baudin's Cockatoo	Carnaby's Cockatoo	FRTB Cockatoo								
Foraging score	1 neg-low	1 neg-low	1 neg-low								
4. Marri woodland	This habitat comprises relatively small, often linear remnant patches and isolated stands of planted Marri (<i>Corymbia calophylla</i>) over scattered natives and naturalised shrubs and weeds along infrastructure corridors. High value foraging habitat for Forest Red-tailed Black Cockatoo, and Carnaby's Cockatoo, moderate for Baudin's Cockatoo. Suitable DBH trees for cockatoo breeding were recorded within this habitat. Marginally to moderately suitable for Black Cockatoo roosting. <table> <tr> <th></th><th>Baudin's Cockatoo</th><th>Carnaby's Cockatoo</th><th>FRTB Cockatoo</th></tr> <tr> <td>Foraging score</td><td>4 mod</td><td>5 mod-high</td><td>7 high</td></tr> </table>		Baudin's Cockatoo	Carnaby's Cockatoo	FRTB Cockatoo	Foraging score	4 mod	5 mod-high	7 high	12.98 ha 3.9 %	
	Baudin's Cockatoo	Carnaby's Cockatoo	FRTB Cockatoo								
Foraging score	4 mod	5 mod-high	7 high								

Habitat Type	Description	Extent of survey area	Representative photograph								
5. Naturalised and native trees	This habitat comprises a range of Eucalyptus species over scattered natives and weeds and is considered highly degraded. Trees include River Red-Gum, Spotted Gum, Lemon-scented Gum, occasional Tuart, Marri and Jarrah. This habitat includes a small patch (0.13 ha) of Pine trees (<i>Pinus sp</i>) which qualify and naturalised trees and have not been delineated due to small patch size. However, Carnaby's Cockatoos will seasonally feed on small patches or isolated single pine trees. Moderate foraging value for Carnaby's and Forest Red-tailed Black Cockatoo, low value for Baudin's Cockatoo. Scattered to sparse suitable DBH trees for cockatoo breeding were recorded within this habitat. Marginally to moderately suitable for Black Cockatoo roosting. <table> <tr> <th></th><th>Baudin's Cockatoo</th><th>Carnaby's Cockatoo</th><th>FRTB Cockatoo</th></tr> <tr> <td>Foraging score</td><td>1 neg-low</td><td>1 neg-low</td><td>1 neg-low</td></tr> </table>		Baudin's Cockatoo	Carnaby's Cockatoo	FRTB Cockatoo	Foraging score	1 neg-low	1 neg-low	1 neg-low	21.75 ha 6.6 %	
	Baudin's Cockatoo	Carnaby's Cockatoo	FRTB Cockatoo								
Foraging score	1 neg-low	1 neg-low	1 neg-low								
6. Native and introduced shrubs	This habitat comprises a range of naturalised, introduced and native planted shrubs, with weed grasses and herbaceous weeds, and was usually associated with disturbed areas along road verges and cycle path embankments, often planted or regenerated vegetation in disturbed areas post-road construction. It is comprised of <i>Acacia</i> and myrtaceous, proteaceous shrubs including <i>Banksia</i>, <i>Hakea</i> and <i>Grevillea</i>. These plants were at a relatively low density to scattered and considered low to moderate quality foraging habitat for Black Cockatoos. This habitat lacks suitable roosting and breeding habitat. <table> <tr> <th></th><th>Baudin's Cockatoo</th><th>Carnaby's Cockatoo</th><th>FRTB Cockatoo</th></tr> <tr> <td>Foraging score</td><td>1 neg-low</td><td>1 neg-low</td><td>1 neg-low</td></tr> </table>		Baudin's Cockatoo	Carnaby's Cockatoo	FRTB Cockatoo	Foraging score	1 neg-low	1 neg-low	1 neg-low	77.24 ha 23.1%	
	Baudin's Cockatoo	Carnaby's Cockatoo	FRTB Cockatoo								
Foraging score	1 neg-low	1 neg-low	1 neg-low								

Habitat Type	Description	Extent of survey area	Representative photograph								
7. Modified wetland drainage area	This habitat includes small artificial lakes, sumps and low swampy areas and fringing trees such as occasional Flooded Gum, River Red Gum and shrubs (<i>Melaleuca sp</i>), Typha rushes, and other dampland-adapted sedge species. Vegetation of these areas is generally degraded to highly degraded. Water bodies and swampy areas associated with this habitat tend to fluctuate seasonal with rainfall and drainage, providing small but limited areas of temporary surface water. The Canning River representing a small portion (0.48 ha) of the survey area that intersects the survey area has been included within this habitat type on the basis of supporting similar tree species, and assessed as having the same Black Cockatoo habitat values (roosting, foraging, breeding). This area has highly modified hydrology and drainage and is highly degraded by infrastructure. Suitable DBH trees for breeding such as Marri and Jarrah are scarce to absent and Flooded Gums and scarce. Fringing trees provide some seasonal nectar for all three species of Threatened Black Cockatoo and potentially suitable night roosts. Considered low to moderate quality foraging habitat for Black Cockatoos. <table> <tr> <th></th><th>Baudin's Cockatoo</th><th>Carnaby's Cockatoo</th><th>FRTB Cockatoo</th></tr> <tr> <td>Foraging score</td><td>1 neg-low</td><td>1 neg-low</td><td>1 neg-low</td></tr> </table>		Baudin's Cockatoo	Carnaby's Cockatoo	FRTB Cockatoo	Foraging score	1 neg-low	1 neg-low	1 neg-low	6.48ha 2.1%	
	Baudin's Cockatoo	Carnaby's Cockatoo	FRTB Cockatoo								
Foraging score	1 neg-low	1 neg-low	1 neg-low								
8. Cleared areas	This includes areas of road and other infrastructure with no vegetation, as well as completely degraded and cleared land along road verges often with bare ground or sparse ground cover of colonising broad-leaf annual weed, naturalised grasses or occasional planted or naturalised shrubs. The density of native species is negligible. Cleared areas cover most of the survey area and there is minimal habitat value for native and significant species. Negligible to low foraging habitat quality for all three Black Cockatoo although occasional shrubs and ground weeds (e.g. erodium) may provide some marginal foraging value. Lacks suitable breeding and roosting trees. <table> <tr> <th></th><th>Baudin's Cockatoo</th><th>Carnaby's Cockatoo</th><th>FRTB Cockatoo</th></tr> <tr> <td>Foraging score</td><td>0 nil</td><td>0 nil</td><td>0 nil</td></tr> </table>		Baudin's Cockatoo	Carnaby's Cockatoo	FRTB Cockatoo	Foraging score	0 nil	0 nil	0 nil	141.72 ha 43.1%	
	Baudin's Cockatoo	Carnaby's Cockatoo	FRTB Cockatoo								
Foraging score	0 nil	0 nil	0 nil								

4.2 Black Cockatoo assessment

The Black Cockatoo assessment considers breeding, foraging and roosting habitat as defined by DAWE (2022) and MRWA (2023). Field survey results are mapped in Figure 4, Appendix A, and detailed field survey data (including breakdown of foraging habitat scores by species and habitat type) presented in Appendix B. Foraging values across the survey area are summarised in Table 11 showing comparison between both scoring methods.

4.2.1 Foraging habitat

Baudin's Cockatoo was not recorded during the survey, although likely to forage on Marri trees or Banksia species on an occasional basis within habitats: Marri woodland, Banksia woodland and Eucalyptus woodland over Banksia. The survey area is located at the western limit of the species' foraging range, and whilst occasionally recorded on the Swan Coastal Plain, occurrence in this area is considered occasional. This local context factor has the effect of lowering foraging value relative to other more common locally occurring Black Cockatoo species.

Carnaby's Cockatoo was recorded via sightings of birds present, and foraging evidence: chewed *Banksia attenuata*, *B. menziesii*, *B. ilicifolia*, *B. prionotes* and *B. sessilis* pods and flowers found at several locations including fresh and old residues. Chewed *Banksia* remains indicate birds eating both seeds and grubs with pods showing frequent and seasonal foraging within these habitats. Chewed pinecones were also recorded within a small patch of approximately 0.13 ha of *Pinus sp.* This patch is less than 1 ha therefore too small to assess as a discrete habitat type and has been mapped as Naturalised and native trees habitat. Three habitat types representing high value foraging habitat for Carnaby's Cockatoo include: Banksia woodland, Eucalypt woodland over Banksia, and Marri woodland. Both Banksia-dominated habitats are well represented across the Road Offset Areas within the survey area, whereas Marri woodland tends to occur in small scattered and narrow linear areas.

Forest Red-tailed Black Cockatoo was recorded via several field observations of birds and extensive foraging evidence (chewed Marri pods) from several locations across the survey area. All foraging evidence associated with this species was found in areas of Marri woodland, or in isolated Marri trees indicating that birds were foraging selectively on single trees across the broader landscape. Marri woodland was assessed as high value foraging habitat.

Overall, the survey area contains approximately 142 ha of low foraging habitat, 110 ha of moderate foraging habitat, and 79 ha of high foraging habitat for at Black Cockatoo species.

Table 11 Summary of Black Cockatoo foraging scores

Fauna habitat	Area (ha)	Bamford (2022)		
		Baudin's Cockatoo	Carnaby's Cockatoo	FRTB Cockatoo
Banksia woodland	59.73	2 (low)	6 (mod-high)	2 (low)
Eucalyptus woodland over Banksia	6.14	3 (mod-low)	6 (mod-high)	4 (mod)
Melaleuca Dampland	4.64	1(neg-low)	1 (neg-low)	1 (neg-low)
Marri woodland	12.98	4 (mod)	5 (mod-high)	7 (high)
Naturalised and native trees	21.75	1 (neg-low)	1 (neg-low)	1 (neg-low)
Native and introduced shrubs	76.27	1 (neg-low)	1 (neg-low)	1 (neg-low)
Modified wetland drainage area	6.97	1 (neg-low)	1(neg-low)	1 (neg-low)
Cleared land	142.2	0 ((nil)	0 (nil)	0 (nil)

4.2.2 Breeding habitat

The survey area is located within the modelled breeding distribution of the Carnaby's Cockatoo and Forest Red-tailed Black Cockatoo, which is supported by DBCA database results of regular and frequent confirmed local

records of both these cockatoos. The location of the survey area is beyond the western edge of Baudin's Cockatoo modelled distribution (DAWE 2022), with this species occurring more frequently towards the eastern edge of the Swan Coastal Plain. Baudin's Cockatoo is occasionally recorded locally in the vicinity of the survey area, however it is acknowledged that this area is considered a marginal foraging area, even though technically there are potential nest trees and foraging habitat present, and local distribution has a bearing on the habitat assessment.

A total of 46 suitable nesting trees were recorded and mapped (Figure 4, Appendix A and Appendix B) across the survey area. These are trees with DBH greater than the specific threshold of 500 mm (Main Roads, 2023) and DAWE (2022). Tree species recorded included Marri (24 trees / 52%), Tuart (12 trees / 26%), Flooded Gum (6 trees / 13%), Jarrah (2 trees / 4%), and River Red-Gum (2 trees / 4%). All but one of these trees were assessed according to MRWA (2023) breeding tree assessment method as Tree category 7. These trees met the 500mm DBH criteria but lack hollows based on ground-based assessment.

One tree, a Tuart assessed on 30/9/2024, this was identified as a tree with suitable DBH, and a potentially suitable hollow with signs of use. An adult pair of Forest Red-tailed Black Cockatoos was observed present at this hollow. The female was peering out of a trunk spout hollow, and the male was perching above the hollow. This tree was re-assessed on the 4/2/2025 by GHD Principal Zoologist, Glen Gaikhorst using a drone. The drone footage identified no cockatoos were present inside the hollow, but there were distinct chew marks on the hollow entrance. The hollow was estimated to be at least 1 metre deep. There were no other signs of breeding. This tree is located within Road offset area D. The presence and behaviour of the cockatoos and chew marks is a strong indication of breeding although not conclusive, therefore this tree was assessed as Category 2.

The tree locations are mapped in Figure 4, Appendix A, and drone photos included in Appendix B. Re-assessment over subsequent seasons may help to confirm actual, or known breeding.

4.2.3 Roosting habitat

No confirmed Black Cockatoo roosts were recorded within the survey area during the field survey. Potential roost habitat includes Naturalised and native trees and Modified wetland drainage area. Within these two habitat types, a number of tall emergent eucalypt trees were recorded, and it is the presence of such tall species of eucalypt trees that fulfill part of the criteria for suitable potential roosting habitat. However, as these habitat areas are adjacent to major road infrastructure, the roost suitability is potentially reduced and considered marginal.

5. Conclusions

Of the eight broad fauna habitat types present, three are considered as high value foraging habitat for Black Cockatoos. These are areas supporting moderate to high density of primary food plants, namely Banksia and or Marri trees.

No roosting evidence was recorded and the habitat was assessed as low to moderate for roosting, and no known roost sites are documented within the survey area, however known roosting sites occur within 0.35 to 0.9 km of the survey area.

A total of 46 suitable Black Cockatoo breeding trees (category 7) for Forest Red-tailed Black Cockatoo and Carnaby's Cockatoo are scattered across the survey area. One tree was assessed as having a potentially suitable nesting hollow (category 2) based on signs of use by Forest Red-tailed Black Cockatoo. This tree was located within Road Offset Area D.

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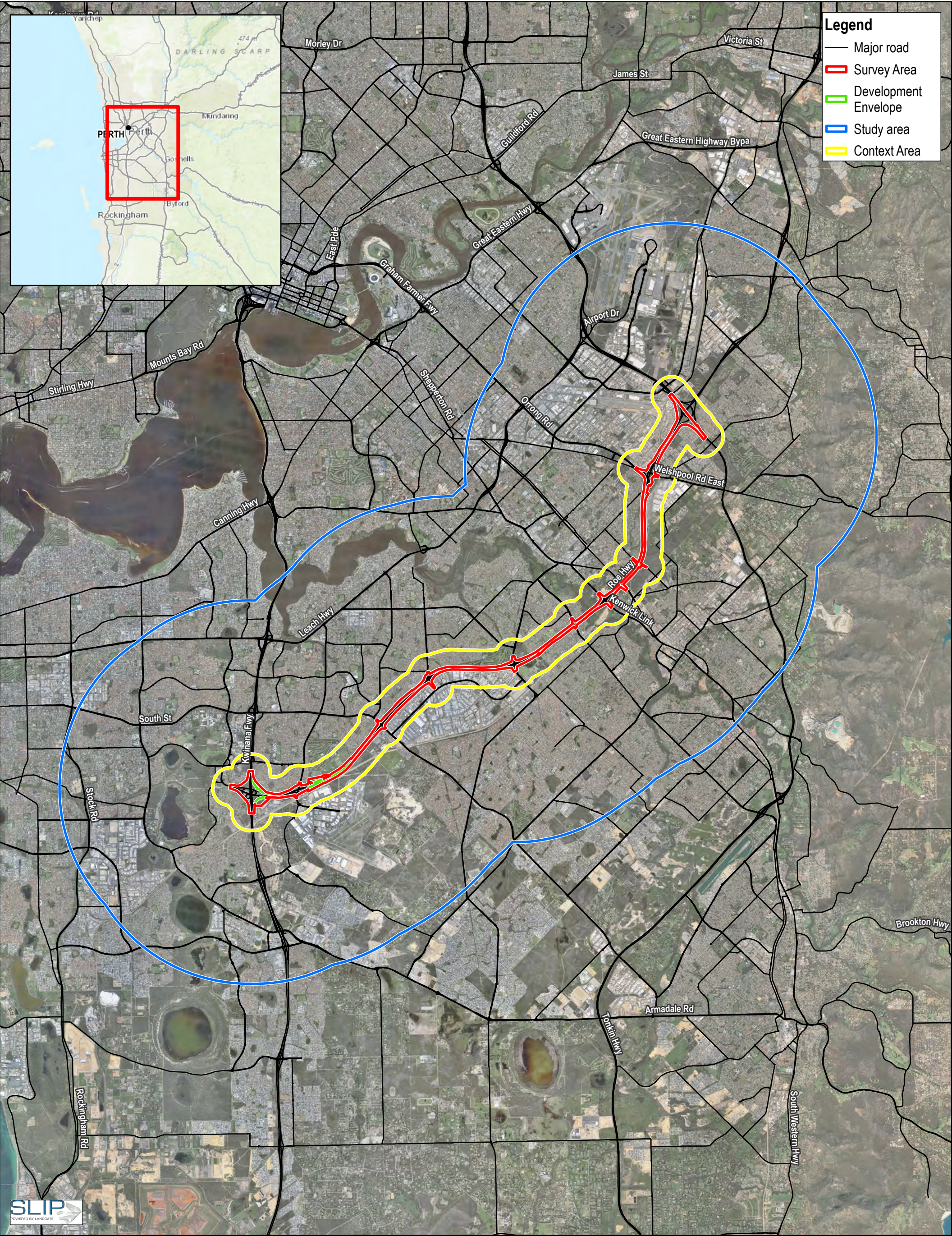
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Appendices

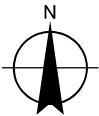
Appendix A

Figures

- | | |
|-----------------|--|
| <i>Figure 1</i> | <i>Survey area location</i> |
| <i>Figure 2</i> | <i>Environmental constraints</i> |
| <i>Figure 3</i> | <i>Survey effort and methods</i> |
| <i>Figure 4</i> | <i>Black Cockatoo Habitat assessment</i> |



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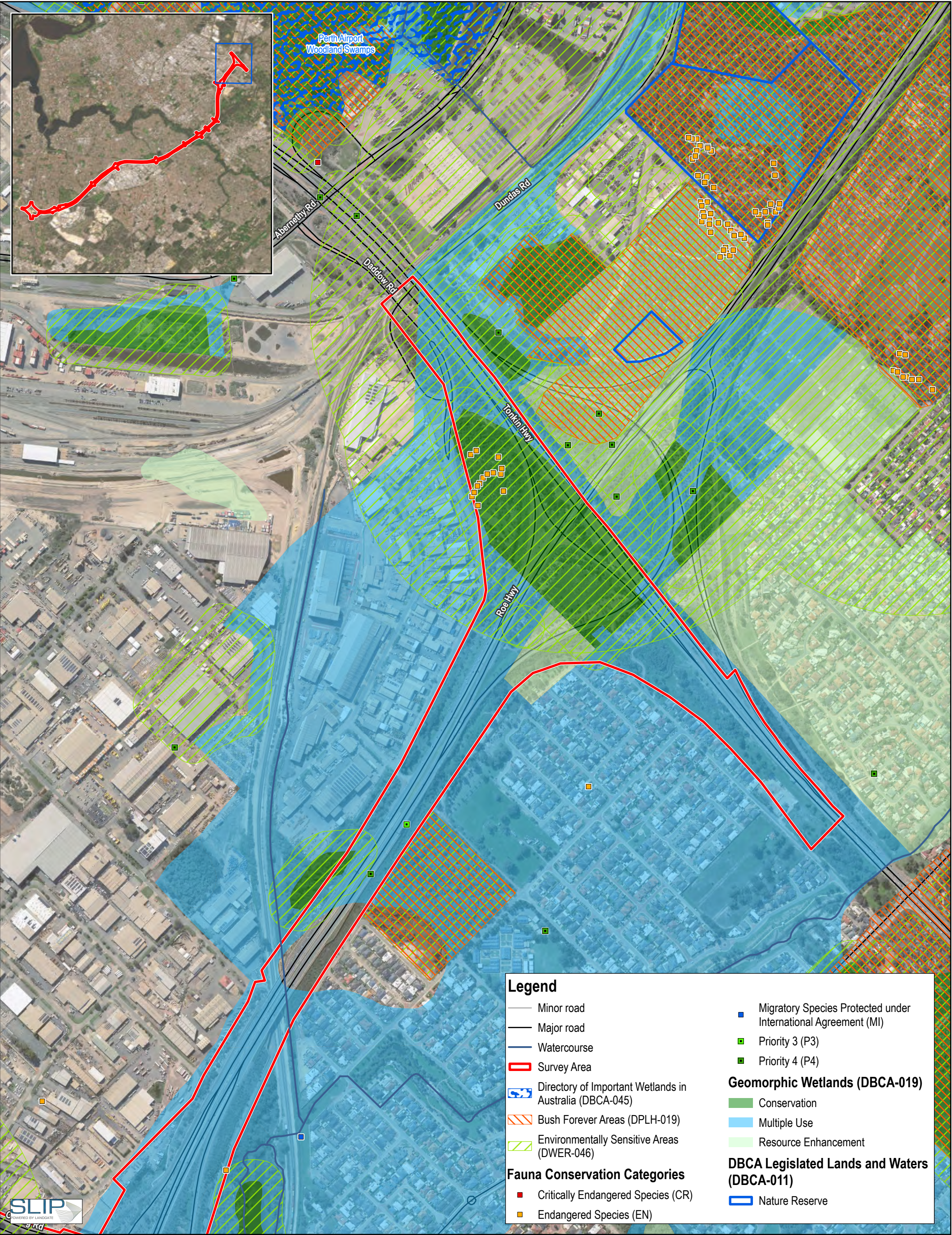


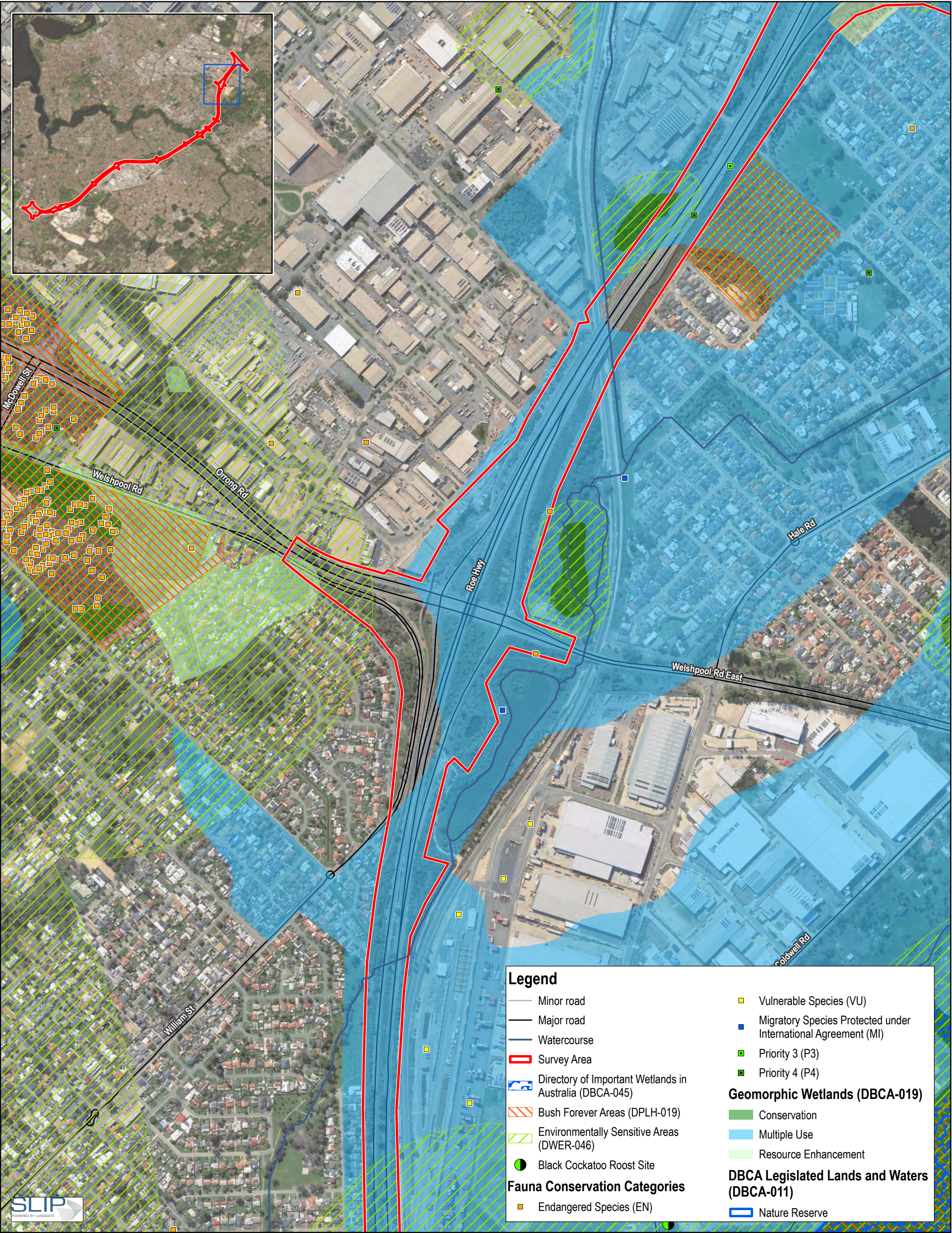
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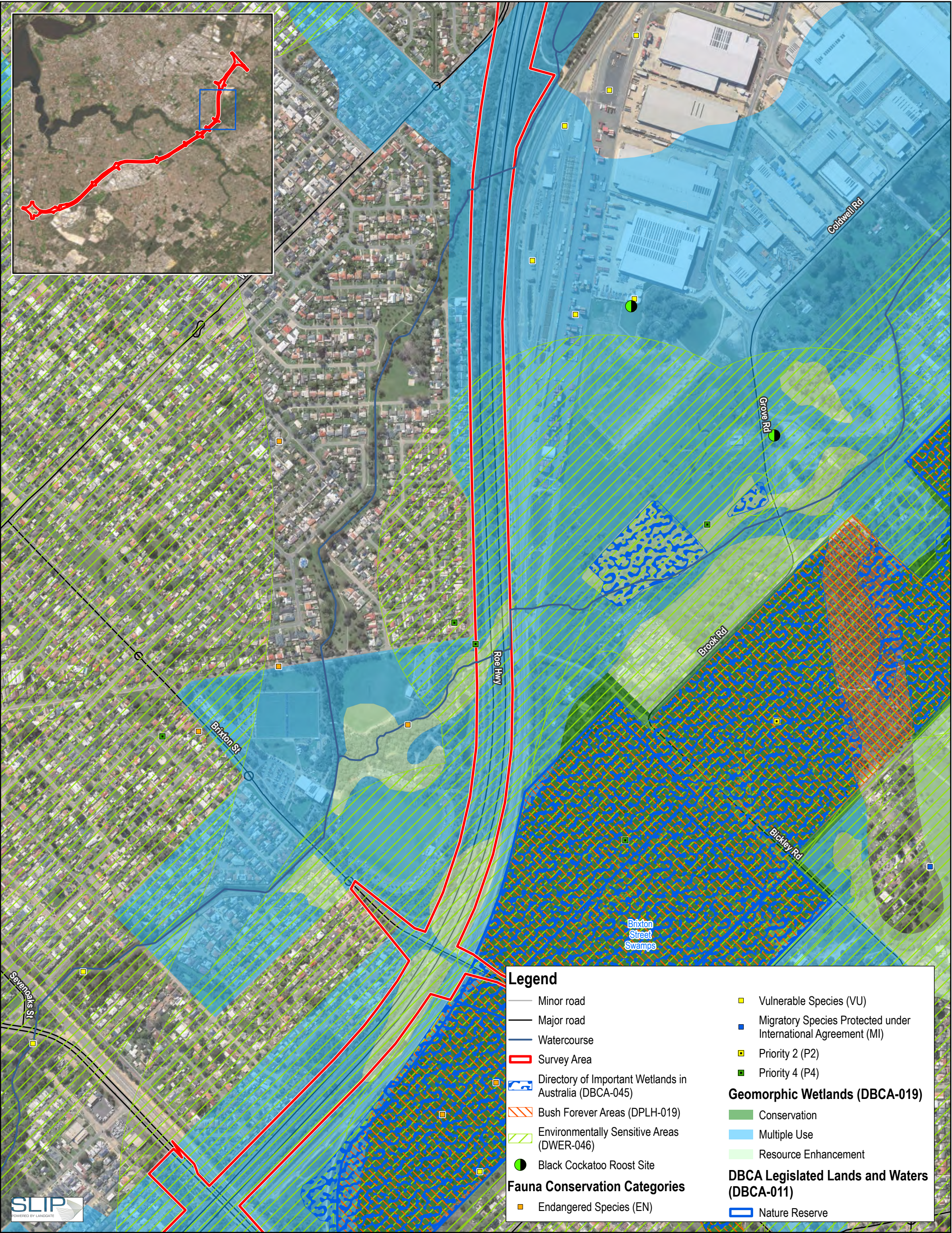
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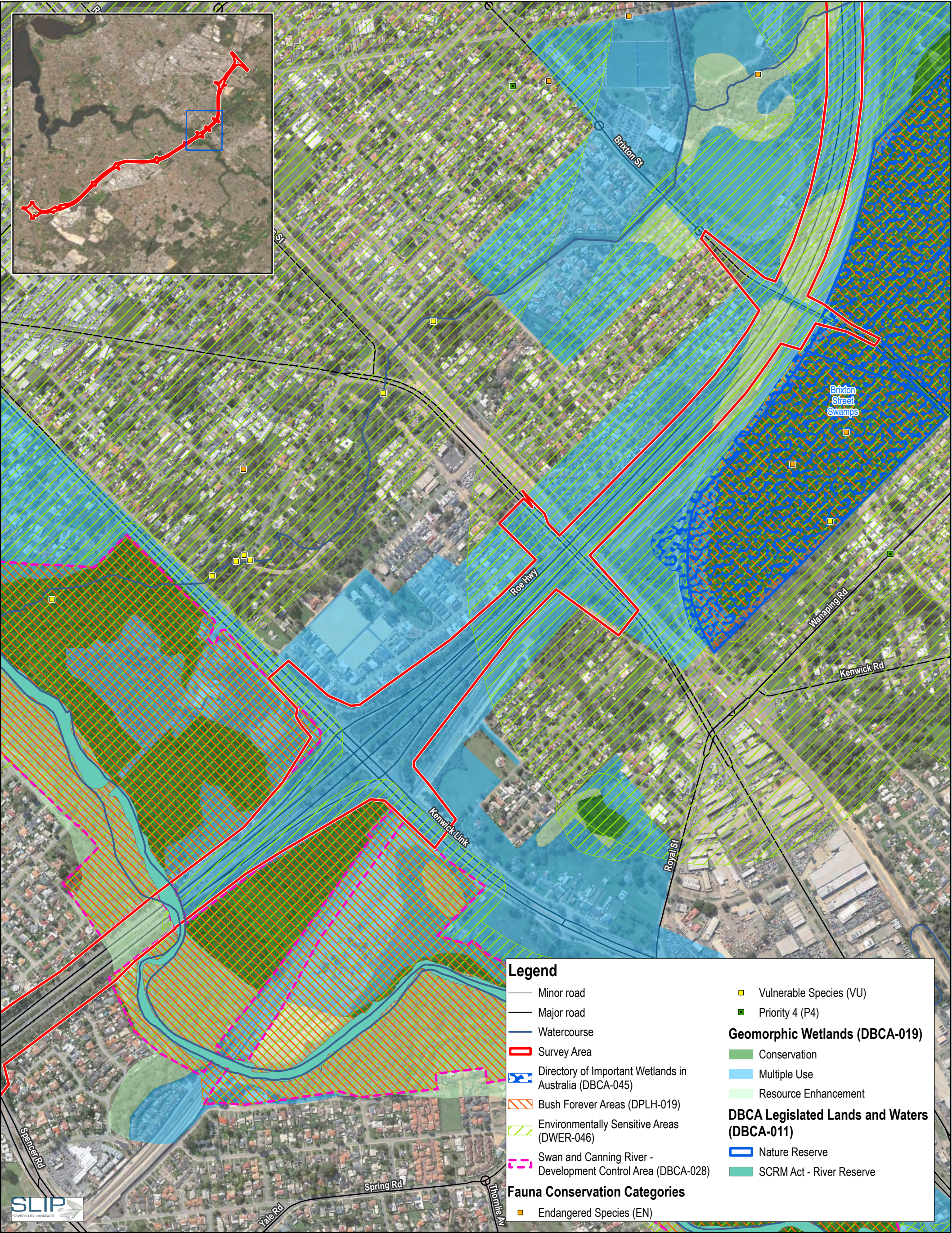
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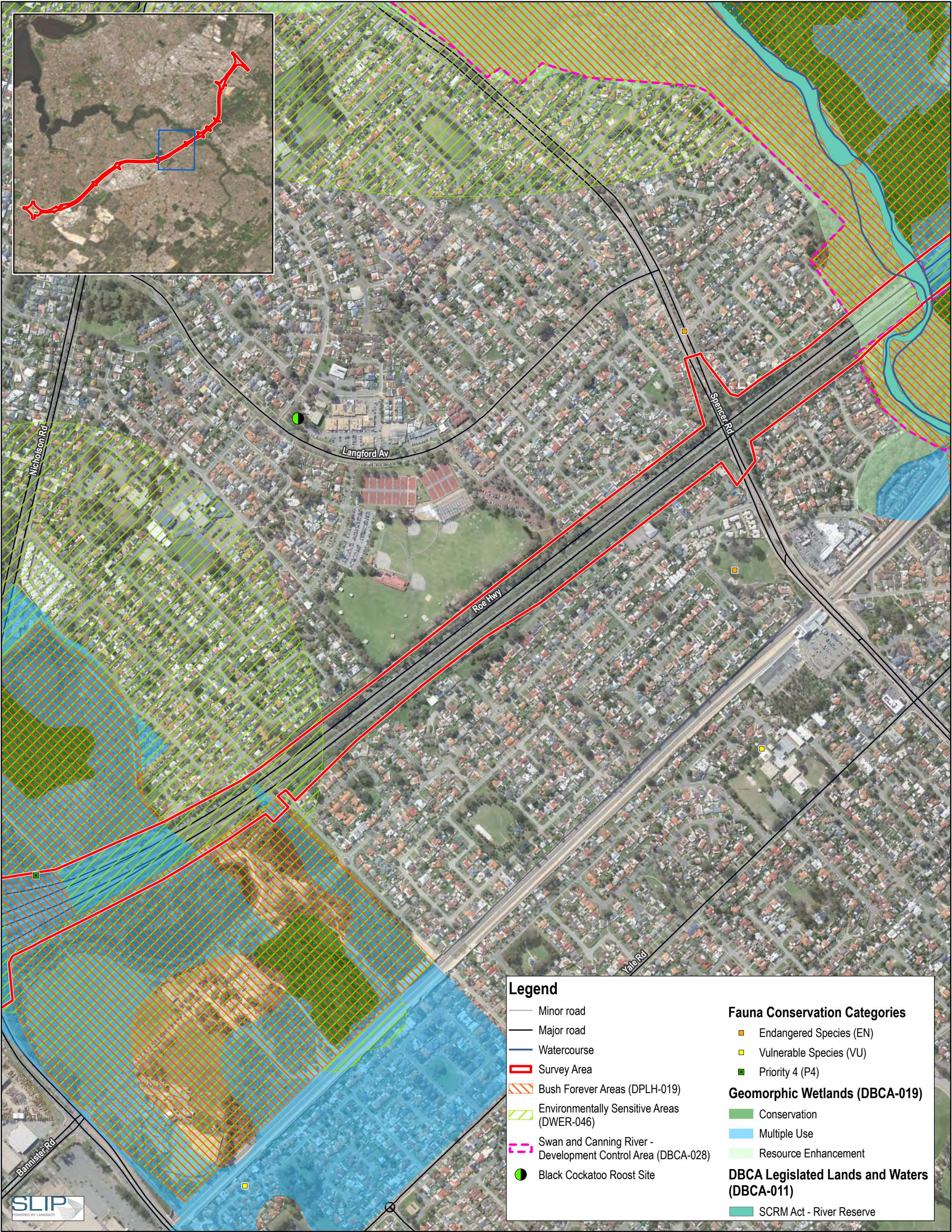
FIGURE 1











Legend

- Minor road
- Major road
- Watercourse
- Survey Area
- Bush Forever Areas (DPLH-019)
- Environmentally Sensitive Areas (DWER-046)
- Swan and Canning River - Development Control Area (DBCA-028)
- Black Cockatoo Roost Site

Fauna Conservation Categories

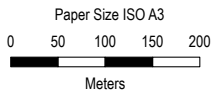
- Endangered Species (EN)
- Vulnerable Species (VU)
- Priority 4 (P4)

Geomorphic Wetlands (DBCA-019)

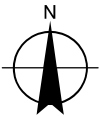
- Conservation
- Multiple Use
- Resource Enhancement

DBCA Legislated Lands and Waters (DBCA-011)

- SCRM Act - River Reserve



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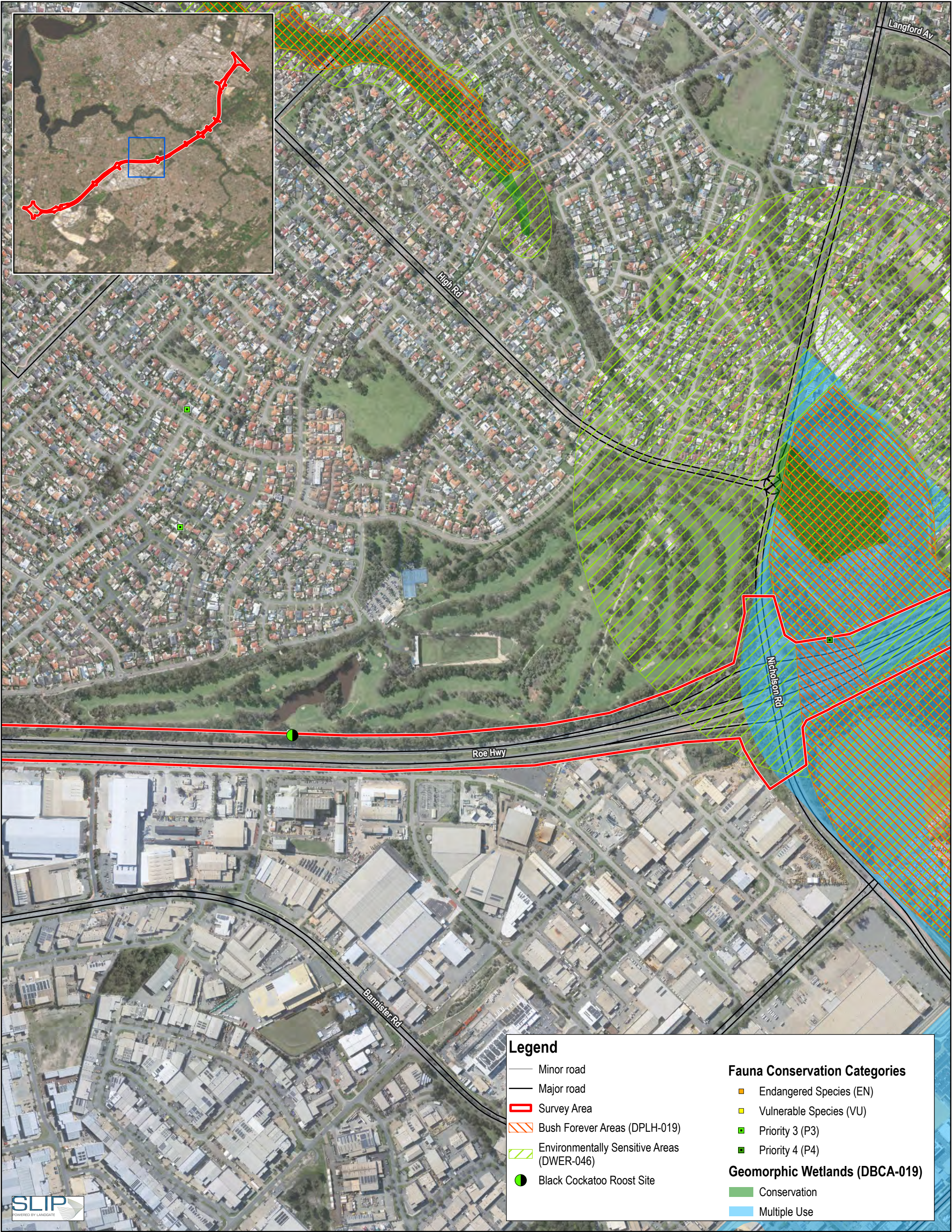
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Environmental Constraints

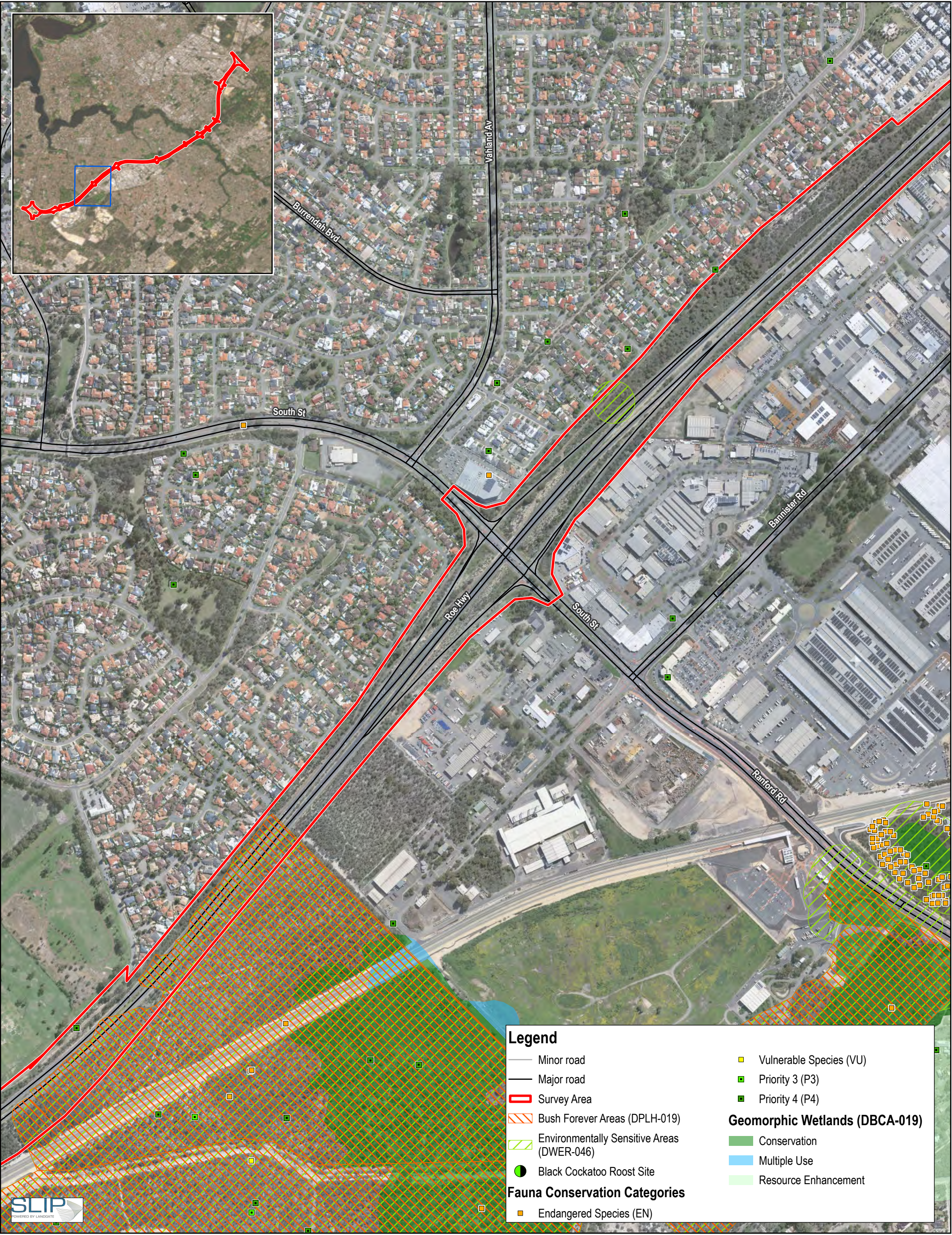
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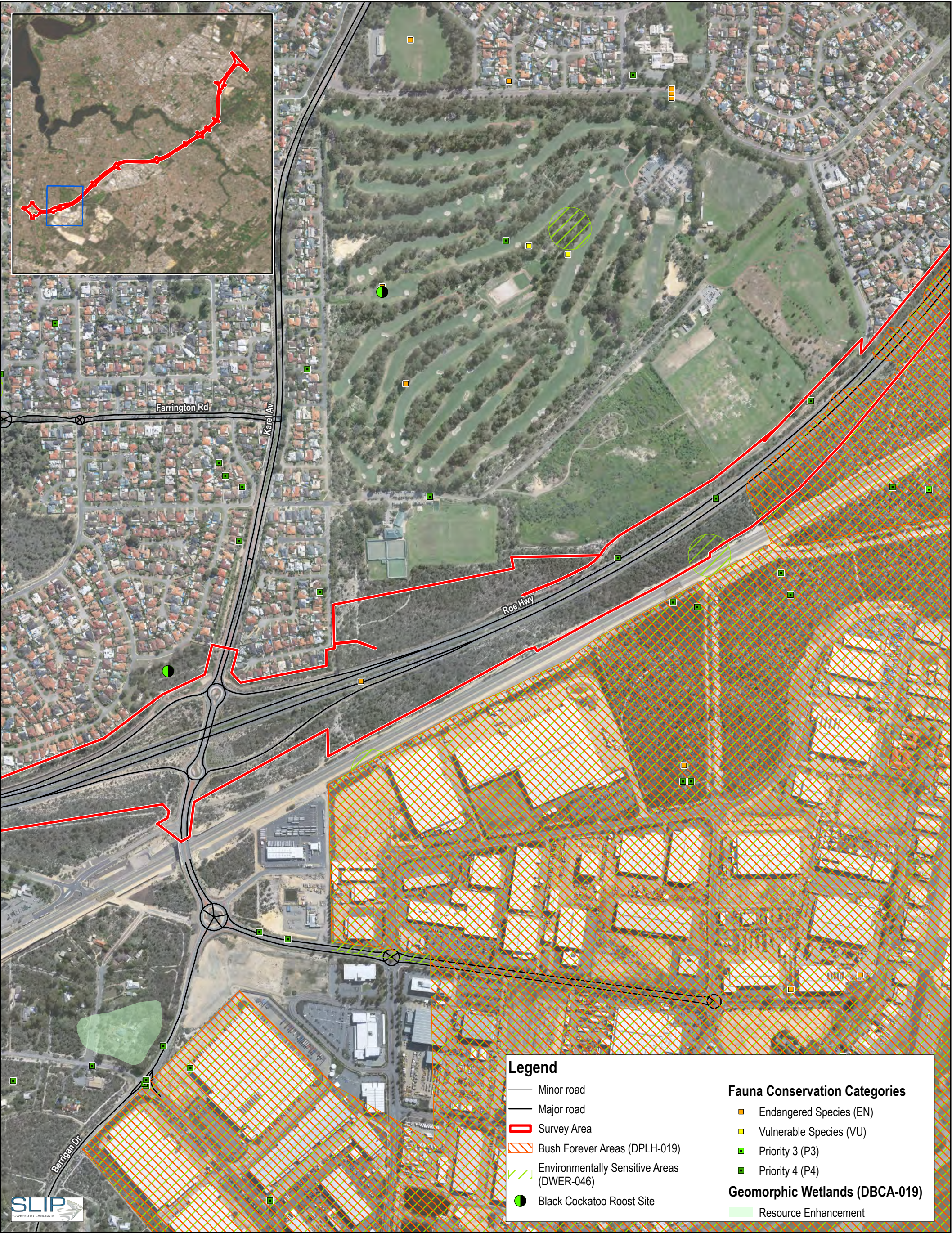
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FIGURE 2



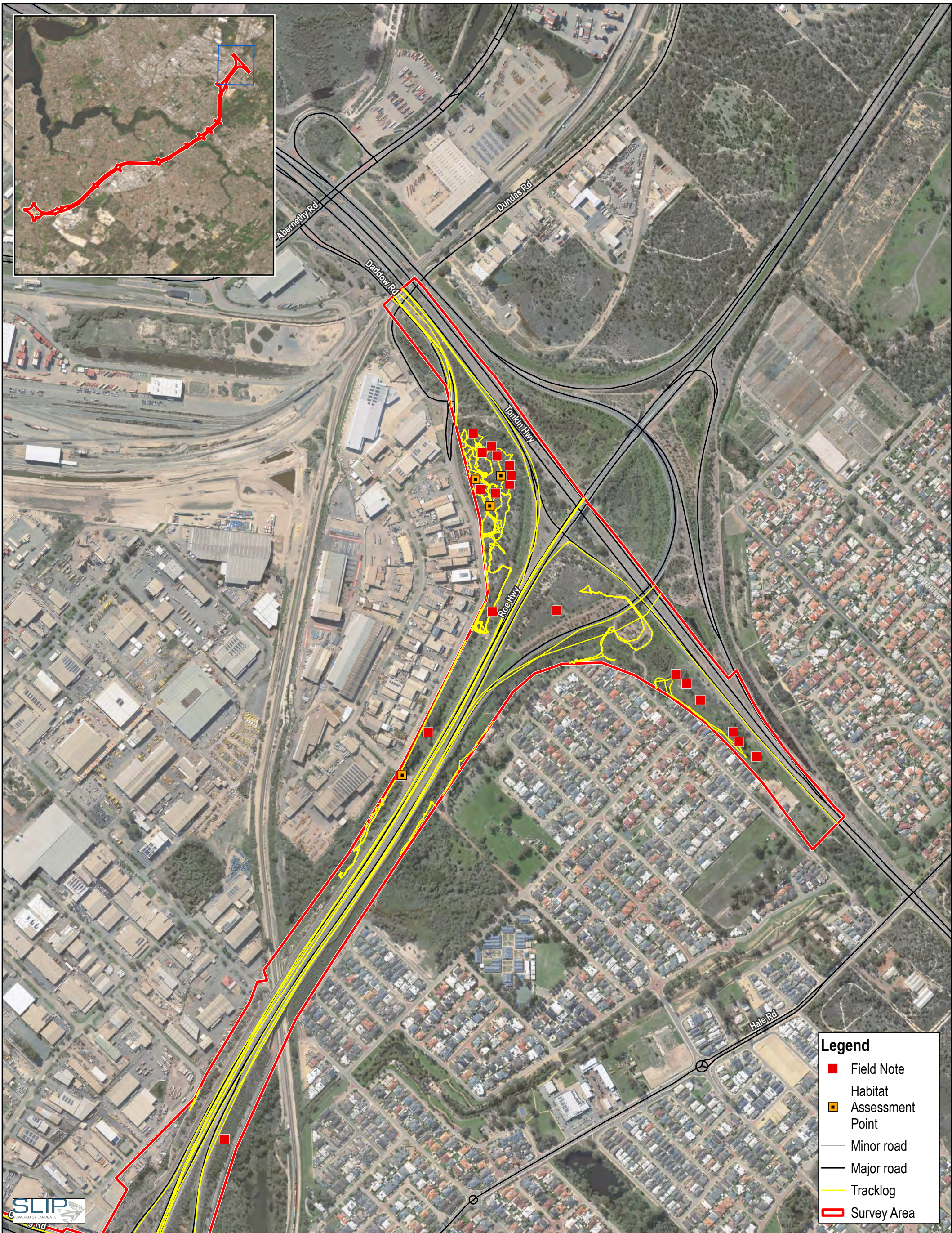






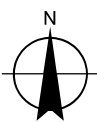






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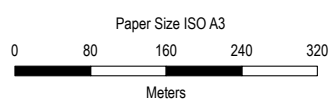
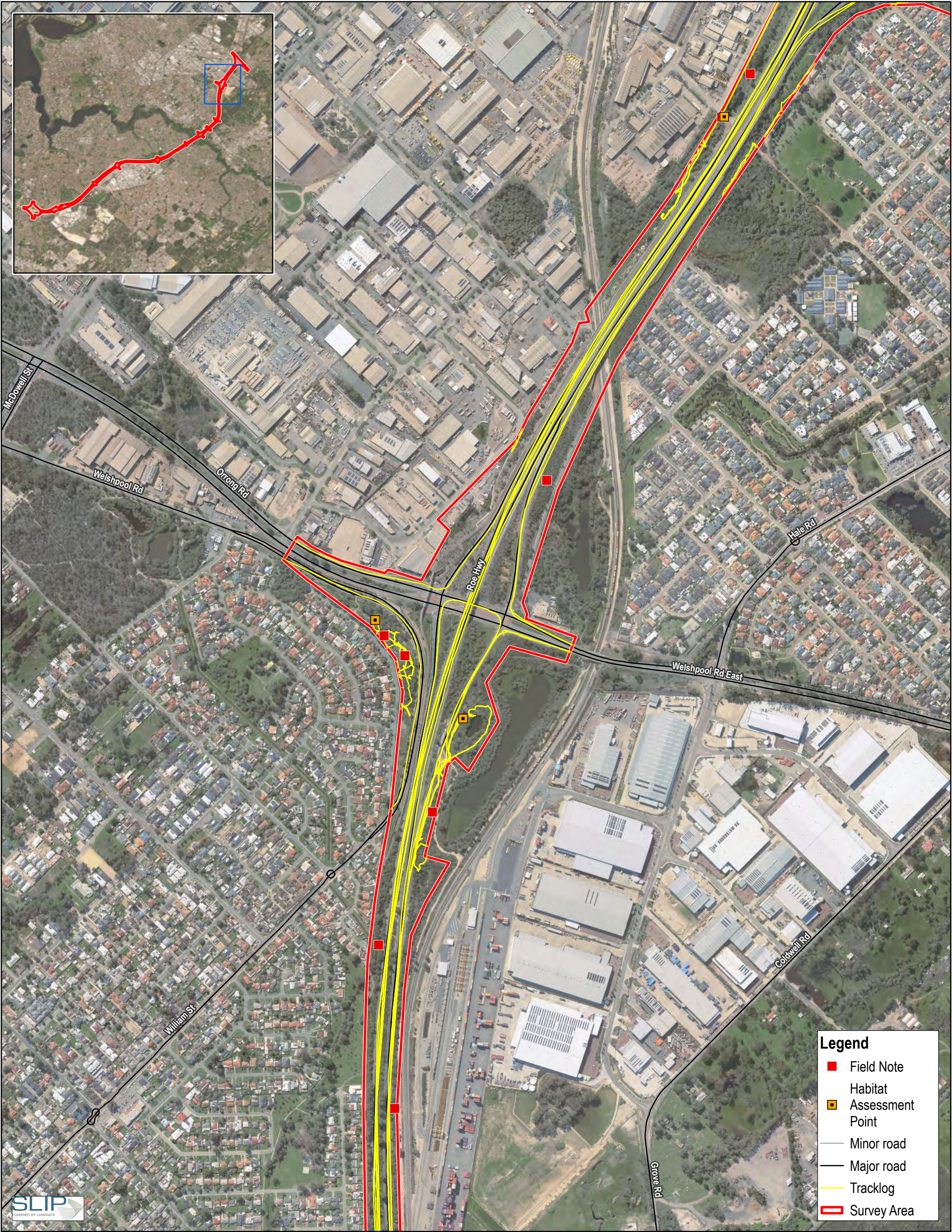
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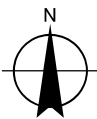
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FIGURE 3



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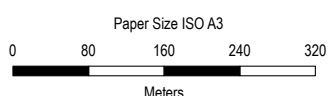
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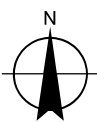
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FIGURE 3



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Main Roads
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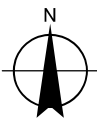
Sample Locations and Survey Effort

FIGURE 3



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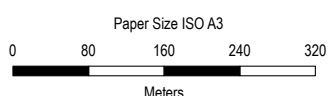
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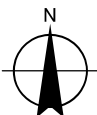
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FIGURE 3



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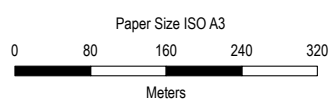
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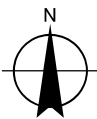
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Sample Locations and Survey Effort

FIGURE 3



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Main Roads
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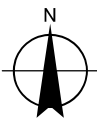
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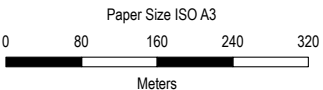
Sample Locations and Survey Effort

FIGURE 3

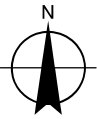


Legend

- Field Note
- Habitat
- Assessment Point
- Minor road
- Major road
- Tracklog
- Survey Area



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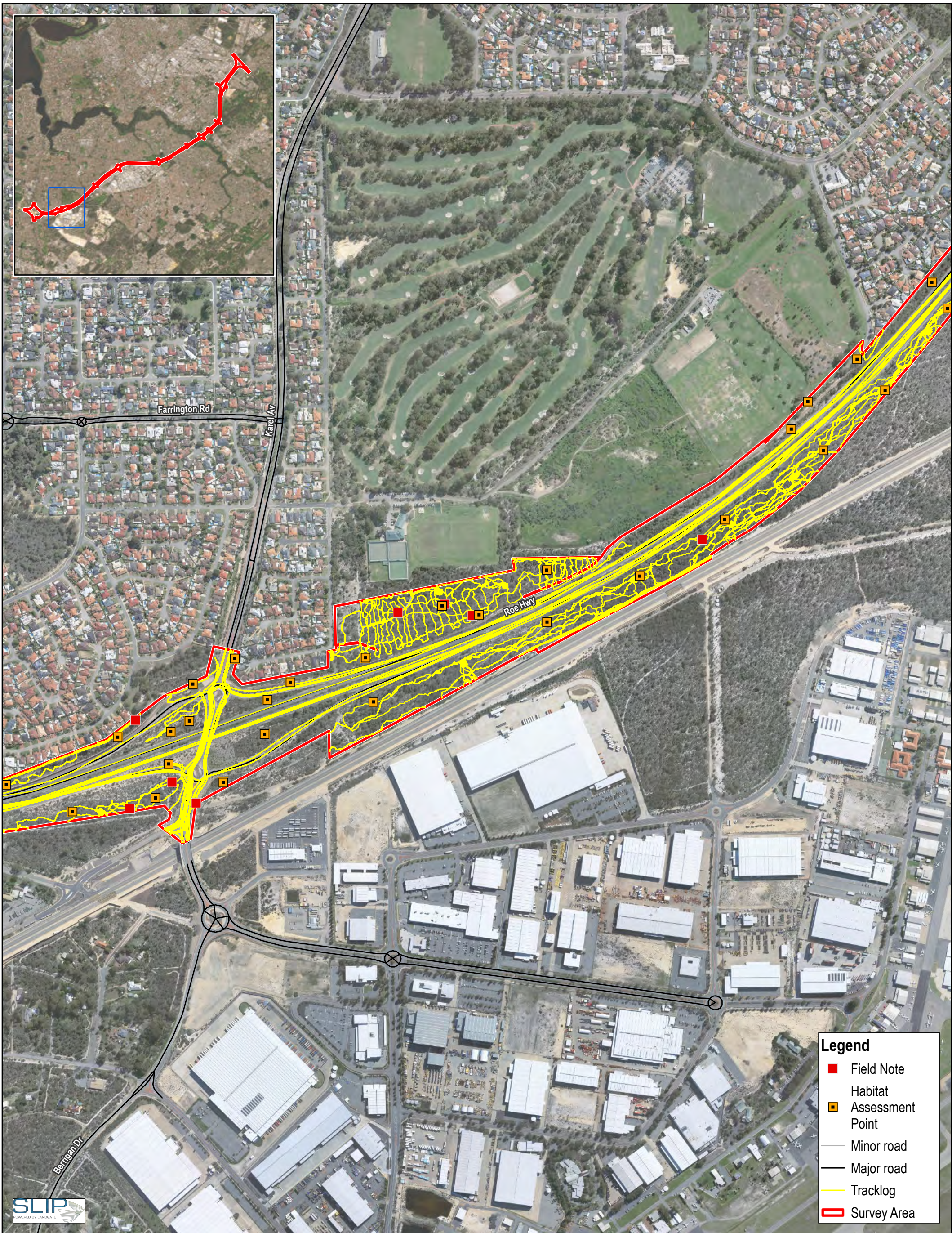


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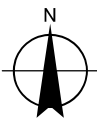
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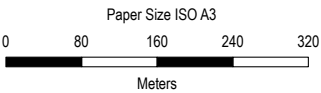
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Sample Locations and Survey Effort

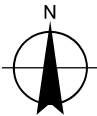
FIGURE 3



Fauna Habitat	Bamford (2020)			Area (ha)
	Baudin's Cockatoo	Carnaby's Cockatoo	FRTB Cockatoo	
Banksia woodland	2 (low)	6 (mod-high)	2 (low)	59.273
Eucalyptus woodland over Banksia	3 (mod-low)	6 (mod-high)	4 (mod)	6.143
Melaleuca dampland and sparse flooded gum	1 (neg-low)	1 (neg-low)	1 (neg-low)	4.638
Marri woodland	4 (mod)	5 (mod-high)	7 (high)	12.975
Naturalised and native trees	1 (neg-low)	1 (neg-low)	1 (neg-low)	21.746
Native and introduced shrubs	1 (neg-low)	1 (neg-low)	1 (neg-low)	77.244
Modified wetland drainage area	1 (neg-low)	1 (neg-low)	1 (neg-low)	6.485
Cleared land	0 (nil)	0 (nil)	0 (nil)	141.717



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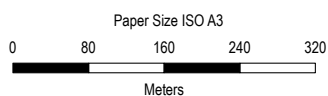
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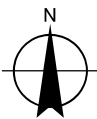
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Survey Results and Habitats

FIGURE 4



Map Projection: Transverse Mercator
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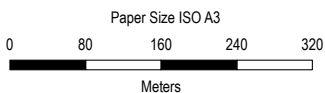
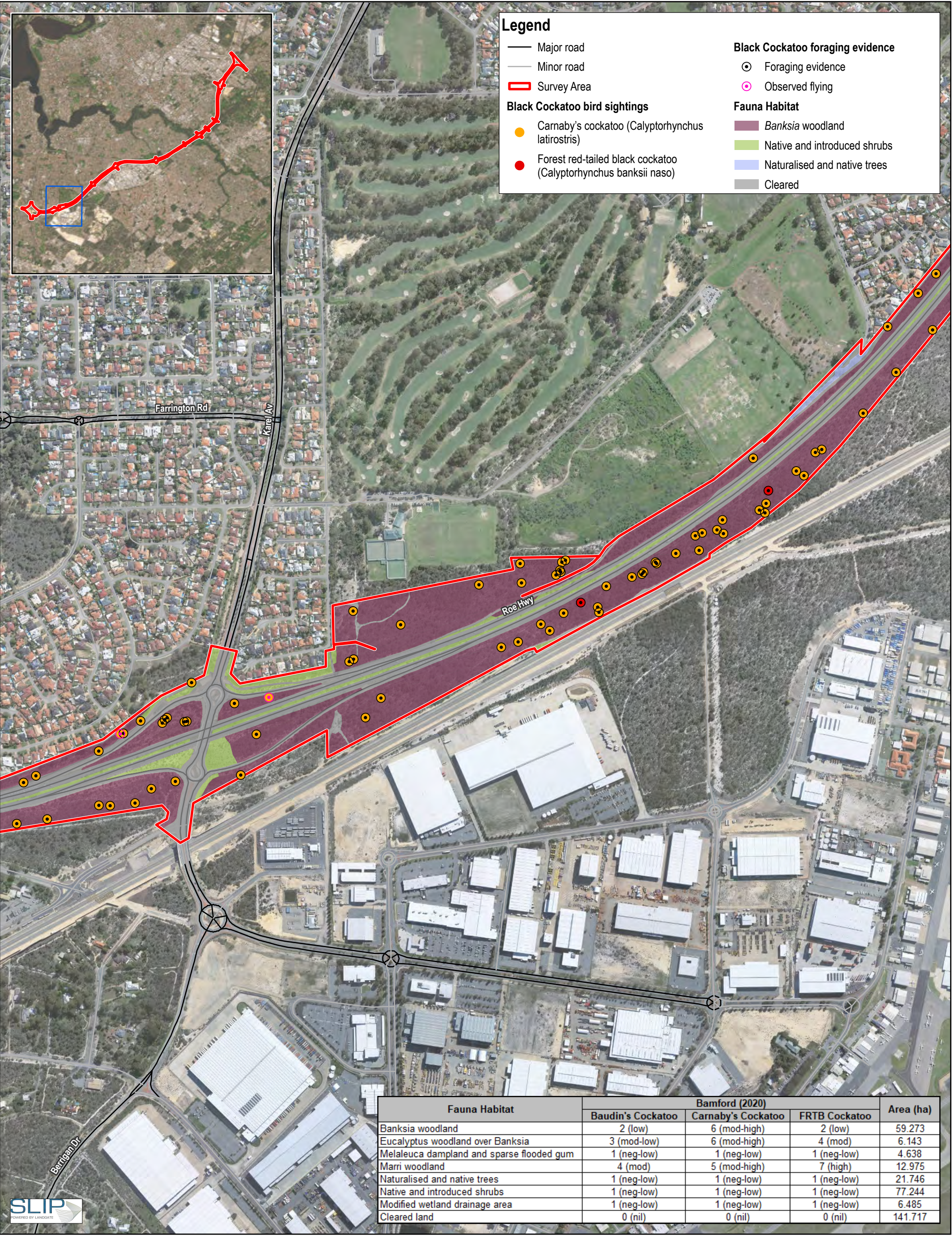
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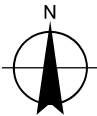
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Survey Results and Habitats

FIGURE 4



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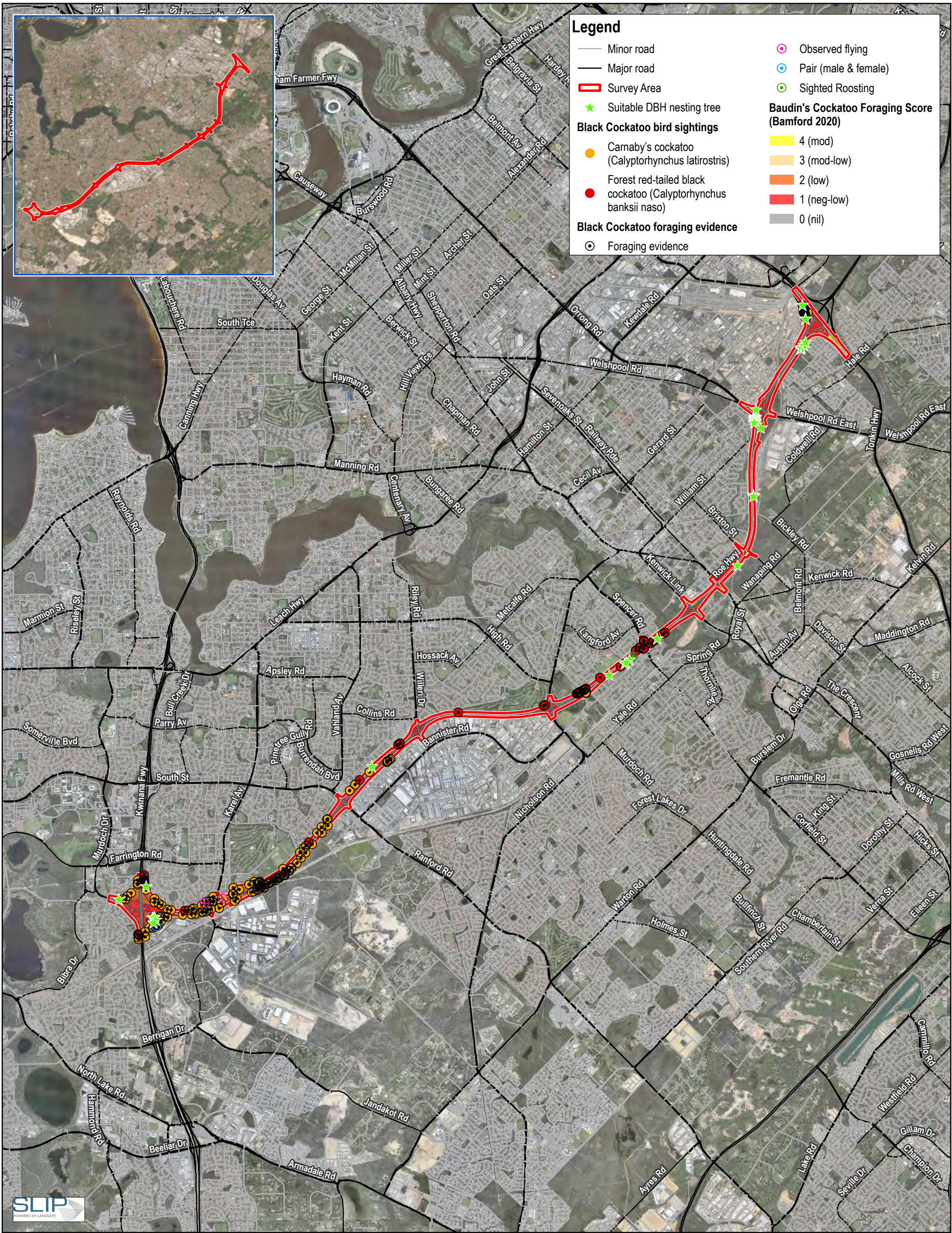
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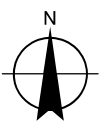
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Survey Results and Habitats

FIGURE 4



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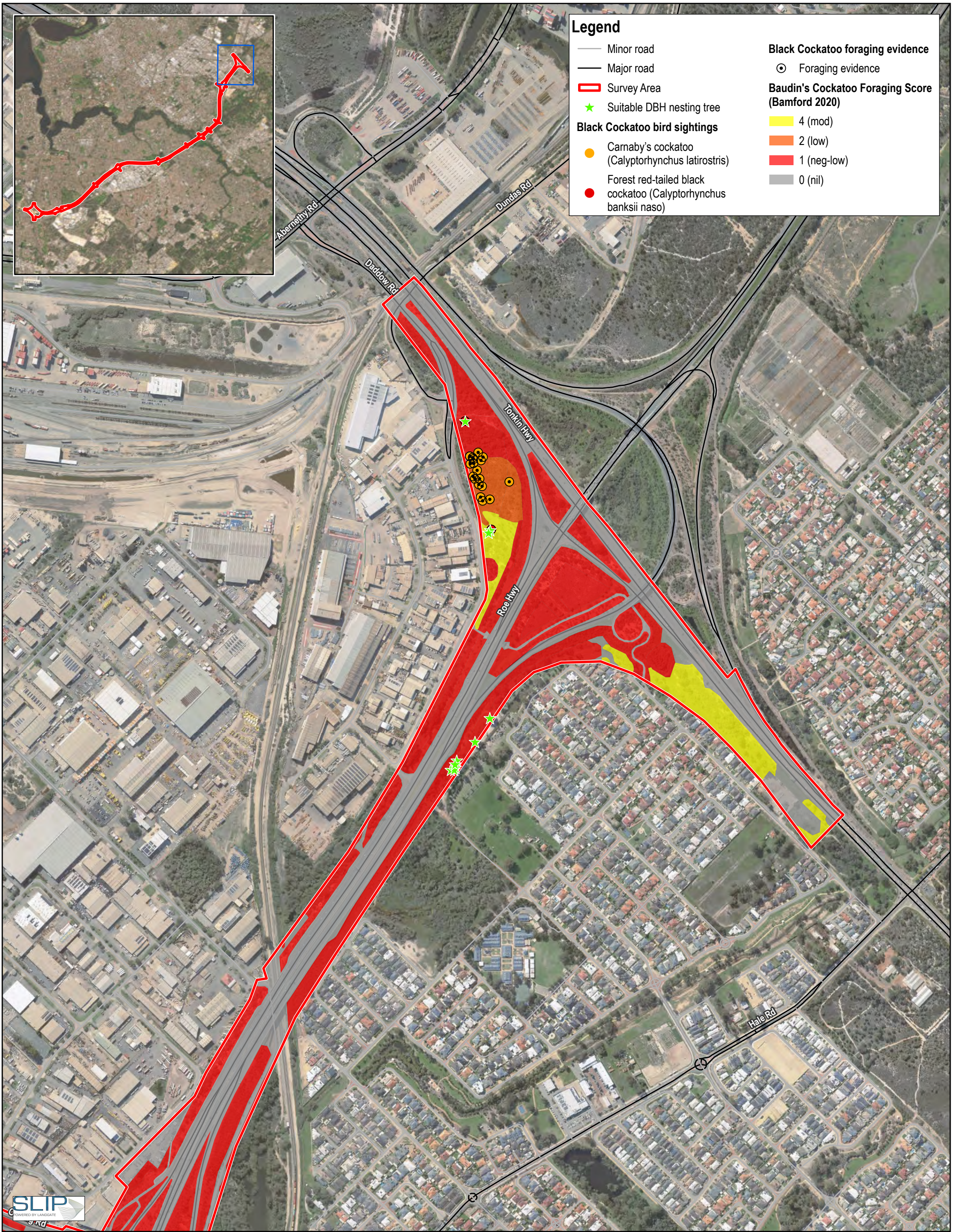
Main Roads
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Baudin's Black Cockatoo
Foraging Habitat Quality

Project No. 12634226
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Date 21/01/2026

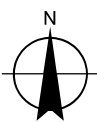
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FIGURE 4A



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Main Roads
Roe Hwy Widening Flora and Fauna Assessment

**Baudin's Black Cockatoo
Foraging Habitat Quality**

Project No. 12634226
Revision No. 0
Date 21/01/2026

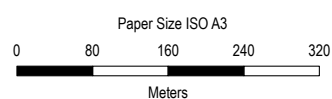
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FIGURE 4A

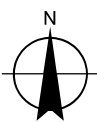








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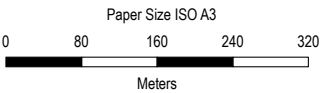
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Roe Hwy Widening Flora and Fauna Assessment

**Baudin's Black Cockatoo
Foraging Habitat Quality**

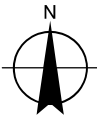
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FIGURE 4A



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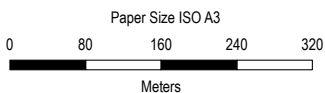
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Roe Hwy Widening Flora and Fauna Assessment

Baudin's Black Cockatoo
Foraging Habitat Quality

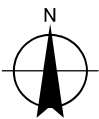
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FIGURE 4A



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Main Roads
Roe Hwy Widening Flora and Fauna Assessment

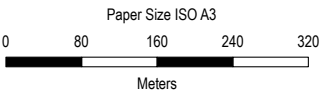
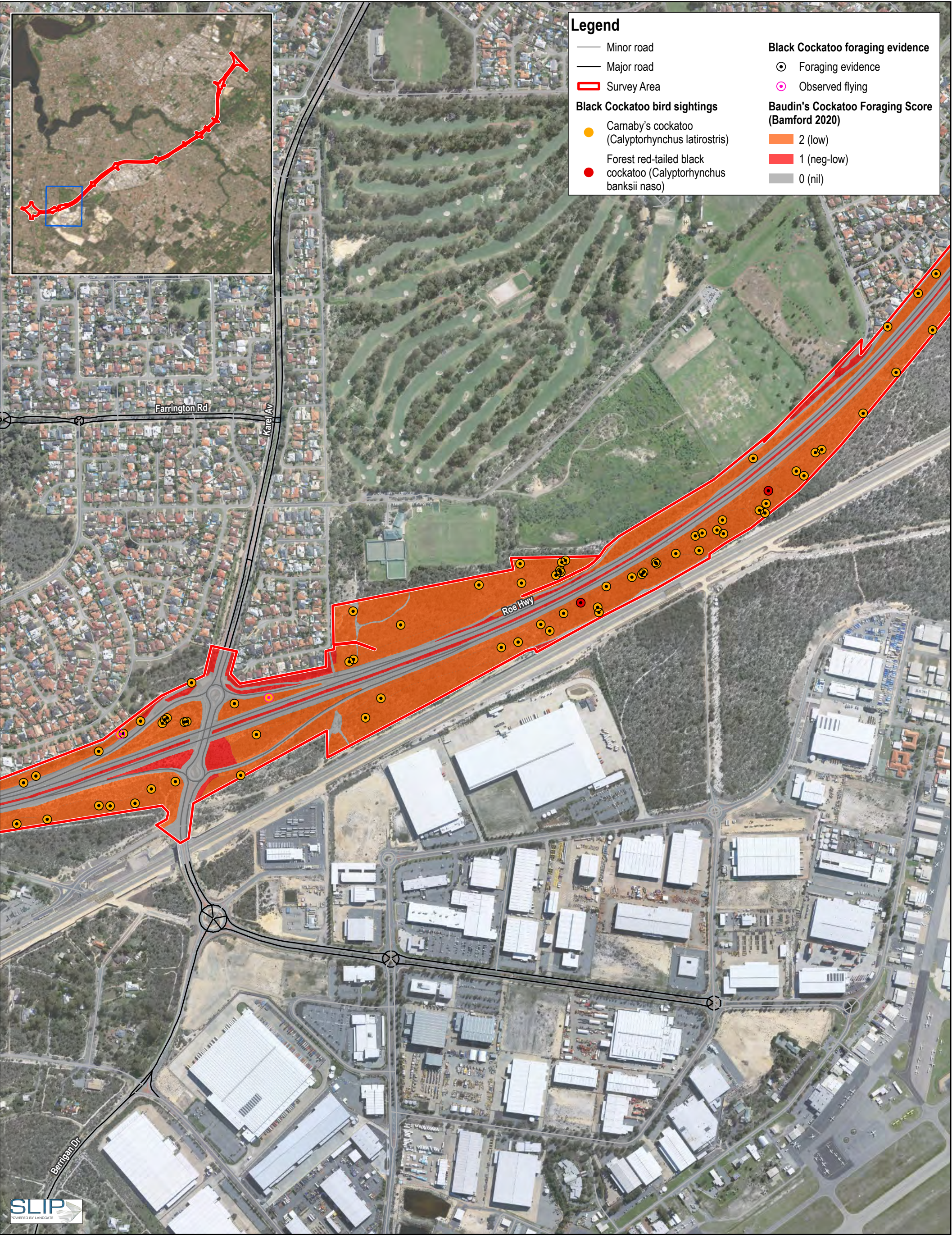
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Foraging Habitat Quality**

Project No. 12634226
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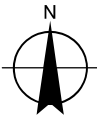
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FIGURE 4A





Map Projection: Transverse Mercator
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Main Roads
Roe Hwy Widening Flora and Fauna Assessment

**Baudin's Black Cockatoo
Foraging Habitat Quality**

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FIGURE 4A



Legend

- Minor road
- Major road
- Survey Area
- Suitable DBH nesting tree
- Carnaby's cockatoo (*Calyptorhynchus latirostris*)
- Forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*)

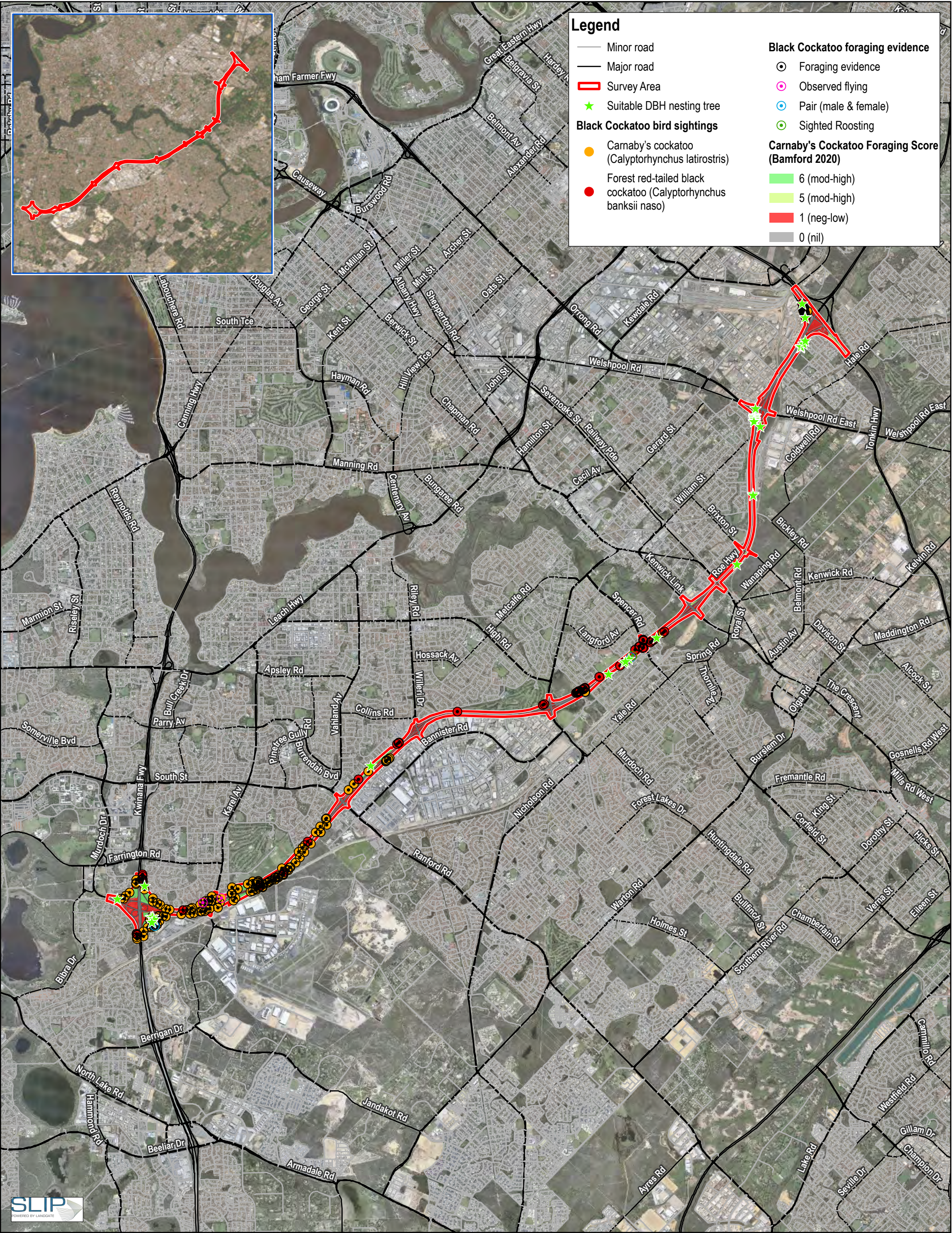
Black Cockatoo foraging evidence

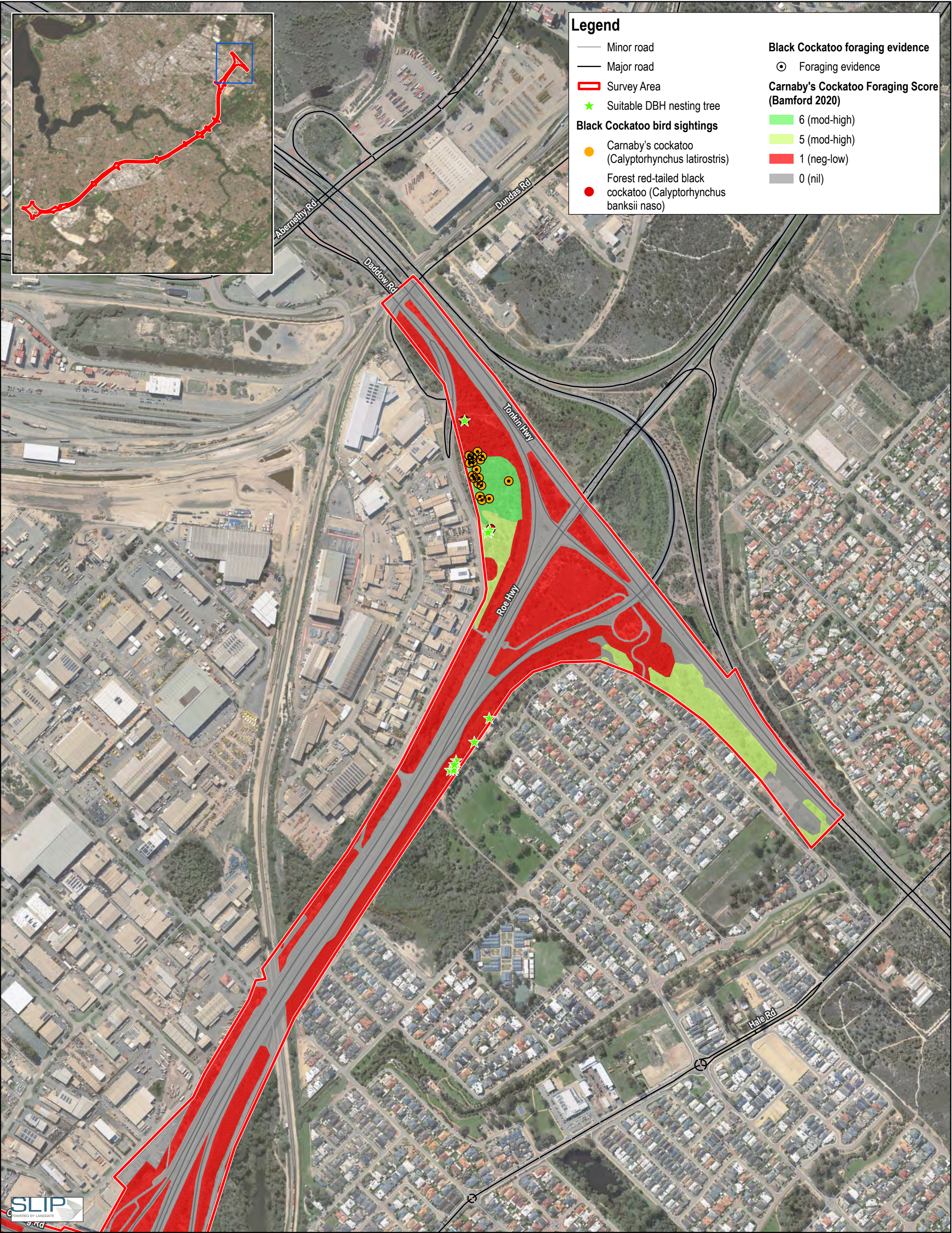
- Foraging evidence
- Observed flying
- Pair (male & female)

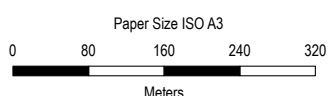
Black Cockatoo bird sightings

Baudin's Cockatoo Foraging Score (Bamford 2020)

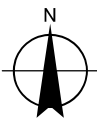
- 3 (mod-low)
- 2 (low)
- 1 (neg-low)
- 0 (nil)







Map Projection: Transverse Mercator
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Main Roads
Roe Hwy Widening Flora and Fauna Assessment

Carnaby's Black Cockatoo
Foraging Habitat Quality

Project No. 12634226
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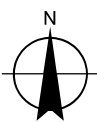
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FIGURE 4B



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Main Roads
Roe Hwy Widening Flora and Fauna Assessment

Carnaby's Black Cockatoo
Foraging Habitat Quality

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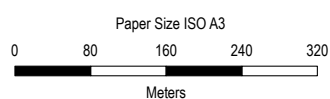
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FIGURE 4B

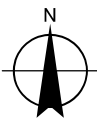


Legend

- Minor road
- Major road
- Survey Area
- Suitable DBH nesting tree
- Black Cockatoo bird sightings**
 - Carnaby's cockatoo (*Calyptrorhynchus latirostris*)
 - Forest red-tailed black cockatoo (*Calyptrorhynchus banksii naso*)
- Black Cockatoo foraging evidence**
 - Foraging evidence
- Carnaby's Cockatoo Foraging Score (Bamford 2020)**
 - 6 (mod-high)
 - 5 (mod-high)
 - 1 (neg-low)
 - 0 (nil)



Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



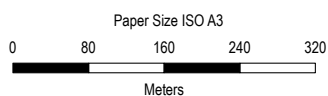
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

**Carnaby's Black Cockatoo
Foraging Habitat Quality**

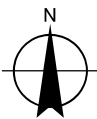
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FIGURE 4B



Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



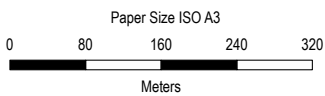
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

Carnaby's Black Cockatoo
Foraging Habitat Quality

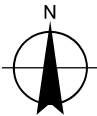
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FIGURE 4B



Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



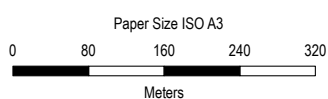
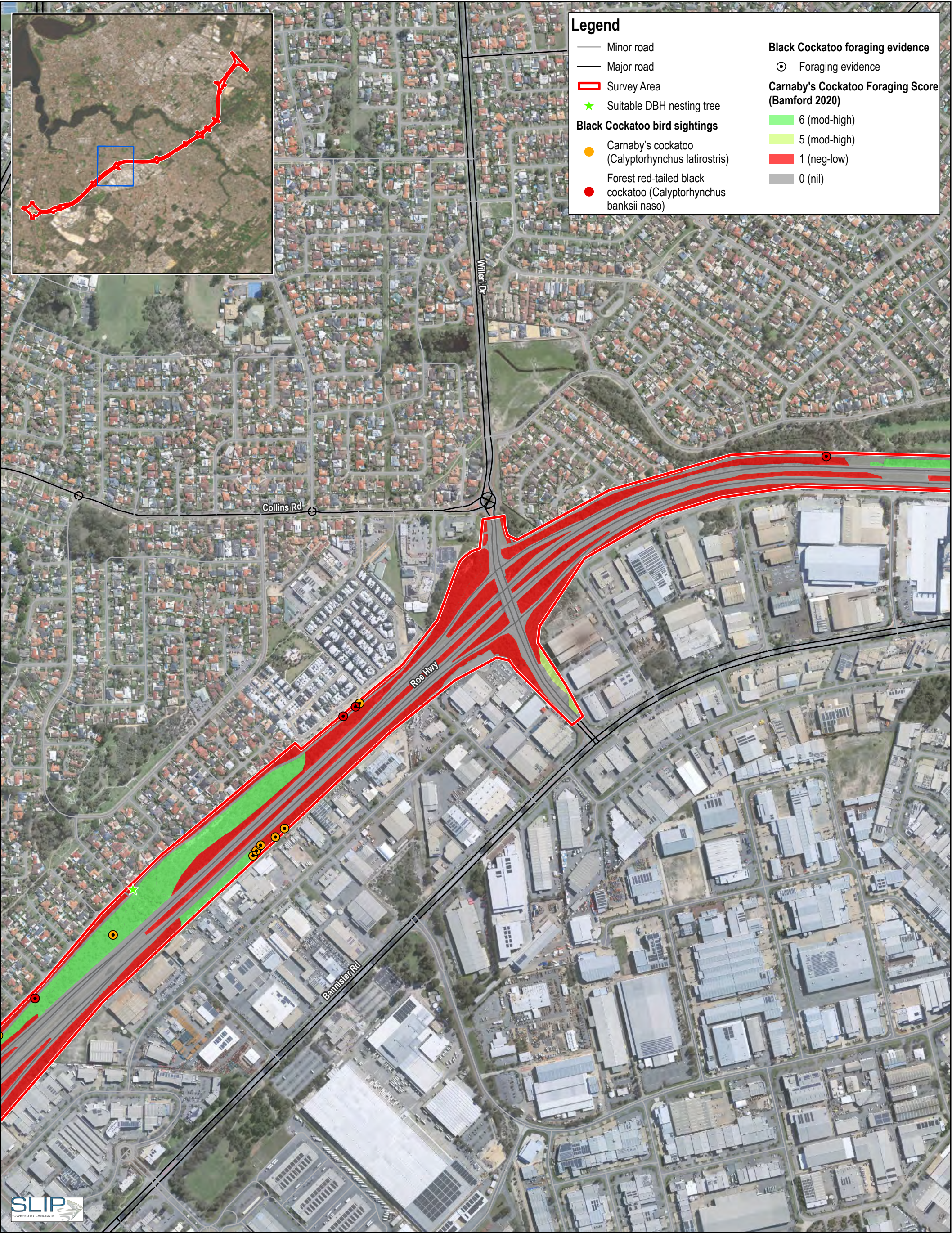
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

Carnaby's Black Cockatoo
Foraging Habitat Quality

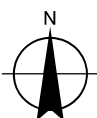
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FIGURE 4B



Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



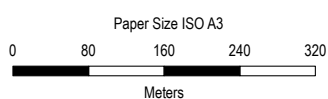
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

Carnaby's Black Cockatoo
Foraging Habitat Quality

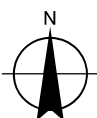
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FIGURE 4B



Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



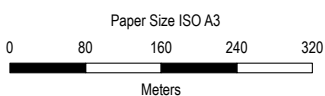
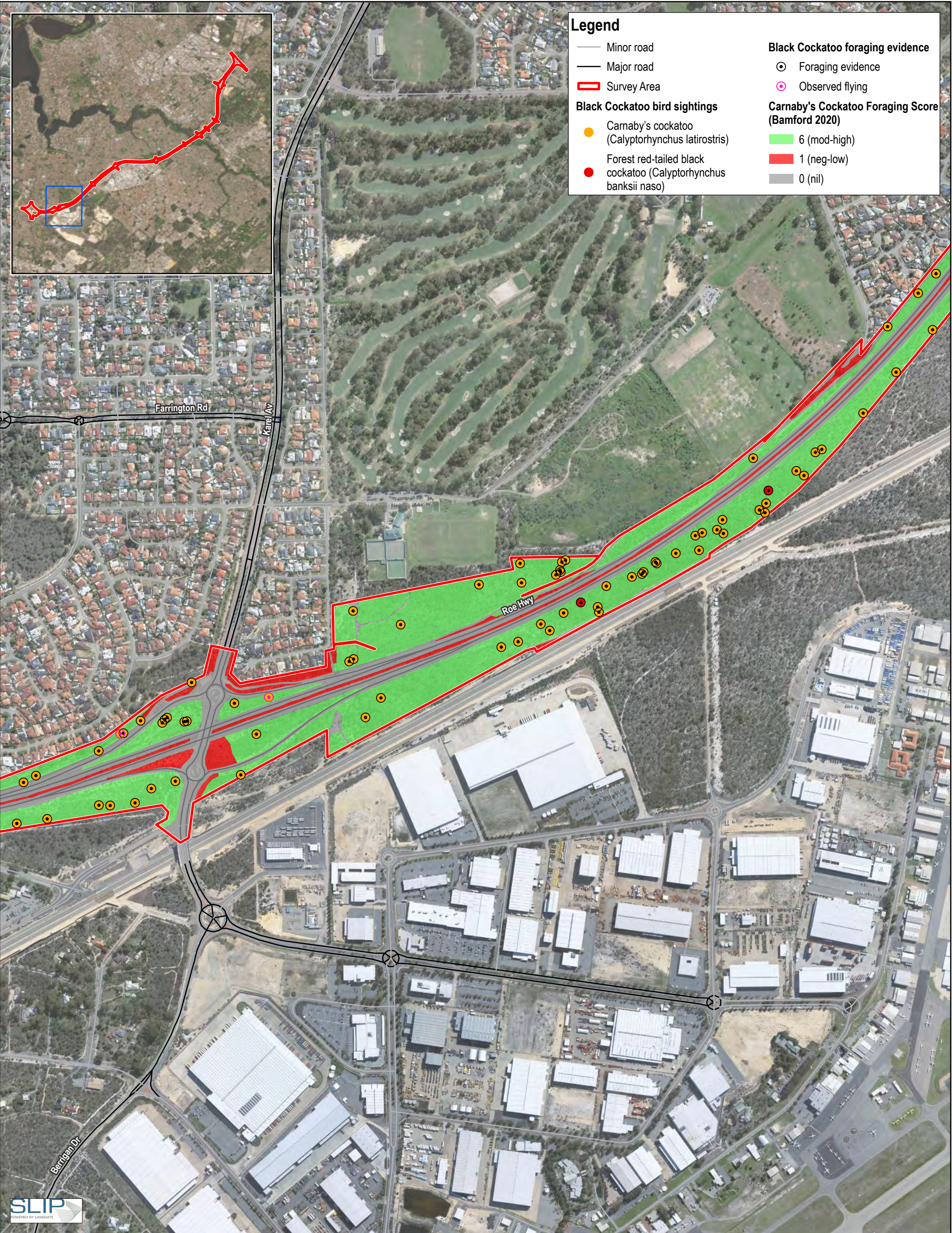
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

Carnaby's Black Cockatoo
Foraging Habitat Quality

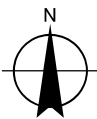
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FIGURE 4B



Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



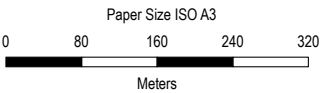
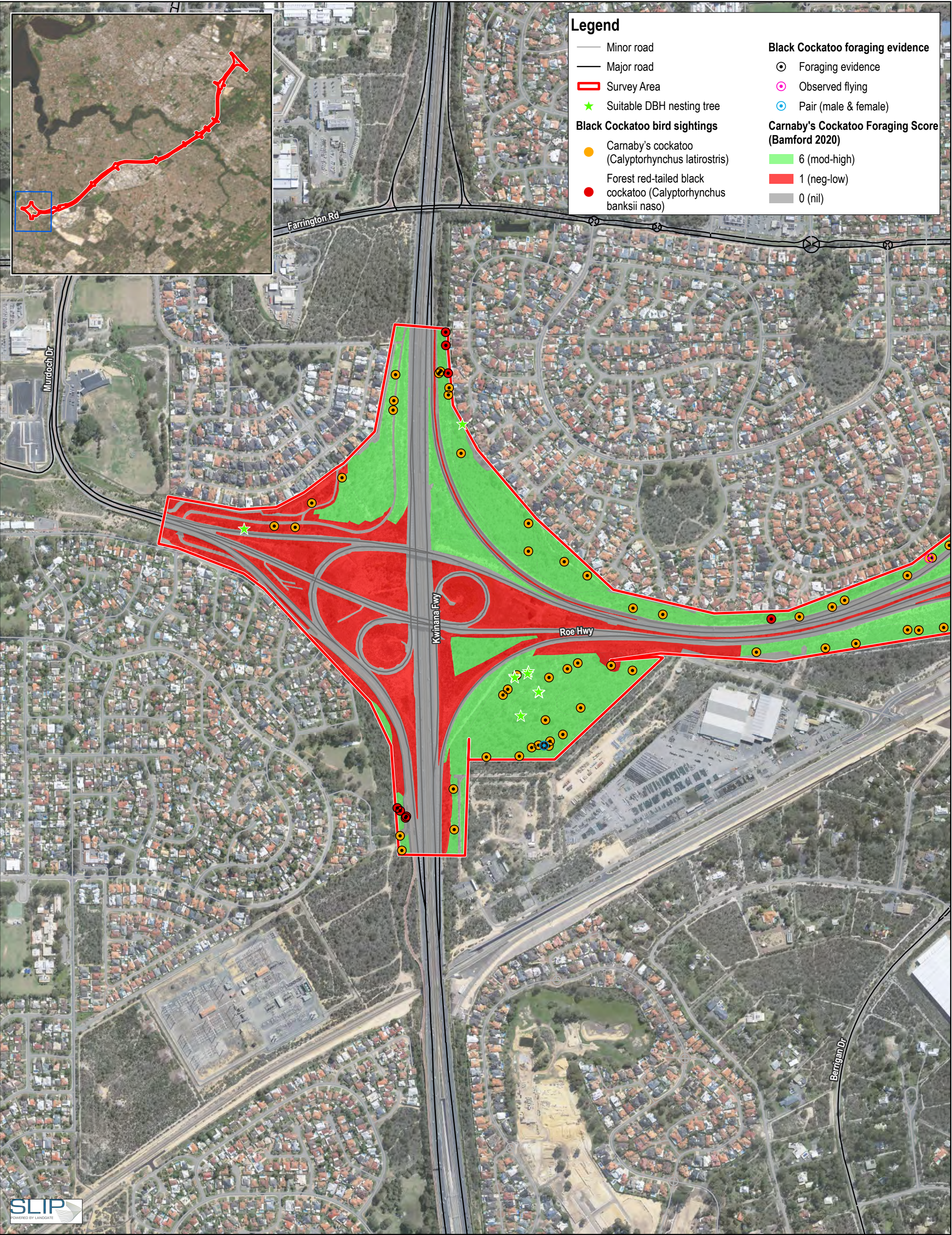
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

Carnaby's Black Cockatoo
Foraging Habitat Quality

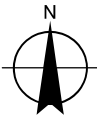
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FIGURE 4B



Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



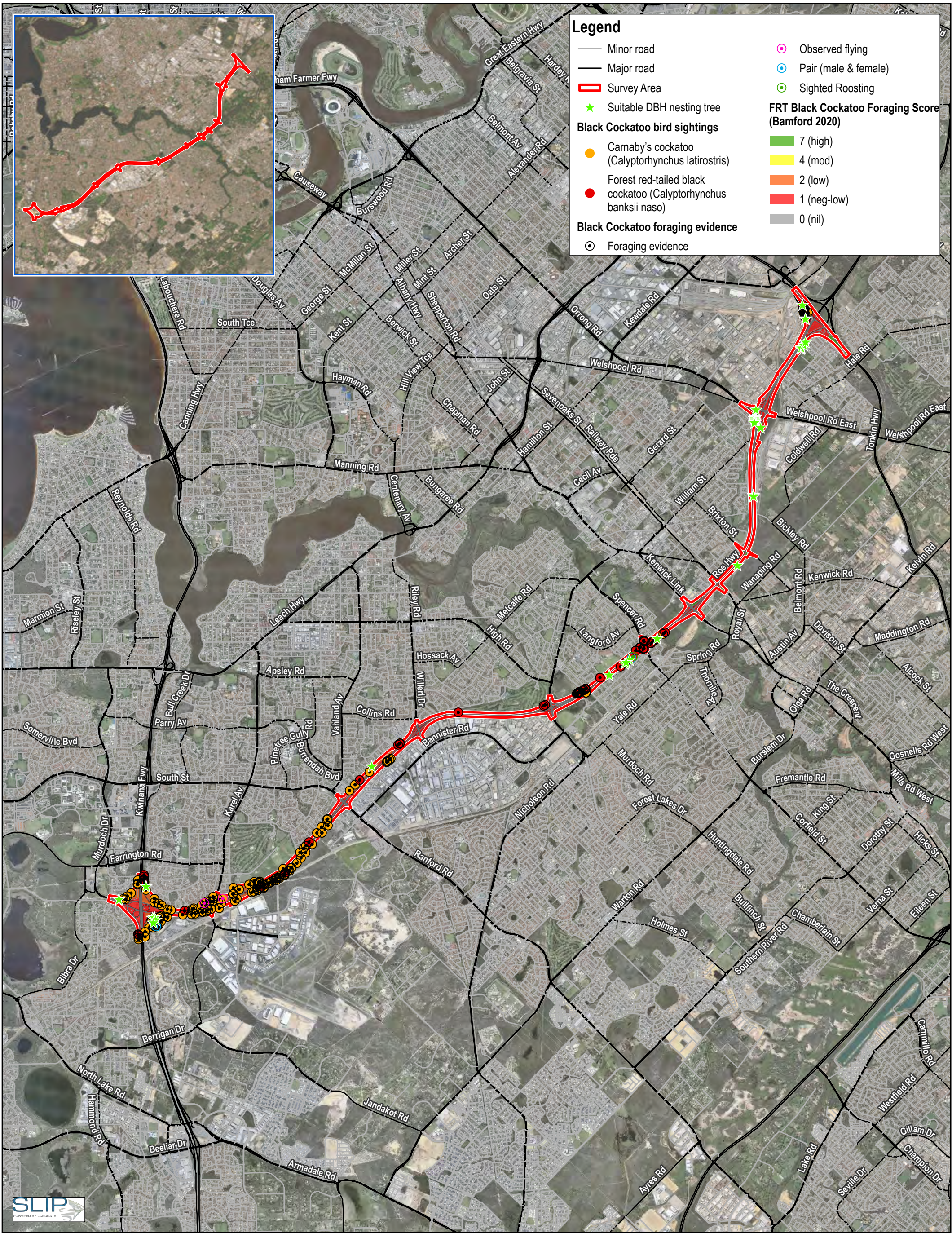
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

Carnaby's Black Cockatoo
Foraging Habitat Quality

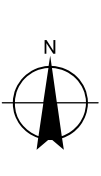
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FIGURE 4B

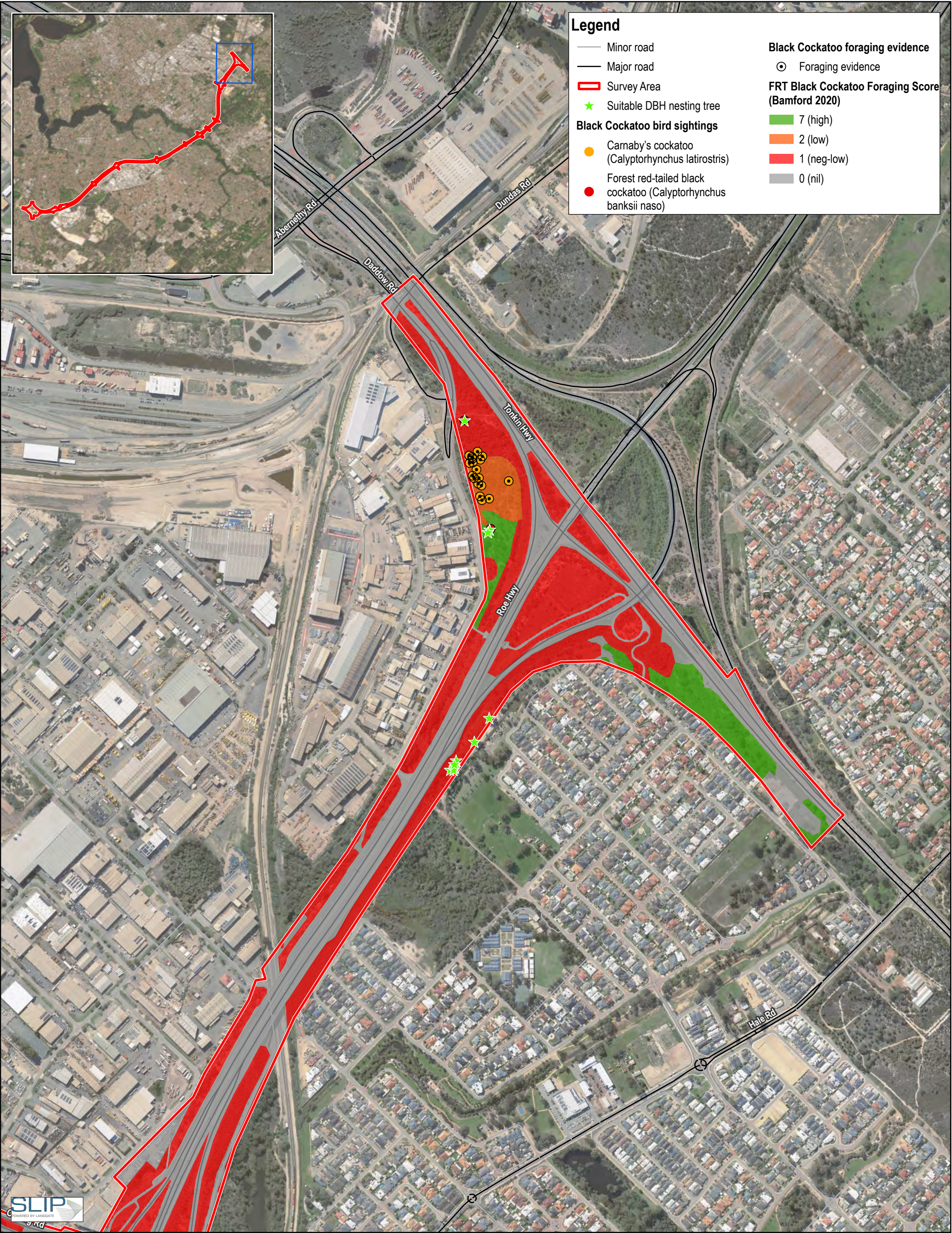


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Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



Main Roads
Roe Hwy Widening Flora and Fauna Assessment
**Forrest Red-tailed Black Cockatoo
Foraging Habitat Quality**

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FIGURE 4C

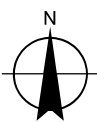






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Grid: GDA2020 MGA Zone 50



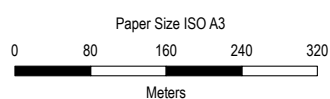
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

Forrest Red-tailed Black Cockatoo
Foraging Habitat Quality

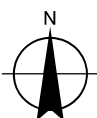
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FIGURE 4C



Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



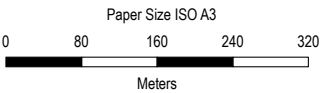
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

Forrest Red-tailed Black Cockatoo
Foraging Habitat Quality

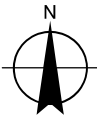
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FIGURE 4C



Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



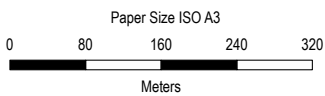
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

Forrest Red-tailed Black Cockatoo
Foraging Habitat Quality

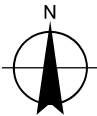
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FIGURE 4C



Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



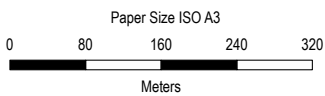
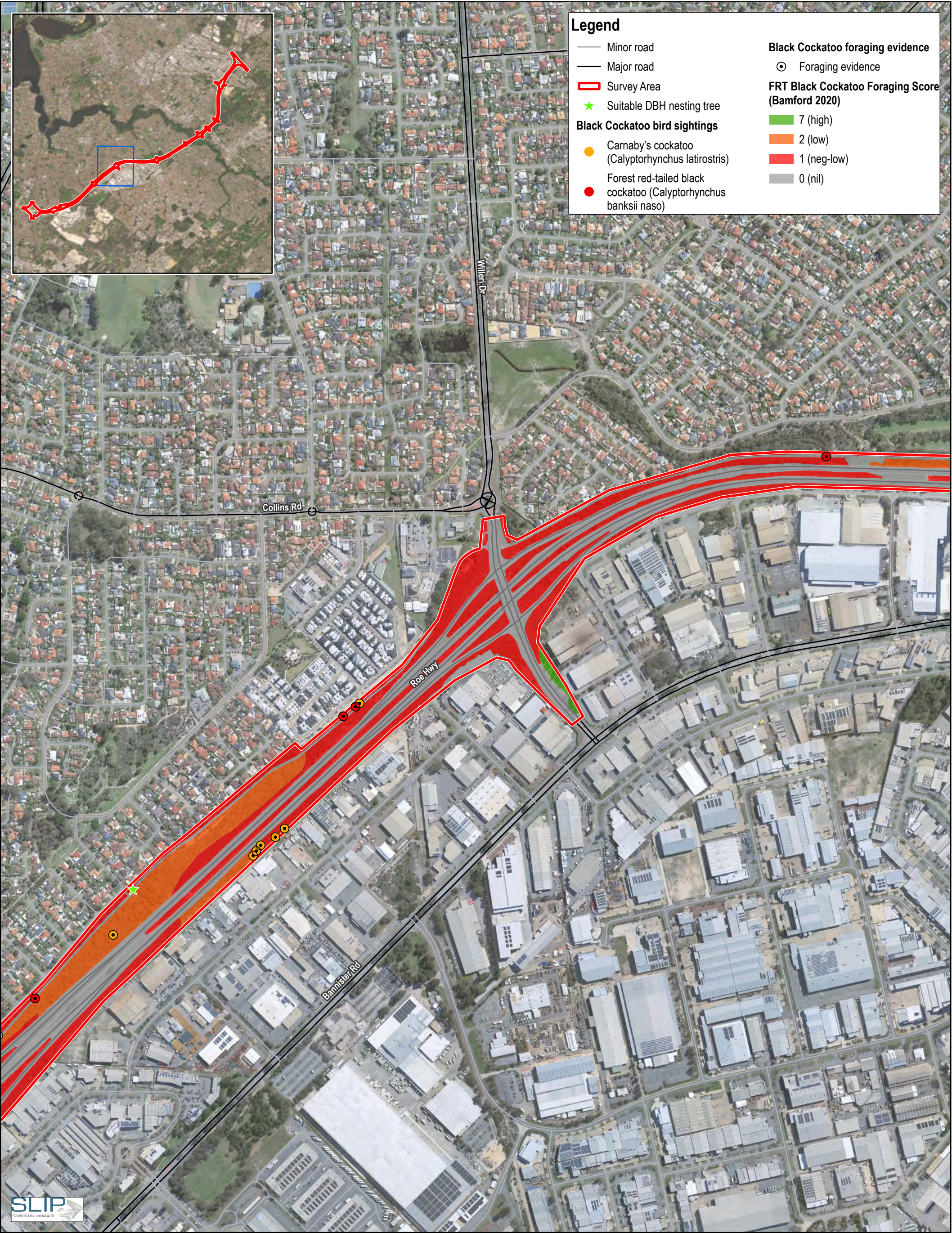
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

Forrest Red-tailed Black Cockatoo
Foraging Habitat Quality

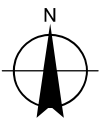
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FIGURE 4C



Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



Main Roads
Roe Hwy Widening Flora and Fauna Assessment

Forrest Red-tailed Black Cockatoo
Foraging Habitat Quality

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FIGURE 4C



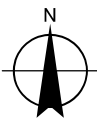
Legend

- Minor road
- Major road
- Survey Area
- Suitable DBH nesting tree
- Black Cockatoo bird sightings**
 - Carnaby's cockatoo (*Calyptorhynchus latirostris*)
 - Forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*)
- Black Cockatoo foraging evidence**
 - Foraging evidence
- FRT Black Cockatoo Foraging Score (Bamford 2020)**
 - 2 (low)
 - 1 (neg-low)
 - 0 (nil)



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Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



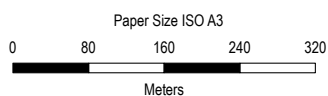
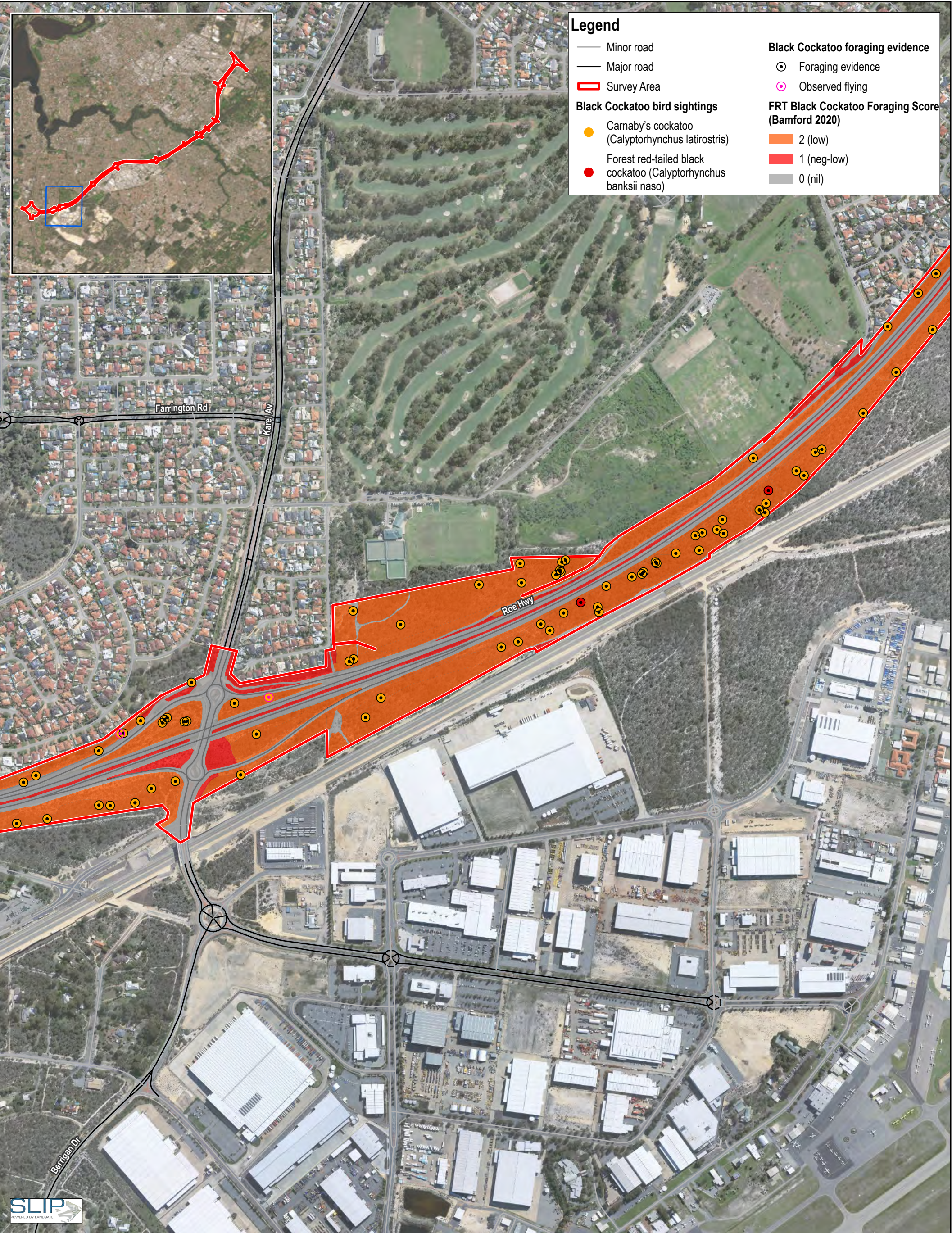
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

**Forrest Red-tailed Black Cockatoo
Foraging Habitat Quality**

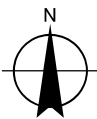
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FIGURE 4C



Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



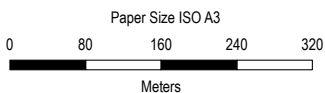
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

Forrest Red-tailed Black Cockatoo
Foraging Habitat Quality

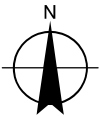
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FIGURE 4C



Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



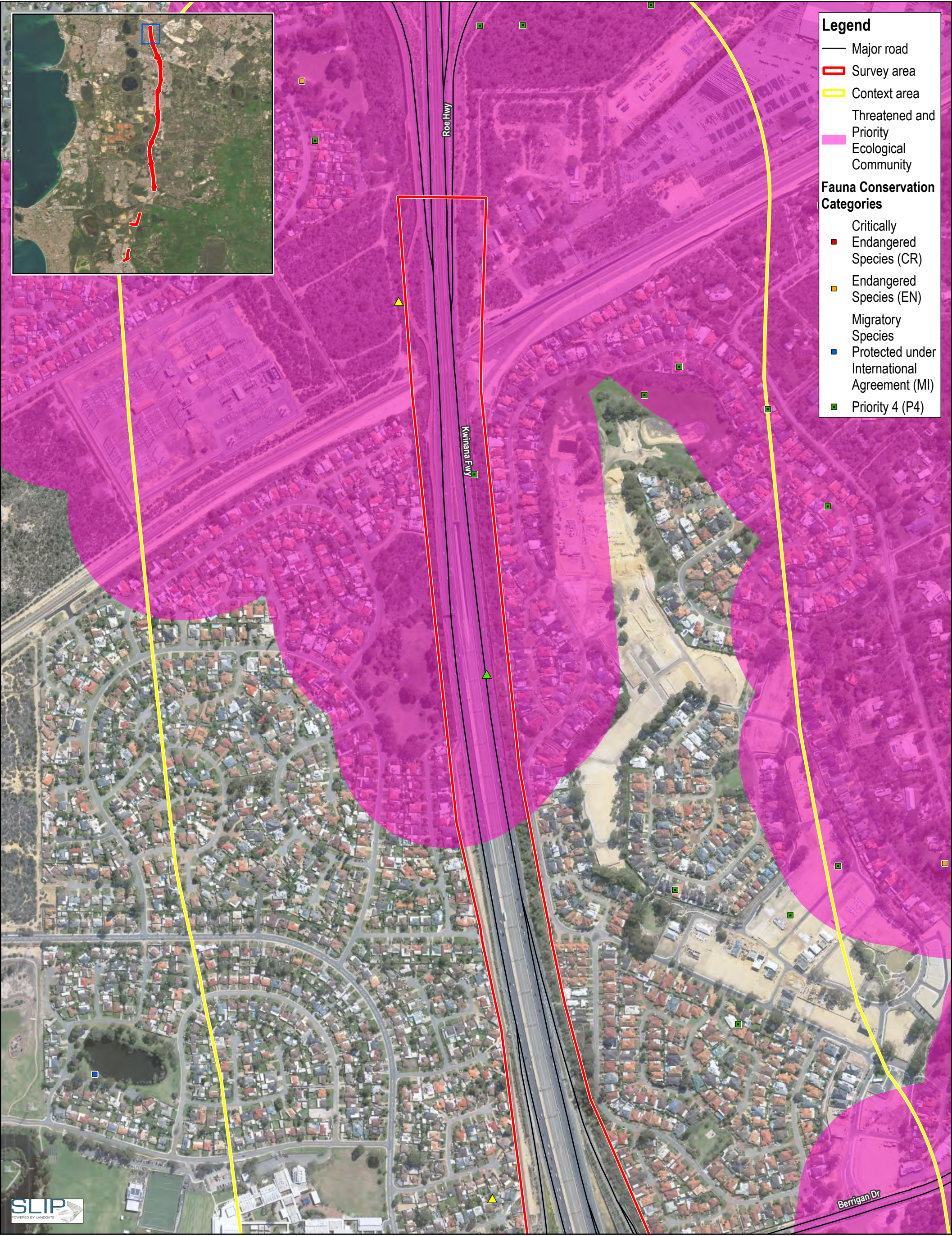
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

Forrest Red-tailed Black Cockatoo
Foraging Habitat Quality

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FIGURE 4C



Legend

— Major road

Survey area

Context area

Threatened and Priority Ecological Community

Fauna Conservation Categories

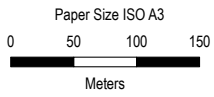
Critically Endangered Species (CR)

Endangered Species (EN)

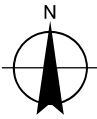
Migratory Species

Protected under International Agreement (MI)

Priority 4 (P4)



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Grid: GDA2020 MGA Zone 50



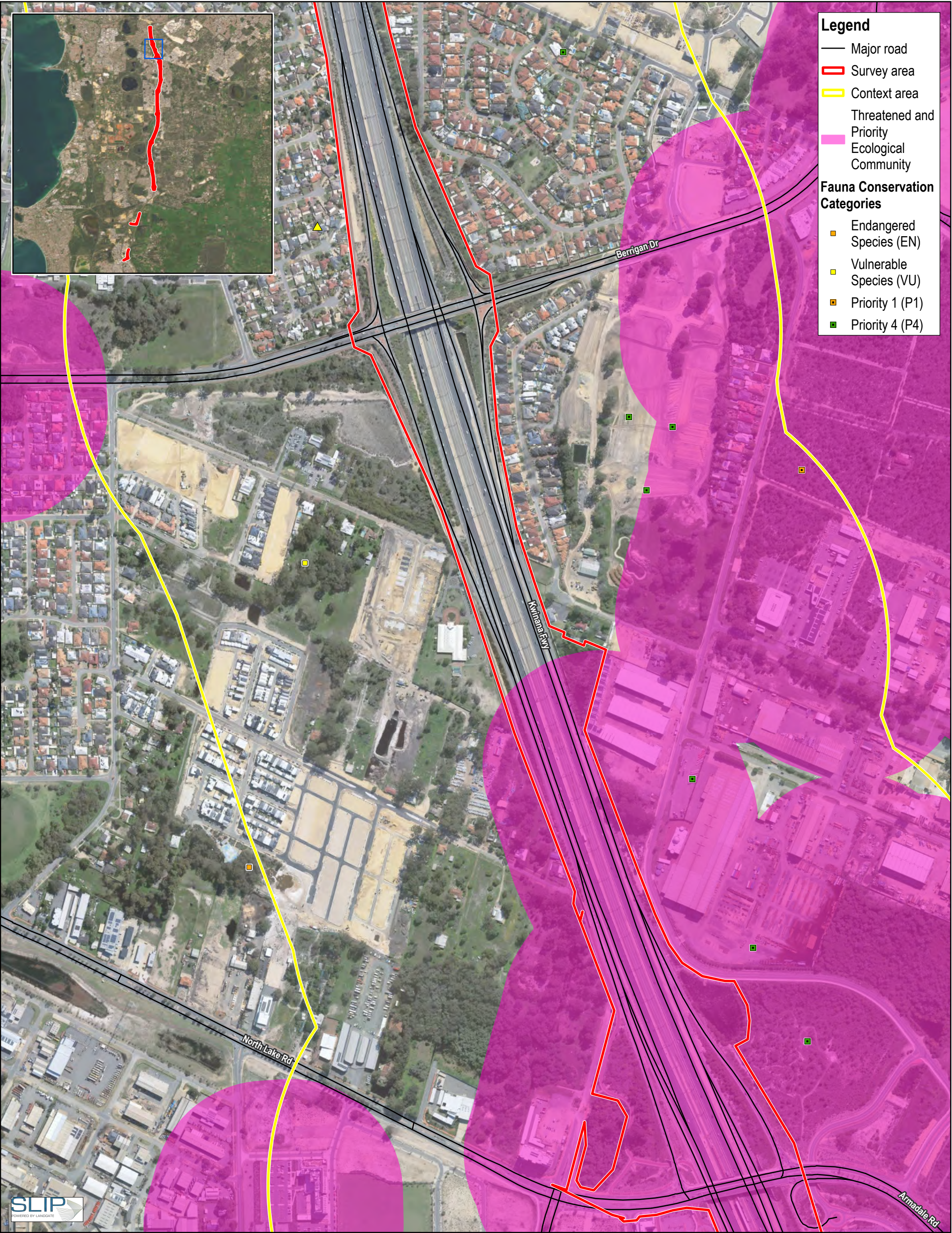
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

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Biological Constraints

FIGURE 5



Legend

— Major road

Survey area

Context area

Threatened and Priority Ecological Community

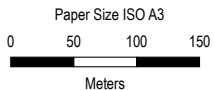
Fauna Conservation Categories

Endangered Species (EN)

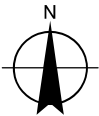
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Priority 1 (P1)

Priority 4 (P4)

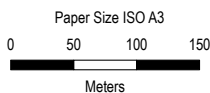
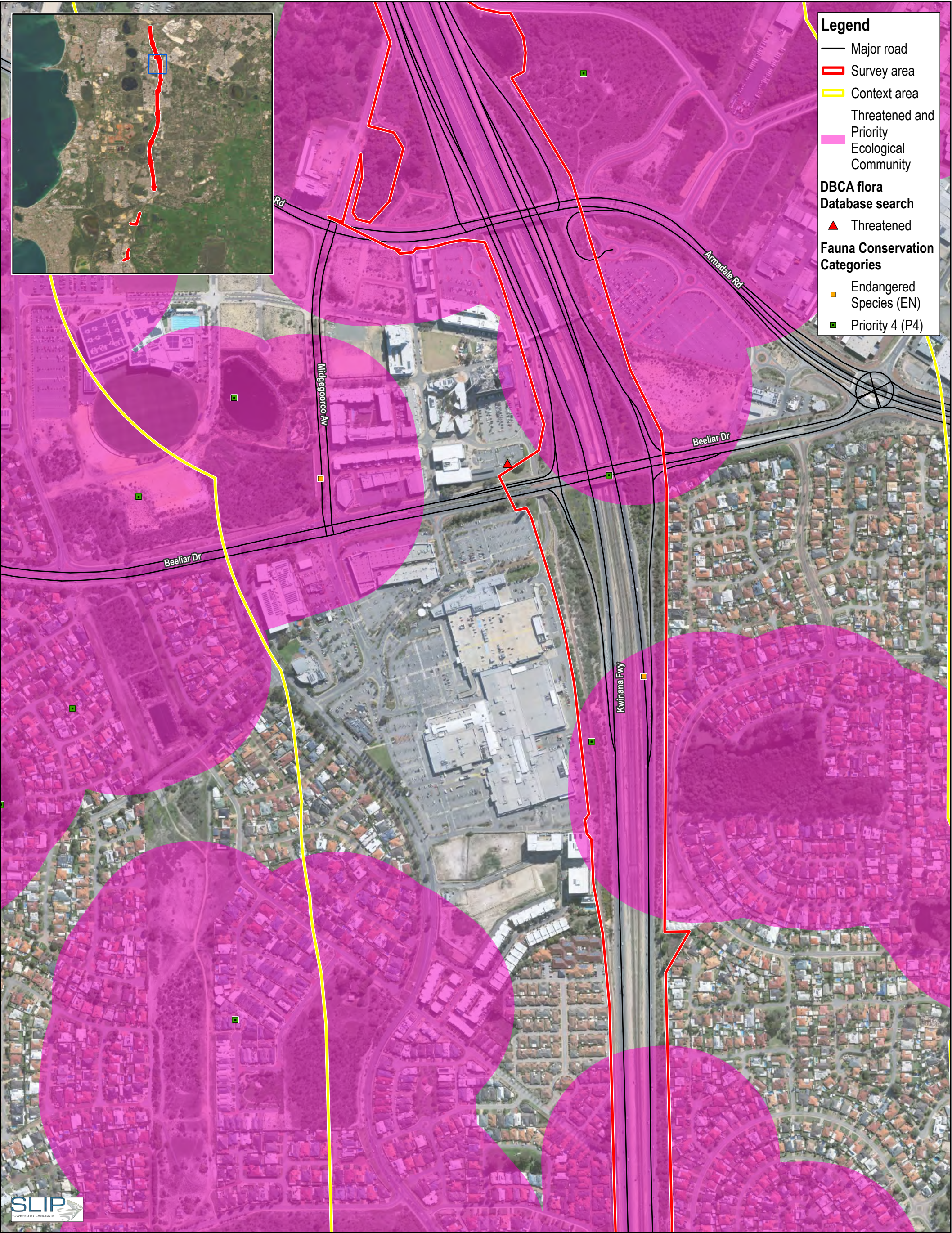


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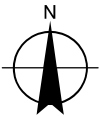


Main Roads
Roe Hwy Widening Flora and Fauna Assessment

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Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



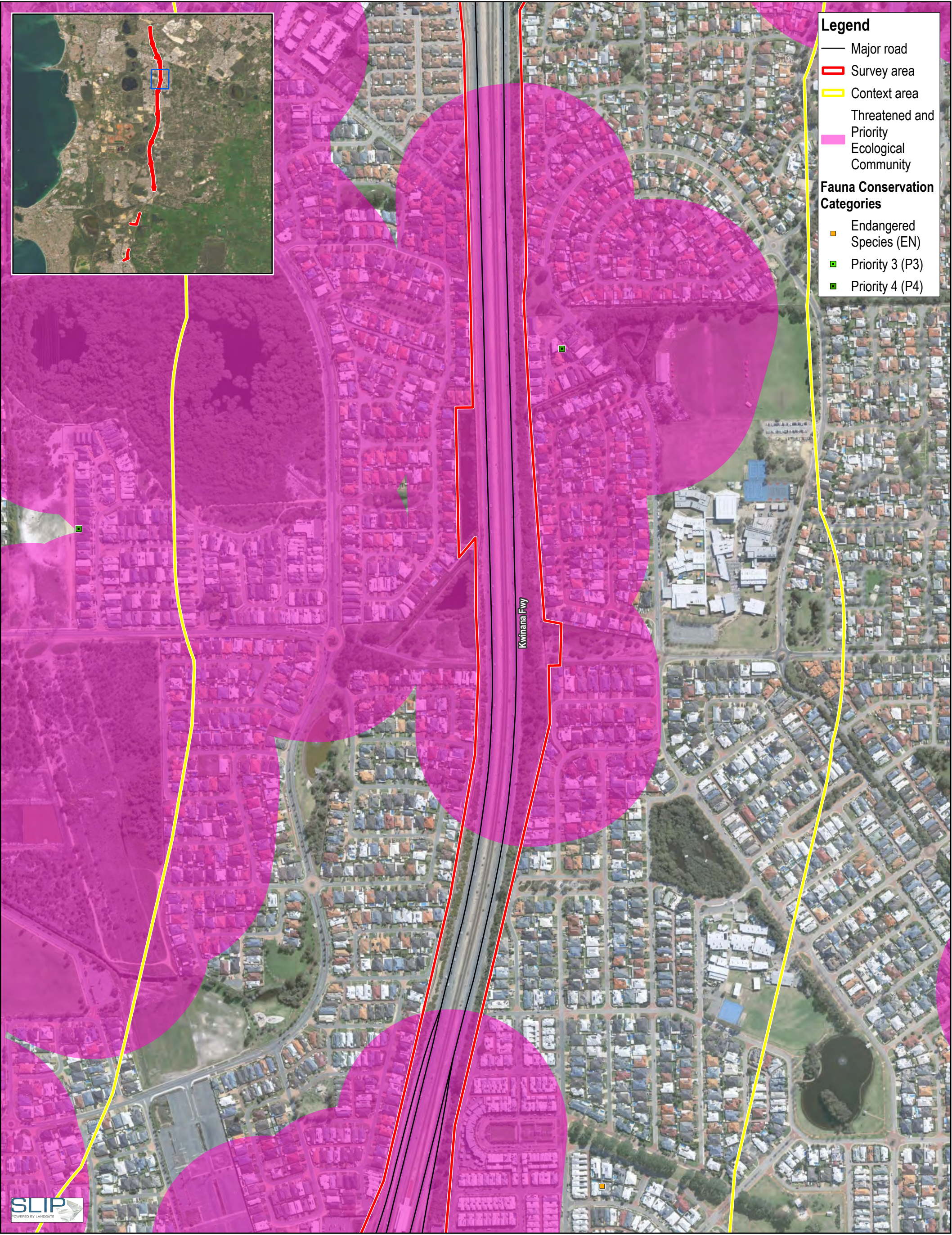
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

Biological Constraints

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FIGURE 5

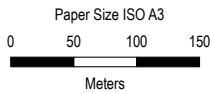


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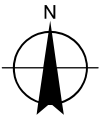
- Major road
- Survey area
- Context area
- Threatened and Priority Ecological Community

Fauna Conservation Categories

- Endangered Species (EN)
- Priority 3 (P3)
- Priority 4 (P4)

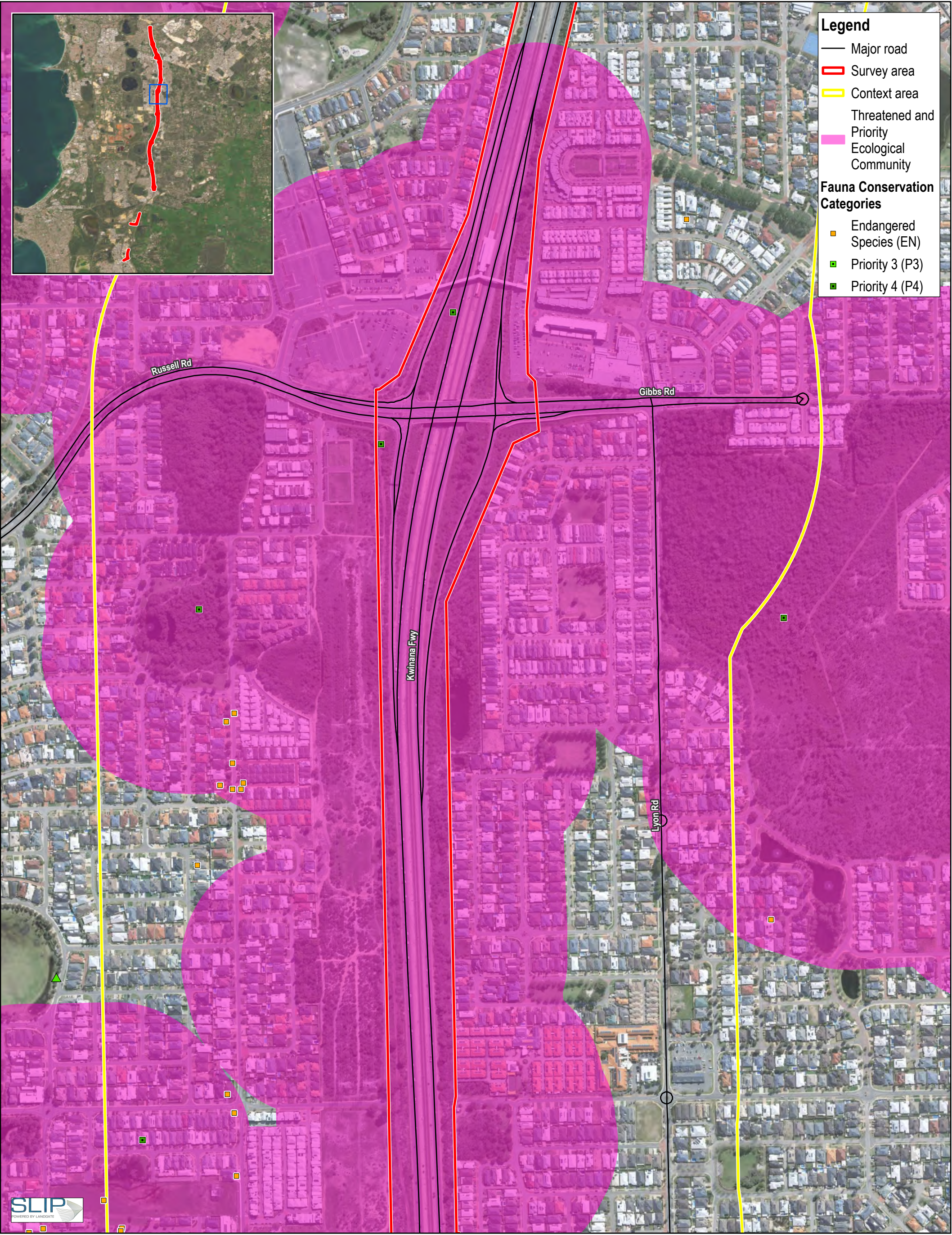


Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



Main Roads
Roe Hwy Widening Flora and Fauna Assessment

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Legend

— Major road

Survey area

Context area

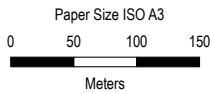
Threatened and Priority Ecological Community

Fauna Conservation Categories

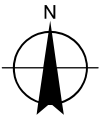
Endangered Species (EN)

Priority 3 (P3)

Priority 4 (P4)

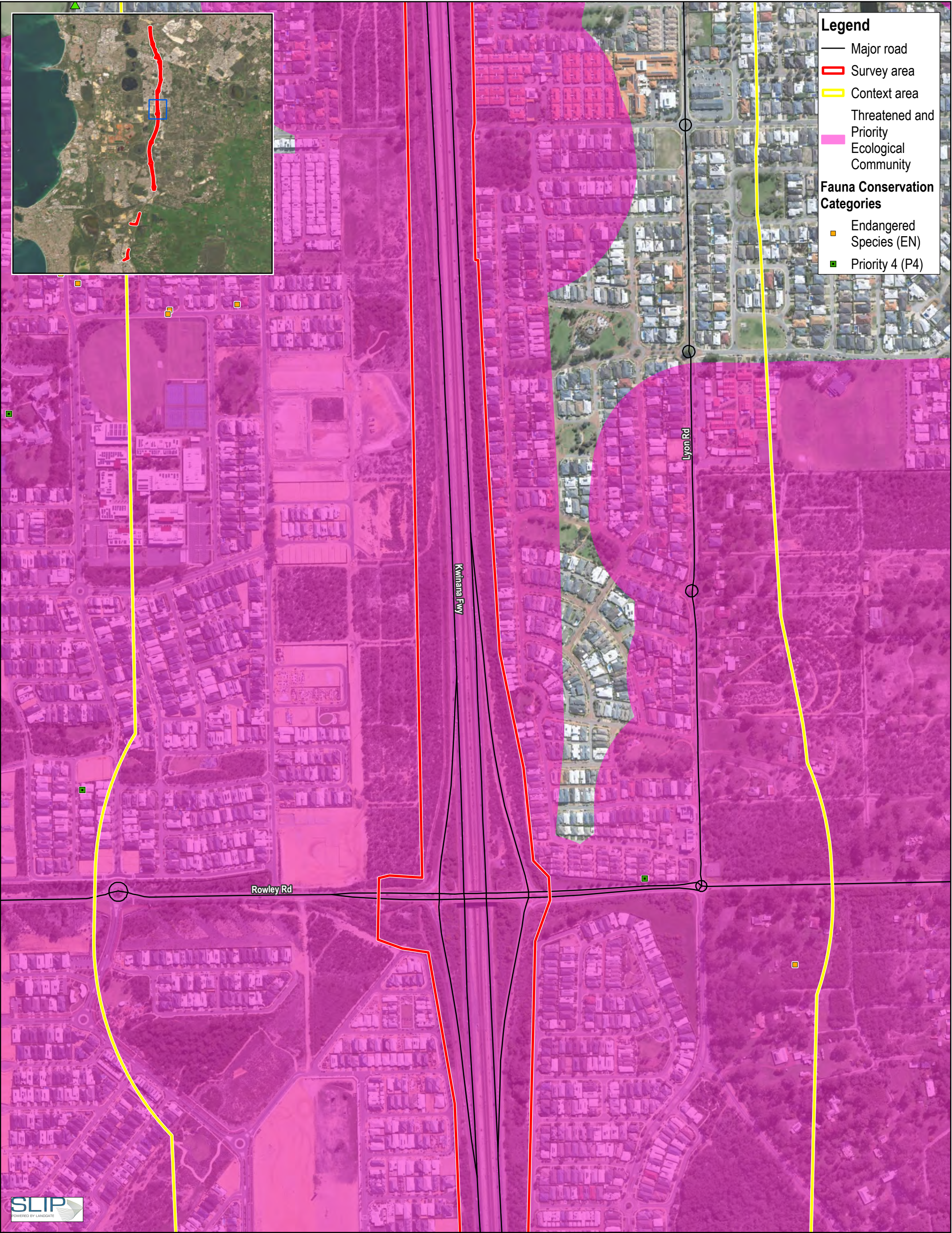


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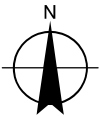
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

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Grid: GDA2020 MGA Zone 50



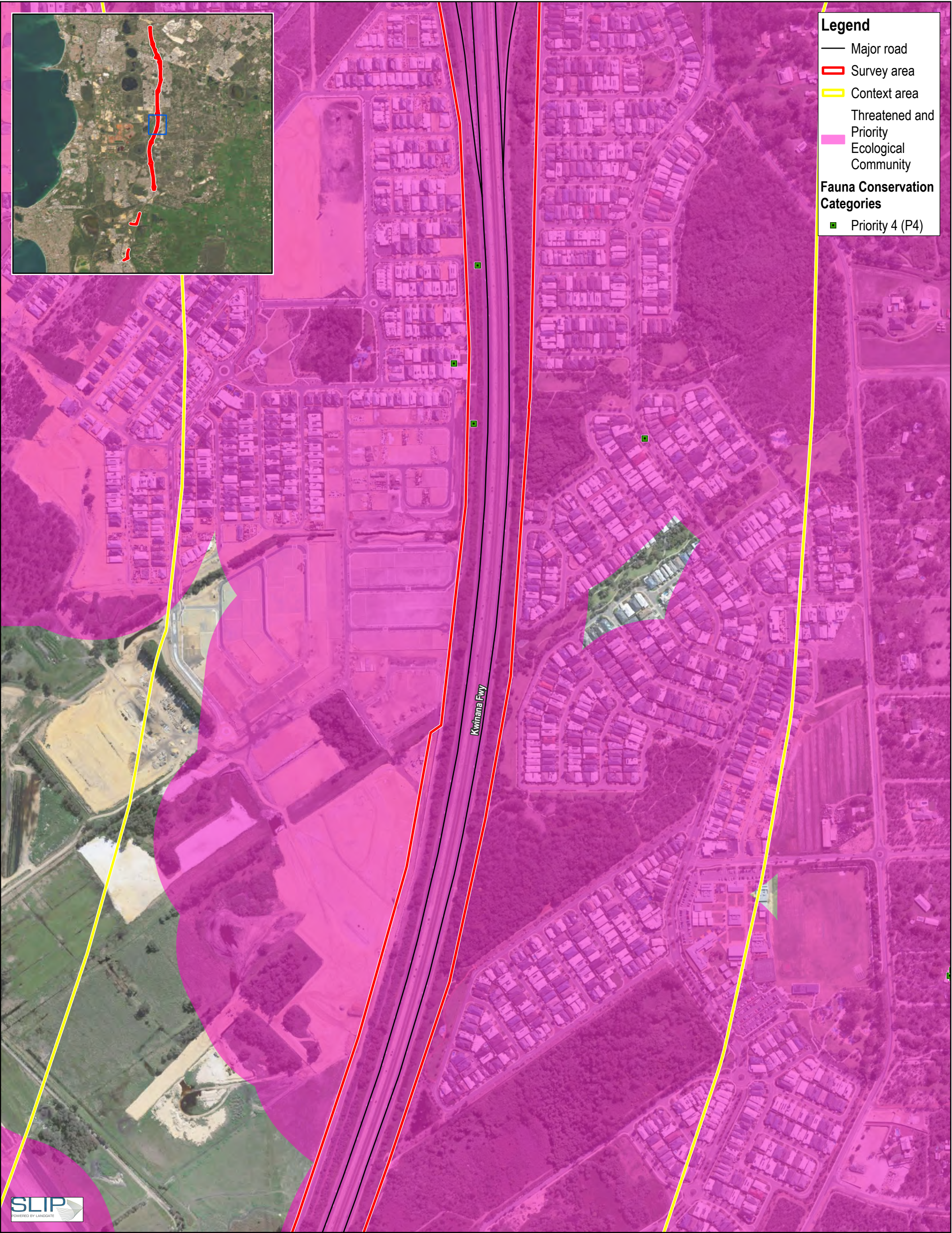
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

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Biological Constraints

FIGURE 5

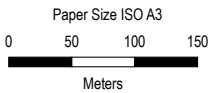


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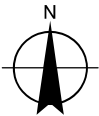
- Major road
- Survey area
- Context area
- Threatened and Priority Ecological Community

Fauna Conservation Categories

- Priority 4 (P4)

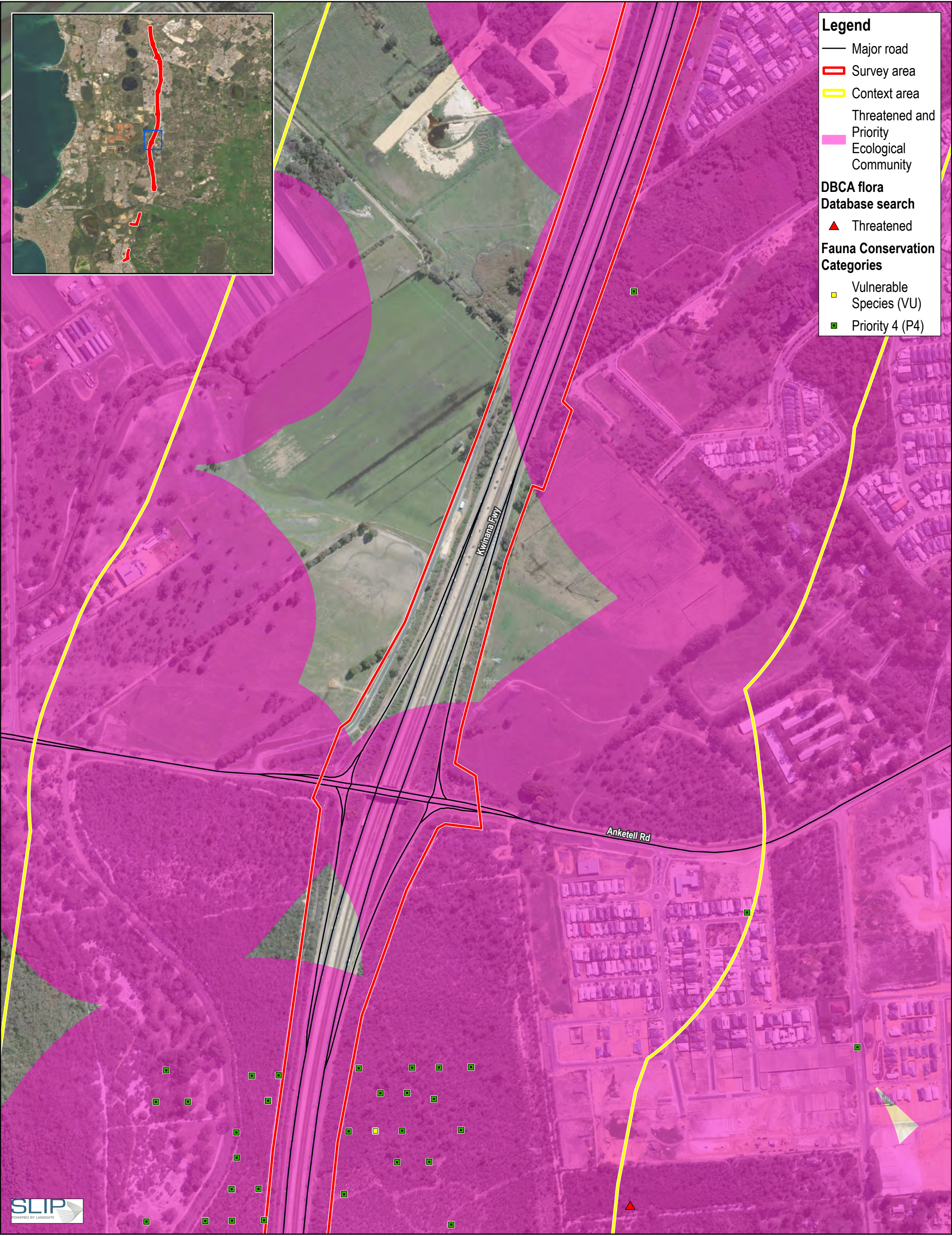


Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



Main Roads
Roe Hwy Widening Flora and Fauna Assessment

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Legend

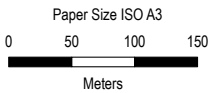
- Major road
- Survey area
- Context area
- Threatened and Priority Ecological Community

DBCAs flora Database search

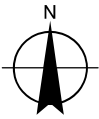
- Threatened

Fauna Conservation Categories

- Vulnerable Species (VU)
- Priority 4 (P4)

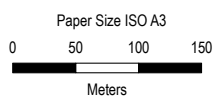
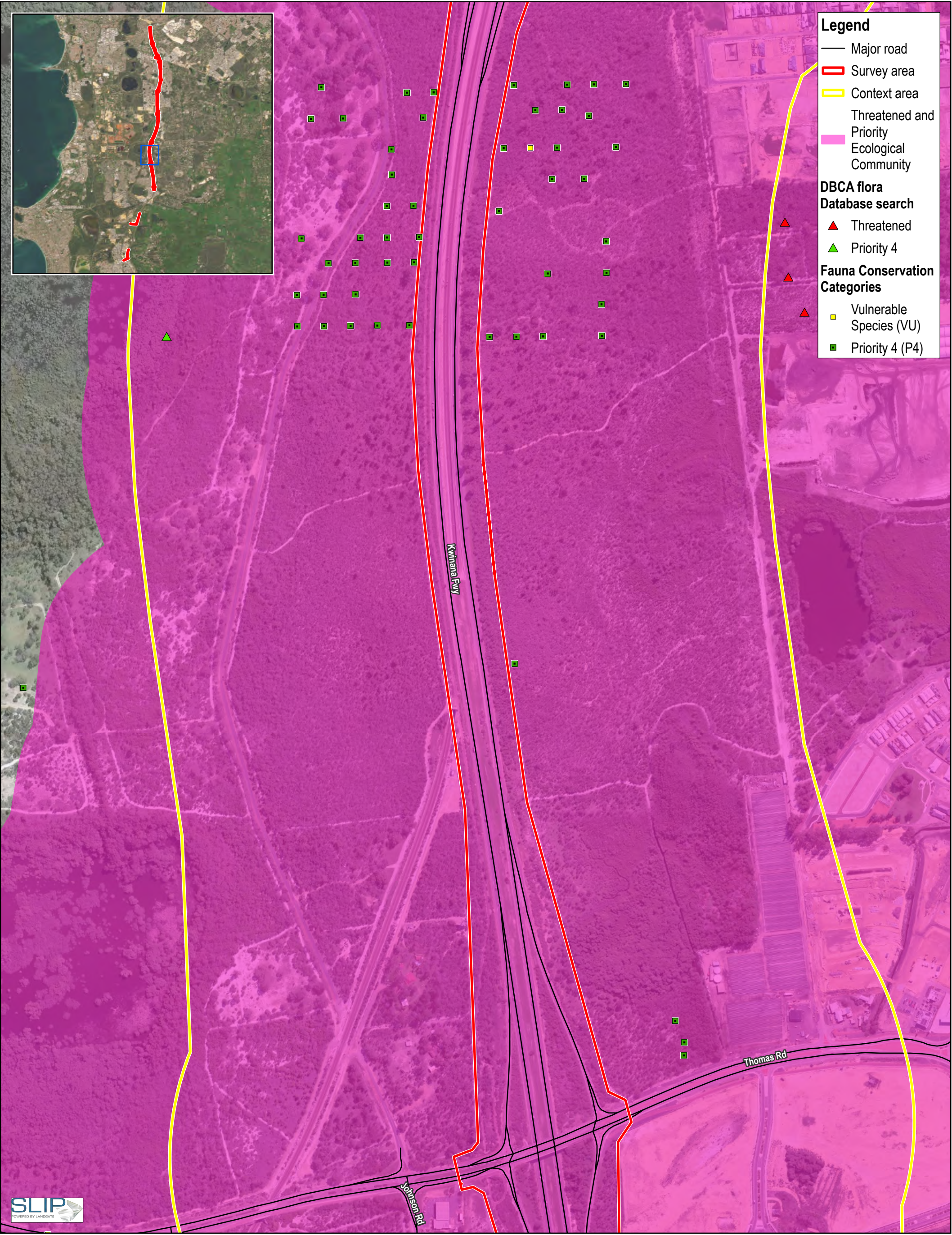


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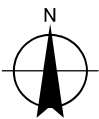


Main Roads
Roe Hwy Widening Flora and Fauna Assessment

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Map Projection: Transverse Mercator
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Grid: GDA2020 MGA Zone 50



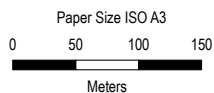
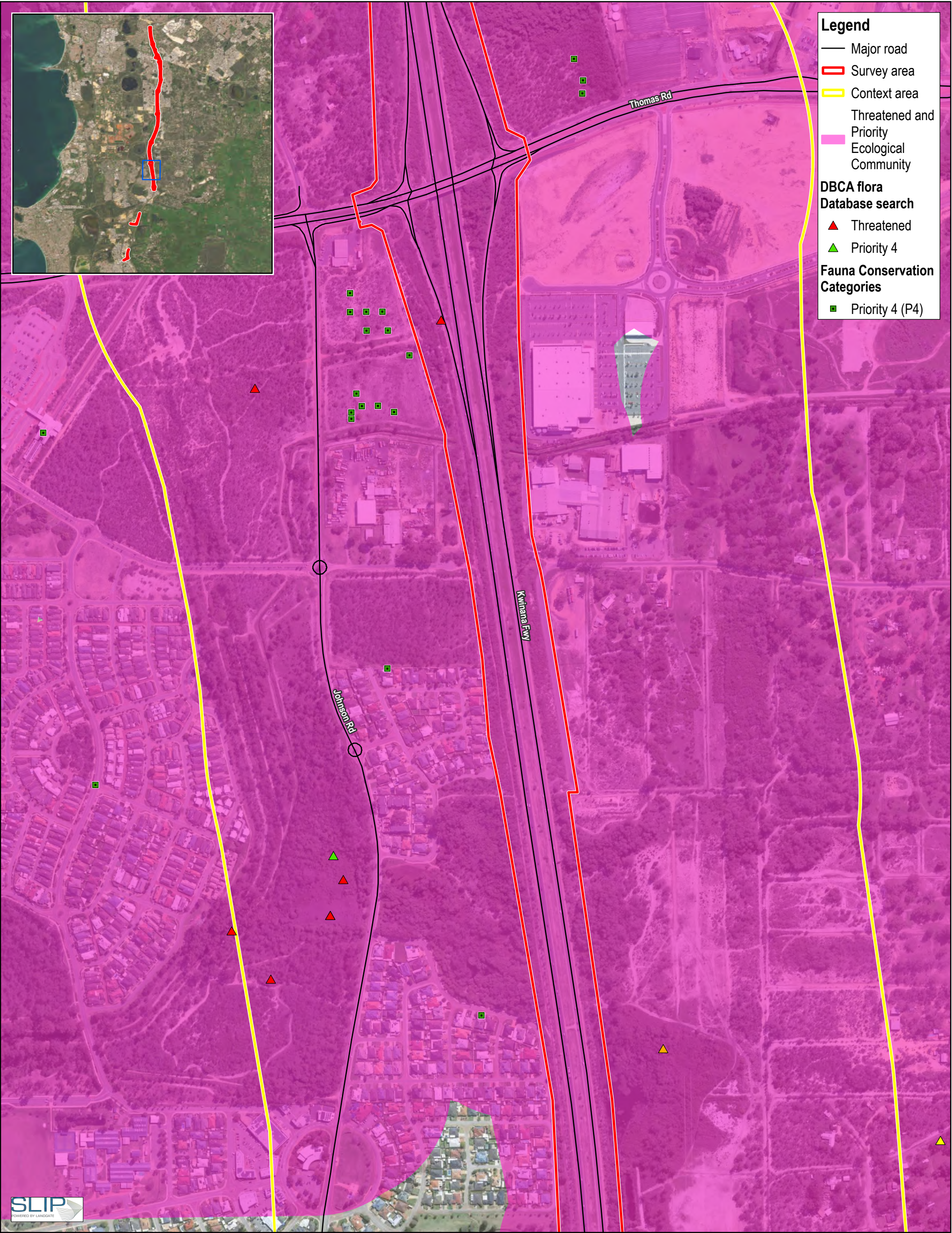
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

Project No. 12634226
Revision No. 0
Date 21/01/2026

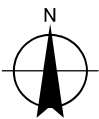
Page 9 of 13

Biological Constraints

FIGURE 5



Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



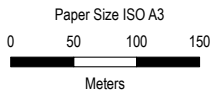
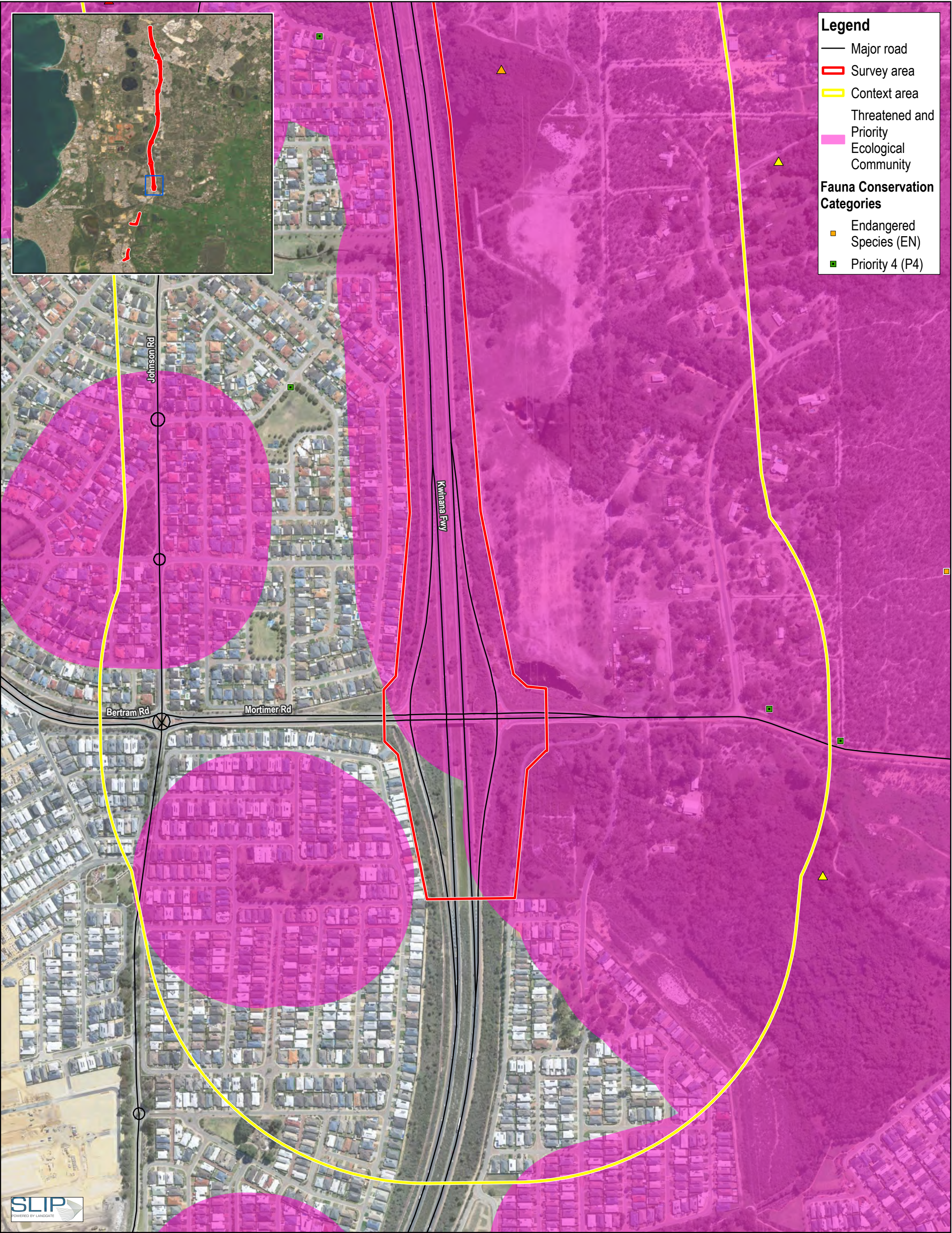
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Project No. 12634226
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Date 21/01/2026

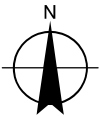
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Biological Constraints

FIGURE 5



Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



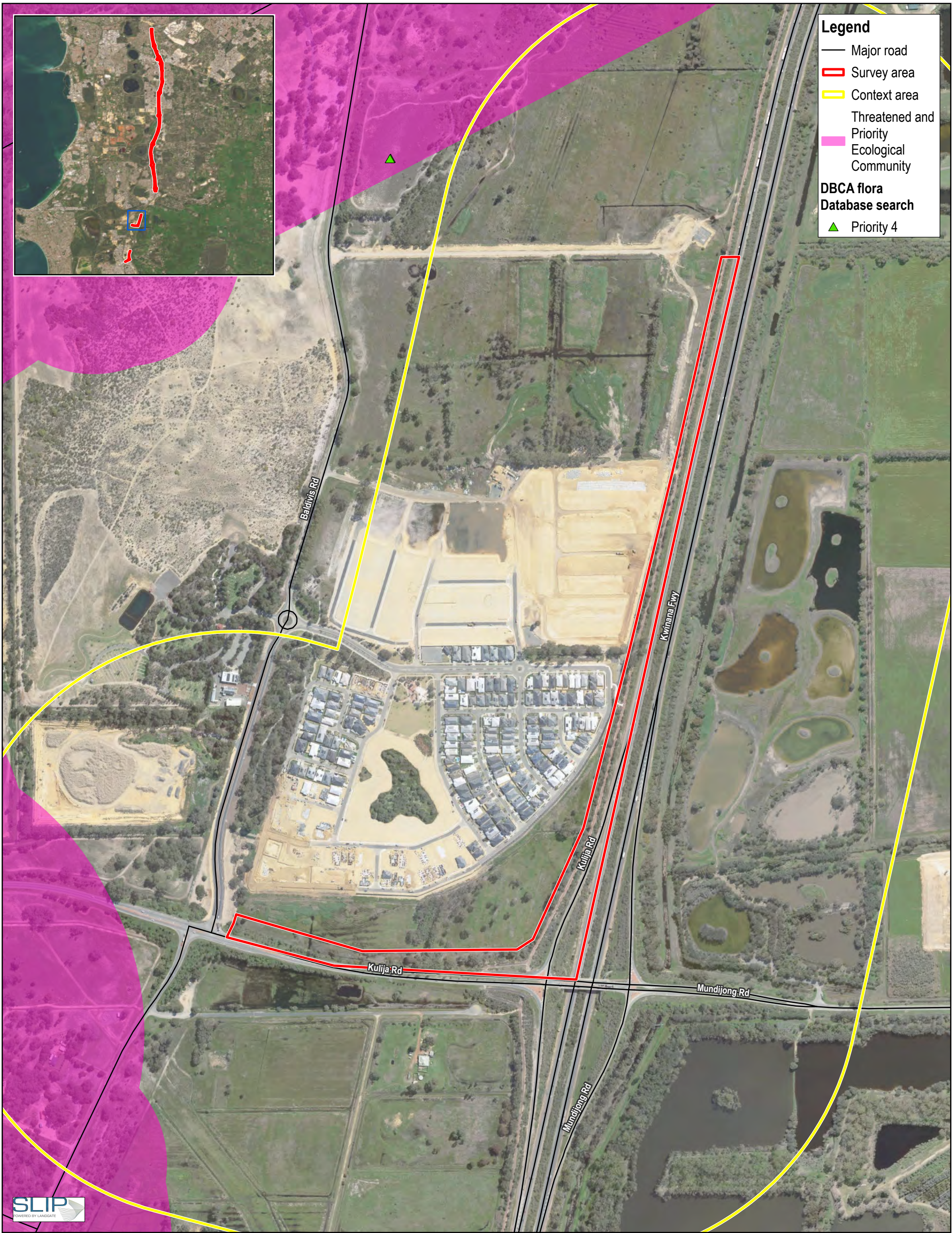
Main Roads
Roe Hwy Widening Flora and Fauna Assessment

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Biological Constraints

FIGURE 5



Legend

- Major road
- Survey area
- Context area
- Threatened and Priority Ecological Community

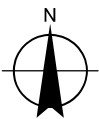
DBCA flora Database search

- Priority 4



Paper Size ISO A3
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Meters

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



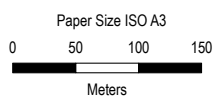
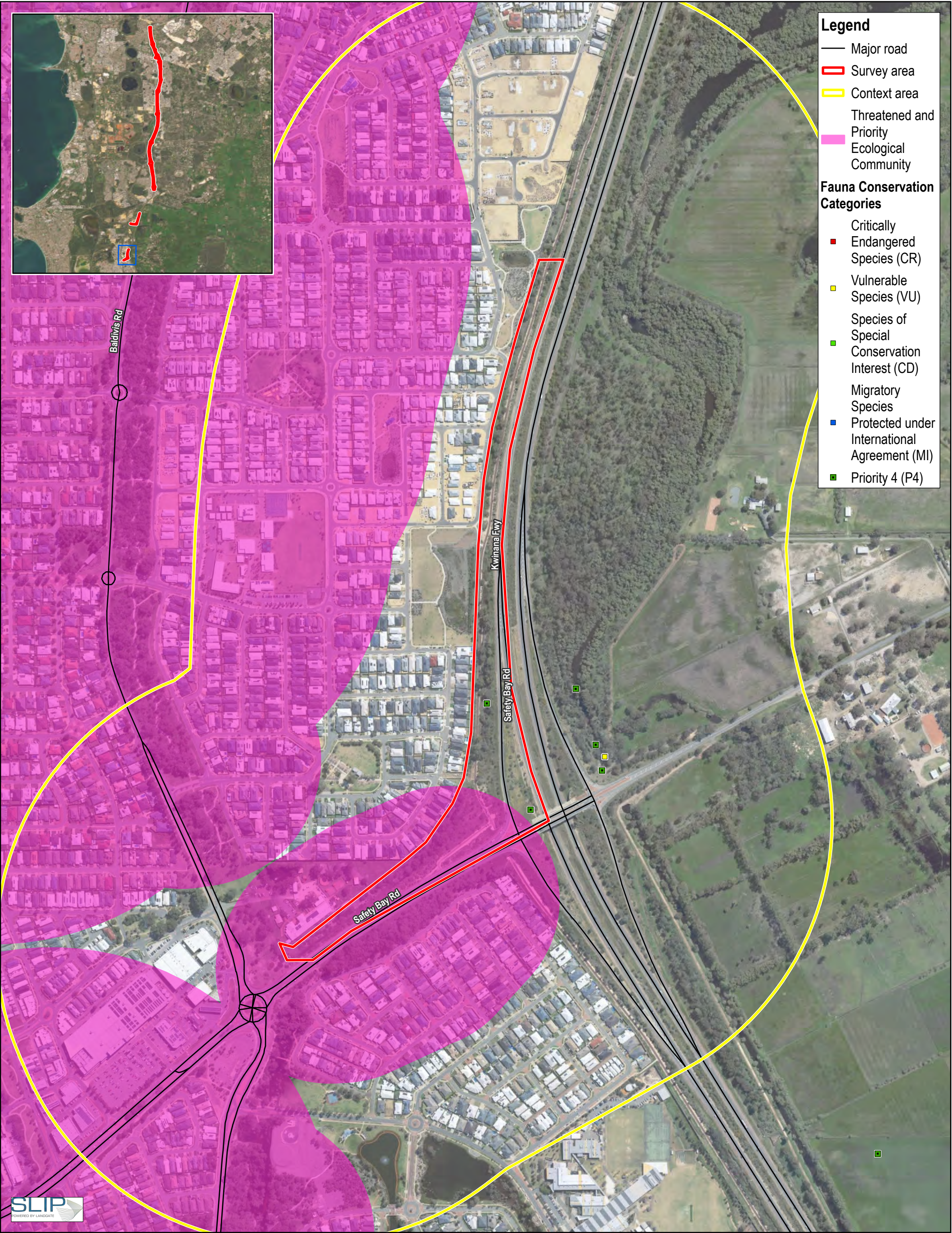
Main Roads
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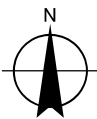
Page 12 of 13

Biological Constraints

FIGURE 5



Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 50



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Biological Constraints

FIGURE 5

Appendix B

Fauna data

Black Cockatoo breeding habitat data

Foraging habitat quality scoring tool

Site photos

Relevant legislation

Federal *Environment Protection and Biodiversity Conservation Act 1999*

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Federal Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places, which are defined in the EPBC Act as Matters of National Environmental Significance (MNES).

The biological aspects listed as MNES include:

Nationally threatened flora and fauna species and ecological communities

Migratory species

A person must not undertake an action that has, will have, or is likely to have a significant impact (direct or indirect) on MNES, without approval from the Federal Minister for the Environment.

The EPBC Act is administered by the Department of Agriculture, Water and the Environment (DAWE).

State *Environmental Protection Act 1986*

The *Environmental Protection Act 1986* (EP Act) is the primary legislative Act dealing with the protection of the environment in Western Australia. The Act allows the Environmental Protection Authority (EPA), to prevent, control and abate pollution and environmental harm, for the conservation, preservation, protection, enhancement and management of the environment and for matters incidental to or connected with the foregoing. Part IV of the EP Act is administered by the EPA and makes provisions for the EPA to undertake environmental impact assessment of significant proposals, strategic proposals and land use planning schemes.

The Department of Water and Environment Regulation (DWER) is responsible for administering the clearing provisions of the EP Act (Part V). Clearing of native vegetation in Western Australia requires a permit from the DWER, unless exemptions apply. Applications for clearing permits are assessed by the Department and decisions are made to grant or refuse the application in accordance with the Act. When making a decision the assessment considers clearing against the ten clearing principles as specified in Schedule 5 of the EP Act:

1. Native vegetation should not be cleared if it comprises a high level of biodiversity.
2. Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a significance habitat for fauna indigenous to Western Australia.
3. Native vegetation should not be cleared if it includes, or is necessary, for the continued existence of rare flora.
4. Native vegetation should not be cleared if it comprises the whole or part of native vegetation in an area that has been extensively cleared.
5. Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.
6. Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
7. 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.
8. Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
9. Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

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

Exemptions for clearing include clearing that is a requirement of a written law or authorised under certain statutory processes (listed in Schedule 6 of the EP Act) and exemptions for prescribed low impact day-to-day activities (prescribed in the Environmental Protection (Clearing of Native Vegetation) Regulations 2004); these exemptions do not apply in environmentally sensitive areas (ESAs).

State Biodiversity and Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) provides for the conservation and protection of biodiversity and biodiversity components, as well as the promotion of the ecologically sustainable use of biodiversity components in Western Australia. The BC Act replaces both the repealed *Wildlife Conservation Act 1950* (WC Act) and the *Sandalwood Act 1929* (Sandalwood Act), as well as their associated regulations. To attain the objectives of the BC Act, principles of ecological sustainable development have been established:

- Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations
- If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation
- The present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations
- The conservation of biodiversity and ecological integrity should be a fundamental consideration in decision-making
- Improved valuation, pricing and incentive mechanisms should be promoted.

The BC Act is administered by the Department of Biodiversity Conservation and Attractions (DBCA).

State Biosecurity and Agriculture Management Act 2007

The *Biosecurity and Agriculture Management Act 2007* (BAM Act) and associated regulations are administered by the Department of Primary Industries and Regional Development (DPIRD) and replace the repealed *Agriculture and Related Resources Protection Act 1976*. The main purposes of the BAM Act and its regulations are to:

- Prevent new animal and plant pests (vermin and weeds) and diseases from entering WA
- Manage the impact and spread of those pests already present in the state
- Safely manage the use of agricultural and veterinary chemicals
- Increased control over the sale of agricultural products that contain violative chemical residues.

The Western Australian Organism List (WAOL) provides the status of organisms which have been categorised under the BAM Act. A Declared Pest is a prohibited organism or an organism for which a declaration under Section 22(2) of the Act is in force. Declared Pests may be assigned a control category including: C1 (exclusion), C2 (eradication) and C3 (management). The category may apply to the whole of the State, LGAs, districts, individual properties or even paddocks, and all landholders are obliged to comply with the specific category of control. Categories of control are defined below.

DPIRD Categories for Declared Pests under the BAM Act

Control class code	Description
C1 (Exclusion)	Pests will be assigned to this category if they are not established in Western Australia and control measures are to be taken, including border checks, in order to prevent them entering and establishing in the State.
C2 (Eradication)	Pests will be assigned to this category if they are present in Western Australia in low enough numbers or in sufficiently limited areas that their eradication is still a possibility.
C3 (Management)	Pests will be assigned to this category if they are established in Western Australia but it is feasible, or desirable, to manage them in order to limit their damage. Control measures can prevent a C3 pest from increasing in population size or density or moving from an area in which it is established into an area which currently is free of that pest.

Background information

Environmentally Sensitive Areas

Environmentally Sensitive Areas (ESAs) are declared by the Minister for Environment under Section 51B of the EP Act. The Table below outlines the aspects of areas declared as ESA in the Environmental Protection (Environmentally Sensitive Areas) Notice 2005.

Aspects of ESAs

Aspects of Environmentally Sensitive Areas
A declared World Heritage property as defined in Section 13 of the EPBC Act.
An area that is included on the Register of the National Estate (RNE), because of its natural values, under the <i>Australian Heritage Commission Act 1975</i> of the Commonwealth (the RNE was closed in 2007 and is no longer a statutory list – all references to the RNE were removed from the EPBC Act on 19 February 2012).
A defined wetland and the area within 50 m of the wetland. Defined wetlands include Ramsar wetlands, conservation category wetlands and nationally important wetlands.
The area covered by vegetation within 50 m of rare flora, to the extent to which the vegetation is continuous with the vegetation in which the rare flora is located.
The area covered by a Threatened Ecological Community.
A Bush Forever Site listed in “Bush Forever” Volumes 1 and 2 (2000), published by the Western Australia Planning Commission, except to the extent to which the site is approved to be developed by the Western Australia Planning Commission.
The areas covered by the <i>Environmental Protection (Gnangara Mound Crown Land) Policy 1992</i> .
The areas covered by the <i>Environmental Protection (Western Swamp Tortoise Habitat) Policy 2002</i> .
The areas covered by the lakes to which the <i>Environmental Protection (Swan Coastal Plain Lakes) Policy 1992</i> (EPP Lakes) applies.
Protected wetlands as defined in the <i>Environmental Protection (South West Agricultural Zone Wetlands) Policy 1998</i> .

Reserves and conservation areas

Bush Forever

Bush Forever, which was released in December 2000 and proclaimed in 2010, is a Government initiative aimed to retain and protect regionally significant bushland on the Swan Coastal Plain within the Perth Metropolitan Region. Bush Forever aims to protect more than 51,000 hectares of regionally significant bushland within 287 sites across the metropolitan portion of the Swan Coastal Plain (Government of Western Australia (GoWA) 2000). Bush Forever sites constitute ESAs as declared by a notice under Section 51B of the EP Act.

Department of Biodiversity, Conservation and Attractions managed land and waters

DBCA manages lands and waters throughout Western Australia to conserve ecosystems and species, and to provide for recreation and appreciation of the natural environment. DBCA managed lands and waters include national parks, conservation parks and reserves, marine parks and reserves, regional parks, nature reserves, State forest and timber reserves. Access to, or through, some areas of DBCA managed lands may require a permit or could be restricted due to management activities. Proposed land use changes and development proposals that affect DBCA managed lands will generally be referred to DBCA throughout the assessment process.

Wetlands

Wetlands include not only lakes with open water, but areas of seasonally, intermittently or permanently waterlogged soil.

Ramsar Wetlands (Wetlands of International Importance)

The Convention of Wetlands of International Importance was signed in 1971 at the Iranian town of Ramsar. The Convention has since been referred to as the Ramsar Convention. Ramsar Listed wetlands are “sites containing representative, rare or unique wetlands, or wetlands that are important for conserving biological diversity ... because of their ecological, botanical, zoological, limnological or hydrological importance” (DAWE 2020b). Once a Ramsar Listed Wetland is designated, the country agrees to manage its conservation and ensure its wise use. Under the Convention, wise use is broadly defined as “maintaining the ecological character of a wetland” (DAWE 2020b).

Nationally important wetlands

Wetlands of national significance are listed under the Directory of Important Wetlands in Australia. Nationally important wetlands are wetlands which meet at least one of the following criteria (DAWE 2020a):

- It is a good example of a wetland type occurring within a biogeographic region in Australia
- It is a wetland which plays an important ecological or hydrological role in the natural functioning of a major wetland system/complex
- It is a wetland which is important as the habitat for animal taxa at a vulnerable stage in their life cycles, or provides a refuge when adverse conditions such as drought prevail
- The wetland supports one percent or more of the national populations of any native plant or animal taxa
- The wetland supports native plant or animal taxa or communities which are considered endangered or vulnerable at the national level
- The wetland is of outstanding historical or cultural significance.

Geomorphic wetlands

Categorisation of wetlands has been conducted by Hill et al. (1996), delineating Swan Coastal Plain wetlands into levels of protection and management categories. Conservation Category Wetlands are wetlands that support high levels of attributes and functions. Resource Enhancement Wetlands are those that have been partly modified but still support substantial functions and attributes. Multiple Use Wetlands are classified as those wetlands with few attributes that still provide important wetland functions. Multiple Use wetlands have few important ecological attributes and functions remaining.

The Geomorphic Wetlands Swan Coastal Plain dataset displays the location, boundary, geomorphic classification (wetland type) and management category of wetlands on the Swan Coastal Plain.

Vegetation extent and status

The National Objectives and Targets for Biodiversity Conservation 2001–2005 (Commonwealth of Australia 2001) recognise that the retention of 30 percent or more of the pre-clearing extent of each ecological community is necessary if Australia’s biological diversity is to be protected. This is the threshold level below which species loss appears to accelerate exponentially and loss below this level should not be permitted. This level of recognition is in keeping with the targets recommended in the review of the National Strategy for the Conservation of Australia’s Biological Diversity (ANZECC 2000).

The extent of remnant native vegetation in WA has been assessed by Shepherd et al. (2002) and the GoWA (2019), based on broadscale vegetation association mapping by Beard (various publications). The GoWA produces Statewide Vegetation Statistics Reports that are used for a number of purposes including conservation planning, land use planning and when assessing development applications. The reports are updated every 2-3 years.

Vegetation condition

The vegetation condition can be assessed in accordance with the vegetation condition rating scale for the South West and Interzone Botanical Provinces (EPA 2016a). The scale recognises the intactness of vegetation and consists of six rating levels as outlined below.

Vegetation condition rating scale for the South West and Interzone Botanical Provinces

	South West and Interzone Botanical Provinces description
Pristine	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species. Damage to trees caused by fire, the presence of non-aggressive weeds and occasional vehicle tracks.
Very Good	Vegetation structure altered, obvious signs of disturbance. Disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds at high density, partial clearing, dieback and grazing.
Completely Degraded	The structure of vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Conservation codes

Species of significant flora, fauna and communities are protected under both Federal and State Acts. The Federal EPBC Act provides a legal framework to protect and manage nationally important flora and communities. The State BC Act is the primary wildlife conservation legislation in Western Australia. Information on the conservation codes is summarised in the following sections.

Ecological communities

Significant communities

Ecological communities are defined as naturally occurring biological assemblages that occur in a particular type of habitat (English and Blyth 1997). Federally listed Threatened Ecological Communities (TECs) are protected under the EPBC Act. The BC Act provides for the Minister to list an ecological community as a TEC (section 27), or as a collapsed ecological community (section 31) statutory listing of State TECs by the Minister. The legislation also describes statutory processes for preparing recovery plans for TECs, the registration of their critical habitat, and penalties for unauthorised modification of TECs.

Possible TECs that do not meet survey criteria are added to the DBCA Priority Ecological Community (PEC) List under Priorities 1, 2 and 3. These are ecological communities that are adequately known; are rare but not threatened, or meet criteria for Near Threatened. PECs that have been recently removed from the threatened list are placed in Priority 4. These ecological communities require regular monitoring. Conservation dependent ecological communities are placed in Priority 5. PECs are not listed under any formal Federal or State legislation, however, may be listed as TECs under the EPBC Act.

Codes and definitions for TECs listed under the EPBC Act and/or BC Act

Categories	Definitions
Federal Government Conservation Categories (EPBC Act)	
Critically Endangered (CR)	An ecological community if, at that time, is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria (as outlined in Environment Protection and Biodiversity Conservation Regulations 2000).
Endangered *(EN)	An ecological community if, at that time: – is not critically endangered; and – is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria (as outlined in Environment Protection and Biodiversity Conservation Regulations 2000).
Vulnerable (VU)	An ecological community if, at that time: – is not critically endangered or endangered; and – is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria (as outlined in Environment Protection and Biodiversity Conservation Regulations 2000).
Western Australia Conservation Categories (BC Act)	
<u>Threatened Ecological Communities</u>	
Critically Endangered (CR)	An ecological community that has been adequately surveyed and found to have been subject to a major contraction in area and/or that was originally of limited distribution and is facing severe modification or destruction throughout its range in the immediate future, or is already severely degraded throughout its range but capable of being substantially restored or rehabilitated.
Endangered (EN)	An ecological community that has been adequately surveyed and found to have been subject to a major contraction in area and/or was originally of limited distribution and is in danger of significant modification throughout its range or severe modification or destruction over most of its range in the near future.

Categories	Definitions
Vulnerable (VU)	An ecological community that has been adequately surveyed and is found to be declining and/or has declined in distribution and/or condition and whose ultimate security has not yet been assured and/or a community that is still widespread but is believed likely to move into a category of higher threat in the near future if threatening processes continue or begin operating throughout its range.
<u>Collapsed ecological communities</u>	
An ecological community is eligible for listing as a collapsed ecological community at a particular time if, at that time – – there is no reasonable doubt that the last occurrence of the ecological community has collapsed); or – the ecological community has been so extensively modified throughout its range that no occurrence of it is likely to recover – • its species composition or structure; or • its species composition and structure. Section 33 of the BC Act provides for a collapsed ecological community to be regarded as a threatened ecological community if it is discovered in a state that no longer makes it eligible for listing as a collapsed ecological community.	

Categories and definitions for PECs as listed by the DBCA

Category	Description
Priority 1	Poorly known ecological communities. Ecological communities that are known from very few occurrences with a very restricted distribution (generally ≤5 occurrences or a total area of ≤100 ha). Occurrences are believed to be under threat either due to limited extent, or being on lands under immediate threat (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) or for which current threats exist. May include communities with occurrences on protected lands. Communities may be included if they are comparatively well-known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under immediate threat from known threatening processes across their range.
Priority 2	Poorly known ecological communities. Communities that are known from few occurrences with a restricted distribution (generally ≤10 occurrences or a total area of ≤200 ha). At least some occurrences are not believed to be under immediate threat of destruction or degradation. Communities may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under threat from known threatening processes.
Priority 3	Poorly known ecological communities. – Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or: – communities known from a few widespread occurrences, which are either large or with significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat, or; – communities made up of large, and/or widespread occurrences, that may or may not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing by domestic and/or feral stock, and inappropriate fire regimes. Communities may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and/or are not well defined, and known threatening processes exist that could affect them.
Priority 4	Ecological communities that are adequately known, rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list. These communities require regular monitoring. – Rare. Ecological communities known from few occurrences that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These communities are usually represented on conservation lands. – Near Threatened. Ecological communities that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.

Category	Description
	– Ecological communities that have been removed from the list of threatened communities during the past five years.
Priority 5	Conservation Dependent ecological communities. Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.

Other significant vegetation

Vegetation may be significant for a range of reasons other than a statutory listing. The EPA (2016a, b) states that significant vegetation may include vegetation that includes the following:

- Restricted distribution
- Degree of historical impact from threatening processes
- A role as a refuge
- Providing an important function required to maintain ecological integrity of a significant ecosystem
- Local endemism in restricted habitats
- Novel combinations of taxa
- A role as a key habitat for Threatened species or large population representing a significant proportion of the local to regional total population of a species
- Being representative of a vegetation unit in 'pristine' condition in a highly cleared landscape, recently discovered range extensions, or isolated outliers of the main range.

This may apply at a number of levels, so the unit may be significant when considered at the fine-scale (intra-locality), intermediate-scale (locality or inter-locality) or broad-scale (local to region).

Flora and fauna

Significant flora and fauna

Species of significant flora are protected under both Federal and State legislation. Any activities that are deemed to have a significant impact on species that are recognised by the EPBC Act, and/or the BC Act can warrant referral to DAWE and/or the EPA.

The Federal conservation level of flora and fauna species and their significance status is assessed under the EPBC Act. The significance levels for flora and fauna used in the EPBC Act align with the International Union for Conservation of Nature (IUCN) Red List criteria, which are internationally recognised as providing best practice for assigning the conservation status of species. The EPBC Act also protects land and migratory species that are listed under International Agreements. The list of migratory species established under section 209 of the EPBC Act comprises:

- Migratory species which are native to Australia and are included in the appendices to the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals Appendices I and II)
- Migratory species included in annexes established under the Japan-Australia Migratory Bird Agreement (JAMBA) and the China–Australia Migratory Bird Agreement (CAMBA)
- Native, migratory species identified in a list established under, or an instrument made under, an international agreement approved by the Minister, such as the republic of Korea–Australia Migratory Bird Agreement (ROKAMBA)

The State conservation level of flora and fauna species and their significance status also follows the IUCN Red List criteria. Under the BC Act flora and fauna can be listed as Threatened, Extinct and as Specially Protected species.

Threatened species are those species which have been adequately searched for and are deemed to be, in the wild, either rare, under identifiable threat of extinction, or otherwise in need of special protection, and have been gazetted as such. The assessment of the conservation status of Threatened species is based on their national

extent and ranked according to their level of threat using IUCN Red List categories and criteria. Specially protected species meet one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection. Species that are listed as Threatened or Extinct species under the BC Act cannot also be listed as Specially Protected species.

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened flora or fauna.

Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

For the purposes of this assessment, all species listed under the EPBC Act, BC Act and DBCA Priority species are considered significant.

Categories and definitions for EPBC Act and BC Act listed flora and fauna species

Conservation category	Definition
Threatened species	
Critically Endangered (CR)	Threatened species considered to be “facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines”. Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines.
Endangered (EN)	Threatened species considered to be “facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines”. Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines.
Vulnerable (VU)	Threatened species considered to be “facing a high risk of extinction in the wild in the medium term future, as determined in accordance with criteria set out in the ministerial guidelines”. Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines.
Extinct species	
Extinct (EX)	Species where “there is no reasonable doubt that the last member of the species has died”, and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).
Extinct in the Wild (EW)	Species that “is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form”, and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).
Specially protected species	
Migratory (MI)	Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act). Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.
Species of Special conservation interest (conservation dependent fauna) (CD)	Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened.
Other specially protected fauna (OS)	Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Codes for DBCA listed Priority flora and fauna

Priority category	Definition
Priority 1	Poorly-known taxa Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

Priority category	Definition
Priority 2	Poorly-known taxa Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
Priority 3	Poorly-known taxa Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.
Priority 4	Rare, Near Threatened and other taxa in need of monitoring – Rare: Taxa that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands. – Near Threatened. Taxa that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable. – Taxa that have been removed from the list of threatened taxa during the past five years for reasons other than taxonomy.

Other significant flora

Flora species, subspecies, varieties, hybrids and ecotypes may be significant for a range of reasons, other than a statutory listing. The EPA (2016a, b) states that significant flora may include taxa that have/are:

- A keystone role in a particular habitat for Threatened or Priority flora or fauna species, or large populations representing a considerable proportion of the local or regional total population of a species
- Relictual status, being representation of taxonomic or physiognomic groups that no longer occur widely in the broader landscape
- New species or anomalous features that indicate a potential new species
- Being representative of the range of a species (particularly, at the extremes of range, recently discovered range extensions, or isolated outliers of the main range)
- Unusual species, including restricted subspecies, varieties, or naturally occurring hybrids
- Local endemism (a restricted distribution) or association with a restricted habitat type (e.g. surface water or groundwater dependent ecosystems).

Other significant fauna

Fauna species may be significant for a range of reasons other than those protected by international agreement or treaty, Specially Protected or Priority Fauna. Significant fauna may include short-range endemic species, species that have declining populations or declining distributions, species at the extremes of their range, or isolated outlying populations, or species which may be undescribed (EPA 2010).

Introduced plants (weeds)

Declared Pests

Information on species considered to be Declared Pests is provided under *State Biosecurity and Agriculture Management Act 2007*.

Weeds of National Significance

The spread of weeds across a range of land uses or ecosystems is important in the context of socio-economic and environmental values. The assessment of Weeds of National Significance (WoNS) is based on four major criteria:

- Invasiveness
- Impacts
- Potential for spread
- Socio-economic and environmental values.

Australian state and territory governments have identified thirty-two Weeds of National Significance (WoNS); a list of 20 WoNS was endorsed in 1999 and a further 12 were added in 2012.

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Field sampling - Habitat assessment data

Object ID Number	Date	Habitat type	Landform	Soil type	Litter cover (%)	Fire age (yr)	Vegetation condition	Notes: % canopy cover of foraging species	Eastings	Northings
25	30/09/2024	Banksia shrubland	Sand plain	Sand	10-30%	10+	Very Good	Occasional <i>Banksia menziesii</i> and <i>Banksia attenuata</i> , 30% cover	391458	6448661
187	12/11/2024	Banksia shrubland	Sand plain	Sandy loam	30-70%	10+	Very Good	30% <i>Banksia attenuata</i> and small <i>Pinus</i> . sp. 10% cover of Grass trees	391354	6448723
188	12/11/2024	Banksia shrubland	Sand plain	Sandy loam	30-70%	10+	Very Good	30% cover of <i>Banksia attenuata</i> , and <i>Banksia menziesii</i>	391367	6448602
193	12/11/2024	Banksia shrubland	Sand plain	Sandy loam	nr	nr	nr	<i>Banksia attenuata</i> present	391359	6448651
196	12/11/2024	Melaleuca damp land	Dampland	sand	nr	nr	Degraded	Paperbark Melaleuca sp. and mixed Eucalyptus (Marri and others) and Acacia sp.	392066	6445380
205	13/11/2024	Banksia shrubland	Sand plain	Sandy loam	10-30%	10+	Good	Mostly Acacia trees and shrubs, some <i>Banksia menziesii</i> scattered 2% and Hakea sp. and <i>Eucalyptus camaldulensis</i> and some Marri	392522	6442835
206	13/11/2024	Banksia shrubland	Sand plain	Sandy loam	10-30%	10+	Good	One tall <i>Banksia attenuata</i> and <i>Eucalyptus camaldulensis</i> and Marri	392471	6442358
207	13/11/2024	Banksia shrubland	Sand plain	Sandy loam	10-30%	10+	Good	Scattered 5-meter-tall <i>Banksia attenuata</i> and 6-meter-tall <i>Banksia menziesii</i> but mostly Geraldton Wax and Kunzea sp. and other shrubs	392240	6440327
208	13/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Good	10 to 30% cover of <i>Banksia menziesii</i> and <i>Banksia attenuata</i> , planted Eucalyptus and occasional Jarrah. occasional tall 7-meter-high Hakea sp.	391683	6435585
209	13/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Good	30 to 50% cover <i>B. attenuata</i> and 10% <i>Banksia menziesii</i> , planted Eucalyptus sp. and occasional Jarrah.	391660	6435507
210	13/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Good	30 to 50% cover <i>B. attenuata</i> and 10% <i>Banksia menziesii</i> , occasional <i>Pinus</i> sp. and <i>Casuarina</i> sp. Hillslope.	391647	6435472
211	13/11/2024	Banksia shrubland	Sand plain	Sandy loam	10-30%	10+	Good	30 to 50% cover <i>B. attenuata</i> and 10% <i>Banksia menziesii</i> , 4 meters to 6 meters tall.	391760	6433161

Object ID Number	Date	Habitat type	Landform	Soil type	Litter cover (%)	Fire age (yr)	Vegetation condition	Notes: % canopy cover of foraging species	Eastings	Northings
212	13/11/2024	Myrtaceous shrubland	Sand plain	Sandy loam	30-70%	10+	Good	Calothamnus sp. dominated. Myrtaceous shrubs.	391808	6432580
213	13/11/2024	Marri woodland	Sand plain	Sandy loam	>70%	10+	Good	Marri woodland and <i>Banksia menziesii</i> , 10% cover. 5 tall plants of <i>Banksia sessilis</i>	391863	6432233
214	13/11/2024	Dampland	Dampland	Sandy loam	>70%	10+	Very Good	Marri and <i>Eucalyptus rudis</i> and Paperbark Melaleuca sp. and grasses.	391878	6432175
215	13/11/2024	Marri woodland	Sand plain	Sandy loam	>70%	10+	Good	Marri woodland and <i>Banksia menziesii</i> 10% cover and <i>B. attenuata</i> 20 to 30% cover.	392012	6430909
216	13/11/2024	Dampland	Dampland	Sandy loam	30-70%	10+	Good	Acacia sp. trees and shrubs and Kunzea sp. and bottlebrush shrubs and occasional Marri and Flooded gum.	392042	6430465
217	13/11/2024	Sand plain	Sand plain	Sandy loam	30-70%	10+	Good	Kunzea and bottlebrush shrubs and occasional Marri	391914	6430444
218	13/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Good	Marri woodland and <i>B. attenuata</i> and <i>B. menziesii</i> 15% cover.	391890	6431083
219	13/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Good	Marri woodland and <i>B. attenuata</i> and <i>B. menziesii</i> 15% cover.	391924	6430844
220	13/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Good	Marri woodland and 20% <i>B. attenuata</i> and <i>B. menziesii</i> 15% cover.	391690	6432773
221	13/11/2024	Flooded Gum woodland	Dampland	Sandy loam	nr	10+	Good	<i>E. rudis</i> over bracken fern understorey. Paperbark Melaleuca trees.	391823	6431937
222	13/11/2024	Marri woodland	Sand plain	Sandy loam	nr	10+	Good	Marri over bracken ferns	391810	6432025
223	13/11/2024	Marri woodland	Sand plain	Sandy loam	nr	10+	Good	Marri and <i>B. menziesii</i> 10% cover, over Grass trees	391781	6432202
224	13/11/2024	Marri woodland	Sand plain	Sandy loam	nr	10+	Very Good	<i>B. menziesii</i> 2% and dense Melaleuca sp. shrubland	391765	6432324
225	13/11/2024	Banksia shrubland	Sand plain	Sandy loam	10-30%	10+	Good	30 to 50% cover of <i>B. attenuata</i> and 10% <i>B. menziesii</i> . 4m tall to 6m tall	391583	6434100
226	13/11/2024	Banksia shrubland	Sand plain	Sandy loam	10-30%	10+	Very Good	30 to 50% cover <i>B. menziesii</i> and 10% <i>Banksia grandis</i> 4m tall to 6m tall.	391564	6433469
227	13/11/2024	Banksia shrubland	Sand plain	Sandy loam	10-30%	10+	Good	30 to 50% cover <i>B. menziesii</i> and 10% <i>Banksia grandis</i> 4m tall to 6m tall	391605	6433414

Object ID Number	Date	Habitat type	Landform	Soil type	Litter cover (%)	Fire age (yr)	Vegetation condition	Notes: % canopy cover of foraging species	Eastings	Northings
228	13/11/2024	Banksia shrubland	Sand plain	Sandy loam	10-30%	10+	Good	30 to 50% cover <i>B. attenuata</i> and 10% <i>B. menziesii</i> . 4m tall to 6m tall	391535	6433775
229	14/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Very Good	<i>B. menziesii</i> 15 to 25% and 15% <i>B. attenuata</i> towards end at 6m tall and Grass trees 5% cover. occasional Eucalyptus sp. Really nice condition patch	392225	6438466
230	14/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Very Good	30% <i>B. attenuata</i> and 10% <i>B. menziesii</i> cover	392164	6439094
231	14/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Very Good	10% <i>B. attenuata</i> and <i>Adenanthos</i> sp. and Geraldton Wax and <i>Calothamnus</i> sp.	392171	6439178
232	14/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Very Good	20% <i>B. attenuata</i> and 10% <i>B. menziesii</i> 6 to 8 m tall and <i>Adenanthos</i> sp. and Geraldton Wax and <i>Calothamnus</i> sp. Grass trees 2% cover. Occasional Hakea trees and Pinus sp.	392182	6439295
233	14/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Very Good	10% <i>B. attenuata</i> and 20% <i>B. menziesii</i> 6 to 8m tall and <i>Adenanthos</i> sp. and Geraldton Wax and <i>Calothamnus</i> sp. Grass trees 2% cover. Occasional Hakea trees and Pinus sp.	392176	6439420
234	14/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Good	25% <i>B. attenuata</i> and 10% <i>B. menziesii</i> 6 to 8m tall and tall Pinus sp. at 20%	392172	6439462
235	14/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Very Good	40 to 50% <i>B. attenuata</i> and 10% <i>B. menziesii</i> 6 to 8m tall and tall Casuarina sp. 10%. and <i>B. sessilis</i> 5%	392164	6439501
236	14/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Very Good	10% <i>B. attenuata</i> and 10% <i>B. menziesii</i> and 10% grass trees	392177	6439572
237	14/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Very Good	10% <i>B. attenuata</i> and 10% <i>B. menziesii</i> and 10% grass trees and 5% b. sessilis, 5m tall. tall Hakea 5%	392159	6439616
238	14/11/2024	Banksia shrubland	Sand plain	Sandy loam	10-30%	10+	Degraded	2 <i>B. attenuata</i> plants and remained is mixed Acacia and Myrtaceous shrubland. one Casuarina sp.	392121	6441391
239	14/11/2024	Banksia shrubland	Sand plain	Sandy loam	10-30%	10+	Degraded	2 <i>B. attenuata</i> plants and a Nuytsia, and 3 plants <i>B. menziesii</i> , remained is mixed	392115	6441471

Object ID Number	Date	Habitat type	Landform	Soil type	Litter cover (%)	Fire age (yr)	Vegetation condition	Notes: % canopy cover of foraging species	Eastings	Northings
								Acacia and Myrtaceous shrubland. Some tall Casuarina sp.		
240	14/11/2024	Banksia shrubland	Sand plain	Sandy loam	10-30%	10+	Good	Bottlebrush, <i>Calothamnus</i> sp, Acacia sp. shrubland and then <i>E. rudis</i> occasional small	392121	6441045
241	14/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Degraded	10% <i>B. menziesii</i> and 8% <i>B. attenuata</i> and <i>Nuytsia floribunda</i> .	392152	6440079
242	14/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Very Good	10% <i>B. attenuata</i> and 10% <i>B. menziesii</i> and 10% Grass trees and 5% <i>Banksia sessilis</i> , 5m tall. tall Hakea 5%	392154	6439680
243	14/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Very Good	40 to 50% <i>B. attenuata</i> 6 to 8m tall and <i>B. menziesii</i> 5 to 6m tall	392250	6439881
244	14/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Very Good	40 to 50% <i>B. attenuata</i> 6 to 8m tall and <i>B. menziesii</i> 5 to 6m tall	392277	6439487
245	14/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Very Good	40 to 50% <i>B. attenuata</i> 6 to 8m tall and <i>B. menziesii</i> 5 to 6m tall	392262	6439667
246	14/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Very Good	40 to 50% <i>B. attenuata</i> 6 to 8m tall and <i>B. menziesii</i> 5 to 6m tall	392299	6439249
247	14/11/2024	Banksia shrubland	Sand plain	Sandy loam	>70%	10+	Very Good	40 to 50% <i>B. attenuata</i> 6 to 8m tall and <i>B. menziesii</i> 5 to 6m tall	392238	6440083
252	14/11/2024	Banksia shrubland	Sand plain	sand	nr	nr	nr	Banksia 50%	392173	6439085
253	14/11/2024	Banksia shrubland	Sand plain	sand	nr	nr	nr	Banksia 50%	392173	6439087
254	14/11/2024	Banksia shrubland	Sand plain	sand	nr	nr	nr	Banksia 30%	392173	6439275
255	14/11/2024	Banksia shrubland	Sand plain	sand	nr	nr	nr	Banksia 40%	392167	6439585

Field sampling – Field notes

Object ID Number	Date	Notes: % canopy cover of foraging species	Easting	Northing
41	12/11/2024	<i>Banksia attenuata</i> and Marri	391681	6447111
52	12/11/2024	<i>Eucalyptus rudis</i> lined	391421	6447818
54	12/11/2024	<i>Pinus</i> sp. <i>Banksia attenuata</i> and <i>B. menziesii</i> and fruiting <i>Corymbia</i> .	391385	6448198
55	12/11/2024	<i>B. menziesii</i> and <i>Corymbia</i> patch. can't access by foot. rail construction in way	391361	6448486
56	12/11/2024	Nuytsia x2. remnant <i>Eucalyptus</i> woodland. Wall blocking view/ access	391563	6447617
57	12/11/2024	Marri woodland	391634	6447263
58	12/11/2024	<i>E. camaldulensis</i> and Marri	391589	6447419
59	12/11/2024	Marri and <i>Banksia attenuata</i> (20% in)	391735	6446976
60	12/11/2024	Marri woodland	391491	6448131
61	12/11/2024	<i>Eucalyptus rudis</i> and <i>E. camaldulensis</i>	392012	6445958
62	12/11/2024	<i>B. menziesii</i> a small patch	392453	6444996
63	12/11/2024	<i>Eucalyptus</i> saplings and <i>Acacia</i> shrubland	392200	6445588
64	12/11/2024	<i>B. menziesii</i> and Marri small.	392495	6444571
65	12/11/2024	<i>E. camaldulensis</i>	392515	6443989
67	12/11/2024	Marri, <i>E. camaldulensis</i> and <i>B. menziesii</i> , 1 every 20m	392514	6442552
68	12/11/2024	Marri, <i>E. camaldulensis</i> and <i>B. menziesii</i> , 1 every 20m and some <i>Banksia sessilis</i> .	392467	6442314
70	12/11/2024	<i>B. attenuata</i> 40% cover and <i>B. menziesii</i>	392219	6440772
71	12/11/2024	<i>B. attenuata</i> 40% cover and <i>B. menziesii</i>	392221	6440514
76	12/11/2024	<i>B. attenuata</i> 40% cover and <i>B. menziesii</i>	392298	6439053
77	13/11/2024	<i>B. menziesii</i> 40% cover and some <i>Banksia attenuata</i> . lots of young Marri. 5 to 8m	392331	6438412
78	12/11/2024	<i>Banksia attenuata</i> 40% cover and <i>B. menziesii</i> . lots of Marri	392323	6438162
79	13/11/2024	<i>Eucalyptus rudis</i> and Marri patch with scattered <i>Banksia grandis</i>	392194	6437138
80	12/11/2024	Paperbark <i>Melaleuca</i> and <i>Eucalyptus</i>	392004	6436554
81	12/11/2024	<i>Eucalyptus</i> sp.	391907	6436298
82	12/11/2024	40 to 50% <i>Banksia attenuata</i> and <i>B. menziesii</i> .	391627	6435436
83	12/11/2024	40 to 50% <i>Banksia attenuata</i> and <i>B. menziesii</i> .	391559	6434366

Object ID Number	Date	Notes: % canopy cover of foraging species	Easting	Northing
84	12/11/2024	40 to 50% <i>Banksia attenuata</i> and <i>B. menziesii</i> .	391530	6434933
85	12/11/2024	40 to 50% <i>Banksia attenuata</i> and <i>B. menziesii</i> .	391569	6435239
87	12/11/2024	20% <i>Banksia attenuata</i> and <i>B. menziesii</i> .	391787	6432730
90	12/11/2024	Marri woodland	391965	6431472
91	12/11/2024	Marri woodland	391972	6431129
94	12/11/2024	Marri woodland	391928	6430403
96	12/11/2024	Marri woodland	391872	6431370
99	12/11/2024	Marri woodland and <i>b. attenuata</i> 25%	391640	6433027
102	12/11/2024	<i>Banksia attenuata</i> 40%	391462	6434376
103	12/11/2024	<i>Banksia attenuata</i> 40%	391531	6433875
104	12/11/2024	<i>Banksia attenuata</i> 25% and Marri	391440	6434923
105	12/11/2024	<i>Banksia attenuata</i> 25% and Marri	391516	6435458
106	12/11/2024	<i>Banksia attenuata</i> 25% and Marri	391544	6435650
108	12/11/2024	Acacia shrubland	392064	6437018
109	12/11/2024	<i>E. camaldulensis</i>	392218	6437705
113	12/11/2024	<i>Banksia attenuata</i> 15% and <i>Banksia sessilis</i> . Burnt recently	392152	6440006
114	12/11/2024	Marri woodland with 5% <i>B. menziesii</i> .	392134	6440667
115	14/11/2024	one large <i>B. attenuata</i>	392156	6441360
116	12/11/2024	Acacia shrubland	392341	6442184
117	12/11/2024	Acacia shrubland	392447	6442733
118	12/11/2024	Acacia shrubland	392405	6444127
119	12/11/2024	Acacia shrubland and Euc woodland	392360	6444588
120	12/11/2024	Acacia shrubland	391648	6446765
121	12/11/2024	dead tall <i>Banksia attenuata</i> over mixed shrub layer incl. <i>Kunzea</i> sp.	392048	6445499
122	13/11/2024	<i>Adenanthos</i> dominated. some Marri. Mostly <i>Calothamnus</i> sp.	392114	6438929
123	13/11/2024	10% <i>Banksia attenuata</i> 6m tall. <i>Adenanthos</i> and <i>Calothamnus</i> dominated.	392108	6438995
124	12/11/2024	mixed Acacia shrubland	392310	6438997

Object ID Number	Date	Notes: % canopy cover of foraging species	Easting	Northing
125	12/11/2024	<i>Banksia menziesii</i> 5% and young Marri	392341	6438869
126	12/11/2024	young <i>E. camaldulensis</i>	392318	6438655
127	13/11/2024	mixed Acacia shrubs and trees	392301	6437775
128	13/11/2024	mixed Acacia and Melaleuca sp.	392271	6437528
129	13/11/2024	mixed Acacia and Melaleuca sp.	392152	6437015
130	13/11/2024	15% <i>Banksia attenuata</i> and <i>Banksia menziesii</i> and Marri	391760	6435676
131	13/11/2024	20% <i>Banksia attenuata</i> and <i>Banksia menziesii</i> and Marri	391549	6435703
132	13/11/2024	<i>Banksia menziesii</i> 10%	391756	6433466
133	13/11/2024	Acacia shrubland	391694	6433448
134	13/11/2024	<i>Banksia menziesii</i> 10%	391774	6433345
135	13/11/2024	Kunzea sp. and Myrtaceous shrubland and planted young Eucalypts and occasional Marri	391772	6432937
136	13/11/2024	Remnant native bushland	391564	6433460
137	12/11/2024	<i>Banksia attenuata</i> 40%	391474	6434255
138	12/11/2024	<i>Banksia attenuata</i> 40% and Marri	391478	6435261
139	14/11/2024	Bottlebrush and Acacia shrubs and occasional <i>E. camaldulensis</i> small	391662	6435939
140	14/11/2024	Paperbark melaleucas and <i>E. camaldulensis</i> drainage line	391834	6436350
141	14/11/2024	Mixed planted Eucalyptus and <i>E. rudis</i> and Marri	391935	6436617
142	14/11/2024	Bottlebrush and Acacia shrubs and occasional <i>E. camaldulensis</i> small	391974	6436733
143	14/11/2024	Bottlebrush and Melaleuca sp. shrubs	392257	6438185
144	14/11/2024	Bottlebrush and Calothamnus sp. and Melaleuca sp. shrubs and young Marri	392240	6438313
152	26/11/2024	Dampland habitat	391938	6431783

Fauna survey results – Black Cockatoo sightings and foraging signs

Object ID #	Date	Cockatoo species	Type	Notes	Survey area portion	Easting	Northing
58	30/09/2024	Forest Red-tailed Black Cockatoo	Birds observed	male and female (pair), perched on potentially suitable hollow	Development envelope	391678	6449012
1	26/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed Banksia menziesii	Development envelope	394230	6450107
2	26/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed Banksia attenuata cones	Development envelope	394800	6450764
3	26/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	394214	6450101
4	26/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	394326	6450193
5	26/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	394404	6450288
6	26/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	394490	6450388
7	26/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	394614	6450547
8	26/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	394798	6450762
9	26/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	394912	6450902
10	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	392864	6449343
12	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	393476	6449642
13	27/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	393516	6449656
14	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	393570	6449697
15	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	393623	6449724
16	27/09/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	fresh chewed Allocasuarina pods	Development envelope	393663	6449748
17	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	393723	6449786
18	27/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	393784	6449808
19	27/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. ilicifolia pods	Development envelope	393811	6449820
20	27/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. ilicifolia pods	Development envelope	393842	6449840
21	27/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. ilicifolia pods	Development envelope	393887	6449863
22	27/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata pods	Development envelope	393932	6449905
23	27/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. ilicifolia pods	Development envelope	393983	6449919
24	27/09/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	fresh chewed Allocasuarina pods	Development envelope	394105	6450011
25	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata. pods	Development envelope	394187	6450046

Object ID #	Date	Cockatoo species	Type	Notes	Survey area portion	Easting	Northing
26	27/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata pods	Development envelope	394083	6449965
27	27/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. ilicifolia pods	Development envelope	393999	6449910
28	27/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata pods	Development envelope	393941	6449871
29	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	393703	6449737
30	27/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	393591	6449682
31	27/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	393119	6449609
32	27/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. ilicifolia cones	Development envelope	393129	6449615
41	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	393193	6449523
42	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	393807	6449815
43	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	393839	6449843
44	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	393949	6449911
45	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	393997	6449942
46	27/09/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	394099	6449981
47	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	394170	6450057
48	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	394097	6449959
49	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	393706	6449725
62	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	391580	6449119
63	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	391592	6449131
65	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	392711	6449328
66	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	392654	6449311
67	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	392680	6449465
68	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	392738	6449468
69	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	392685	6449473
70	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed Banksia menziesii	Development envelope	392691	6449477
71	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	392749	6449559
72	30/09/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed Marri pods	Development envelope	391452	6449874
73	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	391430	6449874

Object ID #	Date	Cockatoo species	Type	Notes	Survey area portion	Easting	Northing
74	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	391434	6449878
75	30/09/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed Marri pods	Development envelope	391446	6449940
76	30/09/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed Marri pods	Development envelope	391446	6449971
78	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	391453	6449839
79	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	391452	6449823
84	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	391464	6448897
85	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	391465	6448802
88	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	391613	6449165
91	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	391756	6449193
92	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. sessilis flowers	Development envelope	392176	6449219
93	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	392338	6449229
94	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	392409	6449239
95	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	392531	6449272
96	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	392557	6449271
97	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	392616	6449277
98	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata. pods	Development envelope	392901	6449438
99	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	392850	6449512
100	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata. pods	Development envelope	392732	6449468
101	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata. pods	Development envelope	392629	6449470
102	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	392589	6449441
103	30/09/2024	Carnaby's Cockatoo	Observed flying	3 birds foraging on B. menziesii	Development envelope	392581	6449440
104	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. menziesii pods	Development envelope	392530	6449399
105	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed Banksia menziesii pods	Development envelope	392383	6449341
106	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed Banksia menziesii pods	Development envelope	392354	6449325
107	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed Banksia menziesii pods	Development envelope	392277	6449302
108	30/09/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed Marri pods	Development envelope	392211	6449297
111	1/10/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	391322	6449787

Object ID #	Date	Cockatoo species	Type	Notes	Survey area portion	Easting	Northing
112	1/10/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	391324	6449809
113	1/10/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	391328	6449871
114	1/10/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	391482	6449686
115	1/10/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	391640	6449456
116	1/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	391640	6449522
117	1/10/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	391779	6449399
118	1/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	391724	6449431
119	1/10/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	391886	6449323
120	1/10/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	391956	6449308
121	1/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	391131	6449570
122	1/10/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Development envelope	391043	6449515
123	1/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. sessilis flowers	Development envelope	391092	6449512
124	1/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	391201	6449629
125	1/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	391332	6448853
126	1/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	391351	6448830
127	1/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	391339	6448846
128	1/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Development envelope	394069	6450087
129	1/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed Banksia menziesii pods	Development envelope	394384	6450396
130	1/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed Banksia menziesii pods	Development envelope	394456	6450475
131	1/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata pods	Development envelope	394499	6450521
132	1/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed Allocasuarina pods	Development envelope	394554	6450587
133	1/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed Banksia menziesii pods	Development envelope	394704	6450761
134	1/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed Banksia menziesii pods	Development envelope	394790	6450873
135	1/10/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata pods	Development envelope	395693	6451908
136	1/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	fresh chewed Marri pods	Development envelope	395510	6451760
137	1/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. menziesii pods	Development envelope	395423	6451671
138	1/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. menziesii pods	Development envelope	395321	6451560

Object ID #	Date	Cockatoo species	Type	Notes	Survey area portion	Easting	Northing
139	1/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata pods	Development envelope	394908	6451026
140	1/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata pods	Development envelope	394893	6451014
141	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed Marri pods	Development envelope	396235	6452423
142	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed Marri pods	Development envelope	396263	6452446
143	3/10/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata pods	Development envelope	396273	6452453
144	3/10/2024	Carnaby's Cockatoo	Observed flying	1 bird observed	Development envelope	392930	6449525
145	3/10/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. menziesii pods	Development envelope	396023	6452095
146	3/10/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. menziesii pods	Development envelope	396030	6452107
147	3/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. menziesii pods	Development envelope	396040	6452119
148	3/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. menziesii pods	Development envelope	396075	6452139
149	3/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. menziesii pods	Development envelope	396096	6452159
150	3/10/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. menziesii pods	Development envelope	399771	6453402
151	3/10/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. menziesii pods	Development envelope	399781	6453404
152	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	fresh chewed Marri pods	Development envelope	400857	6454230
153	3/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. prionotes pods	Development envelope	400865	6454235
154	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	fresh chewed Marri pods	Development envelope	400870	6454240
155	3/10/2024	Forest Red-tailed Black Cockatoo	Birds feeding	2 birds feeding on marri	Development envelope	400636	6454058
156	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	fresh chewed marri pods	Development envelope	400515	6453963
157	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	fresh chewed marri pods	Development envelope	400430	6453897
158	3/10/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed menziesii pods	Development envelope	401061	6454381
159	3/10/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. prionotes pods	Development envelope	401029	6454361
160	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	401004	6454336
161	3/10/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. menziesii pods	Development envelope	401234	6454513
162	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	401265	6454541
163	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	399007	6453175
164	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	398977	6453158
165	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	397371	6453034

Object ID #	Date	Cockatoo species	Type	Notes	Survey area portion	Easting	Northing
166	3/10/2024	Forest Red-tailed Black Cockatoo	Sighted perching	Sighted perching	Development envelope	400663	6454086
167	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	400714	6454197
168	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	type not specified	Development envelope	399772	6453483
169	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	type not specified	Development envelope	399767	6453478
170	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	type not specified	Development envelope	399760	6453473
171	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	type not specified	Development envelope	399736	6453457
172	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	399672	6453418
173	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	type not specified	Development envelope	399643	6453406
174	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	399631	6453394
175	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	399625	6453389
176	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	399664	6453423
177	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	399651	6453417
178	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	399646	6453412
179	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	399638	6453409
180	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	399619	6453395
181	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	399602	6453384
182	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	type not specified	Development envelope	399720	6453444
184	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	400041	6453689
185	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	400865	6454390
186	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	fresh chewed marri pods	Development envelope	400866	6454379
187	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	fresh chewed marri pods	Development envelope	400873	6454367
188	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	400805	6454264
189	3/10/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	chewed marri pods	Development envelope	400787	6454258
190	11/11/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	type not specified	Development envelope	402975	6458593
191	11/11/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	type not specified	Development envelope	402952	6458587
192	12/11/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	type not specified	Development envelope	403920	6460458
193	12/11/2024	Carnaby's Cockatoo	Foraging evidence	chewed Banksia pod	Development envelope	403963	6460571

Object ID #	Date	Cockatoo species	Type	Notes	Survey area portion	Easting	Northing
204	12/11/2024	Carnaby's Cockatoo	Foraging evidence	chewed Banksia pod	Development envelope	391342	6448753
206	12/11/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	403899	6460525
207	12/11/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	403895	6460534
208	12/11/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	403892	6460578
209	12/11/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	403878	6460583
210	12/11/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	403871	6460612
211	12/11/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	403878	6460614
212	12/11/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	403878	6460624
213	12/11/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	403876	6460627
214	12/11/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	403870	6460630
215	12/11/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	403870	6460630
216	12/11/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	type not specified	Development envelope	403858	6460713
217	12/11/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	403900	6460629
218	12/11/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	403889	6460640
219	12/11/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	403896	6460621
220	12/11/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	403887	6460598
221	12/11/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	403881	6460578
222	12/11/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	403891	6460564
223	12/11/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	403898	6460560
224	12/11/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	403917	6460529
225	12/11/2024	Carnaby's Cockatoo	Foraging evidence	type not specified	Development envelope	391338	6448787
226	12/11/2024	Forest Red-tailed Black Cockatoo	Foraging evidence	type not specified	Development envelope	391353	6448834
11	27/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Road Offset Area	393157	6449478
33	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Road Offset Area	393524	6449794
34	27/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Road Offset Area	393616	6449820
35	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. ilicifolia cones	Road Offset Area	393627	6449848
36	27/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. ilicifolia cones	Road Offset Area	393520	6449840

Object ID #	Date	Cockatoo species	Type	Notes	Survey area portion	Easting	Northing
37	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Road Offset Area	393240	6449695
38	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Road Offset Area	393128	6449728
50	27/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata pods	Road Offset Area	393605	6449813
51	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Road Offset Area	393614	6449824
52	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Road Offset Area	393618	6449843
53	27/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Road Offset Area	393424	6449790
54	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Road Offset Area	391885	6449176
55	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Road Offset Area	391720	6449025
56	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Road Offset Area	391690	6449010
57	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Road Offset Area	391688	6448999
59	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Road Offset Area	391647	6448995
60	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Road Offset Area	391619	6448975
61	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Road Offset Area	391541	6448973
64	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Road Offset Area	391688	6449160
81	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Road Offset Area	391834	6449188
82	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Road Offset Area	391763	6449089
83	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Road Offset Area	391663	6449000
89	30/09/2024	Carnaby's Cockatoo	Foraging evidence	chewed B. attenuata cones	Road Offset Area	391680	6449060
90	30/09/2024	Carnaby's Cockatoo	Foraging evidence	fresh chewed B. attenuata cones	Road Offset Area	391731	6449180

Fauna survey results – Black Cockatoo breeding habitat tree data

Object ID #	Date	Tree species	DBH (mm)	Hollow suitability/ diameter (mm)	Tree category (1-7)	Notes	Easting	Northing
13	3/10/2024	Marri (<i>C.calophylla</i>)	600	no hollows visible	7	In development envelope	400216	6453740
18	11/11/2024	Marri (<i>C.calophylla</i>)	870	no hollows visible	7	In development envelope	402961	6458609
19	11/11/2024	Marri (<i>C.calophylla</i>)	600	no hollows visible	7	In development envelope	402962	6458609
20	11/11/2024	Marri (<i>C.calophylla</i>)	530	no hollows visible	7	In development envelope	402963	6458604
21	11/11/2024	Marri (<i>C.calophylla</i>)	600	no hollows visible	7	In development envelope	402976	6458597
22	11/11/2024	Marri (<i>C.calophylla</i>)	520	no hollows visible	7	In development envelope	402975	6458594
23	11/11/2024	Marri (<i>C.calophylla</i>)	620	no hollows visible	7	In development envelope	402961	6458587
24	11/11/2024	Marri (<i>C.calophylla</i>)	540	no hollows visible	7	In development envelope	402959	6458589
25	11/11/2024	Marri (<i>C.calophylla</i>)	600	no hollows visible	7	In development envelope	402951	6458574
26	11/11/2024	Marri (<i>C.calophylla</i>)	520	no hollows visible	7	In development envelope	402958	6458553
27	11/11/2024	Marri (<i>C.calophylla</i>)	520	no hollows visible	7	In development envelope	402966	6458536
28	11/11/2024	Marri (<i>C.calophylla</i>)	500	no hollows visible	7	In development envelope	402967	6458534
29	11/11/2024	Marri (<i>C.calophylla</i>)	540	no hollows visible	7	In development envelope	402965	6458531
30	11/11/2024	Marri (<i>C.calophylla</i>)	600	no hollows visible	7	In development envelope	402971	6458508
31	11/11/2024	Marri (<i>C.calophylla</i>)	1200	no hollows visible	7	In development envelope	402960	6458500
32	11/11/2024	Marri (<i>C.calophylla</i>)	670	no hollows visible	7	In development envelope	402951	6458494
33	11/11/2024	Marri (<i>C.calophylla</i>)	500	no hollows visible	7	In development envelope	402981	6458738
41	11/11/2024	Marri (<i>C.calophylla</i>)	500	no hollows visible	7	In development envelope	403071	6458401
42	11/11/2024	Marri (<i>C.calophylla</i>)	500	no hollows visible	7	In development envelope	402934	6457130
43	11/11/2024	Marri (<i>C.calophylla</i>)	500	no hollows visible	7	In development envelope	402936	6457106
44	11/11/2024	Marri (<i>C.calophylla</i>)	500	no hollows visible	7	In development envelope	402632	6455806
45	12/11/2024	Marri (<i>C.calophylla</i>)	670	no hollows visible	7	In development envelope	403918	6460456
64	12/11/2024	Marri (<i>C.calophylla</i>)	650	no hollows visible	7	In development envelope	403859	6460713
65	12/11/2024	Marri (<i>C.calophylla</i>)	500	no hollows visible	7	In development envelope	403914	6460450
17	3/10/2024	River Red Gum (<i>E.camaldulensis</i>)	850	no hollows visible	7	In development envelope	401120	6454426

Object ID #	Date	Tree species	DBH (mm)	Hollow suitability/ diameter (mm)	Tree category (1-7)	Notes	Easting	Northing
40	11/11/2024	River Red Gum (<i>E.camaldulensis</i>)	1200	no hollows visible	7	In development envelope	403917	6460013
2	30/09/2024	Tuart (<i>E.gomphocephala</i>)	1100	no hollows visible	7	In development envelope	391607	6449163
3	30/09/2024	Tuart (<i>E.gomphocephala</i>)	1080	no hollows visible	7	In development envelope	391640	6449174
6	30/09/2024	Tuart (<i>E.gomphocephala</i>)	780	no hollows visible	7	In development envelope	391608	6449160
7	30/09/2024	Tuart (<i>E.gomphocephala</i>)	700	no hollows visible	7	In development envelope	391638	6449169
12	1/10/2024	Tuart (<i>E.gomphocephala</i>)	530	no hollows visible	7	In development envelope	395740	6452016
14	3/10/2024	Tuart (<i>E.gomphocephala</i>)	690	no hollows visible	7	In development envelope	400600	6454026
15	3/10/2024	Tuart (<i>E.gomphocephala</i>)	700	no hollows visible	7	In development envelope	400508	6453955
16	3/10/2024	Tuart (<i>E.gomphocephala</i>)	750	no hollows visible	7	In development envelope	400536	6453979
4	30/09/2024	Tuart (<i>E.gomphocephala</i>)	980	no hollows visible	7	In Road Offset area	391665	6449125
5	30/09/2024	Tuart (<i>E.gomphocephala</i>)	750	Hollow suitable, ~ 300 mm diameter, vertical trunk spout, adult pair of FRTBC present, female in hollow entrance, possible juvenile heard calling within hollow.	2	In Road Offset area. Hollow checked by G.Gaikhorst on 4/2/25 using drone. No cockatoos present. Multiple chew marks on hollow entrance, hollow is at least 1 m deep. No other signs of breeding.	391689	6449003
8	30/09/2024	Tuart (<i>E.gomphocephala</i>)	750	no hollows visible	7	In Road Offset area	391664	6449126
9	30/09/2024	Tuart (<i>E.gomphocephala</i>)	620	no hollows visible	7	In Road Offset area	391622	6449070
10	1/10/2024	Jarraah (<i>E.marginata</i>)	550	no hollows visible	7	In development envelope	391485	6449755
11	1/10/2024	Jarraah (<i>E.marginata</i>)	650	no hollows visible	7	In development envelope	390972	6449509
34	11/11/2024	Flooded Gum (<i>E.rudis</i>)	600	no hollows visible	7	In development envelope	403836	6459896
35	11/11/2024	Flooded Gum (<i>E.rudis</i>)	600	no hollows visible	7	In development envelope	403825	6459891
36	11/11/2024	Flooded Gum (<i>E.rudis</i>)	500	no hollows visible	7	In development envelope	403833	6459891
37	11/11/2024	Flooded Gum (<i>E.rudis</i>)	800	no hollows visible	7	In development envelope	403839	6459913
38	11/11/2024	Flooded Gum (<i>E.rudis</i>)	500	no hollows visible	7	In development envelope	403835	6459904
39	11/11/2024	Flooded Gum (<i>E.rudis</i>)	1200	no hollows visible	7	In development envelope	403882	6459957

Site photos



Forest Red-tailed Black Cockatoo, adult pair at potentially suitable hollow
(Category 2) 1/10/2024



Forest Red-tailed Black Cockatoo foraging sign (chewed *Allocasuarina* pod)



Potentially suitable hollow (category 2) re-assessed for nesting suitability using drone 4/2/2025 showing hollow interior. Extensive chew marks visible, no feathers or eggshells remains visible.



Carnaby's Cockatoo foraging sign (chewed *Banksia menziesii* pod)



Carnaby's Cockatoo foraging sign (chewed *Banksia attenuata* pod)

Black Cockatoo foraging quality scoring tool developed by (Bamford, 2022)

Carnaby's Cockatoo foraging habitat scores

Fauna Habitat Type	Area (ha)	Condition (out of 6)	Context (out of 3)	Density (out of 1)	Foraging Score (out of 10)
Banksia woodland	59.73	4	1	1	6
Eucalyptus woodland over Banksia	6.14	4	1	1	6
Melaleuca Dampland	4.64	1	0	0	1
Marri woodland	12.98	3	1	1	5
Naturalised and native trees	21.75	1	0	0	1
Native and introduced shrubs	76.27	1	0	0	1
Modified wetland drainage area	6.97	1	0	0	1
Cleared land	142.2	0	0	0	0

Average Carnaby's Cockatoo foraging habitat score for DE

Fauna Habitat	Area(ha)	Foraging Score	Area x Score
Banksia woodland	59.73	6	355.62
Eucalyptus woodland over Banksia	6.14	6	36.84
Marri woodland	12.98	5	64.90
Total	78.39		457.36
Average FHQS			5.83

Forest Red Tailed Black Cockatoo foraging habitat scores

Fauna Habitat Type	Area (ha)	Condition (out of 6)	Context (out of 3)	Density (out of 1)	Foraging Score (out of 10)
Banksia woodland	59.73	2	0	0	2
Eucalyptus woodland over Banksia	6.14	3	1	1	4
Melaleuca Dampland	4.64	1	0	0	1
Marri woodland	12.98	5	1	1	7

Fauna Habitat Type	Area (ha)	Condition (out of 6)	Context (out of 3)	Density (out of 1)	Foraging Score (out of 10)
Naturalised and native trees	21.75	1	0	0	1
Native and introduced shrubs	76.27	1	0	0	1
Modified wetland drainage area	6.97	0	0	0	1
Cleared land	142.2	0	0	0	0

Average Forest Red-tailed Black Cockatoo foraging habitat score for DE

Fauna Habitat	Area(ha)	Foraging Score	Area x Score
Eucalyptus woodland over Banksia	6.14	4	24.56
Marri woodland	12.98	7	90.86
Total	19.12		115.42
Average FHQS			6.04

Baudin's Black Cockatoo foraging habitat scores

Fauna Habitat Type	Area (ha)	Condition (out of 6)	Context (out of 3)	Density (out of 1)	Foraging Score (out of 10)
Banksia woodland	59.73	2	0	0	2
Eucalyptus woodland over Banksia	6.14	3	0	0	3
Melaleuca Dampland	4.64	1	0	0	1
Marri woodland	12.98	4	0	0	4
Naturalised and native trees	21.75	1	0	0	1
Native and introduced shrubs	76.27	1	0	0	1
Modified wetland drainage area	6.97	1	0	0	1
Cleared land	142.2	0	0	0	0

Average Baudin's Black Cockatoo foraging habitat score for DE

Fauna Habitat	Area(ha)	Foraging Score	Area x Score
Eucalyptus woodland over Banksia	6.14	3	18.42
Marri woodland	12.98	4	51.92
Total	19.12		70.34
Average FHQS			3.68

