

# **Compliance Report – Bruce Highway Upgrade Caloundra Road to Sunshine Motorway Upgrade Project, February 2019**

**EPBC Approval 2015/7464**

Report 02

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# Document control options

## Departmental approvals

Refer to the appropriate Risk Assessment Tool for relevant reviewer and approver

Date	Name	Position	Action required (Review/endorse/approve)
18/02/2019	Cameron McDonald	Environmental Officer	Initial Draft
28/02/2019	Anita Haynes	Senior Environmental Officer	Initial Review
6/03/2019	Cameron McDonald	Senior Environmental Officer	Finalise report comments
13/03/2019	Mark Asang	Project Manager	Endorsed
20/03/2019	Leah McKenzie	District Director (North Coast)	Approved

## Risk level

GACC major       GACC minor       High risk (but not GACC)       Medium risk

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<b>District &amp; Region</b>	North Coast
<b>Branch &amp; Division</b>	PDO
<b>Project/program</b>	Bruce Highway Caloundra Road to Sunshine Motorway Upgrade
<b>Project number</b>	280/10A/1
<b>Project location</b>	Glenview
<b>Status</b>	Revision 1
<b>DMS ref. no.</b>	450/01352

# Proponent and Approval Action

Detail	Applicable Details
EPBC Reference Number:	2015/7464
Project Name:	Bruce Highway Upgrade – Caloundra Road to Sunshine Motorway
Proponent:	Department of Transport and Main Roads
ABN:	390 407 690 291
Proposed Action:	To upgrade a 7km section of the Bruce Highway between Caloundra Road and the Sunshine Motorway at Sippy Downs, Queensland. The upgrade will allow for the construction of a six-lane highway and the upgrade of two interchanges.
Location of Action:	Between Caloundra Road and the Sunshine Motorway at Sippy Downs, Queensland
Reporting Period:	December 2017 – December 2018
Date Prepared:	February 2019

## Declaration of Accuracy

In making this declaration, I am aware that sections 490 and 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) make it an offence in certain circumstances to knowingly provide false or misleading information or documents. The offence is punishable on conviction by imprisonment or a fine, or both. I declare that all the information and documentation supporting this compliance report is true and correct in every particular. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

**Signed**



**Full name**

Leah McKenzie

**Position**

District Director (North Coast)

**Organisation**

Department of Transport and Main Roads (ABN 39 407 690 291)

**Date**

\_\_20\_\_ / \_\_03\_\_ / \_\_2019\_\_

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Proponent and Approved Action

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# 1. Introduction

## 1.1 Purpose of this Report

The Department of Transport and Main Roads (TMR) is constructing a 7km upgrade of the Bruce Highway between Caloundra Road and Sunshine Motorway (hereafter referred to as “the Project”). The Project consists of an upgrade to both the Sunshine Motorway and Caloundra Road interchanges, a six-lane upgrade of the Bruce Highway between the two interchanges, as well as a fully connected service road on the western side of the highway. TMR (as Administrator) has awarded the Project to a Joint Venture of Fulton Hogan and Seymour Whyte (hereafter referred to as “the Contractor”) as a design and construct contract.

The Project was referred to the Department of Environment (DoE) on 15<sup>th</sup> April 2015 for determination of whether the Project was likely to have a significant impact on *Matters of National Environmental Significance* (MNES). Projects likely to cause a significant impact on MNES require approval under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). The Project was deemed a controlled action on 18<sup>th</sup> May 2015 and was approved, subject to conditions, on 2<sup>nd</sup> September 2016 (reference number: 2015/7464). The approval conditions are provided in **Appendix A** of this report.

Condition 6 of the EPBC Act approval conditions require that TMR prepare and publish an annual report on their website that addresses compliance with each of the conditions of the approval for each year of construction. This report is the second annual compliance report for the Project that meets this condition.

## 1.2 Matters of National Environmental Significance

Under the EPBC Act, a project must be referred to DoE for actions that are likely to have a significant impact on MNES protected by Part 3 of the EPBC Act. These are known as “controlling provisions”. This project triggered one controlling provision: “*potential impacts to listed threatened species and communities* (Section 18 and Section 18A)”. The proposed action is likely to have a significant impact on the following matters protected by the EPBC Act.

- Lowland Rainforest of Subtropical Australia – critically endangered.
  - The proposed actions will reduce the extent of the critically endangered Lowland Rainforest of Subtropical Australia (LRSA) Threatened Ecological Community.
- Koala (*Phascolarctos cinerus*) – vulnerable.
  - The proposed action will reduce the extent of critical habitat for the Koala.

# 2. Description of Activity

## 2.1 Project Location

The upgrade to the Bruce Highway is being undertaken between the area extending south of Caloundra Road and north towards the Sunshine Motorway at Sippy Downs, Queensland. The Project also includes areas on the Mooloolah River floodplain and areas north of Aussie World along Frizzo Road.

The project area is located within the Sunshine Coast Council (SCC) Local Government Area, approximately 15km west of Caloundra and 10km southwest of Mooloolaba. The project area encroaches on a section of the former Beerwah State Forest, west of the Bruce Highway at Glenview.

Sections of the project area have been historically cleared along the Bruce Highway for residential and commercial purposes. The project area also contains remnant vegetation, within the former Beerwah State Forest, Palmview Regional Park, and along the Mooloolah River.

## 2.2 Description of the Project

The Project consists of an upgrade to a 7km section of the Bruce Highway between Caloundra Road and the Sunshine Motorway from four to six lanes including major upgrades to the interchanges at Caloundra Road and the Sunshine Motorway. The Project will include the following key features:

- Upgrade of the current Bruce Highway alignment from four to six lanes and to provide immunity for a 1 in 100-year flood event;
- A “diverging diamond” interchange at the intersection of the Bruce Highway and Caloundra Road to better facilitate right-turn movements that are critical to the effective functioning of the interchange;
- The western service road which will link the Caloundra Road interchange with the Aussie World precinct and extend through to the Sunshine Motorway interchange;
- A grade-separated interchange at the intersection of the Bruce Highway, the Sunshine Motorway and the new western service road and to provide improved efficiency for all movements, reduce queuing and delays, and increase road safety by eliminating high speed at grade intersections. This interchange will also include access to the Aussie World precinct via a “second chance” roundabout;
- A southbound off-ramp at Pignata Road to provide access to the Aussie World precinct and the local road network;
- Replacement and upgrades of existing drainage structures (bridges and culverts) on the Bruce Highway to maintain the existing surface water hydrological and hydraulic characteristics of the area; and
- Fauna passage structures, including an underpass, fauna fencing, a rope ladder and fauna escape structures for animals trapped on the Bruce Highway.

**Figure 1** provides the CR2SM design layout as an overview of the project area.

# Bruce Highway Upgrade — Caloundra Road to Sunshine Motorway

design layout

May 2017



**Inset A**  
Caloundra Road interchange



**Inset B**  
Southbound off ramp to Pignata Road



**Legend**

- Main roads
- Western service road
- Local road/connection
- New pedestrian and/or cycle route
- Bus stop
- Signalised intersection

**Inset C**  
Sunshine Motorway interchange



**Figure 1: Bruce Highway Upgrade – Caloundra Road to Sunshine Motorway Design Layout**



## 2.3 Project Progress

Vegetation clearing is still ongoing in small pockets within centre median areas and a section along the far northern extent of the project. Approximately 90% of the clearing along the main alignment has been completed. The project has installed various erosion and sediment controls across the site including the construction of approximately 50 sediment basins to manage water quality.

Bulk earthworks are ongoing with fill approaching final design levels in some areas. Traffic switches have been completed at Sippy Creek Road, Tanawha Road, Cuning Road and Caloundra Road to Bruce Highway south.

Pavement has been constructed for the Bruce Highway Southbound adjacent to Pignata Road, and along Sunshine Motorway to Bruce Highway southbound onramp at Bellflower, linemarking and final landscape treatments pending. Structures work for bridges and drainage are ongoing. Several culverts have been constructed, bridge piers are in place, and fauna movement structures are under construction. There is currently a strong focus on establishing temporary Traffic Management (TTM) lanes to allow for works to progress.

Two of the project's environmental offset sites have been purchased with voluntary declarations in place, and one property legally secured under a Conservation Agreement from the Commonwealth with NRME, TMR and SCC as parties to the agreement. Rehabilitation and maintenance of the properties has commenced.

## 2.4 Approval History

The date of the EPBC Approval, and the compliance reporting dates and status of the Annual Compliance Reports are provided in **Tables 1 and 2**.

**Table 1: Relevant Dates for EPBC Approval.**

Approval Number	Date of Decision	Expiry Date
EPBC 2015/7464	2 September 2016	31 December 2026

**Table 2: Chronology of Compliance Reports**

Reporting Dates	Report No.	Status
December 2016 – December 2017	01	Completed
December 2017 – December 2018	02	Completed (this report)

## 3. Condition Compliance

**Table 3** provides an overview of the conditions and compliance status. Where additional information is required, reference has been made to relevant sections of this report for further evidence of compliance.

**Table 3: Summary of Compliance with EPBC Act Approval Conditions**

No.	Condition	Timeframe	Status	Evidence of Compliance
1	For the protection of the <i>EPBC Act</i> listed vulnerable Koala ( <i>Phascolarctos cinereus</i> ) and <i>Lowland rainforest of subtropical Australia</i> Threatened Ecological Community the approval holder must implement the “Overarching Environmental Management Plan” while undertaking the proposed action.	Progressive - for the period of construction.	<b>Ongoing.</b>	<p>An Environmental Management Plan (Planning) was prepared to communicate the EPBC compliance requirements applicable to the project during the development and implementation phases.</p> <p>The Contractor operates under an Environmental Management Plan for Construction (EMP-C) which has undergone a document revision process by TMR. The EMP-C reflects the mitigation measures outlined in the Overarching Environmental Management Plan (OEMP), as well as control strategies and commitments to account for any issues and requirements identified in the Project Scope of Works and Technical Criteria (SWTC), presented in a format that is suitable for use by on-ground personnel.</p> <p>The Contractor provides monthly environmental reports demonstrating compliance with the EMP-C, which reflects the requirements of the OEMP and SWTC. This demonstration of compliance is achieved through monthly internal audit reporting, which includes the subset of compliance and reporting deliverables noted within the OEMP.</p> <p>Independent third-party audits are undertaken quarterly to demonstrate compliance with the EMP-C and identify any non-conformance, including verification of compliance with the OEMP, SWTC, and the EPBC approval conditions.</p> <p>Refer to Section 4.1 for additional information.</p>
2	For the protection of the EPBC Act listed critically endangered <i>Lowland Rainforest of Subtropical Australia</i> (LRSA) the approval holder must:	(a) For the construction period.	<b>Commenced and tracking.</b>	(a) To date a total of 11,860m <sup>2</sup> (1.186ha) of TEC has been cleared as part of the project works (within

No.	Condition	Timeframe	Status	Evidence of Compliance
	<p>(a) Not disturb more than 3.92ha of the LRSA Threatened Ecological Community (TEC) within and adjacent to the project site;</p> <p>(b) Legally secure and implement the offset of 16.64ha at the location shown and ensure that by the tenth anniversary of commencement of action, the offset meets the following condition thresholds:</p> <ul style="list-style-type: none"> <li>i. Canopy cover: at least 70% of canopy vegetation is native;</li> <li>ii. Species richness: contains 30 native woody species from the LRSA TEC listing advice; and</li> <li>iii. Total vegetation: At least 70% of total vegetation cover is native.</li> </ul> <p>(c) Legally secure and implement the offset of 4.65ha at the location shown by the first 12-month anniversary of the commencement of the action.</p>	<p>(b) By the tenth anniversary of commencement action</p> <p>(c) By the first 12-month anniversary of commencement.</p>	<p><b>Commenced.</b></p> <p><b>Commenced.</b></p>	<p>and adjacent to the project site), in compliance with Condition 2(a).</p> <p>Progressive quantities for cleared areas are reviewed and provided in the Contractors monthly environmental progress reports.</p> <p>Refer to <b>Appendix B</b> for a map of the project site, and <b>Appendix C</b> for as-built diagrams of areas cleared to date.</p> <p>(b) Lot 37 C3147, Lot 1 SP300404, and Lot 2 RP27760 have been legally secured. The implementation of offset actions relevant to Section (b) are currently works in progress. Local Government (Sunshine Coast Council) has been engaged to undertake management of the site to meet the condition thresholds.</p> <p>Refer to <b>Appendix D</b> for map of Lower Mooloolah River Environmental Reserve.</p> <p>(c) Lot 2 SP268457 has been legally secured by TMR. The implementation of offset actions relevant to Section (c) are currently works in progress. The management actions relevant to these conditions are being undertaken by the engaged contractor.</p> <p>Refer to <b>Appendix E</b> for map of Mooloolah Valley property.</p> <p>Refer to Section 4.2 'for additional information pertaining to Condition 2.</p>
3	<p>For the protection of the EPBC Act listed vulnerable Koala (<i>Phascolarctos cinereus</i>) the approval holder must:</p>	<p>(a) For the construction period.</p>	<p><b>Commenced and tracking.</b></p>	<p>(a) The definition of Koala habitat in the approval refers only to "high" and "medium" Koala habitat. Accordingly, the total Koala habitat cleared to date</p>

No.	Condition	Timeframe	Status	Evidence of Compliance
	<p>(a) Not disturb more than 35.3ha of Koala habitat within the Project site;</p> <p>(b) Implement the five Koala movement structures (Koala friendly underpasses) within the Project site, namely:</p> <p>i. One new structure to facilitate Koala movement across Steve Irwin Way;</p> <p>ii. One new structure to facilitate Koala movement across the Bruce Highway south of the Mooloolah River;</p> <p>iii. One new structure to facilitate Koala movement across the Bruce Highway north of Sippy Creek;</p> <p>iv. Improve the existing structure at Sippy Creek to facilitate Koala movement across the Bruce Highway; and</p> <p>v. Improve the existing structure at Mooloolah River to facilitate Koala movement across the Bruce Highway.</p> <p>(c) Legally secure and implement the offset of 50ha at the location shown by the first 12-month anniversary of the commencement of the action.</p>	<p>(b) Design and Implementation phase.</p> <p>(c) By the first 12-month anniversary of commencement.</p>	<p><b>Design commenced</b></p> <p><b>Commenced</b></p>	<p>is 165,696m<sup>2</sup> (16.57ha), compliant with Condition 3(a).</p> <p>The total for Non-Juvenile Koala Habitat (NJKH) floral species cleared to date is 3,176 individuals.</p> <p>(b) The sub-conditions ((b)i.-v.) regarding Koala movement structures have been incorporated into the design drawings for the road furniture. Intensive construction activities are still ongoing, and traffic switches are required to facilitate further construction of the fauna structures.</p> <p>Refer to <b>Appendix H</b> for map showing the locations of the fauna movement structures.</p> <p>(c) The 50ha offset, Lot 2 RP51879 at Missing Link Road, Glenview has been legally secured by TMR.</p> <p>Refer to <b>Appendix F</b> or map of Glenview property.</p> <p>Refer to Section 4.3 for additional information on Condition 3.</p>
4	Within 10 days of the commencement of the action, the approval holder must advise the Department in writing of the actual date of commencement of the action.	Within 10 days of commencement of construction.	<b>Completed</b>	<p>A letter was submitted to the Department on 23<sup>rd</sup> December 2016 to formally notify of the commencement of works.</p> <p>Refer to <b>Appendix G</b> for this notice.</p>
5	The approval holder must maintain accurate records substantiating all activities associated with or relevant to the	Progressive.	<b>Ongoing</b>	All records associated with this condition are maintained and updated on a regular basis. Refer to Section 4.4 for further detail on records associated with this condition.

No.	Condition	Timeframe	Status	Evidence of Compliance
	<p>conditions of approval and make them available upon request to the Department.</p> <p>Such records may be subject to audit by the Department or an independent auditor in accordance with Section 458 of the EPBC Act or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits must also be published on the approval holder's website within two weeks of the Department's approval of the final audit.</p>			
6	<p>Within three months of every 12-month anniversary of the commencement of the action, the approval holder must publish a report on their website addressing compliance with each of the conditions of this approval over the previous 12 months. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the Department at the same time as the compliance report is published.</p>	<p>For the period of construction.</p> <p>The compliance report must be published within three months of every 12-month anniversary.</p>	<p><b>Compliant</b></p> <p>Second compliance report complete (this report).</p> <p><b>Minor Non-Compliance</b></p> <p>The first compliance report was published on TMR project website October 2018, which was not within the reporting period. DoE was notified of this non-compliance.</p>	<p>This is the second compliance report for the EPBC approval. This report will be published on the TMR website concurrently with submission to the Department, satisfying this condition of approval.</p> <p>The relevant documentary evidence will be provided to DoE at the time of publication.</p> <p>DoE was provided notification of publication of the first compliance report in October 2018.</p>
7	<p>Upon direction of the Minister, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister. The independent auditor must be approved by the Minister prior to the commencement of the audit. Audit criteria must be agreed to by the Minister and the</p>	<p>Following direction from the Minister.</p>	<p>To date, there has been no direction from the Minister to complete an independent audit.</p>	<p>Not currently applicable.</p>

No.	Condition	Timeframe	Status	Evidence of Compliance
	audit report must address the criteria to the satisfaction of the Minister.			
8	Condition 6 ceases to apply once the approval holder has demonstrated to the satisfaction of the Minister that all conditions have been achieved.	Not currently applicable	Not currently applicable.	Not currently applicable.

## 4. Additional Supporting Information

### 4.1 Condition 1

*For the protection of the EPBC Act listed vulnerable Koala (*Phascolarctos cinereus*) and Lowland rainforest of subtropical Australia Threatened Ecological Community the approval holder must implement the Overarching Environmental Management Plan while undertaking the proposed action.*

The Contractor has developed an Environmental Management Plan for the construction phase of the project (EMP-C) which reflects the mitigation measures outlined in the Overarching Environmental Management Plan (OEMP). Sub-plans have also been developed to support the EMP-C which are implemented as part of the construction and operations phase. These sub-plans consist of the following:

- Vegetation Management Plan;
- Species Management Plan;
- Fauna Management Plan;
- Overarching Erosion and Sediment Control Management Plan;
- Weed, Pest and Disease Management Plan;
- Water Quality Management Plan;
- Cultural Heritage Plan;
- Noise and Vibration Management Plan;
- Air Quality Management Plan;
- Soils Management Plan;
- Acid Sulphate Soil and Contaminated Land Management Plan;
- Waste Management Plan;
- Hazardous Substances Management Plan; and
- Greenhouse Gases Management Plan.

The above sub-plans are used to define the construction controls required to ensure each potential aspect and impact identified is eliminated, reduced or appropriately mitigated. The sub-plans have been developed to meet requirements of the EPBC approval. For example:

- “*Loss of habitat*” is being minimised through the establishment of exclusion zones, reducing the clearing footprint through changes in design, and delivery of vegetation offsets.
- “*Injury or mortality to fauna*” is being minimised through the continual engagement of suitably qualified fauna spotter-catchers during clearing operations, specialised ecologists for conducting pre-clearance surveys of potential frog habitat areas, and provision of fauna furniture and crossings through design.
- “*Habitat degradation*” is being minimised through implementation of the various management measures included within the Water Quality Management Plan, Waste Management Plan, Weed Pest and Disease Management Plan etc.

Furthermore, for specific management of Giant barred frog the following is undertaken:

- Construction within suitable habitat is avoided, where possible, following rain if water is still present onsite;

- Qualified ecologists conduct surveys of potentially suitable habitat during the nights prior to clearing;
- Fauna spotter-catchers capture and relocate individuals, tadpoles and egg masses to similar habitat if detected;
- Any frogs observed or relocated are recorded and reported to the Administrator.

Management measures of the sub-plans are monitored through daily inspections, supervision during vegetation clearing and accompanying fauna spotter-catcher reports, monitoring of water quality, erosion and sediment control performance, weeds/pests etc. Internal and external audit checks are undertaken to ensure compliance and a compliance tracking register is maintained by the Principal Contractor. Where compliance has not been achieved, a non-conformance report is raised by the Principal Contractor and reported to the Administrator. This process includes identification of failure in process, as well as remediation measures.

As per the OEMP, barricading for both protected flora and identified fauna habitat areas are reinstated as required. Erosion and sediment controls (ESC) are also maintained following rainfall events. If rainfall received onsite exceeds design thresholds, notification is provided to the Department of Environment and Science (DES). ESC's are continually reviewed for effectiveness onsite and amendments are communicated through revised ESC plans (red-line mark ups) and distributed to relevant site personnel.

#### **4.1.1 Non-Compliance**

No non-compliance against the conditions are reported for this reporting period.

## **4.2 Condition 2**

### **4.2.1 Condition 2(a)**

*Not disturb more than 3.92ha of the Lowland Rainforest of Subtropical Australia Threatened Ecological Community within and adjacent to the project site.*

Per Table 3 above, the project has cleared 11,860m<sup>2</sup> (1.186ha) of Threatened Ecological Community (TEC). The project team continue to manage and monitor the clearing limits of the project footprint.

The project is compliant with this condition. Progressive quantities for cleared areas are reviewed and provided in the Contractors monthly environmental progress reports.

Refer to **Appendix C** for as-built diagrams of areas cleared to date.

### **4.2.2 BioCondition Assessment Mooloolah River**

To ensure the vegetation community condition of the TEC buffer area located within the Mooloolah River National Park is not significantly impacted by the Project works, monitoring was undertaken within Patch 1. Additionally, the project team also monitored TEC Patch 2. Patch 1 is located west and Patch 2 is located to the east of the Bruce Highway, refer to **Figure 2**.

Monitoring was undertaken prior to commencement of construction works, and more recently during construction operations. The monitoring activities included:

- Completing a BioCondition assessment of the buffer areas containing Lowland Rainforest of Subtropical Australia TEC.
- Undertaking additional monitoring, including weed species and cover; dead or dying trees; encroachment of other native/or exotic species e.g. camphor laurel (*Cinnamomum camphora*), not consistent with characteristics of the vegetation; and any other substantial disturbances potentially impacting vegetation condition.
- Reporting of the results of the BioCondition assessment and comparing with the preliminary BioCondition assessment.



- Reporting of results of additional monitoring regarding impacts to vegetation condition including disturbance, weeds and encroachment of other flora species.

The results of the monitoring are summarised as follows:

- BioCondition assessment followed methodology described by Eyre et al. (2015).
- The BioCondition assessment was conducted by suitably qualified ecologists from Ecosure Pty Ltd on 4 February 2019 to provide a comparison with the preliminary BioCondition assessment completed in 2016 (prior to construction).
- Patch 1 TEC transect differs slightly from the 2016 transect as no location data was available.

A 100 metre transect was established with the majority of the transect falling within the 50-metre buffer adjacent to the project boundary.

The BioCondition score in 2019 totalled 0.855 which is slightly higher than the score of 0.84 from 2016. Higher results were recorded for canopy, sub canopy, shrub and ground cover species richness. Weed species were absent within the transect and exotic species were recorded at the eastern edge adjacent to the project boundary.

Patch 1 (0.855) scored an ABCD<sup>1</sup> rating of 1, meaning the vegetation is considered to have a functional biodiversity condition (> 0.80). While the BioCondition score rose marginally in 2019, the ABCD rating has not changed from 2016 to 2019, indicating no significant change in overall BioCondition of Patch 1.

The survey did not observe any other signs of poor health, such as dead or dying trees or erosion.

- Patch 2 TEC transect again differs from the transect undertaken prior to construction as the transect was located outside of the buffer area.

Vegetation within Patch 2 is mostly confined to the banks of the Mooloolah River. To the north and south of the transect are fenced grazing paddocks.

The BioCondition score in Patch 2 decreased marginally from 2016 to 2019. This may have been attributed to some differences in the transect location. The 2016 survey was conducted in area of continuous riparian vegetation outside of the buffer, while the 2019 survey was in a smaller patch within the 50m buffer.

Patch 2 (0.66) is categorised as a rating 2, below functional biodiversity condition (0.6-0.8). The BioCondition score in Patch 2 decreased marginally from 2016 to 2019, possibly due to differences in transect location. However, the ABCD rating remains at 2, suggesting that overall BioCondition rating has not changed from 2016 to 2019.

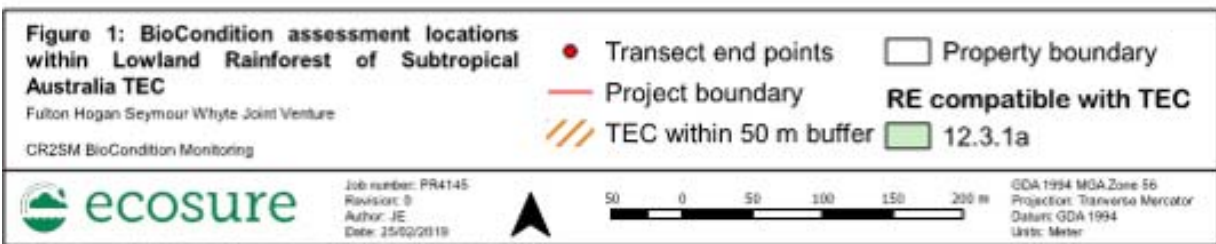
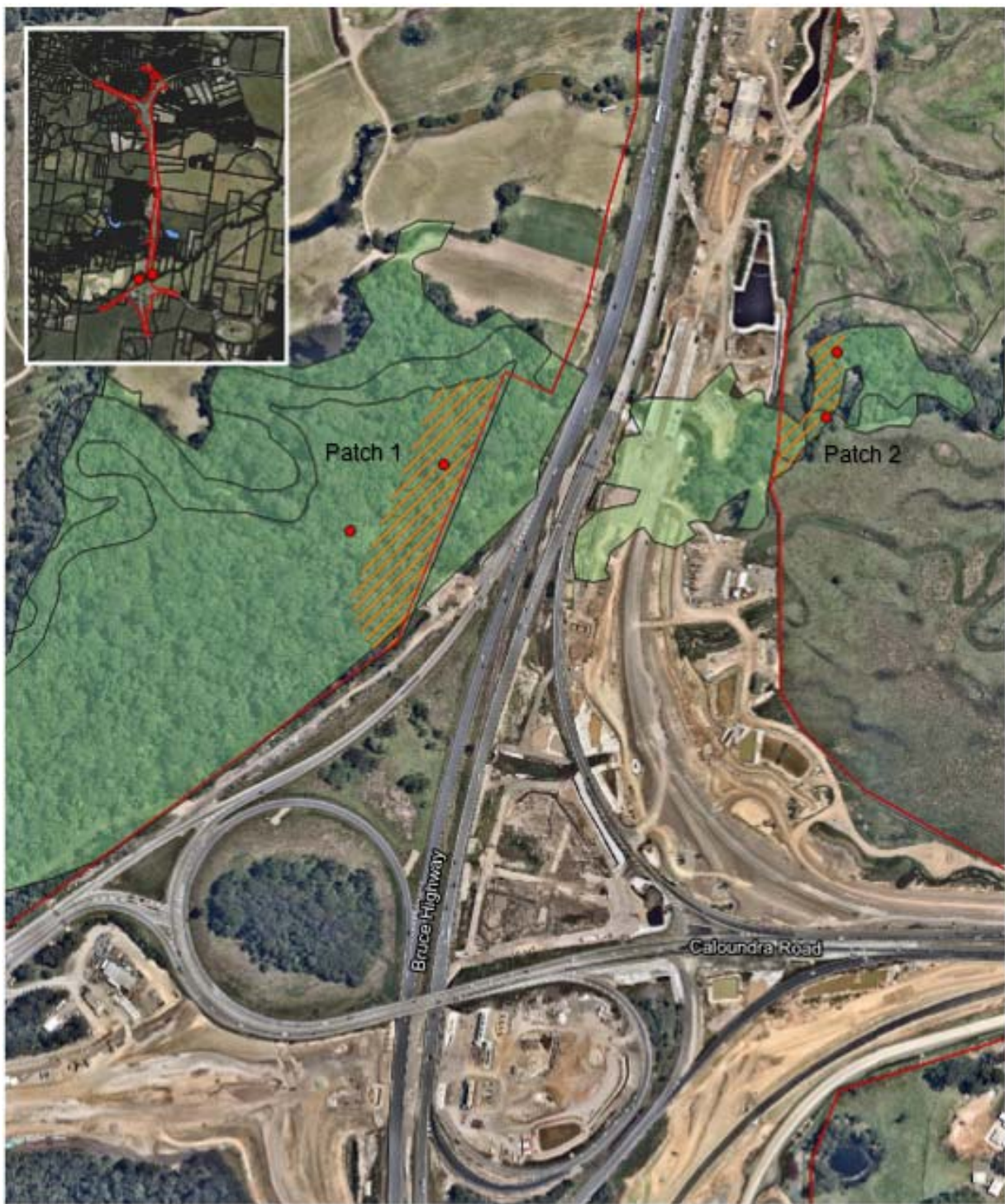
Other disturbances to vegetation in Patch 2 include impact from flooding along the banks of Mooloolah River.

The field assessment did not identify any other encroachment impacts.

The TEC areas adjacent to the project works will continue to be monitored as per condition requirements.

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<sup>1</sup> ABCD framework outlined within Eyre *et al.* (2015)



**Figure 2: BioCondition assessment locations within Lowland Rainforest of Subtropical Australia TEC**

### 4.2.3 Condition 2(b)

*Legally secure and implement the offset of 16.64ha at the location shown and ensure that by the tenth anniversary of commencement of action, the offset meets the following condition thresholds.*

- i. Canopy cover – at least 70% of canopy vegetation is native;*
- ii. Species richness – contains 30 native woody species from the LRSA TEC listing advice;*
- iii. Total vegetation – at least 70% of total vegetation cover is native”.*

An Offset Management Plan (OMP) has been developed by DTMR to demonstrate the objectives of the EPBC Act Environmental Offsets Policy in compensating for impacts on the Lowland Rainforest of Subtropical Australia (LRSA) Threatened Ecological Community (TEC). The impacts on this TEC will result from works associated with the Project.



The scope of the OMP is to align specific environmental revegetation, regeneration, rehabilitation and protection measures for vegetation that occurs in a portion of the LMRE Reserve at Laxton Road, Palmview. These activities will deliver TMR's offset obligations under the EPBC Act, yielding an overall conservation outcome for the LRSA TEC.

An agreement between Sunshine Coast Council (SCC) and the Department of Transport and Main Roads (DTMR) to deliver and manage the Mooloolah River Rainforest Offset Project was signed on 1<sup>st</sup> June 2017. The agreement will comply with and meet the *Environmental Protection & Biodiversity Conservation Act* (EPBC) conditions of approval and is part of the agreement.

A summary of works undertaken for this reporting period is summarised below:

- A total of six monitoring transects were established across the offset management site during the third quarter of 2018 to assess progression of the offset objectives. These transects provide monitoring data that may be compared to the initial BioCondition baseline assessments; as well as capture and report on data relating to attributes associated with overall offset objectives, Key Performance Indicators (KPI's) and provide evidence that the offset is on trajectory towards a functioning representation of the LRSA TEC.
- The SCC Pest Management Team have installed infrared motion sensor cameras to collect pest animal data and respond accordingly. Low numbers of wild dogs and higher numbers of foxes were recorded. Foot hold traps were installed during the September-October 2018 period with no activations recorded.
- To initiate beneficial bacteria and fungi inoculation processes as well as provide habitat for small reptiles, coarse woody debris has been installed at a rate of 10 tonnes per hectare throughout reconstruction zones.

- Ongoing control of weeds and exotic grass competition has been undertaken including initial treatment and ongoing maintenance of weeds along the edge of the remnant area. More than 95% of weeds on the rainforest edge have been controlled. This is promoted by a regular mowing regime ensuring grass is cut bi-monthly.
- Erosion mitigation plantings have been installed totalling 500x *Lomandra hystrix*, 20x *Ficus coronate*, and 20x *Waterhousia floribunda*.

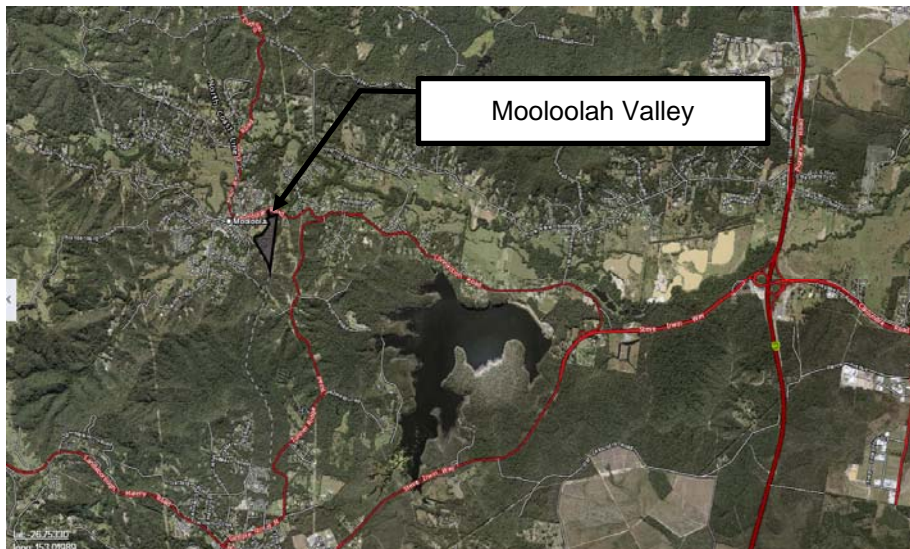
The following upcoming activities are scheduled to occur over the following twelve months:

- Ground preparation for second stage of tube stock installation including spraying of additional planting row areas within previously ripped lines;
- Installation of 15,940 second stage tube stock including soil amelioration, guards, mulch and weed mats;
- Ongoing monitoring and weed control throughout the remnant rainforest;
- Ongoing monitoring and data collection; and
- Ongoing general maintenance works as required by the OMP and the SCC technical specification.

#### 4.2.4 Condition 2(c)

*Legally secure and implement the offset of 4.65ha at the location shown by the first 12-month anniversary of the commencement of the action.*

TMR has purchased Lot 2 RP268457 (28 Mooloolah Road, Mooloolah Valley, Sunshine Coast) in Freehold in 2016 and a Voluntary Declaration is in place.



An Offset Management Plan (OMP) has been prepared and aims to protect and maintain in perpetuity 5.02ha of Lowland Rainforest of Subtropical Australia and manage to remnant status approximately 4.5ha of high value regrowth as a land-based offset for clearing works associated with the Project works.

The OMP details key risks and management actions and provides support for a Voluntary Declaration under the *Vegetation Management Act 1999*, and the requirements of the approval under the EPBC Act for the Project.

The primary management objective for the site is to conserve and improve the value of the area for the Lowland Rainforest of Subtropical Australia (LRSA). The overall management outcome will be to maintain current vegetation structure, composition and diversity, and improve the value of the area through management of high value regrowth. This will increase the total area of LRSA, and buffer core LRSA against weed invasion and fire.

TMR has engaged a Contractor to deliver the works required under the OMP and to meet the EPBC conditions of approval as part of the agreement. The purpose of the OMP and works is to protect and maintain in perpetuity 5.02ha of LRSA and manage to remnant status.

A summary of works undertaken for this reporting period is summarised below:

- The implementation of offset actions relevant to this condition are currently works in progress.
- Weed control activities have been ongoing targeting species including Easter cassia, Madeira vine, Alexandra palm, blue morning glory, Cocos palm, broad-leaf pepper tree, and lantana.
- Native species have been observed germinating including Bangalow palm, glossy laurel, blue quandong, and watergum. *Pararistolochia praevenosa* (Richmond Birdwing Butterfly Vine) has also been recorded growing naturally.
- BioCondition monitoring has commenced involving establishment of transects to capture baseline data to assist monitoring site progress and recovery. Two out of the three transects achieved a classification score of 4 which is dysfunctional biodiversity condition. The other reached a classification score of 3 which is a slightly improved condition.

There are no reported non-conformances this reporting period.

#### **4.2.4.1 Richmond Birdwing Butterfly Vine (*Pararistolochia praevenosa*)**

In the preliminary stages of the project design, a conservative approach was taken to include the entirety of the project footprint as the clearing impact area. The clearing area identified the removal of *Pararistolochia praevenosa* (Richmond birdwing butterfly vine), and as such TMR commenced the propagation of *Pararistolochia praevenosa* (Richmond birdwing butterfly vine) with anticipation of the removal of this species and to meet State approval conditions.

As the project design evolved, the area of vegetation clearing required for the project was significantly reduced and as a result did not require the removal of the identified *Pararistolochia praevenosa*.

As TMR commenced the salvage, propagation, and growing of 50 *P. praevenosa*, a commitment to continue with the growing and translocation to the Mooloolah Valley offset site will occur.

It has also been reported that *P. praevenosa* is naturally growing at this offset site.

### **4.3 Condition 3**

#### **4.3.1 Condition 3(a)**

*Not disturb more than 35.3ha of Koala habitat within the project site.*

The definition of Koala habitat in the approval refers only to “high” and “medium” Koala habitat. Accordingly, the total Koala habitat cleared to date is 165,696m<sup>2</sup> or 16.57ha, in compliance with Condition 3(a). The total for Non-Juvenile Koala Habitat (NJKH) floral species cleared to date is 3,176 individuals. An additional 18.73ha of Koala habitat area is approved to be removed if required, however, it is not anticipated that this will be cleared. Reduction of this value will be considered with any design or other change where possible.

#### **4.3.2 Condition 3(b)**

*Implement five koala movement structures (koala friendly underpasses) within the project area.*

Five Koala movement structures have been incorporated into the project design drawings for road fauna furniture. These works are in progress. The status of the fauna structures are as follows:

- Steve Irwin Way fauna passage (CU-04-01) is approximately 50% complete, with remaining works to be completed once the traffic switch has occurred.
- Southern fauna passage (CU-02-02) is approximately 20% complete, with remaining works to be completed once the traffic switch has occurred.

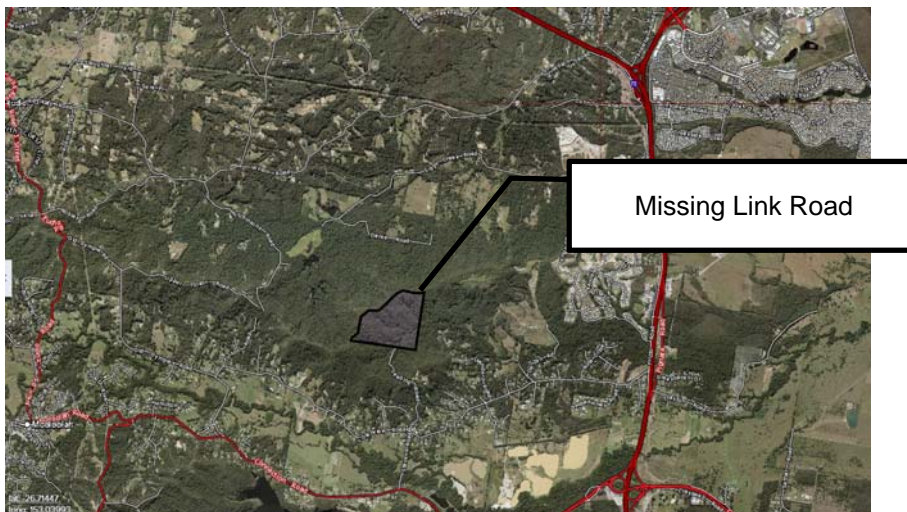
- Northern fauna passage (CU-17-03) is approximately 70% complete, with remaining works to be completed once the traffic switch has occurred.
- Mooloolah River fauna crossing improvement works are approximately 15-20% complete. The fauna furniture is being prepared to be installed under the Mooloolah Creek bridges on the finished section of works.
- Sippy creek fauna crossing improvement (movement) works have not yet commenced.
- Steve Irwin Way rope ladder crossing has not yet commenced. The project team are finalising the footprint details of the anchor blocks and approvals with National Parks to minimise vegetation impacts.

The fauna structures are scheduled to be completed by early 2020. The fauna structure locations are provided in **Appendix H**.

#### 4.3.3 Condition 3(c)

*Legally secure and implement the offset of 50ha by the first 12-month anniversary of the commencement of action.*

TMR purchased Lot 2 RP51879 (Missing Link Road, Glenview) in Freehold in 2016 from a private landowner, a Voluntary Declaration is now in place.



An Offset Management Plan (OMP) has been prepared for the property to protect and maintain in perpetuity 50.07ha of Koala habitat as a land-based offset for clearing works associated with the Project. The OMP details key risks management actions, provides support for a Voluntary Declaration under the *Vegetation Management Act 1999* and outlines the requirements for management of Koala habitat offsets.

This 50.07ha offset will provide a net conservation gain over the impacts on Koala habitat of the Project, largely through protection in perpetuity of existing remnant vegetation and improvements to habitat condition through weed and fire management.

TMR has engaged a Contractor to deliver the requirements of the OMP and offset conditions to enhance Koala habitat characteristics. Activities relevant to the offset site include:

- Koala habitat monitoring – a baseline Koala Survey conducted using Koala Detection Dogs and the Spot Assessment Technique (SAT) and Annual BioCondition plot monitoring;
- Fire management – the preparation of a detailed Fire Management Plan (FMP) and onsite fire management including application of controlled burns;
- Weed control – implementation of systematic and regular weed control; and
- Reporting – annual reports, biannual in the first year.

A summary of works undertaken for this reporting period is summarised below:

- Weed management activities have been ongoing and include hand pulling of *Lantana camara* and exotic vines and cut and treatment of woody weeds.
- An annual Koala Spot Assessment Technique (SAT) survey has been conducted – all seven SAT zones were confirmed as having koala scat present. A total of 42 different koala scat locations were recorded throughout the survey site.
- Annual BioCondition monitoring has been carried out – six BioCondition monitoring plots previously established were revisited. The results of the surveys were assessed against relevant RE benchmarks and tallied to generate an overall BioCondition site score. The reassessment resulted in similar scores to the previous year. Five of the six sites are within the range for vegetation in good condition. It has been noted that grass cover has increased at most sites.
- Camera monitoring at the site is continuing to assess levels of pest / feral animals. To date a large amount of fox activity has been shown, wild and domestic dog use has also been recorded. Native animals including bandicoot, macropod and one koala sighting has been recorded.
- A Fire Management Plan has been developed for the site, to support DTMR requirements for ecological purposes including contribution to weed management. A low intensity burn is proposed for 2019 and 2020. This activity will involve creation and maintenance of existing breaks and fire trails including pre-clearance fauna and cultural heritage surveys, hand raking of leaf litter to identify fauna habitat and nesting, and pre and post inspections for koala.

No project non-conformances have been reported.

Refer to **Appendix F** for a locality map of the relevant offset site.

#### **4.4 Condition 5**

Condition 5 of the EPBC Act Approval states:

*The approval holder must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval and make them available upon request to the Department.*

TMR acknowledges this condition. All records pertaining to activities associated with or relevant to the EPBC Act conditions of approval are maintained and updated on a regular basis.

##### **4.4.1 Principal Contractor EMP**

The Principal Contractor is required to maintain accurate records of all activities relevant to the conditions of approval in accordance with their Environmental Management Plan (EMP) and associated sub-plans. The Contractors EMP and sub-plans have undergone the process of review and acceptance by the Administrator (TMR). The implementation of the Contractor's EMP and sub-plans, including compliance with required record-keeping, is subject to internal monthly and external quarterly audits.

##### **4.4.2 Environmental Site Inductions**

An environmental site induction is delivered to all project site personnel, contractors and sub-contractors prior to commencing work on site. The Principal Contractor is required to maintain an accurate record of all persons inducted on the Project.

##### **4.4.3 Contractor Reporting**

In accordance with the conditions of the contract, the Principal Contractor is required to keep records of the following:

- Environment and cultural heritage induction register;
- Monitoring results including air, noise, vibration, water, flora (veg clearing reports, KHT counts), fauna (amphibian monitoring, fauna reports), contamination, weeds and pests;
- Inspection reports, checklists and diary entries;
- Incident and non-conformance reports, complaints register and associated corrective actions taken;
- Compliance testing results;
- Environmental audit reports and subsequent corrective actions taken;
- Biosecurity matter certificates, permits, and management documentation;
- Complete registers kept under the Species Management Program of animal breeding place(s) tampered with and injury/death to native fauna.

The Principal Contractor is required to undertake and document weekly and monthly environmental site inspections for verifying compliance with the EMP, licences, permits and approvals and other environmental performance requirements specified within the Contract.

The Principal Contractor also provides the Administrator monthly progress reports on environmental matters. The monthly reports include records of the total area and individual numbers of TEC and Koala habitat cleared each month.

#### **4.4.4 Environmental Checks**

To ensure compliance with the EPBC Act conditions of approval, including measures taken to implement the management plans required by this approval, the following environmental audits and reviews are undertaken:

- Prior to works commencing on site, the environmental documentation (including the EMP) is revised and accepted by the Administrator prior to use.
- The Contractor's updates and revisions to environmental documentation (EMP, sub-plans and Erosion and Sediment Control Plans) are also revised and accepted by the Administrator prior to use.
- Independent quarterly audits on the implementation of the Contractor's EMP(C) is undertaken.

#### **4.4.5 Environmental Incident Reporting**

As per the conditions of the contract, the Contractor must notify the Administrator immediately of any incidents where actual or potential environmental harm has taken place. The Contractor must undertake a root-cause analysis of the environmental incident and provide the analysis to the Administrator as part of the following environmental monthly progress report.

### **4.5 Conclusion**

The CR2SM Project is well underway with the current focus being predominantly on bulk and completion earthworks, bridges, drainage construction and installation. Some vegetation clearing is still to occur over the coming months in isolated pockets, however the bulk of clearing and grubbing has been completed throughout the main alignment from south of Caloundra Road to the north along Sunshine Motorway at Sippy Downs. The Project has been found to generally comply with the conditions of the EPBC approval, noting that some of the deliverables are works in progress, such as offset conditions and fauna furniture.



## 4.6 References

Barung Landcare (2018), *NCHD-3402 Quarterly Report – Oct – Dec 2018: Bruce Highway Upgrade – Caloundra Road to Sunshine Motorway*.

Department of Transport and Main Roads (2016), *Offset Management Plan – Lowland Rainforest of Subtropical Australia: Lower Mooloolah River Environmental Reserve*.

Ecosure Pty Ltd (2019), *BioCondition Assessment, Mooloolah River, CR2SM*, prepared for Fulton Hogan Seymour Whyte Joint Venture.

Future-Plus Environmental (2018), *Fire Management Plan*, prepared for Department of Transport and Main Roads.

Future-Plus Environmental (2018), *Glenview Koala Offset Project – Fire and Weed Management Works Report No. 2*, report prepared for Department of Transport and Main Roads.

RPS Australia East Pty Ltd (2016), *Bruce Highway Upgrade – Caloundra Road to Sunshine Motorway Project: Threatened Ecological Community Impact Assessment (Lowland Rainforest of Subtropical Australia) EPBC 2015/7464*, report prepared for Department of Transport and Main Roads.

Sunshine Coast Council (2018), *Annual Report – Year 2 (2017-18) Lowland Rainforest of Subtropical Australia Threatened Ecological Community offset; Lower Mooloolah River Environmental Reserve*, report prepared for Department of Transport and Main Roads.

# Appendix A –EPBC Approval Conditions

## APPROVAL

### BRUCE HIGHWAY UPGRADE, CALOUNDRA ROAD TO SUNSHINE MOTORWAY, QUEENSLAND (EPBC 2015/4764)

#### Proposed action

<b>person to whom the approval is granted</b>	Department of Transport and Main Roads
<b>proponent's ABN</b>	39 407 690 291
<b>proposed action</b>	To upgrade a 7km section of the Bruce Highway between Caloundra Road to Sunshine Motorway, Queensland (see EPBC referral 2015/7464)

#### Approval decision

<b>Controlling Provision</b>	<b>Decision</b>
Listed threatened species and communities (sections 18 & 18A)	Approved

#### Conditions of Approval

This approval is subject to the conditions specified below.

#### Expiry date of approval

This approval has effect until 31 December 2026

#### Decision maker

**Name and position** James Barker  
Assistant Secretary  
Assessments (Qld, Tas, Vic) and Sea Dumping Branch

#### Signature

#### Date of Decision

## Conditions attached to the approval

### General

1. For protection of the **EPBC Act** listed koala (*Phascolarctos cinereus*) and **Lowland rainforest of subtropical Australia** *threatened ecological community* the **approval holder** must implement the **Overarching Environmental Management Plan** while undertaking the proposed action.

### **Lowland rainforest of subtropical Australia** *threatened ecological community* management

2. For the protection of the **EPBC Act** listed critically **endangered rainforest of subtropical Australia** the **approval holder** must:
  - a. Not disturb more than 3.92ha of the **Lowland rainforest of subtropical Australia** threatened ecological community within and adjacent to the **project site**, as shown in Attachment A;
  - b. Enter into a **Conservation Agreement** over the offset of 16.64 ha at the location shown in Attachment B, and ensure that by the tenth anniversary of **commencement of the action**, the offset meets the following condition thresholds:
    - i. Canopy Cover: at least 70 per cent of canopy vegetation is native;
    - ii. Species Richness: contains 30 woody species from the **Lowland rainforest of subtropical Australia threatened ecological community listing advice**; and
    - iii. Total vegetation: At least 70 per cent of total vegetation cover is native.
  - c. **Legally secure** and implement the offset of 4.65 ha at the location shown in Attachment C by the first 12 month anniversary of the **commencement of the action**.

### **Koala management**

3. For the protection of the **EPBC Act** listed vulnerable Koala (*Phascolarctos cinereus*) the **approval holder** must:
  - a. Not disturb more than 35.3 ha of **Koala habitat** within the **project site** (Attachment D);
  - b. Implement five koala movement structures (koala friendly underpasses) within the project area, namely:
    - i. One new structure to facilitate movement across Steve Irwin Way;
    - ii. One new structure to facilitate koala movement across the Bruce Highway south of Mooloolah River;
    - iii. One new structure to facilitate koala movement across the Bruce Highway north of Sippy Creek;
    - iv. Improve the existing structure at Sippy Creek (at the location identified in Attachment E) to facilitate koala movement across the Bruce Highway

- c. **Legally secure** and implement the offset of 50ha at the location shown in Attachment F by the first 12 month anniversary of the **commencement of action**.

#### **Administrative conditions**

4. Within 10 days of the **commencement of action**, the **approval holder** must advise the **Department** in writing of the actual date of **commencement of action**.
5. The **approval holder** must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval and make them available upon request to the **Department**. Such records may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the **EPBC Act**, or used to verify the compliance with the conditions of approval. Summaries of audits will be posted on the **Department's** website. The results of the audits must also be published on the **approval holder's** website within two weeks of the **Department's** approval of the final audit.
6. Within three months of every 12 month anniversary of the **commencement of the action**, the **approval holder** must publish a report on their website addressing compliance with each of the conditions of this approval over the previous 12 months. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the **Department** at the same time as the compliance report is published.
7. Upon the direction of the **Minister**, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the **Minister**. The independent auditor must be approved by the **Minister** prior to the commencement of the audit. Audit criteria must be agreed to by the **Minister** and the audit report must address the criteria to the satisfaction of the **Minister**.

#### **Definitions**

**Approval holder** means the person to whom the approval is granted, or any person acting on their behalf, or to whom the approval is transferred under section 145B of the EPBC Act.

**Commencement of the action** means the disturbance of any vegetation identified as **Lowland rainforest of subtropical Australia** or **Koala habitat**, as defined in this approval notice. Commencement of the action includes physical disturbance of this vegetation for any purpose including clearing of vegetation, earthworks, establishment of site offices and fencing, and new road works.

**Conservation Agreement** means an agreement established under s.305 of the *Environment Protection and Biodiversity Conservation Act 1999*.

**Department** means the Australian Government Department administering the *Environment Protection and Biodiversity Conservation Act 1999*.

**EPBC Act** means the *Environment Protection and Biodiversity Conservation Act 1999*.

**Koala habitat** means the areas identified as 'high koala habitat values' and 'medium koala habitat values' in Attachment D.

**Legally secure** means placing on the land title a voluntary declaration under the *Vegetation Management Act 1999* (Qld).

**Lowland rainforest of subtropical Australia** means the areas identified as 'ground-truthed TEC within the project area' and '50m buffer' in Attachment A.

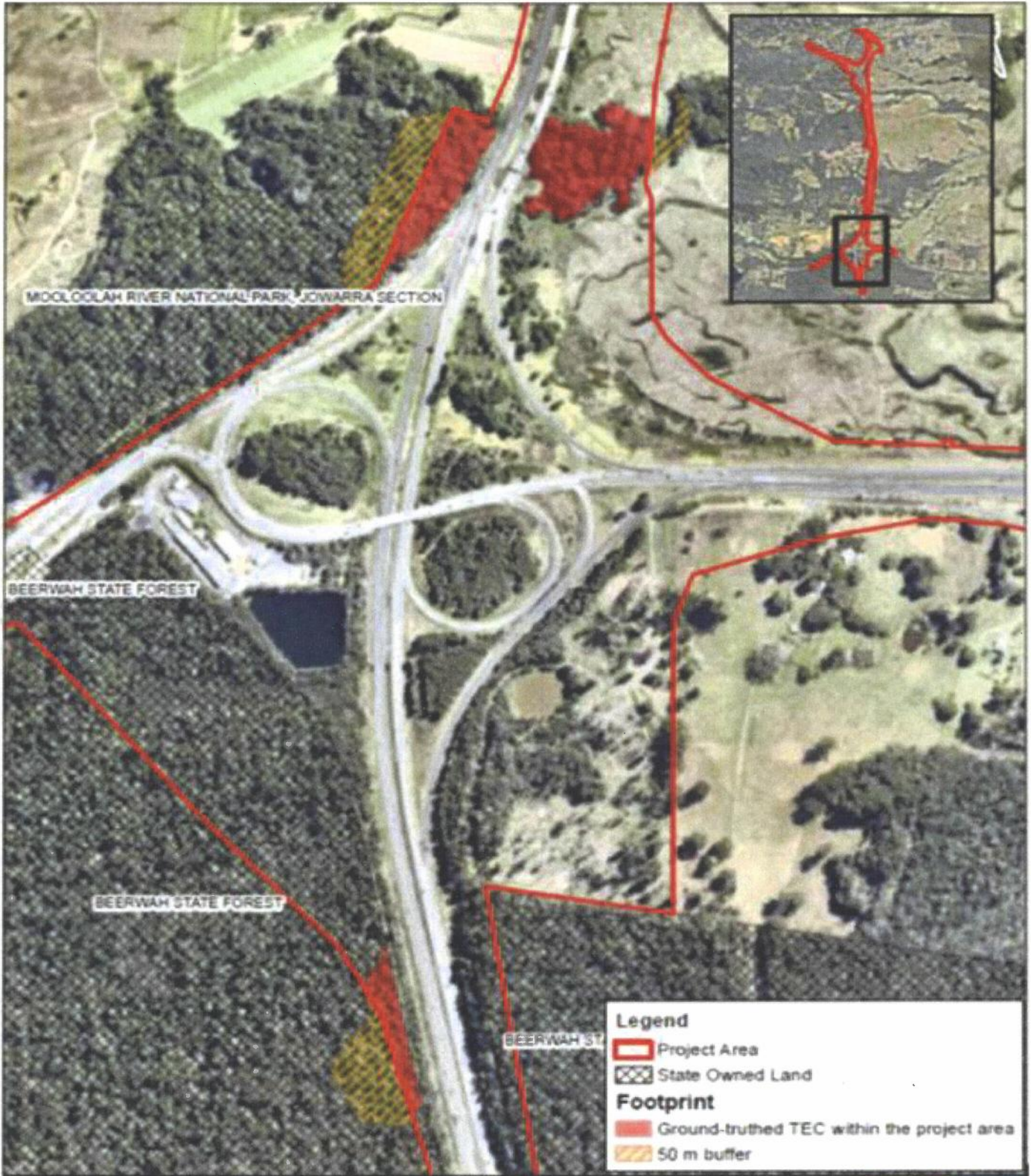
**Lowland rainforest of subtropical Australia threatened ecological community listing advice** means Appendix A of the TSSC (2011a) Commonwealth Listing Advice on Lowland Rainforest of Subtropical Australia

<http://www.environment.gov.au/biodiversity/threatened/communities/pubs/101-listing-advice.pdf>

**Minister** means the Commonwealth **Minister** administering the **EPBC Act** and includes a delegate of the **Minister**.

**Overarching Environmental Management Plan** means the documents *Bruce Highway Upgrade – Caloundra Road to Sunshine Motorway Project: Overarching Environmental Management Plan*, version 2, Final/March 2016.

**Project site** means the 'updated referral area (March 2016)' as identified in Attachment G.



Client	
Department of Transport and Main Roads	
Completed by	LW Date 23/02/2018
Approved by	SL Date 23/02/2018

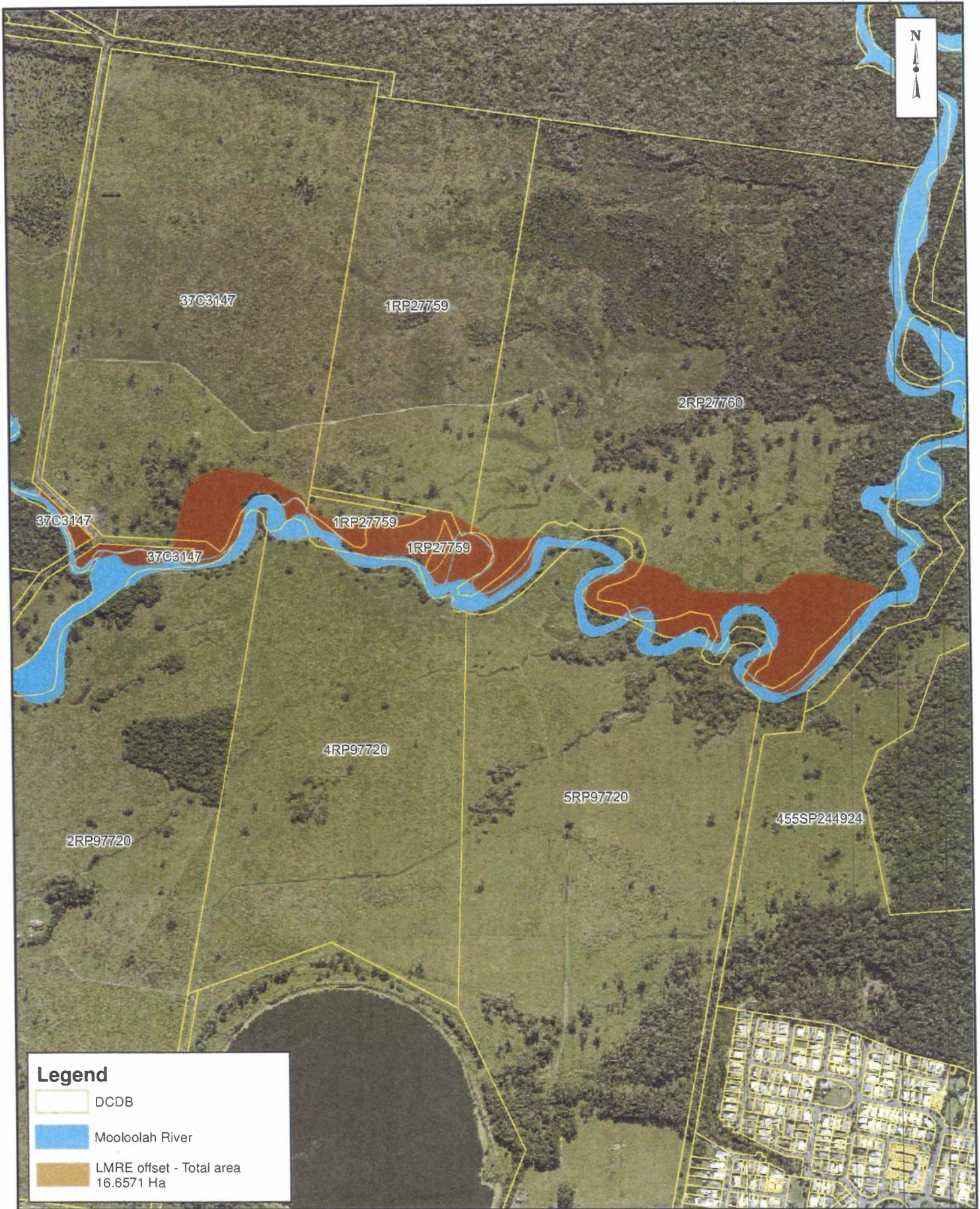
**Ground-truthed TEC identified within the project area**

**Figure 3.2** Project: **Threatened Ecological Community Impact Assessment**

Source: Aerial photography Nearmap 2015

Disclaimer: While all reasonable care has been taken to ensure the information contained on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.





**Legend**

- DCDB
- Mooloolah River
- LMRE offset - Total area  
16.6571 Ha

Projection/ Datum : Map Grid of Australia (MGA) Zone 56, Geocentric Datum of Australia (GDA) 1994

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**Mooloolah River  
Lower Mooloolah River Environment  
Reserve (LMRE Reserve)**

Plan No/ Job No:	<b>Map1</b>
Issue:	<b>A</b>
Date:	13/03/2017
Drawn by:	R Friend
Checked by:	S Scott





### Legend

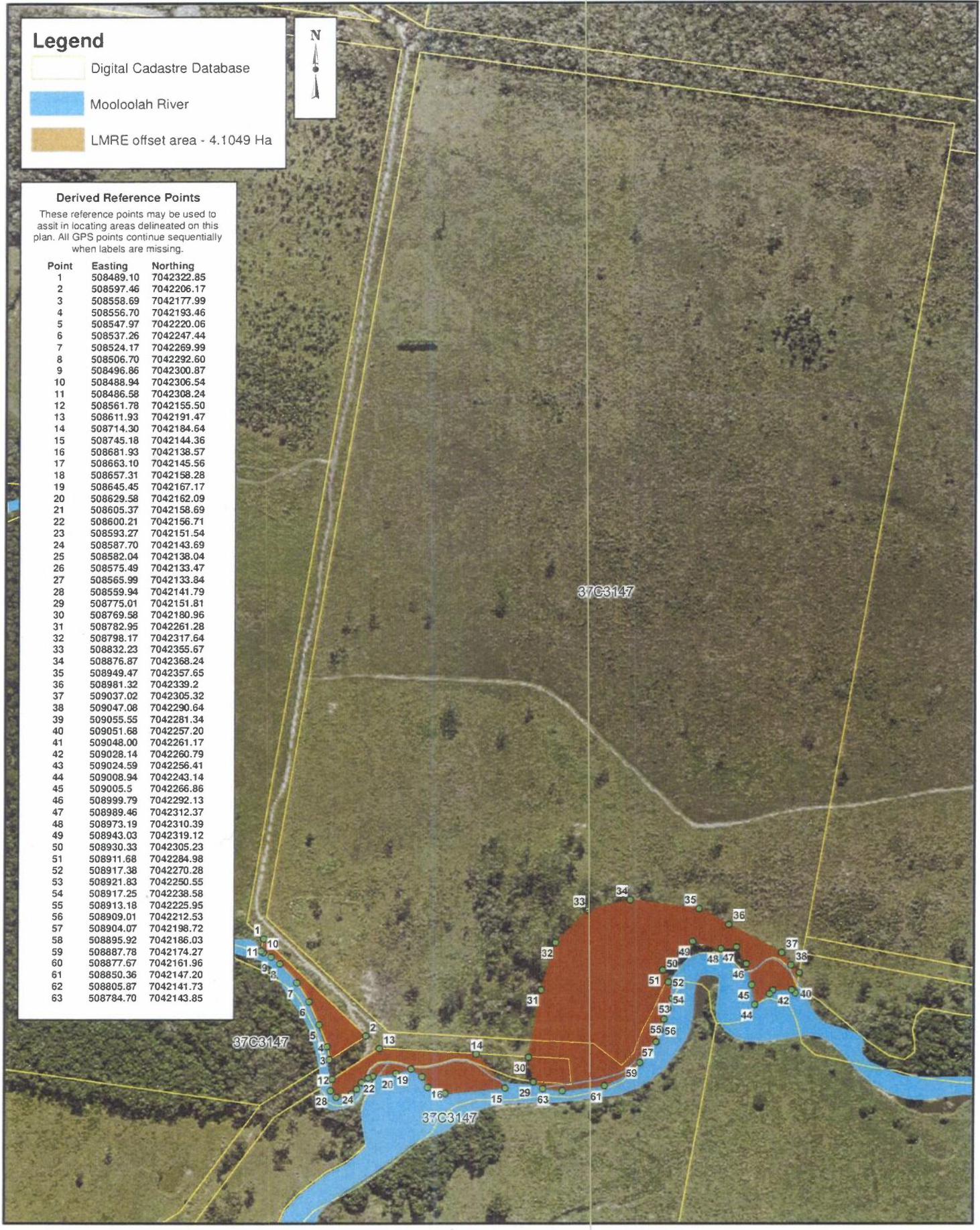
-  Digital Cadastre Database
-  Mooloolah River
-  LMRE offset area - 4.1049 Ha



### Derived Reference Points

These reference points may be used to assist in locating areas delineated on this plan. All GPS points continue sequentially when labels are missing.

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7	508524.17	7042269.99
8	508506.70	7042292.60
9	508496.86	7042300.87
10	508488.94	7042306.54
11	508486.58	7042308.24
12	508561.78	7042155.50
13	508611.93	7042191.47
14	508714.30	7042184.64
15	508745.18	7042144.36
16	508681.93	7042138.57
17	508663.10	7042145.56
18	508657.31	7042158.28
19	508645.45	7042167.17
20	508629.58	7042162.09
21	508605.37	7042158.69
22	508600.21	7042156.71
23	508593.27	7042151.54
24	508587.70	7042143.69
25	508582.04	7042138.04
26	508575.49	7042133.47
27	508565.99	7042133.84
28	508559.94	7042141.79
29	508775.01	7042151.81
30	508769.58	7042180.96
31	508782.95	7042261.28
32	508798.17	7042317.64
33	508832.23	7042355.67
34	508876.87	7042368.24
35	508949.47	7042357.65
36	508981.32	7042339.2
37	509037.02	7042305.32
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46	508999.79	7042292.13
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Projection/ Datum : Map Grid of Australia (MGA) Zone 56, Geocentric Datum of Australia (GDA) 1994

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## Mooloolah River Lower Mooloolah River Environment Reserve (LMRE Reserve)

Plan No/ Job No:	<b>Map3</b>
Issue:	<b>A</b>
Date:	13/03/2017
Drawn by:	R Friend
Checked by:	S Scott



### Legend

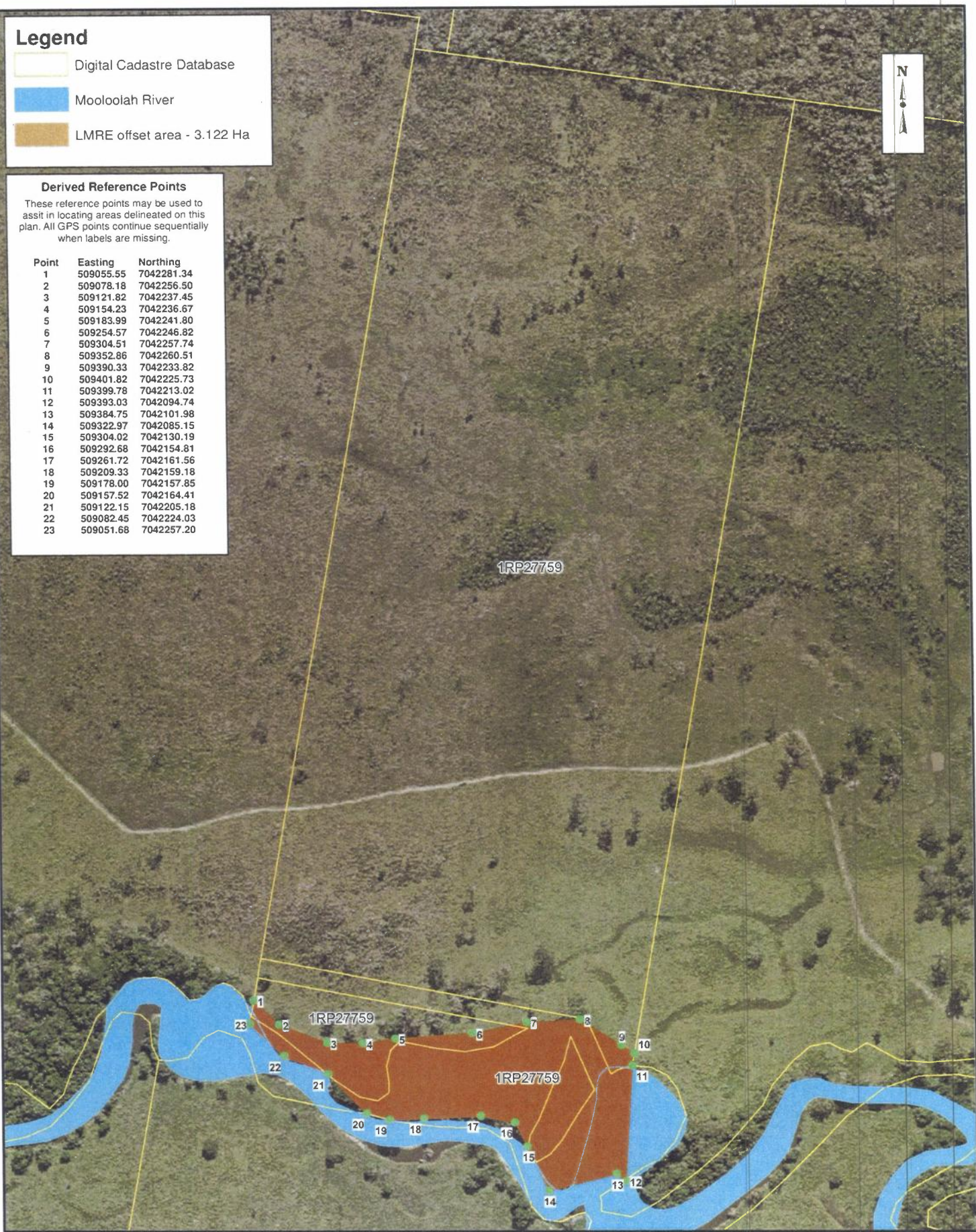
- Digital Cadastre Database
- Mooloolah River
- LMRE offset area - 3.122 Ha



### Derived Reference Points

These reference points may be used to assist in locating areas delineated on this plan. All GPS points continue sequentially when labels are missing.

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9	509390.33	7042233.82
10	509401.82	7042225.73
11	509399.78	7042213.02
12	509393.03	7042094.74
13	509384.75	7042101.98
14	509322.97	7042085.15
15	509304.02	7042130.19
16	509292.68	7042154.81
17	509261.72	7042161.56
18	509209.33	7042159.18
19	509178.00	7042157.85
20	509157.52	7042164.41
21	509122.15	7042205.18
22	509082.45	7042224.03
23	509051.68	7042257.20



Projection/ Datum : Map Grid of Australia (MGA) Zone 56, Geocentric Datum of Australia (GDA) 1994

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## Mooloolah River Lower Mooloolah River Environment Reserve (LMRE Reserve)

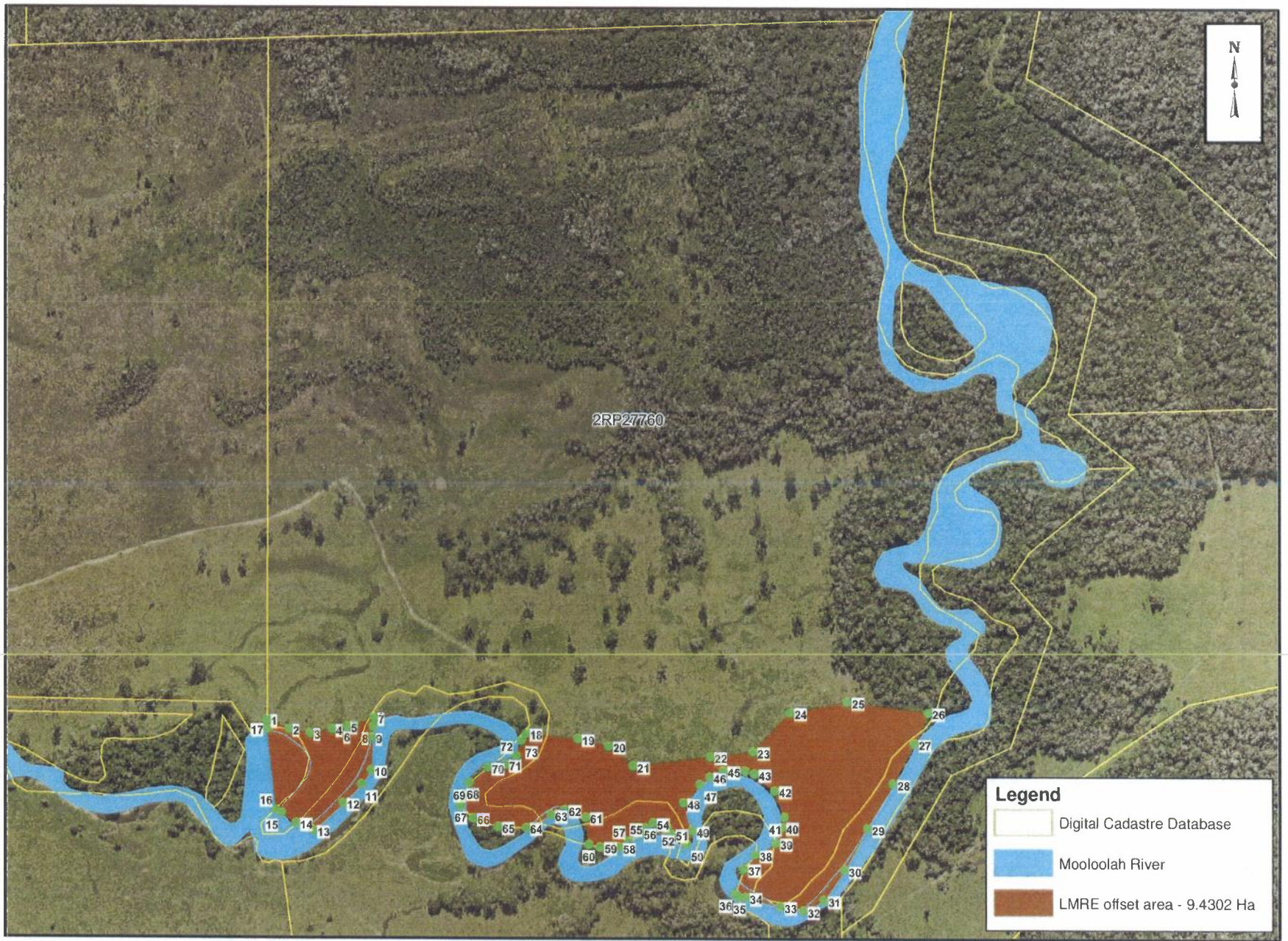
Plan No/ Job No: **Map3**  
 Issue: **A** Date: 13/03/2017  
 Drawn by: R Friend  
 Checked by: S Scott



**Derived Reference Points**

These reference points may be used to assist in locating areas delineated on this plan. All GPS points continue sequentially when labels are missing.

Point	Easting	Northing
1	509401.82	7042225.73
2	509428.74	7042206.74
3	509454.92	7042195.52
4	509484.29	7042195.79
5	509504.14	7042195.52
6	509513.54	7042195.97
7	509541.32	7042202
8	509537.35	7042189.29
9	509534.18	7042174.22
10	509524.65	7042127.39
11	509509.52	7042109.61
12	509481.57	7042087.38
13	509437.02	7042055.63
14	509416.45	7042070.4
15	509399.98	7042088.65
16	509393.03	7042094.74
17	509399.78	7042213.02
18	509735.27	7042140.91
19	509802.16	7042119.54
20	509840.44	7042101.7
21	509867.13	7042066.75
22	509969.84	7042060.71
23	510026.63	7042057.09
24	510084.31	7042103.89
25	510162.05	7042104.62
26	510264.18	7042069.32
27	510239.17	7042027.96
28	510202.29	7041975.79
29	510159.59	7041918
30	510120.17	7041864.79
31	510086.04	7041826.69
32	510056.27	7041816.76
33	510026.41	7041829.3
34	509983.38	7041851.06
35	509974.7	7041854.07
36	509970.8	7041859.17
37	509987.99	7041892.03
38	510006.28	7041909.54
39	510035.3	7041920.85
40	510047.15	7041941.67
41	510052.86	7041956.02
42	510046.09	7041996.02
43	510023.43	7042025.14
44	510011.7	7042031.82
45	509983.63	7042037.5
46	509963.86	7042032.04
47	509949.87	7042024.15
48	509923.71	7042001.61
49	509929.27	7041959.55
50	509918.95	7041942.08
51	509901.37	7041959.95
52	509897.62	7041969.1
53	509893.95	7041978.04
54	509879.85	7041980.35
55	509869.23	7041975.11
56	509860.17	7041969.62
57	509844.00	7041960.09
58	509830.5	7041954.42
59	509805.98	7041959.39
60	509792.1	7041966.23
61	509794.93	7042005.62
62	509768.73	7042021.5
63	509749.68	7042017.93
64	509714.18	7042006.03
65	509676.98	7042014.47
66	509646.7	7042032.92
67	509633.36	7042054.62
68	509638.55	7042071.62
69	509649.32	7042084.32
70	509677.5	7042102.02
71	509700.45	7042102.06
72	509717.48	7042111.21
73	509727.85	7042132.15



**Legend**

- Digital Cadastre Database
- Mooloolah River
- LMRE offset area - 9.4302 Ha

Projection/ Datum : Map Grid of Australia (MGA) Zone 56, Geocentric Datum of Australia (GDA) 1994

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 Disclaimer: While every care is taken to ensure the accuracy of this data, Pliney Bowas Software Pty Ltd and/or the State of Queensland no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all ability (including without limitation, liability in negligence), for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the data being inaccurate or incomplete in any way and for any reason.

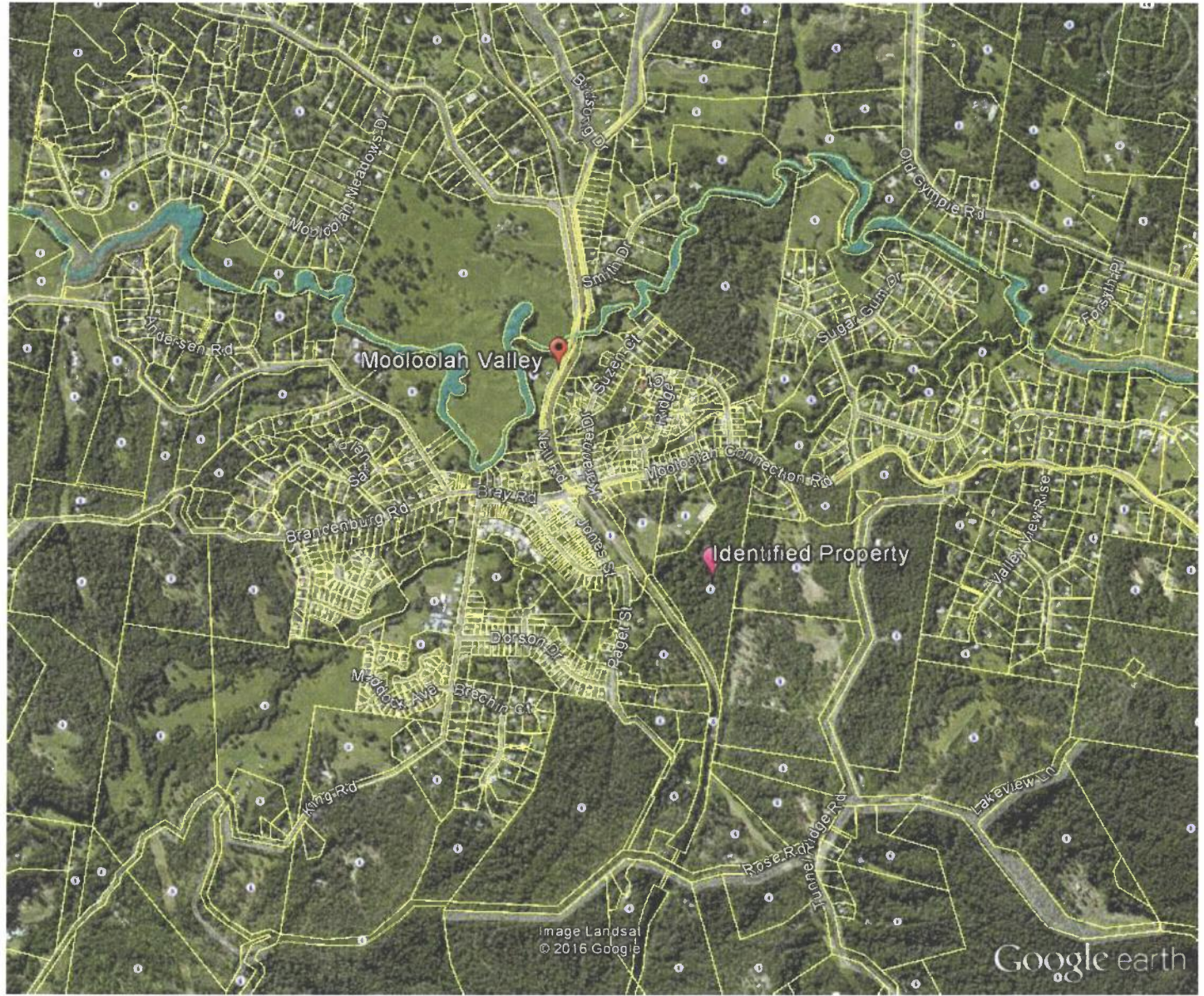
**Mooloolah River  
 Lower Mooloolah River Environment Reserve  
 (LMRE Reserve)**

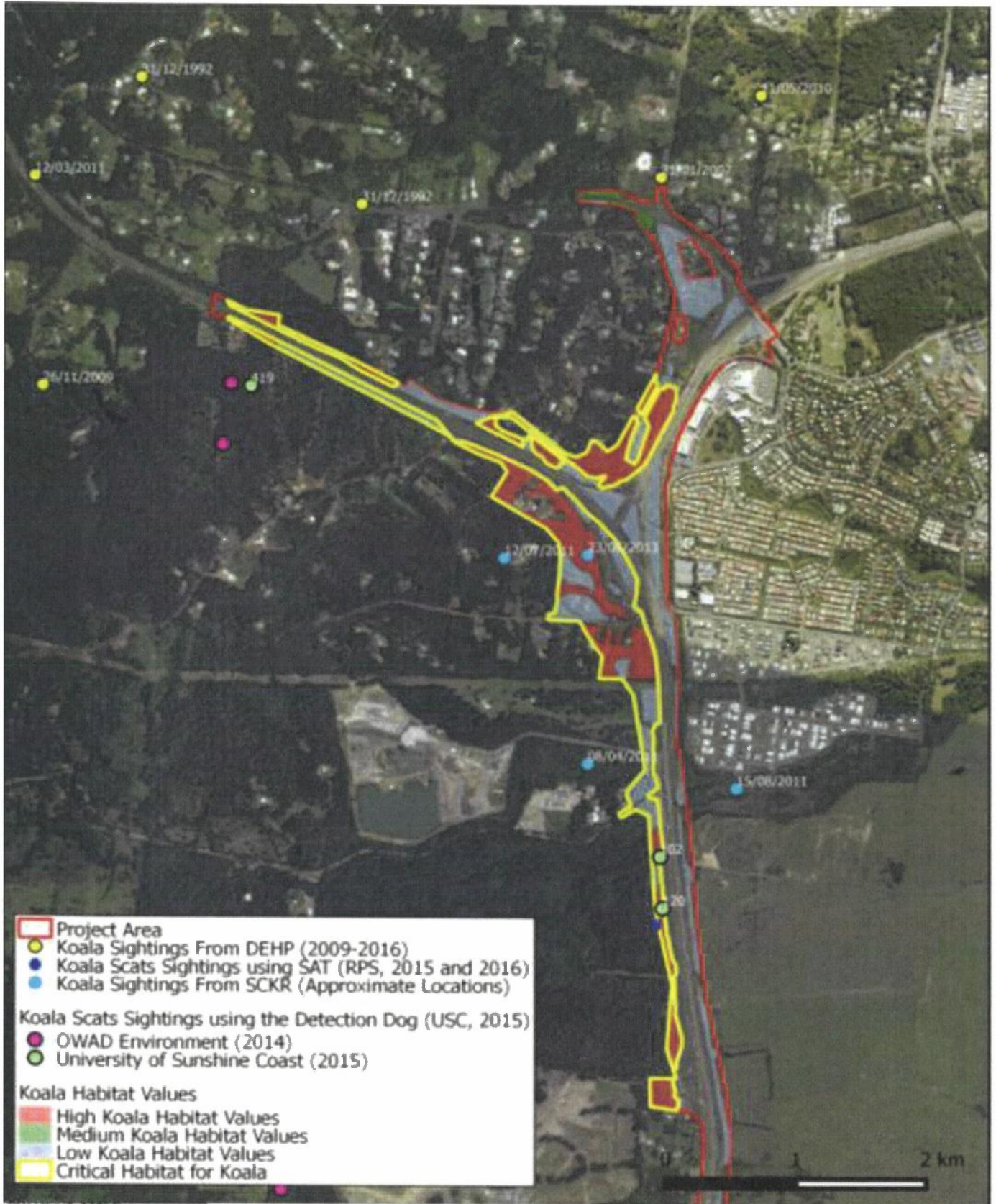
Plan No/ Job No: **Map4**  
 Issue: **A** Date: 13/03/2017  
 Drawn by: R Friend  
 Checked by: S Scott




Attachment C


Lot 2 RP268457 (28 Mooloolah Road, Mooloolah Valley, Sunshine Coast)





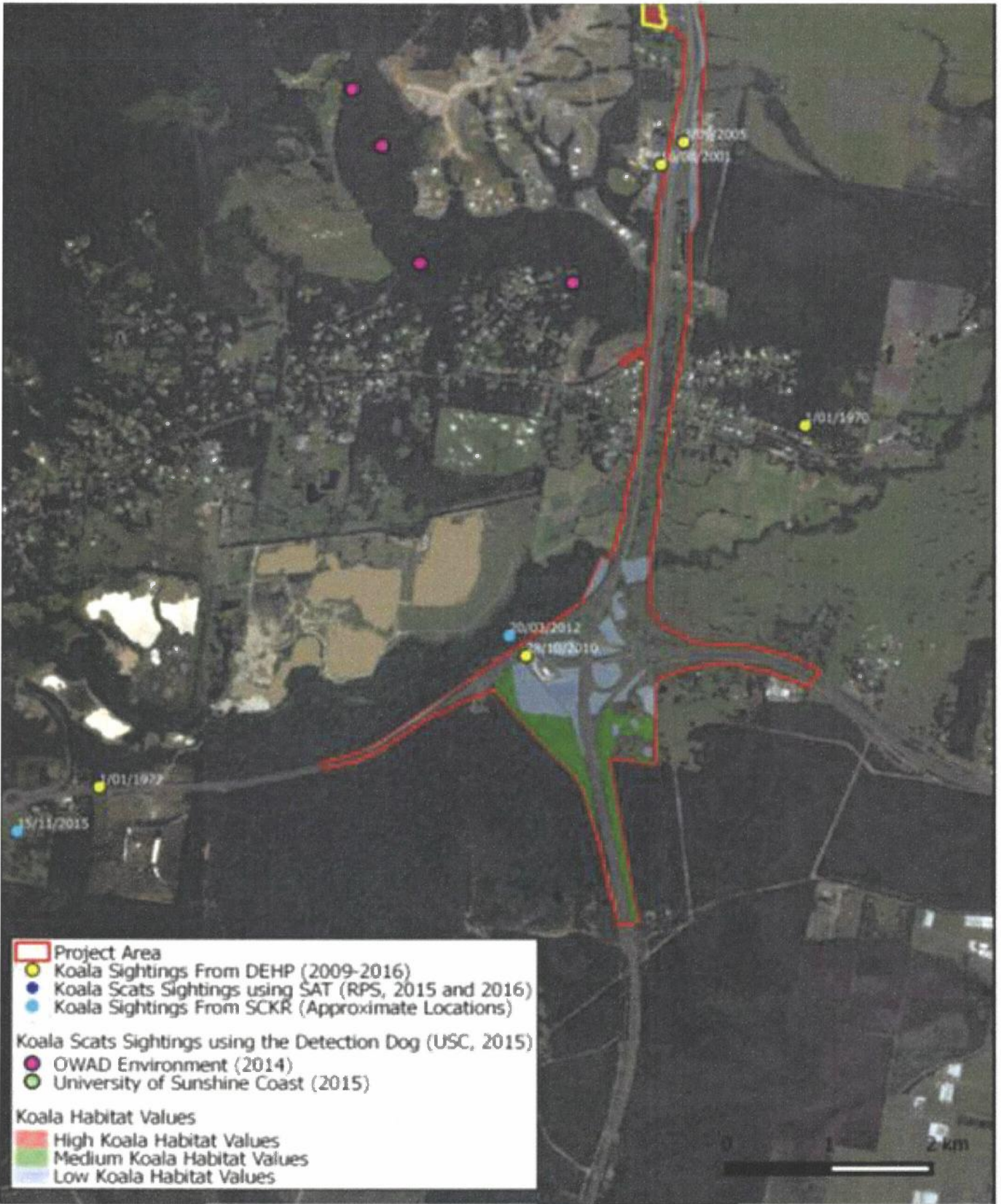
<b>PROJECT TITLE:</b> Koala Population and Habitat Analysis	<b>SHEET TITLE:</b> Figure 4.2 - Koala Habitat Map within the Project Area (Northern Portion)	
<b>CLIENT:</b> Department of Transport and Main Roads	<b>SHEET NUMBER:</b> PR15024_KPHA_Rev 4	<b>DATE:</b> 06/03/2016







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PROJECT TITLE: Koala Population and Habitat Analysis	SHEET TITLE: Figure 4.3 - Critical Koala Habitat Map within the Project Area (Southern Portion)	
CLIENT: Department of Transport and Main Roads	SHEET NUMBER: PR15024_KPHA_Rev 4	DATE 06/03/2016







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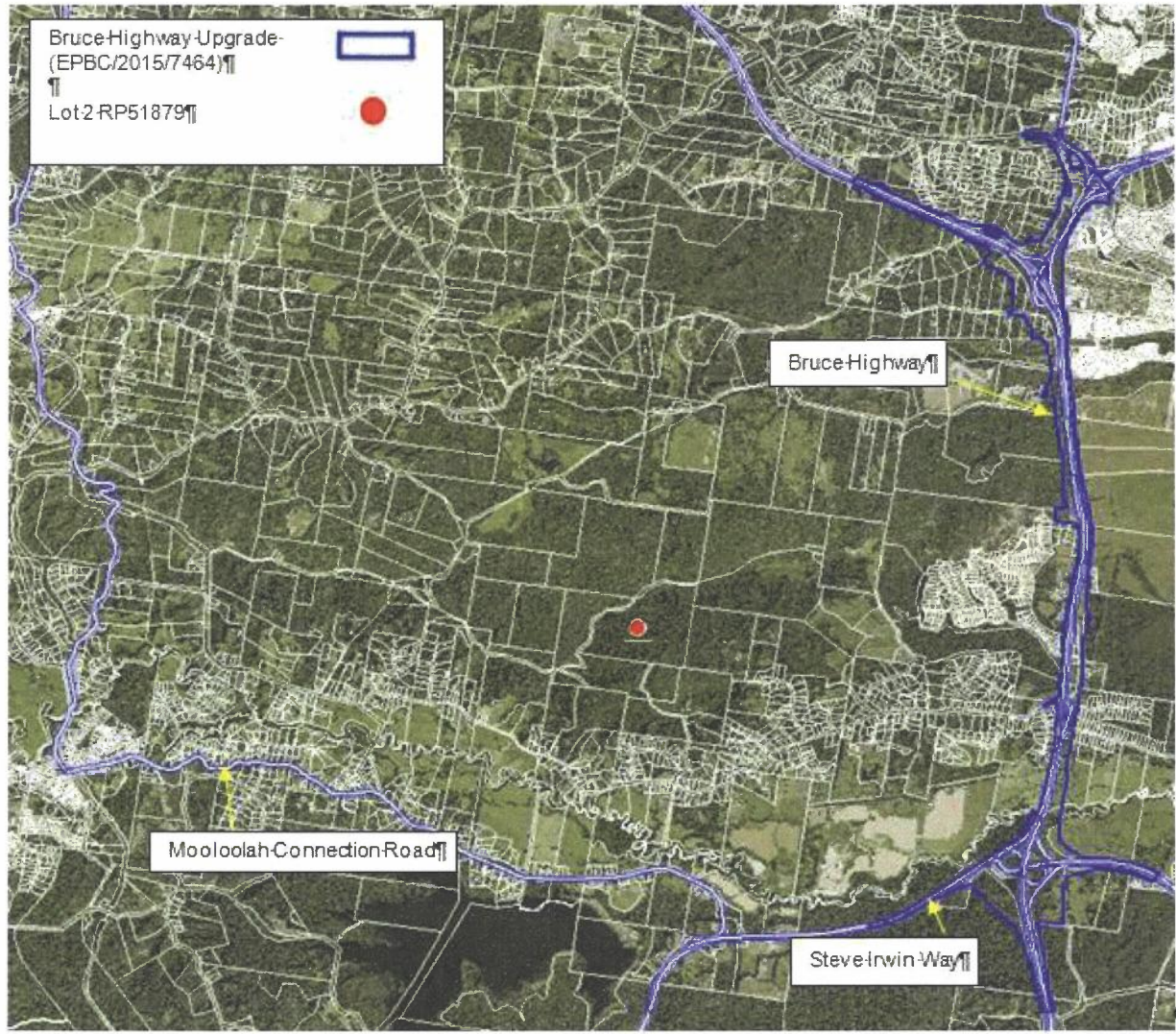


Project Area  
● Box Culvert Locations  
**Fauna Movement**  
- - - Suggested Koala Movement  
 Proposed Improvement to Existing Structures (e.g. Dry Passage)

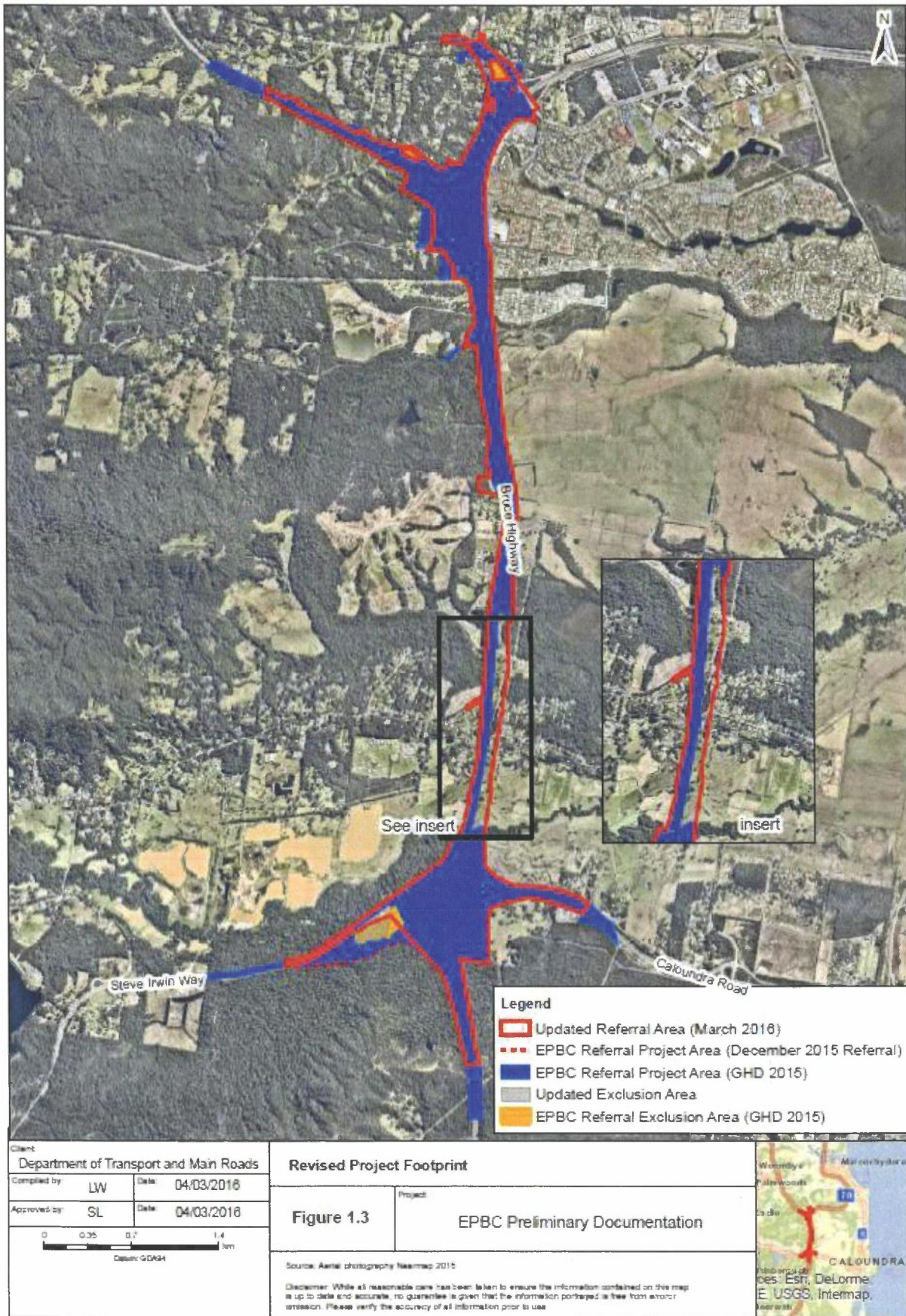
<b>PROJECT TITLE:</b> Koala Population and Habitat Analysis		<b>SHEET TITLE:</b> Figure 7.1 - Proposed Wildlife Movement Corridors				<b>DISCLAIMER:</b> Designs documented on this drawing are the property of RPS and are not authorised for reproduction or use in whole or part without written permission. These plans have been prepared for the exclusive use of the client. RPS does not accept responsibility for any use of or reliance upon the contents of these drawings by any third party. Confirm all dimensions on site and clarify any discrepancies prior to construction.
<b>CLIENT:</b> Department of Transport and Main Roads		<b>SHEET NUMBER:</b> PR15024_KPHA_Rev 4	<b>DATE:</b> 26/02/2016			

Attachment F

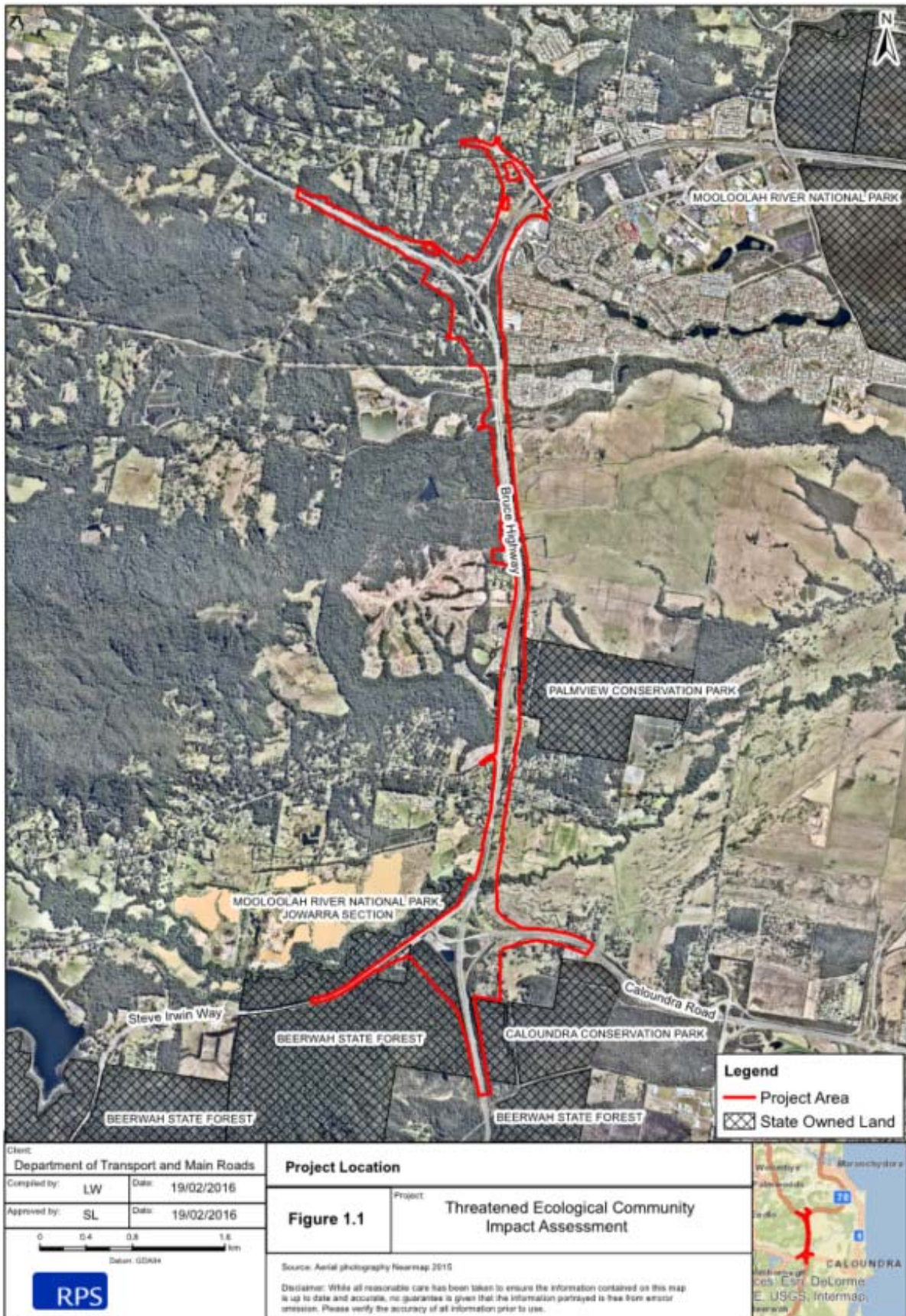
Lot 2 RP51879 (Missing Link Road, Glenview)



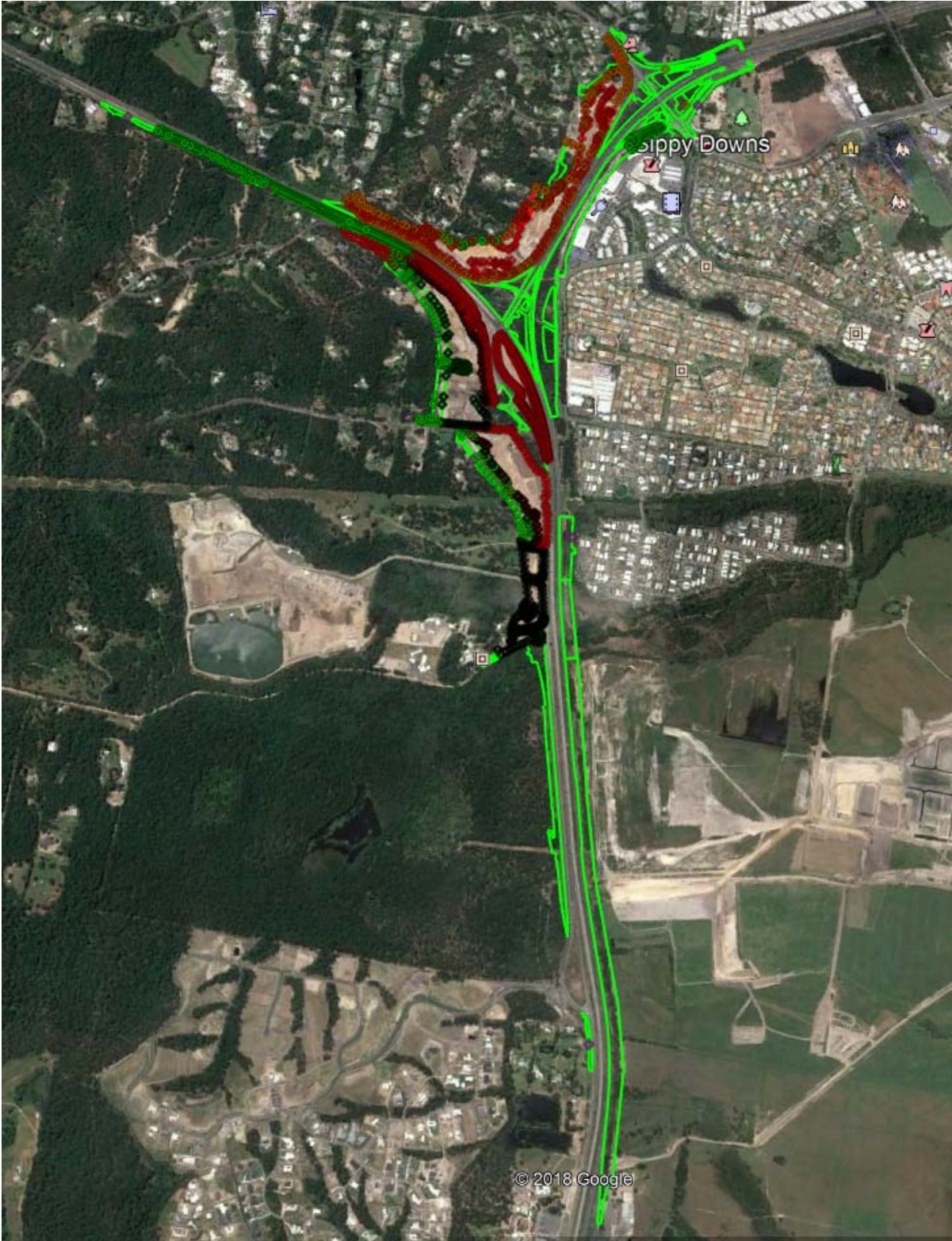




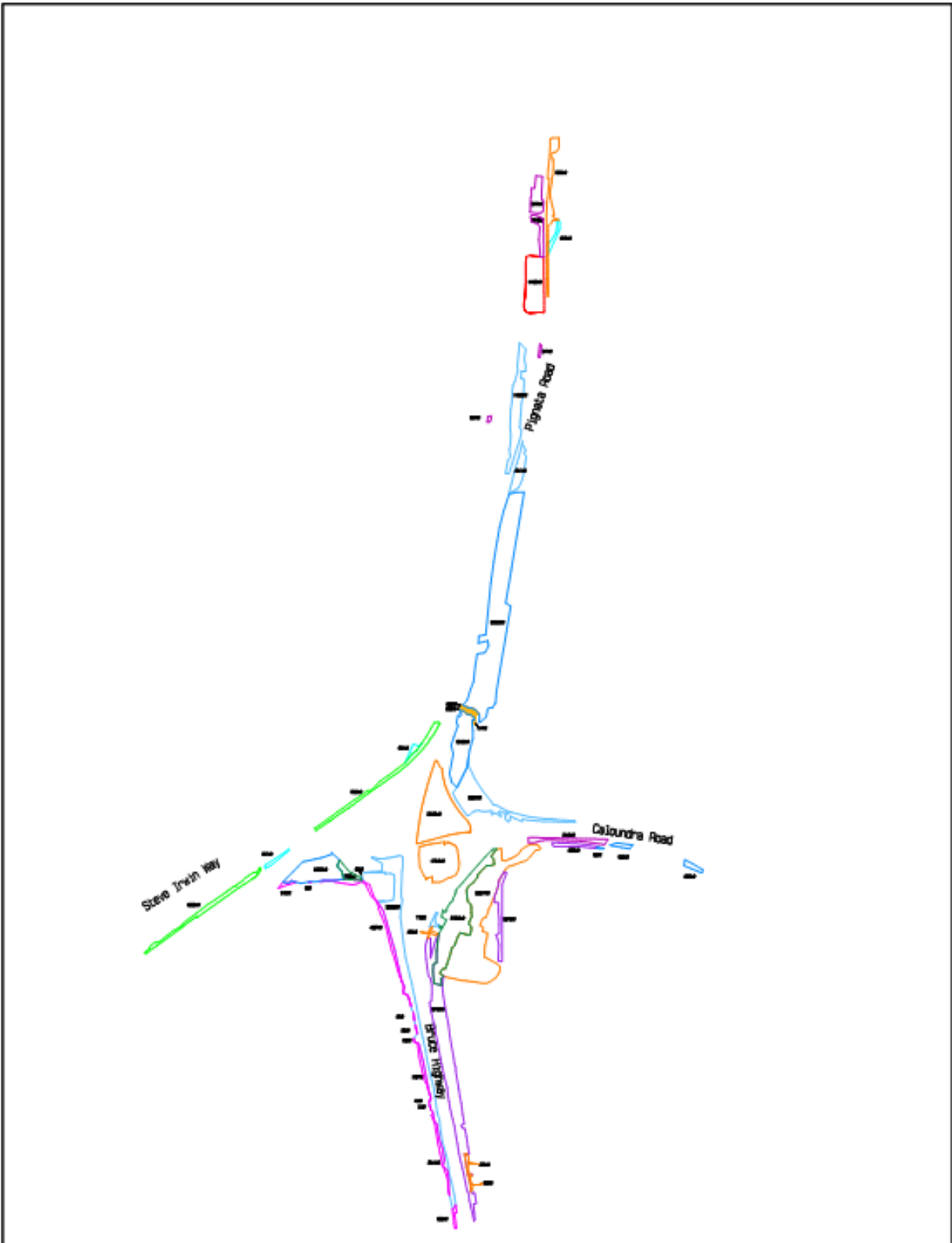
# Appendix B – CR2SM Project Site Threatened Ecological Community



# Appendix C – As-Built Clearing Diagrams



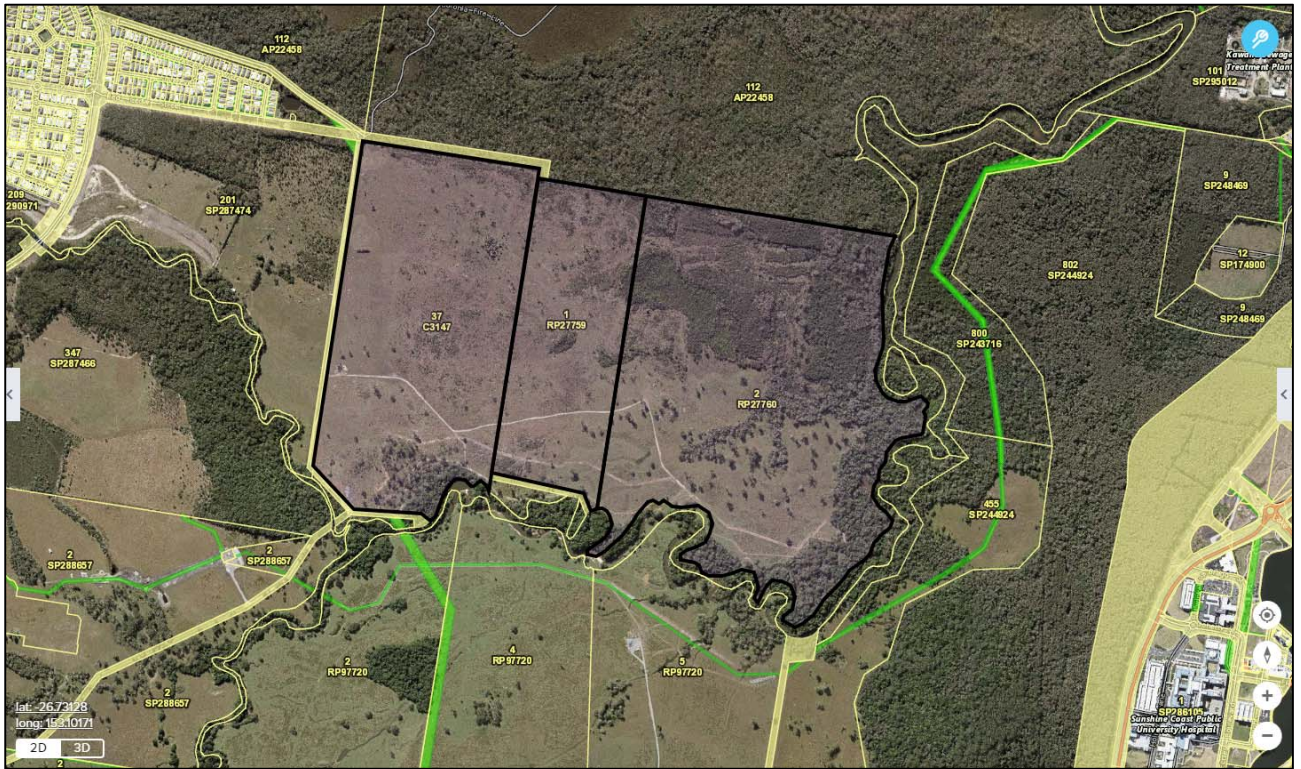
Clearing to date - North



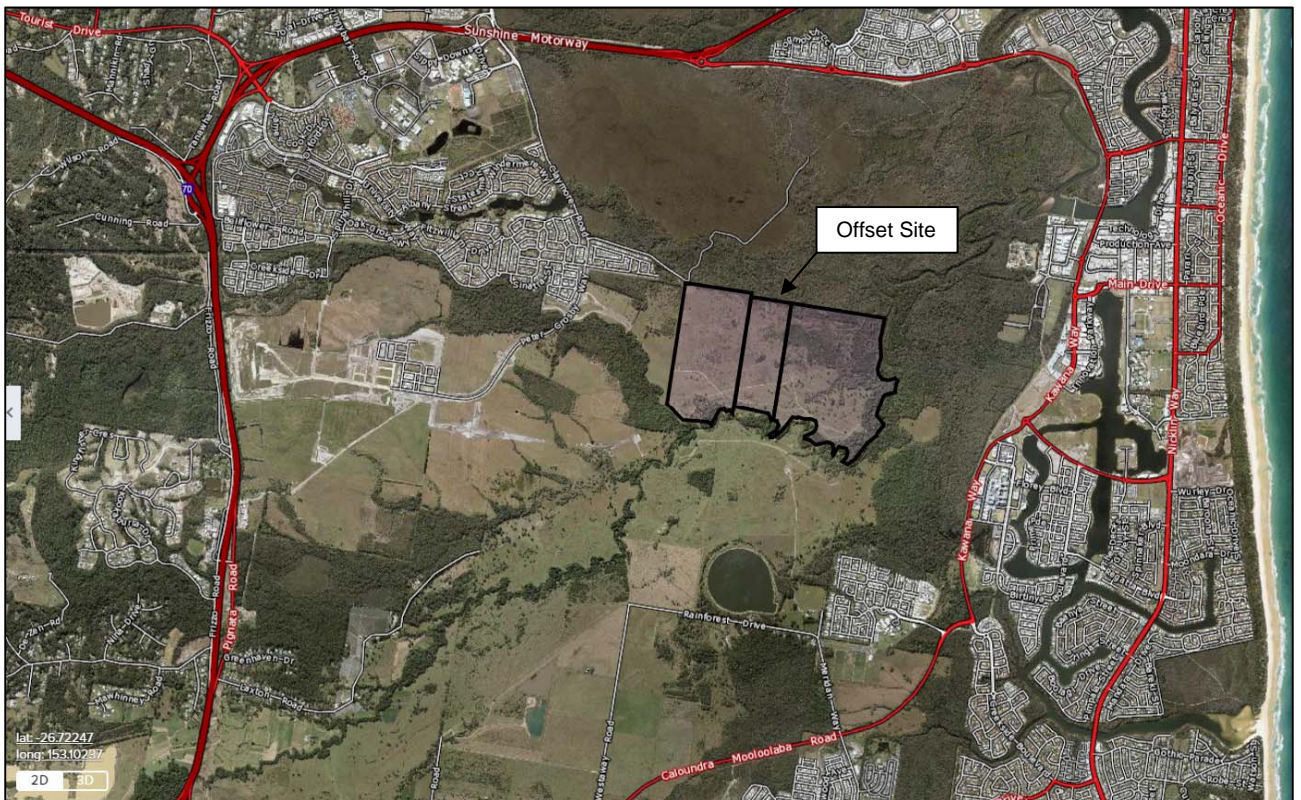
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		Bruce Highway Upgrade Caloundra Road to Sunshine Motorway		SURVEY		26/06/2018	
		Scale 1:12500		Drawing Title		Date of Survey	
		Contours n/a		SKT-0127 Clearing To Date CR2SM South		26/06/2018	
		Sheet Size A3		Datum		Drawing Number	
		Sheet 1 of 1		Hwy: 1984 Vert: Australian Height Datum		28010A1	
<small>           001 26/06/2018 Final Issue            002 01/07/2018 RECORD         </small>		<small>           001 26/06/2018 Final Issue            002 01/07/2018 RECORD         </small>				SKT-0127_A <small>This drawing is subject to COPYRIGHT.</small>	

**Clearing to date - South**

# Appendix D – Lower Mooloolah River Environmental Reserve Offset Site (16.64ha)

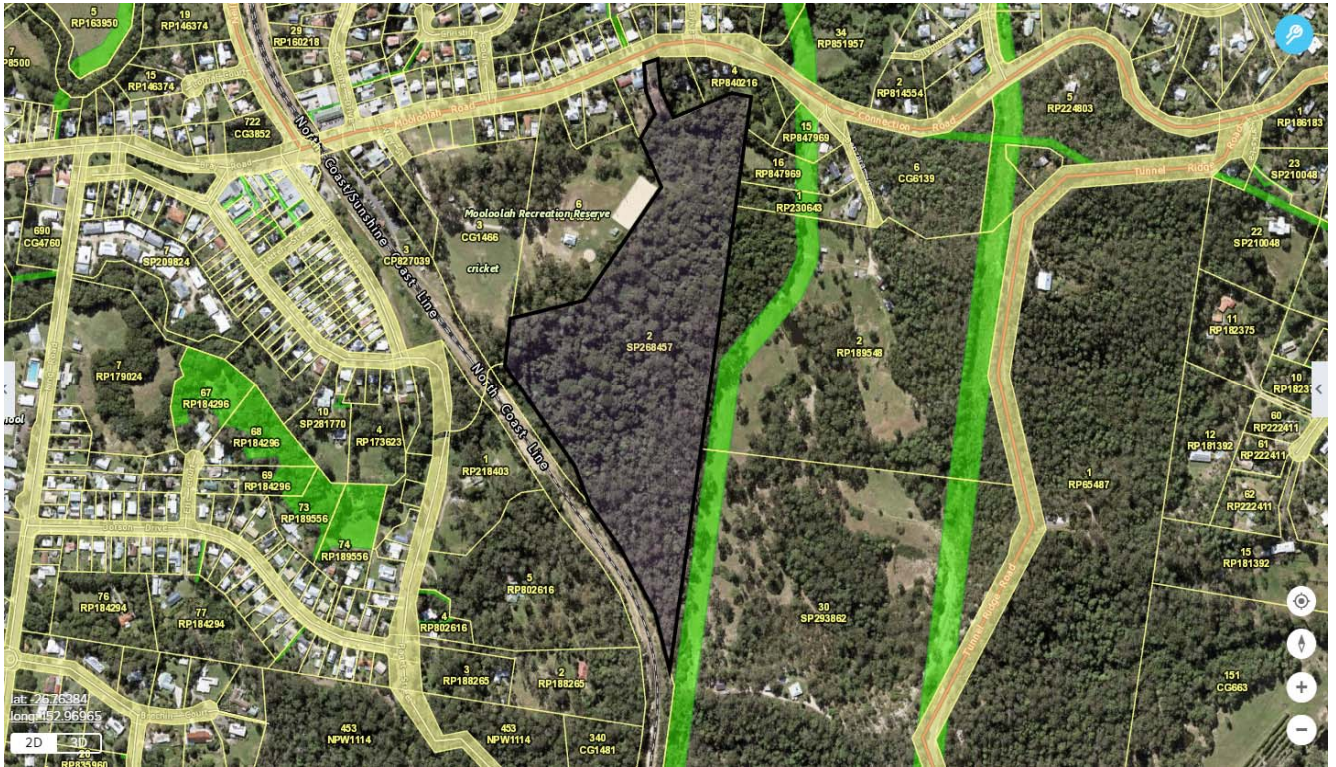


Lower Mooloolah River Environmental Reserve Offset Site.

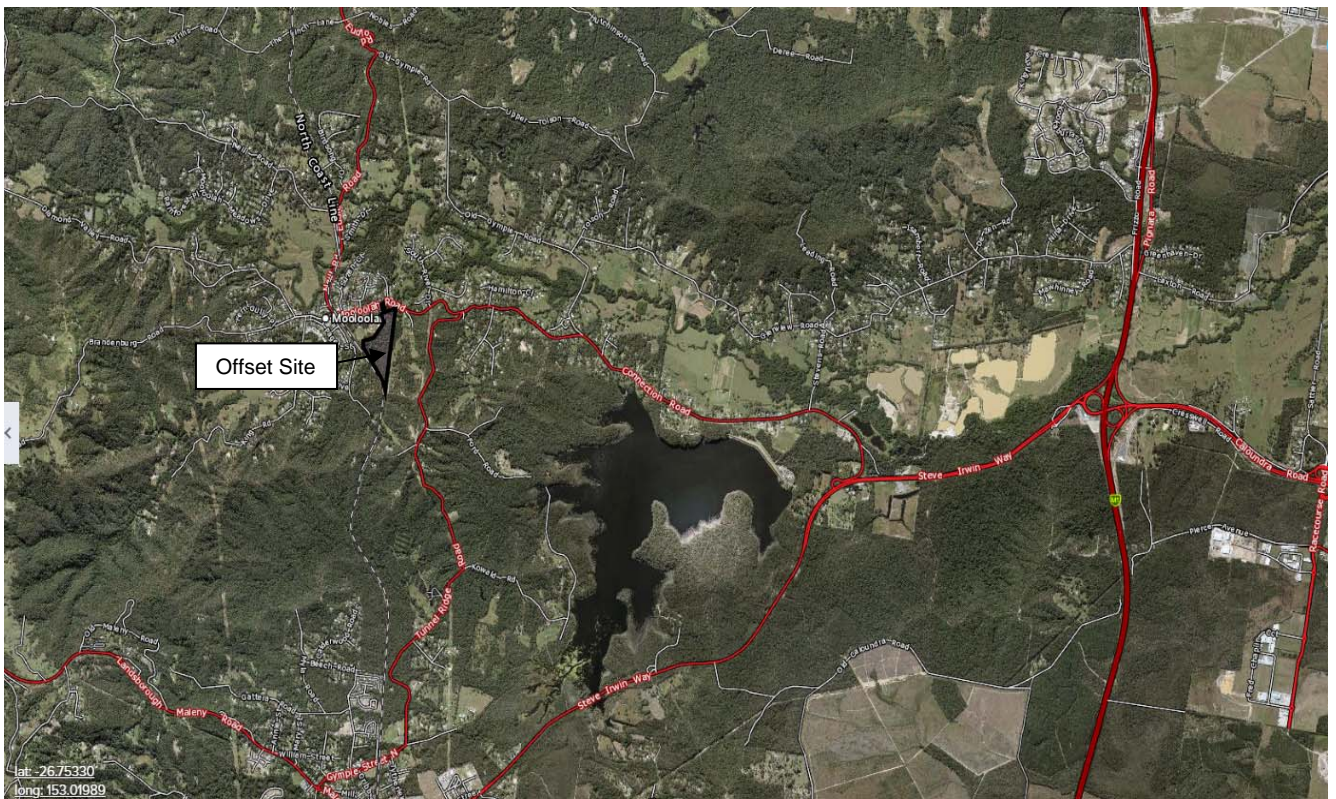


Lower Mooloolah River Environmental Reserve Offset Site General Locale.

# Appendix E – 28 Mooloolah Road, Mooloolah Valley Offset Site (4.65ha)



28 Mooloolah Road, Mooloolah Valley Offset Site.



28 Mooloolah Road, Mooloolah Valley Offset Site General Locale.

# Appendix F – Missing Link Road, Glenview Offset Site (50ha)



Missing Link Road, Glenview Offset Site.



Missing Link Road, Glenview Offset Site General Locale.

# Appendix G – Notification of Commencement of the Action

Our ref 450/01352  
Your ref EPBC 2015/7464  
Enquiries Ms Amy Kirkpatrick



Department of  
**Transport and Main Roads**

23 December 2016

Compliance and Enforcement Branch  
Environment Standards Division  
Department of Environment and Energy  
GPO Box 787  
CANBERRA ACT 2601

Sent by email: [postapprovals@environment.gov.au](mailto:postapprovals@environment.gov.au)

Attn: Imogen Moore

Dear Ms Moore

With reference to condition 4 of EPBC Approval 2015/7464, this letter is to formally notify your Department of the commencement of works for The Bruce Highway Upgrade Project – Caloundra Road to Sunshine Motorway (CR2SM).

Access to the site was granted to the Contractor on 2 December 2016 for preliminary works including geotechnical investigations, building demolitions and site compound establishment.

Ancillary to the geotechnical investigations and site compound establishment, minor vegetation clearing commenced in locations applicable to this approval on 8 December 2016.

If you have any questions, or require further information in relation to the above works, please contact Mr Mark Asang on 0418 795 871 or Ms Amy Kirkpatrick on 0428 103 578. Information and on the project including project updates are also available on our website at: <http://www.tmr.qld.gov.au/Projects/Name/B/Bruce-Highway-Caloundra-Road-to-Sunshine-Motorway-upgrade>.

Yours sincerely

A handwritten signature in blue ink that reads "M. Asang".

Mark Asang  
Project Manager

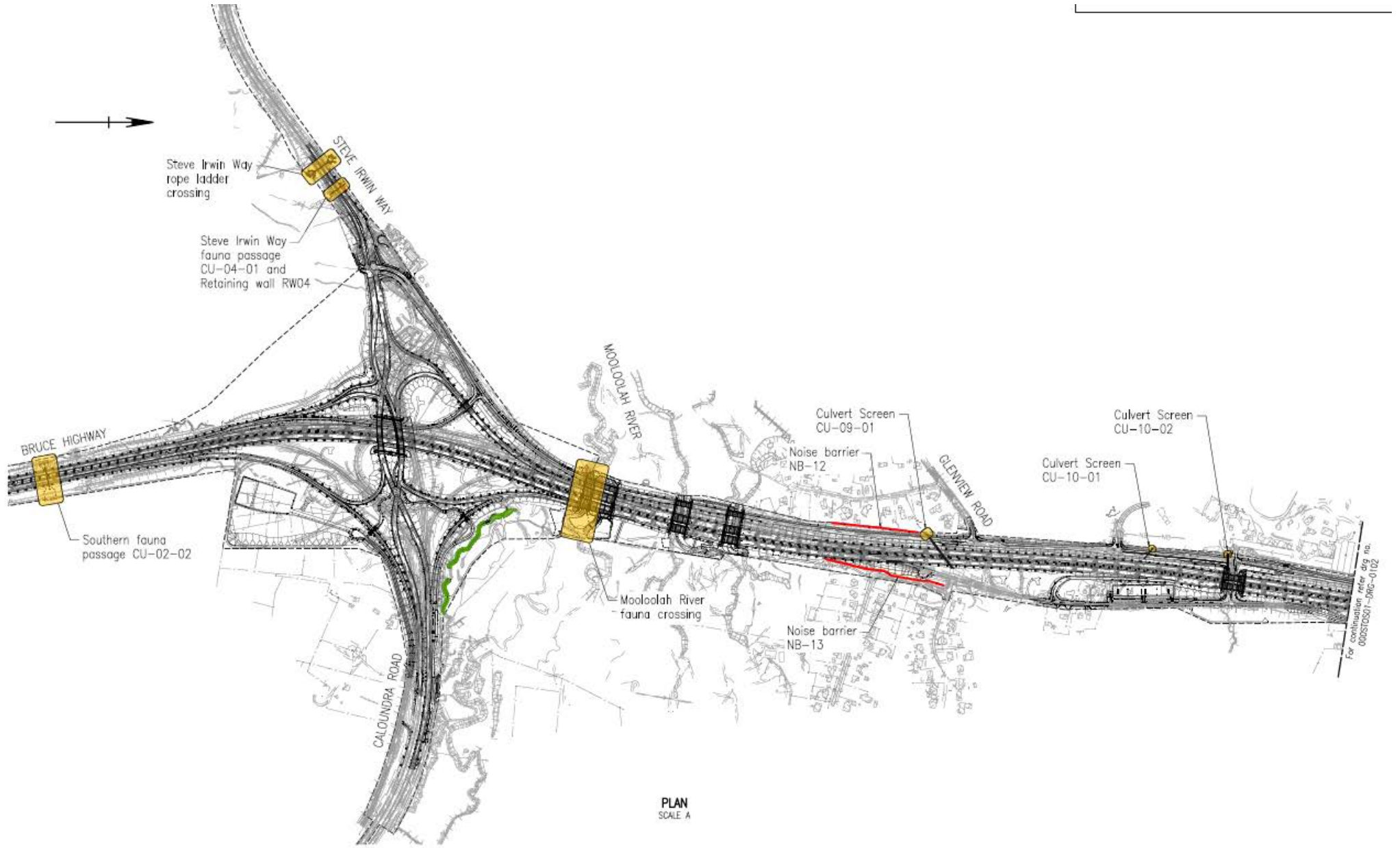
for Gavin Soward  
Project Director

Program Delivery and Operations Branch  
North Coast Region  
PO Box 1800  
Maroochydore Queensland 4558

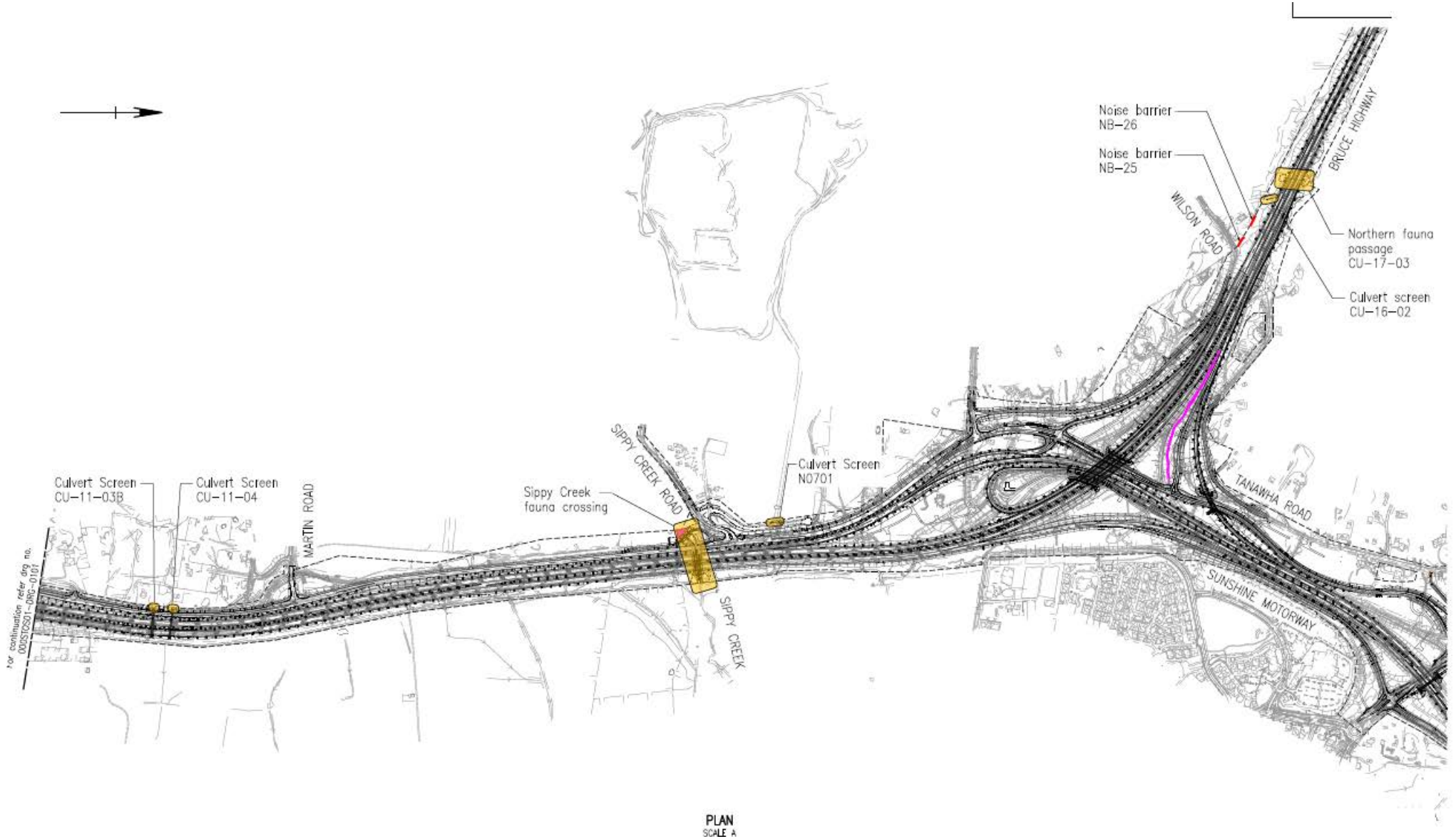
Telephone 1800 749 022  
Website [www.tmr.qld.gov.au](http://www.tmr.qld.gov.au)  
Email [brucehwycr2sm@tmr.qld.gov.au](mailto:brucehwycr2sm@tmr.qld.gov.au)  
ABN 39 407 690 291



# Appendix H – Fauna Furniture Locations



CR2SM Fauna Structure Location Plan



CR2SM Fauna Structure Location Plan

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