

Compliance Report – Bruce Highway Upgrade Project - Caloundra Road to Sunshine Motorway, January 2022

EPBC Approval 2015/7464

Report 05

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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) |
|------------|---------------|--|---|
| 25/02/2021 | Anita Haynes | Principal Environmental Officer | Review |
| | Leah McKenzie | Deputy Regional Director (North Coast) | Approve |

Risk level

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

| | |
|------------------------------|---|
| Prepared by | Tim Doherty |
| Title | Senior Environmental Officer (Contractor) |
| District & Region | North Coast |
| Branch & Division | PDO |
| Project/program | Bruce Highway Upgrade Program - Caloundra Road to Sunshine Motorway |
| Project number | 280/10A/1 |
| Project location | Glenview |
| Status | Revision 1 |
| DMS ref. no. | 450/01693 |

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 at Meridan Plains and the Sunshine Motorway at Sippy Downs, Queensland. The upgrade will allow for the construction of a six-lane highway, the upgrade of two interchanges and the addition of a two-way service road. |
| Location of Action: | Between Caloundra Road at Meridan Plains and the Sunshine Motorway at Sippy Downs, Queensland |
| Reporting Period: | December 2020 – December 2021 |
| Date Prepared: | February 2022 |

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

Deputy Regional Director (North Coast)

Organisation

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

Date

02 / 03 / 2022

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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) has constructed a 7km upgrade of the Bruce Highway between Caloundra Road and Sunshine Motorway (hereafter referred to as “the Project”). The Project consisted 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) 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. As of July 2021 major construction works for the project were completed with only minor finalisation works to be completed by mid 2022

The Project was referred to the Department of Environment (DoAWE) on 15 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 May 2015 and was approved, subject to conditions, on 2 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 fifth 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 DoAWE 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 involved major construction activities between the area extending south of Caloundra Road at Meridan Plains and north towards the Sunshine Motorway at Sippy Downs, Queensland. The Project also included areas on the Mooloolah River floodplain and areas north of Aussie World along Frizzo Connection Road.

The project was located within the Sunshine Coast Council (SCC) Local Government Area, approximately 15km west of Caloundra and 10km southwest of Mooloolaba. The project area encroached 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 included areas of remnant vegetation, within the former Beerwah State Forest, Palmview Regional Park, and along the Mooloolah River.

2.2 Description of the Project

The Project consisted 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 major construction activities associated with the upgrade were completed in July 2021. The completed Project works includes the following key features:

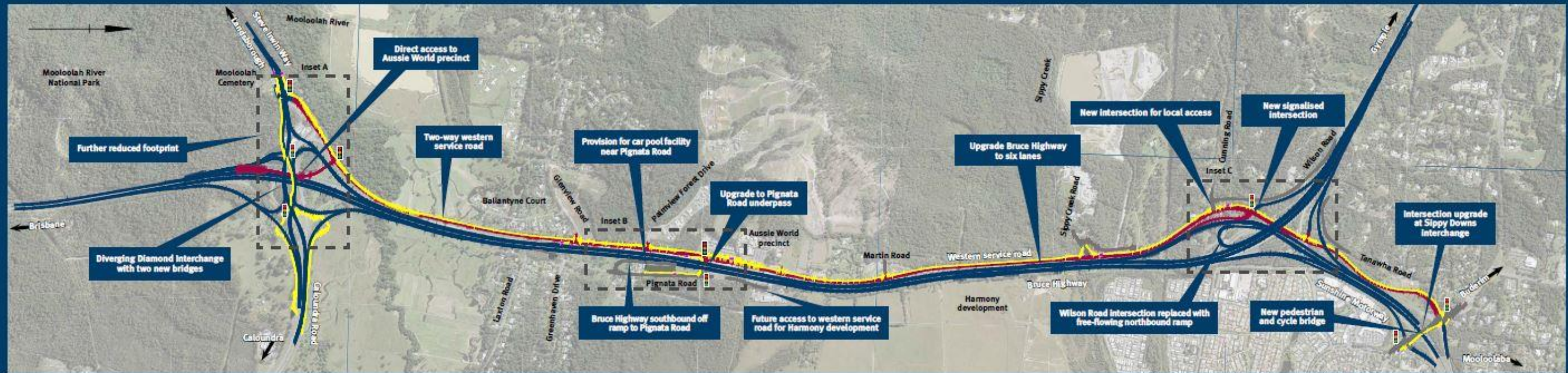
- Upgrade of the historical Bruce Highway alignment from four to six lanes and to provide immunity for a 1 in 100-year flood event;
- A “diverging diamond” interchange at the intersection of the Bruce Highway and Caloundra Road to better facilitate right-turn movements that are critical to the effective functioning of the interchange;
- The western service road (Frizzo Connection Road) linking the Caloundra Road interchange with the Aussie World precinct and extending 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;
- A southbound off-ramp at Pignata Road providing 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 final design layout as an overview of the completed project.

Bruce Highway Upgrade — Caloundra Road to Sunshine Motorway

design layout

May 2017



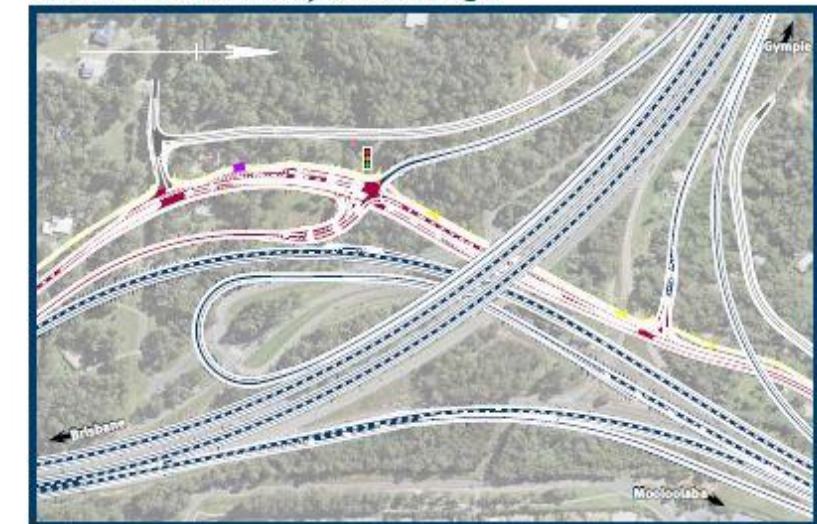
Inset A
Caloundra Road interchange



Inset B
Southbound off ramp to Pignata Road



Inset C
Sunshine Motorway interchange



Legend

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



For a closer look at the Bruce Highway Upgrade design layout, visit www.tmr.qld.gov.au/brucehwycaloundrazsunshinemwy



Figure 1: Bruce Highway Upgrade—Caloundra Road to Sunshine Motorway, Final design layout

2.3 Project Progress

The project achieved practical completion in July 2021, with significant milestones achieved during the 2020 – 2021 reporting period, a summary update is provided;

- Global permanent earthworks and pavements completed, with the Project fully open to the public.
- During the Project timeframe over 1 million m² of topsoil was placed to allow for installation of design landscaping treatments.
- Landscaping treatments completed to date consisted of 225000m² of turf, 720000m² of hydromulch and approximately 100000m² of mulch and planted areas. In regards to larger trees, 114 x 200L, 343 x 45L and 810 x 25L trees were installed. The design areas for revegetation consisted of creek revegetation and riparian plantings, open areas, bio basin and drainage line plantings.
- Vegetation clearing of Threatened Ecological Community (TEC) was completed, with a significantly reduced project footprint and clearing impact achieved.

Project works requiring finalisation within the 2021 – 2022 period will be limited to installation of a component of the Sippy Creek fauna structure and completion of post construction surveys. Upon completion of these remaining works, all Conditions related to construction activities of the project will be closed.

The project's environmental offset sites are continuing with rehabilitation and maintenance. One of the offset sites has reached completion of the remedial works per the offset management plan, as such ongoing ad-hoc surveillance of the site has commenced, with the criteria to note any matters of concern and action accordingly. The results from each specific Biocondition survey undertaken are showing continued improvement. The respective offset sites have been purchased with voluntary declarations in place, and one property legally secured under a Conservation Agreement from the Commonwealth with Department of Natural Resources, Mines and Energy (NRME), TMR and SCC as parties to the agreement.

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 |
| December 2018 – December 2019 | 03 | Completed |
| December 2019 – December 2020 | 04 | Completed |

3. EPBC 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 | <p>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.</p> | <p>Progressive - for the period of construction.</p> | <p>In Progress (95% complete)</p> | <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 operated under an Environmental Management Plan for Construction (EMP-C) which has undergone a document revision process by TMR. The EMP-C reflected 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 has provided monthly environmental reports demonstrating compliance with the EMP-C, which reflects the requirements of the OEMP and SWTC. Demonstration of compliance was achieved through monthly internal and third-party audits and reporting, which included the subset of compliance and reporting deliverables noted within the OEMP.</p> <p>Refer to Section 4.1 ‘for additional information pertaining to Condition 1 compliance.</p> |

| No. | Condition | Timeframe | Status | Evidence of Compliance |
|-----|---|--|---|---|
| 2 | <p>For the protection of the EPBC Act listed critically endangered <i>Lowland Rainforest of Subtropical Australia</i> (LRSA) the approval holder must:</p> <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> <p>i. Canopy cover: at least 70% of canopy vegetation is native;</p> <p>ii. Species richness: contains 30 native woody species from the LRSA TEC listing advice; and</p> <p>iii. Total vegetation: At least 70% of total vegetation cover is native.</p> <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>(a) For the construction period.</p> <p>(b) By the tenth anniversary of commencement of action</p> <p>(b)(i)</p> <p>(b)(ii)</p> <p>(b)(iii)</p> <p>(c) By the first 12-month anniversary of commencement.</p> | <p>(a) Compliant</p> <p>(b) Compliant</p> <p>(b)(i) Compliant</p> <p>(b)(ii) Compliant</p> <p>(b)(iii) In progress</p> <p>(c) Compliant</p> | <p>(a) A total of 13,231.13m² (1.32ha) of TEC has been cleared as part of the project works (within the project site), detailing compliance with Condition 2(a).</p> <p>The project reduced the footprint area within the TEC vegetation zone, which reduced the total impact area from the initial design area by over 66%. (2.6ha of TEC retained)</p> <p>Progressive quantities for cleared areas were reviewed and provided in the Contractors monthly environmental progress reports.</p> <p>Refer to Appendix B for a map of the project Threatened Ecological Community, and Appendix C for as-built diagrams of areas cleared and completed.</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>(b)(i) Data was collected from transects during the third quarter 2021 for this Year 5 Report, Refer to Section 4.2 for detailed information.</p> <p>(b)(ii) Flora Assessment undertaken.</p> <p>Eco 9 Pty. Ltd. 2011. "Lower Mooloolah River Environmental Reserve, Claymore Road, Sippy Downs". This report has identified 61 native woody species from the Lowland Rainforest of</p> |

| No. | Condition | Timeframe | Status | Evidence of Compliance |
|-----|---|---|--|--|
| | | | | <p>Subtropical Australia threatened ecological community listing advice.</p> <p>(b)(iii) Data was collected from transects during the third quarter 2021 for this Year 5 Report, Refer further to Section 4.2.</p> <p>Refer to Appendix D 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 TMR contractor.</p> <p>Refer to Appendix E 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) 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>(a) For the construction period.</p> <p>(b) Design and Implementation phase.</p> <p>(c) By the first 12-month anniversary of commencement.</p> | <p>(a) Compliant</p> <p>(b) (i), (ii), (iii) and (v) Compliant</p> <p>(b) (iv) In progress (90% Complete)</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 for the project works was recorded as 18,7625m² (18.76ha), compliant with Condition 3(a).</p> <p>The total for Non-Juvenile Koala Habitat (NJKH) floral species cleared for the Project works was recorded as 3,256 individuals.</p> <p>(b) (i-v) Koala movement structures have been incorporated into the design drawings for the road furniture and landscaping. The construction of fauna movement structures is near completion with only Sippy Creek</p> |

| No. | Condition | Timeframe | Status | Evidence of Compliance |
|-----|--|--|----------------------|--|
| | <ul style="list-style-type: none"> iii. One new structure to facilitate Koala movement across the Bruce Highway north of Sippy Creek; iv. Improve the existing structure at Sippy Creek to facilitate Koala movement across the Bruce Highway; and v. Improve the existing structure at Mooloolah River to facilitate Koala movement across the Bruce Highway. <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> | | (c) Compliant | <p>movement structure remaining to be completed. All other koala movement structures (underpasses) have been completed. These are further discussed in Section 4.3.2.</p> <p>(c) The 50ha offset, Lot 2 RP51879 at Missing Link Road, Glenview has been legally secured by TMR.</p> <p>Refer to Appendix F or map of Glenview property.</p> <p>Refer to Section 4.3 for additional information pertaining to Condition 3.</p> |
| 4 | <p>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.</p> | <p>Within 10 days of commencement of construction.</p> | Compliant | <p>A letter was submitted to the Department on 23 December 2016 to formally notify of the commencement of works.</p> <p>Refer to Appendix G for this notice.</p> |
| 5 | <p>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.</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> | <p>Progressive.</p> | Ongoing | <p>All records associated with this condition are maintained and updated on a regular basis.</p> |
| 6 | <p>Within three months of every 12-month anniversary of the commencement of the action, the approval holder must</p> | <p>For the period of construction.</p> | Compliant | <p>This report provides the fifth compliance report. This report will be published on the TMR website</p> |

| No. | Condition | Timeframe | Status | Evidence of Compliance |
|-----|--|---|---|--|
| | <p>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>The compliance report must be published within three months of every 12-month anniversary.</p> | <p>Fifth compliance report complete (this report). Fourth compliance report completed. Third compliance report completed. Second compliance report completed. <i>Minor Non-Compliance</i> The first compliance report was published on TMR's project website October 2018, which was not within the reporting period. DoAWE was notified of this non-compliance.</p> | <p>concurrently with submission to the Department, satisfying this condition of approval. The relevant documentary evidence will be provided to DoAWE at the time of publication.</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 audit report must address the criteria to the satisfaction of the Minister.</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 applicable.</p> |

| No. | Condition | Timeframe | Status | Evidence of Compliance |
|-----|---|--------------------------|---------------------------|---------------------------|
| 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. OEMP Conditions Compliance

4.1 EPBC 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 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 were also developed to support the EMP-C which were 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 were used to define the construction controls required to ensure each potential aspect and impact identified is eliminated, reduced or appropriately mitigated. The sub-plans were 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 and by enhancing habitat through fauna features incorporated in the design.

Management measures of the sub-plans were monitored during construction works 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 were also undertaken to review compliance and a compliance tracking register was maintained by the Contractor. Where compliance had not been achieved, a non-conformance report was raised by the Contractor and reported to the Administrator. This process included identification of reasoning for non-conformance, as well as corrective and preventative actions. Refer to **Appendix H** which provides details of the items that were found to be non-conforming and actions on how the non-conformances have been corrected and addressed

As the project has reached Practical Completion, the project is now working under the updated Environmental Management Plan - Operations (EMP-O). The EMP-O details the operational and monitoring requirements and responsibilities for project works during the maintenance period.

Where non-conformances against the EMP-O are identified, a non-conformance report will be raised by the Contractor and reported to the Administrator. As per management during construction, this process will include identification of reasoning for non-conformance, as well as corrective and preventative actions.

Erosion and sediment controls (ESC) were continually reviewed for effectiveness onsite and amendments were communicated through revised ESC plans (red pen mark-ups) and distributed to relevant site personnel. The project notified the Department of Environment and Science (DES) where required for incidents and when rainfall received onsite exceeds the ESC design threshold.

Furthermore, with respect to the specific management of Giant Barred Frog (*Mixophyes iteratus*) (GBF) the following was undertaken during the project:

- Construction within suitable habitat was avoided, where possible, following rain if water was still present onsite;
- Qualified ecologists conducted surveys of potentially suitable habitat during the nights prior to clearing;
- Fauna spotter-catchers captured and relocated individuals, tadpoles and egg masses to similar habitat if detected; and
- Any frogs observed or relocated were recorded and reported to the Administrator.
- Monitoring of GBF and other frog species was also undertaken to gain an undertaking of the habitat locations within and surrounding the project site.

A summary of the frog monitoring for the project is provided:

At the commencement of this project, a total of sixteen distinct frog habitat areas were identified to provide known and potential habitat for several threatened frog species. Those confirmed species were the GBF, the wallum froglet (*Crinia tinnula*) and the tusked frog (*Adelotus brevis*). Species considered potential to occur were the wallum sedge frog (*Litoria olongburensis*) and the wallum rocket frog (*Litoria freycineti*).

The project has undertaken five years of monitoring surveys. During these survey's threatened frog species have been confirmed at eight of the sixteen habitat sites with a potential species, the wallum rocket frog now being confirmed to occur within the project at one site. During the surveys additional threatened species were also positively identified, these being the tusked frog, and wallum froglet.

In addition to the monitoring surveys and project approval conditions, detailed mitigation measures were implemented in relation to the management of clearing in areas of known or potential frog habitat. These measures required pre-clear surveys at specified times prior to the commencement of vegetation and undertaking inspection of known and potential frog habitat immediately prior to, and during actual clearing.

One of the most sensitive areas of habitat within the project was at and surrounding the Mooloolah River. This monitoring site was confirmed habitat for the endangered GBF. In addition to the standard pre-clear surveys, hand clearing of vegetation was undertaken at the site prior to conventional clearing with machine. Hand clearing involved removing all leaf litter and other potential microhabitat that could be used as refuge by the giant barred frog.

The management measures implemented for the project are considered to have met the intent of the OEMP and other project approval conditions and ensuring the protection of frog species. The implementation of these measures resulted in no deaths or injuries to this species. Seasonal spring and summer surveys were conducted opportunistically when favourable weather conditions had been experienced on site.

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.

As outlined in Table 3 above, the project cleared a total of 13,231.13m² (1.32ha) of Threatened Ecological Community (TEC). Progressive quantities for cleared areas were reviewed and provided in the Contractors monthly environmental progress reports.

The project has completed the TEC vegetation clearing works. Opportunities through design amendments were undertaken to reduce the impact of TEC clearing, and as a result a significant clearing reduction of 66% (2.6ha) from initial impact to TEC vegetation was achieved.

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

4.2.2 BioCondition Assessment Mooloolah River

A BioCondition Assessment was undertaken within the TEC (patch 1 area) prior to construction (2016) and during the construction phase (January 2019). A post construction BioCondition Assessment was undertaken in October 2021.

Prior to the final assessment DES has developed revised benchmarks for the RE 12.3.1a. Given the recent change, the current assessment used the previous benchmark values where possible to maximise consistency of results across the surveys and allow effective analysis trends. However, counts of large trees are not directly comparable because the thresholds for large non-eucalypt trees have increased, and the inclusion of a large eucalypt tree threshold.

The survey plot BioCondition Scores (Patch 1 area) showed relative consistency over the project timeframe with scores ranging from only 0.745 to 0.765. The site maintained a broad condition class of 2. Some trends in individual attribute scores were recorded including;

- Native species richness rose across the three survey periods, with a higher tree richness score in 2019 and 2021, and a higher forb/other richness score in 2021. This trend may be partially due to the identification of less easily detected species over repeated surveys.
- Native perennial grass cover was higher in 2019 and 2021. However, this difference may be an artifact of the BioCondition methodology, which uses only five 1 m² quadrats to estimate plant cover. The benchmark for native grass cover in RE 12.1.3 is only 1%, which equates to only 5% of the combined 5 m² sample area. A larger sample size (i.e. either more quadrats or larger quadrats) would provide a more accurate estimate of grass cover in REs that have such low benchmark values.
- Shrub cover was lower in 2021, possibly due to the timing of this survey in October (late dry season).
- Connectivity and context (area of remnant/regrowth vegetation within 1 km radius) were lower in 2019 and 2021. While this trend may be due to clearing activities associated with the CR2SM development, it could also be partially due to changes in RE mapping (from version 9.0 in 2016 to version 12 in 2021).

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 TMR 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 SCC and TMR to deliver and manage the Mooloolah River Rainforest Offset Project was signed on 1 June 2017. The agreement will comply with and meet the EPBC conditions of approval and is part of the agreement.

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

- Ongoing control of weed and exotic grass across entire 16.64 hectare offset area around naturally regenerating species as a key component to assisted natural regeneration. Ongoing maintenance of weeds along the edge of the remnant area (Lantana, Broadleaved pepper tree, Mile-a-minute, Singapore daisy in particular). Greater than 98% of weeds on the rainforest edges have been controlled. The ongoing maintenance will ensure close to 100% weed control along the remnant edge.

Weed density in the remnant rainforest has been reported as is almost negligible. Weed density in the reconstruction zones has reported to have been reduced from approximately 80% down to less than 5%.

Weed control activities and reinforcement plantings have resulted in almost 100% of canopy vegetation being native, significantly more than 30 different native woody LSRA TEC species, and significantly greater than 70% total vegetation cover being native in these zones.

In total, 1,458 replacement tubestock have been installed for the project to date, with 160 replacements within this reporting period to ensure original planting numbers are maintained.

- The bio-condition monitoring was undertaken at the six established transects locations across the offset area. The established Transects 1 and 2 were established within high quality LRSA remnant and will provide a direct comparison across all attributes monitored with Transects 3 to 6, that were established within the reconstruction zones and transitional zone. Both Transect 1 and 2 are only 25m long compared to the 100m Transects for BioCondition Assessment, this in turn has provided results with slightly lower species diversity.

T1 vegetation is a very good representation of RE 12.3.1 and is in excellent condition. The canopy cover is 100% native.

T2 vegetation is a very good representation of RE 12.3.1 and is in excellent condition. The canopy cover is 100% native.

Transects T3, T4 and T5 are located within a reconstruction zone of the offset area and as such is representative of the areas where exotic pasture grasses previously dominated. Natural recruitment is responsible for 16%, 20% and 12% within T3, T4 and T5 (respectively) of the native stem count for the transects, with the balance attributed to successful native tube stock installation during Stage 1 and Stage 2 reconstruction plantings. The vegetation assemblage at these transects continues on a positive trajectory towards a representation of LRSA. The vegetation cover at the transects were reported as being T3 100% native canopy with 6% non-native ground cover recorded, T4 100% native canopy with 8% non-native ground cover recorded, and T5 100% native canopy with 9% non-native ground cover recorded.

T6 is located within a transitional zone of the offset area where elements of RE12.3.5 and RE 12.3.1 occur. Eucalypt, Allocasuarina and Melaleuca emergents exist as well as lower and mid-storey rainforest species and native shade-tolerant grasses. Reinforcement planting occurred throughout this zone as part of Stage 1 and Stage 2 plantings. As expected, natural recruitment is significantly higher in this zone than in the reconstruction zones. Natural recruitment is responsible for 30% of the native stem count for this transect with the balance directly attributed to successful native tube stock installation during the Stage 1 and Stage 2 reinforcement plantings. The vegetation assemblage at T6 is on a positive trajectory towards a representation of LRSA. The vegetation cover was reported as being 100% native canopy with 4% non-native ground cover recorded.

- The SCC Pest Management Team have collected pest animal data and responded accordingly throughout the reporting period.

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

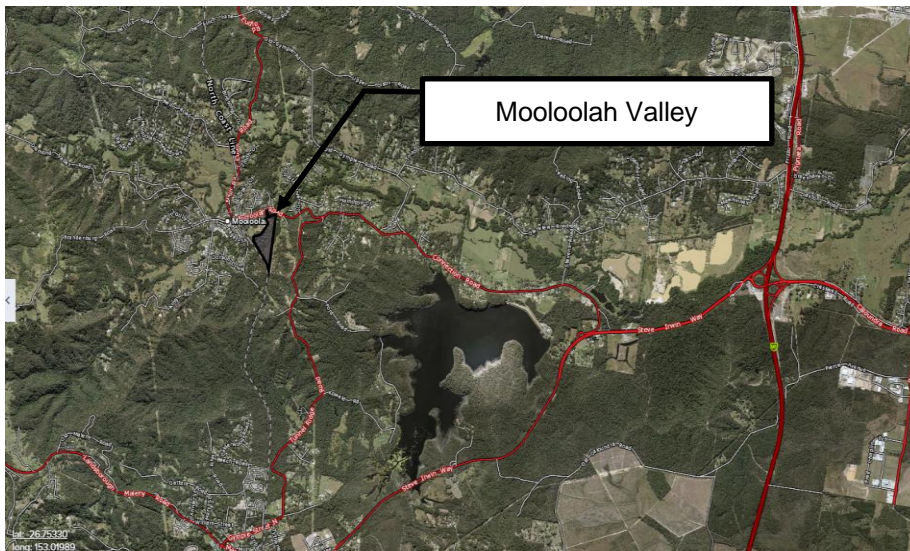
- Ongoing monitoring and weed control throughout the rainforest remnant;
- Ongoing monitoring and data collection;
- Ongoing general maintenance works as required by the OMP and the SCC technical specification; and
- Removal of tree guards as necessary.

Refer to **Appendix D** for location.

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 separate 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:

- Weed control activities continued during the reporting period. The works continued to focus on the control of exotic species beneath intact canopy as well as creating space along the edge of native vegetation to assist facilitating recruitment in these areas as well as access in and around the site. Due to the well-timed and systematic follow up in previous years, many of the zones have now achieved a level of relatively low maintenance and increased efforts were put towards primary weed control works. This involved the expansion of the current works front to conduct further primary weed control. Efforts largely involved control of lantana (*Lantana camara*), broad-leaved pepper tree (*Schinus terebinthifolius*), large leaf privet (*Ligustrum lucidum*), Easter cassia (*Senna pendula* var. *glabrata*), blue morning glory (*Ipomoea indica*), alexandra palm (*Archontophoenix alexandrae*), guava (*Psidium guajava*) and groundsel bush (*Baccharis halimifolia*), radiata pine (*Pinus radiata*), umbrella sedge (*Cyperus eragrostis*), cat's claw creeper (*Dolichandra unguis-cati*), broad-leaf paspalum (*Paspalum mandiocanum*), thickhead (*Crassocephalum crepidioides*), aster weed (*Aster subulatus*), Paddy's lucerne (*Sida rhombifolia*), cobbler's pegs (*Bidens pilosa* var. *pilosa*) and blue billygoat weed (*Ageratum houstonianum*) were reported as being controlled

In addition to progressing primary weed control works, systematic and timely follow up weed control and maintenance was performed through all previously worked areas. Follow up spraying was primarily used to control weeds such as Madeira vine (*Anredera cordifolia*), trad (*Tradescantia fluminensis*), creeping inch plant (*Callisia repens*), striped trad (*Tradescantia zebrina*) Paddy's lucerne (*Sida rhombifolia*), blackberry nightshade (*Solanum nigrum*),

climbing nightshade (*Solanum seaforthianum*), lantana, blue billygoat weed, cobbler's pegs, palm grass (*Setaria palmifolia*), broad-leaf paspalum, blue morning glory, thickhead, Rhodes grass (*Chloris gayana*), African mustard (*Brassica tournefortii*), slender celery (*Cyclosporum leptophyllum*), tropical chickweed (*Drymaria cordata*), mistflower (*Argentia riparia*), arrowhead vine (*Syngonium podophyllum*), Guinea grass (*Megathyrsus maximus* var. *maximus*), devil's fig (*Solanum torvum*), signal grass (*Urochloa decumbens*), green panic (*Megathyrsus maximus* var. *pubiglumis*), molasses grass (*Melinis minutiflora*), corky passionfruit (*Passiflora suberosa*), creeping ruellia (*Ruellia simplex*) and the many woody weeds and vines as seedlings.

The site continues to respond to assisted regeneration works as is detailed in the series of images below. Note in sequence the stump immediately above the yellow star picket and:



- The dense lantana prior to works in 2018 (stump barely visible as covered by lantana)



- Dead and dying weeds following initial weed control in 2019



- Native recruitment beginning to establish as a result of ongoing weed control in 2020

BC1 100 m (towards 0 m) – Dec 2018

BC1 100 m (towards 0 m) – Dec 2019

BC1 100 m (towards 0 m) – Dec 2020



BC1 100 m (towards 0 m) – Dec 2021

- A dense native ground layer and mid-storey present that obscures the stump in 2021

- BioCondition monitoring at 6 transects were undertaken and compared to the baseline data. The results showed continued improvements to native vegetation and their functional biodiversity across most plots. All plots achieved higher total scores from 2020, except for BC6 which decreased from 73.5 in 2020 to 72.5 in 2021. Of note is the improvement in the classification level of one of plots from 4 to 3. All other plots maintained the same classification level from 2020.

It was reported that all plots received the highest possible score for recruitment of dominant canopy species due to the level of native germination in all worked areas across the site. Improvements were further observed in tree canopy cover and native perennial grass, with scoring for non-native plant cover generally decreasing across all plots. The levels of woody debris and organic litter cover fluctuated, most likely because of the large tree falls and flood debris that have accumulated over the last year.

There are no reported non-conformances this reporting period.

Refer to **Appendix E** for location.

4.2.4.1 Richmond Birdwing Butterfly Vine (*Pararistlochia 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 *Pararistlochia praevenosa* (Richmond birdwing butterfly vine), and as such TMR commenced the propagation of *Pararistlochia 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 *Pararistlochia 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.

In April 2021, 87 *Pararistlochia praevenosa* (Richmond birdwing butterfly vine) plants were planted. They had been grown in pots for two years as the sensitive vines tend to establish better when planted if they are installed when more mature. The areas for planting were assessed over several months to determine where both suitable locations and suitable natural structures (e.g. logs or dead trees) were evident. These locations were first prepared by spot spraying and hand weeding to ensure the vines could establish with minimal competition from weeds. As of November 2021, an inspection of the planting works detailed 48 of the individuals thriving.

It has also been reported that *P. praevenosa* is naturally growing at this offset site with Richmond Birdwing Butterfly observed during the works.

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 during the project works was 187,627m² or 18.76ha, in compliance with Condition 3(a). The total for Non-Juvenile Koala Habitat (NJKH) floral species cleared during the project works was 3,256 individuals.

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 near completion. The update and status of the fauna structures are as follows:

- I. Steve Irwin Way fauna passage (CU-04-01) is **complete** with plants and fencing installed. (refer to Figure 2 in Appendix I)
- II. Southern fauna passage (CU-02-02) is **complete** including the forked refuge poles. (refer to Figure 3 and 4 in Appendix I)
- III. Northern fauna passage (CU-17-03) is **complete** with plants and fencing installed. (refer to Figure 5 in Appendix I)
- IV. Sippy creek fauna crossing improvement (movement) works are **approximately 90% complete**, with plants and fencing installed (including the forked refuge poles). The remaining work outstanding are limited to installation of brackets and ledge under pedestrian culvert. These works are to be completed in early 2022. (refer to Figure 6,7 and 8 in Appendix I)
- V. Mooloolah River fauna crossing improvement works are **complete**. The fauna furniture is fully installed throughout the Mooloolah River bridges including the fauna furniture beneath the bridges forked refuge poles and landscaping completed. (refer to Figure 9 and 10 in Appendix I)

Additional fauna structures that have been installed for the project include:

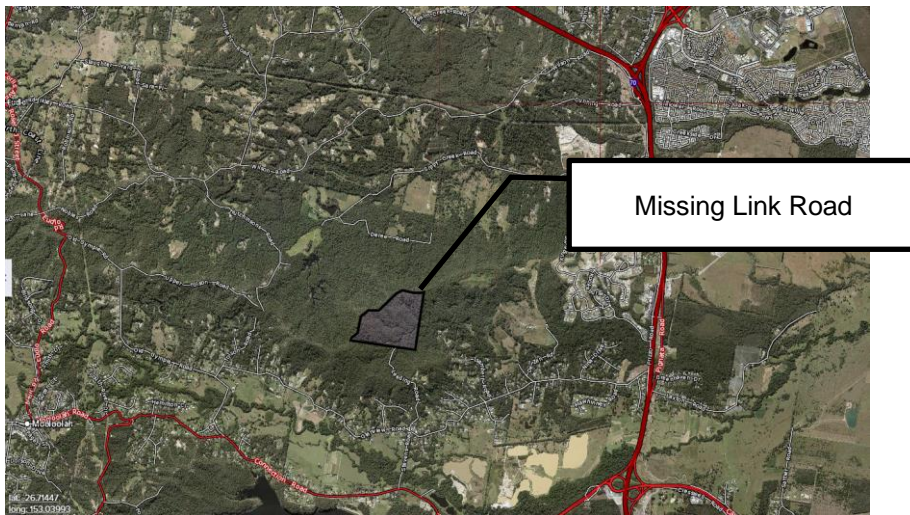
- Steve Irwin Way Rope ladder has been installed (refer to Figure 11 in Appendix I)
- Koala refuge poles have been installed along western service road and Wilson Road section.
- Koala resting forks have been installed across the site at Mooloolah river and overflow channels
- Large vegetation root balls were salvaged and used for fauna habitat.

Photos of the fauna structures are shown in **Appendix I**.

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 engaged a separate contractor to deliver the requirements of the OMP and offset conditions to enhance Koala habitat characteristics. As of this reporting period the programmed works are generally complete with final weed management activities to be undertaken by July 2022 and TMR to commence ongoing ad-hoc monitoring of the site as per the OMP.

Completed 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:

- The on-ground weed management has continued at the property with the successful reduction of weed density at the site. One weed treatment event is remaining for the area with this to be conducted by July 2022. Survey results show that the sites weed presence is very low with approximately 95% of the site in excellent condition. Results from annual BioCondition surveys reflect this, with results showing that weed species make up $\leq 1\%$ of cover at Bio sites. The remaining weed control events are considered to be sufficient to treat remaining problem weed areas and maintain the very low weed presence.
- Annual bio-condition surveys were undertaken in September 2021, which includes the monitoring of six sites, the results reported similar results to the 2020 survey. Five sites continue to fall within the range for BioCondition 1, indicating vegetation in good condition. One site continues to record a score as BioCondition 2. The main factor reducing the score at this site is the total number of large trees which is less than benchmark condition. The site has a cohort of slender canopy trees or “poles” present, and in time the site will also attain BioCondition 1 status. Several years will be required for the smaller girth trees to start to reach

the benchmark diameter. Following four years of survey, no underlying factors which may result in altering the BioCondition scores at sites are apparent. The presence of weeds mainly *Lantana camara* was not extensive enough to lower scores initially. Weeds accounted for up to 4% of total plant cover at sites in the first survey in 2017, however weed cover is now <= 1% at sites due to targeted weed control measures.

- An annual Koala Spot Assessment Technique (SAT) survey was conducted – six (6) of the seven (7) SAT zones surveyed were confirmed as having koala scat present (SAT 2 did not record any scats). A total of 22 different koala scat locations were recorded throughout the survey site from systematic SAT surveys, with an additional seven incidental scat detections. Medium fresh/weeks old scat (Category 3) to very old (Category 5) scats were present. SAT Sites 2, 3 and 7 showed varying degrees of burning associated with the low intensity ecological burn complete in May 2021, and the presence of scats indicated that koalas have since been active at the recently burnt sites. Sites achieved an overall activity level of 10.5%, showing an increase when compared to 2020.

Camera monitoring for wild dog and pest species recommenced post burn works, however no results have been supplied to date for review or assessment.

- A Fire Management Plan has been developed for the site, to support TMR requirements for ecological purposes including contribution to weed management. A low intensity burn was proposed for 2019 and 2020 however due to environmental conditions and restricted QLD fire bans this did not occur. The low intensity burn was conducted on the 29th of May 2021 as this was the first available time when permitting and environmental conditions allowed.

This activity did not require creation and maintenance of existing breaks and fire trails, however pre-clearance fauna inspections were undertaken, with hand raking of leaf litter to protect habitat trees undertaken to ensure burn exclusion.

The pre-burn koala survey was undertaken using a thermal sensor drone on the evening preceding the burn with two positive Koala (*Phascolarctos cinereus*) identifications at the time. Both identifications were assessed to be not at risk during the burn due as they were located outside of the burn footprint.

The planned burn had an aim to achieve a 40-60% coverage of the burn unit (34.6ha), focusing on the tall open eucalypt forest. The burn achieved just under 50% of the entire area (approx. 15.4ha). The fire carried through patches of the drier upper slopes, leaving a micro mosaic of burnt and unburnt fuels along with horizontal and vertical refugia remaining intact;

- Soil moisture was considered favourable by the fire contractors (rather than most suitable) for implementing the burn through the long unburnt Eucalyptus open forests with Acacia and suppressed grass cover, with conditions conducive to maximising post-fire recovery;
- The burn edge along the existing access was treated more thoroughly to increase the fuel consumption to provide a reduced fuel zone to minimise likelihood of landscape fire movement during the fire season; and
- The fire did not penetrate lower slopes to any extent due to the moist, sheltered conditions.

No project non-conformances have been reported.

Refer to **Appendix F** offset site locality map.

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 was 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 Contractor's 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, was subject to internal monthly and external quarterly audits. The construction EMP and sub-plans were revised on a six-monthly basis.

4.4.2 Environmental Site Inductions

An environmental site induction was 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 has kept 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 Contractor has undertaken and documented 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 Contractor has provided the Administrator monthly progress reports on environmental matters. The monthly reports included 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, the following environmental audits and reviews were 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) were also revised and accepted by the Administrator prior to use.
- Independent quarterly audits on the implementation of the Contractor's EMP(C) and compliance of approval conditions were also undertaken.
- Internal monthly audits on the implementation of the Contractor's EMP(C) as well as compliance to approval conditions and client specifications were undertaken.

4.4.5 Environmental Incident Reporting

As per the conditions of the contract, the Contractor has notified the Administrator immediately of any incidents where actual or potential environmental harm has taken place. Incident investigations and notifications have been provided to the Administrator and regulatory body where required. The results and findings of the incidents were also been submitted as part of the following environmental monthly progress report.

4.5 Conclusion

The CR2SM Project has focussed on completion and finalisation of all works during the 2020 – 2021 period. This has been confirmed through, completion of design landscape treatments, achieving practical completion and opening the project to the public. As discussed above, minor finalisation works are nearing completion with a forecasted closure of all construction related conditions during 2022. These remaining works specifically relate to installation of a component for the Sippy Creek fauna structure and completion of post construction monitoring.

All other construction related activities have been completed with notable achievements in revision of overarching design to remove significant impacts to both existing TEC and NJKH vegetation communities.

The Contractor has been compliant with their related components of the EPBC approval during this reporting period. This has been managed through ongoing monitoring of site works, review of documentation and records carried out through ongoing ad-hoc environmental inspections and formal audits. These ongoing management actions have ensured that any issues identified are addressed promptly in order to maintain ongoing compliance with the EPBC conditions

Throughout the active construction works for the project, external quarterly compliance auditing of the project conditions resulted in an average of 92% over the project lifetime. Further external quarterly compliance auditing upon erosion and sediment management resulted in an average of 91% over the project lifetime.

4.6 References

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

Ecosure Pty Ltd (2021), *BioCondition Assessment, Mooloolah River, CR2SM*, prepared for Fulton Hogan Seymour Whyte Joint Venture.

Ecosure Pty Ltd (2019), *Mooloolah Valley Offset Year 3 Annual Report*

Envirotech Solutions, *CR2SM Construction Environmental IA Program Closeout*

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

Future-Plus Environmental (2021), *Glenview Koala Offset Project – Fire and Weed Management Works Report No. 5*, 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 5 (2020-2021) 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 Decision Notice

APPROVAL

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

Proposed action

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

Approval decision

| Controlling Provision | Decision |
|---|-----------------|
| 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.

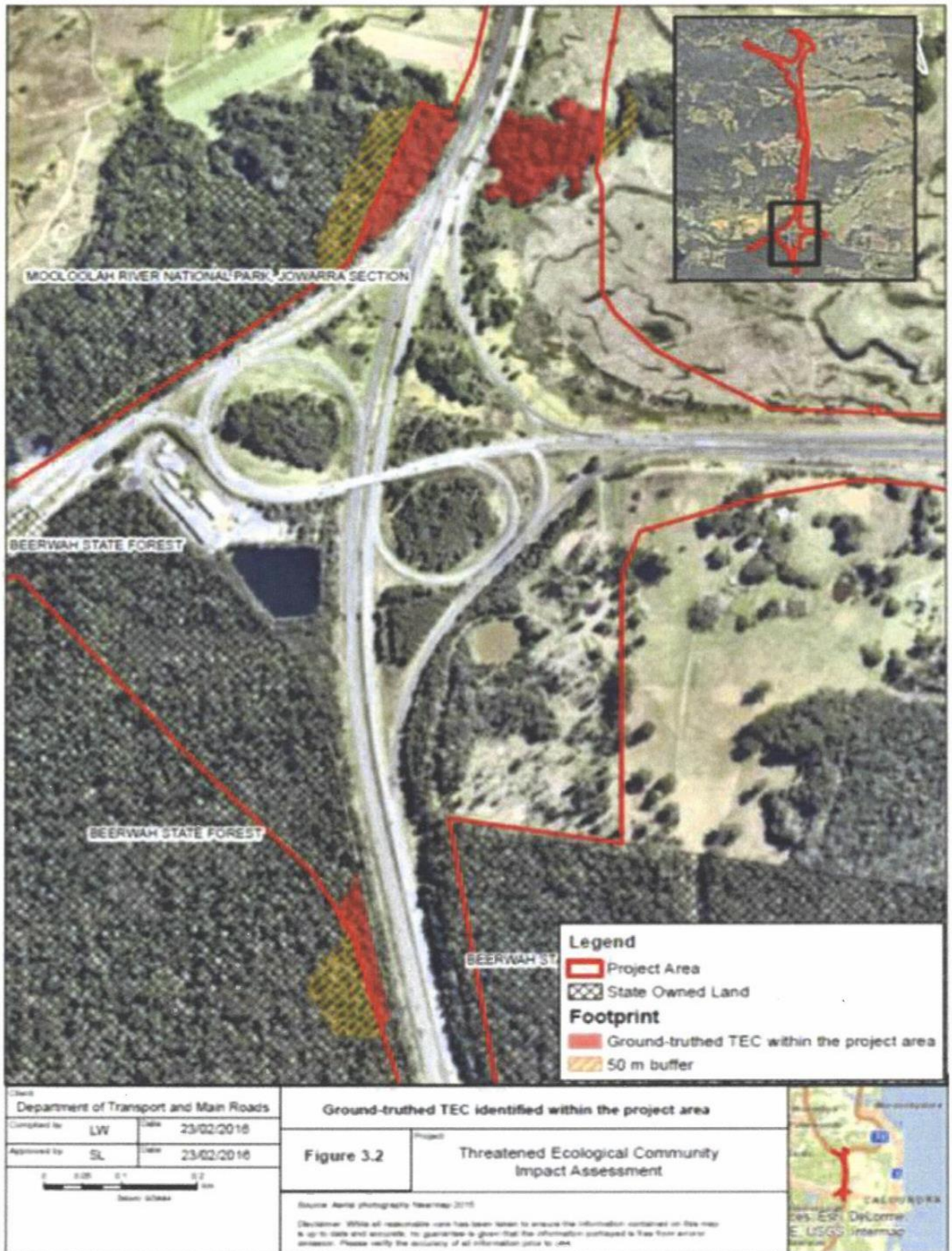
Lowland rainforest of subtropical Australia threatened ecological community listing advice means Appendix A of the TSSC (2011a) Commonwealth Listing Advice on Lowland Rainforest of Subtropical Australia
<http://www.environment.gov.au/biodiversity/threatened/communities/pubs/101-listing-advice.pdf>

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

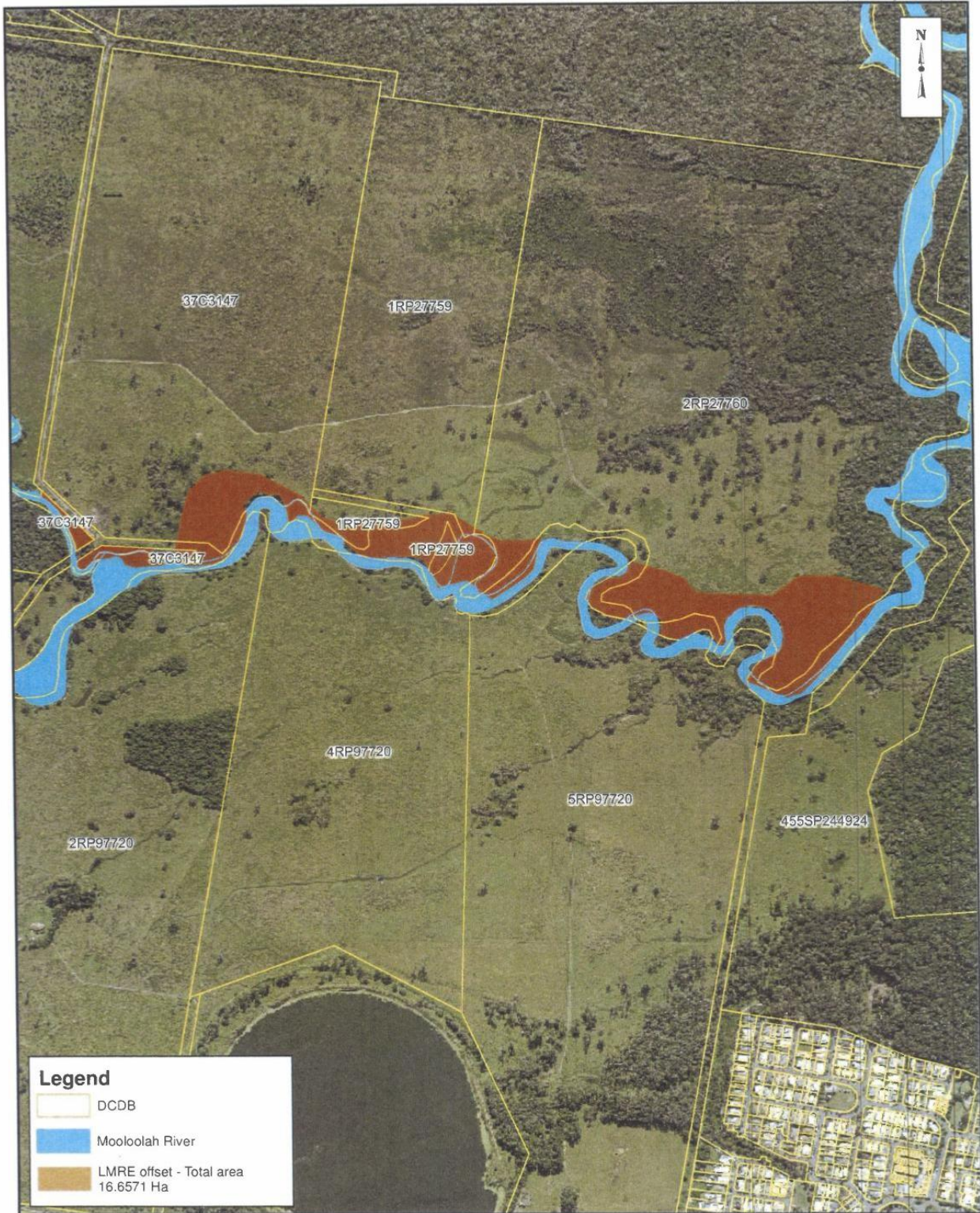
Overarching Environmental Management Plan means the documents *Bruce Highway Upgrade – Caloundra Road to Sunshine Motorway Project: Overarching Environmental Management Plan*, version 2, Final/March 2016.

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

Attachment A



Attachment B.



Legend

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

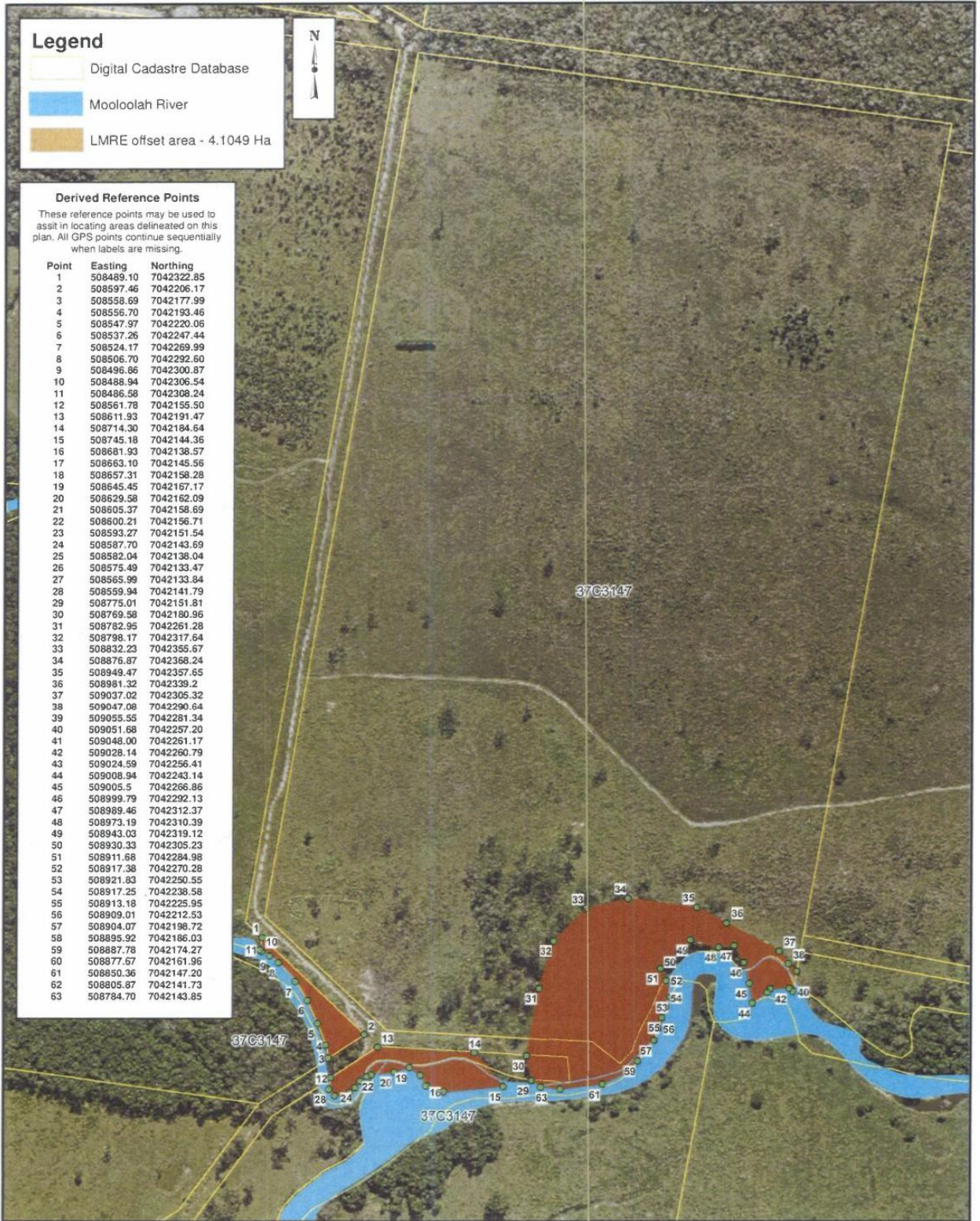
Projection/ Datum : Map Grid of Australia (MGA) Zone 56, Geocentric Datum of Australia (GDA) 1994

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

| | |
|---------------------|-------------|
| Plan No/ Job No: | Map1 |
| Issue: | A |
| 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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| 2 | 508597.46 | 7042206.17 |
| 3 | 508558.69 | 7042177.99 |
| 4 | 508556.70 | 7042193.46 |
| 5 | 508547.97 | 7042220.06 |
| 6 | 508537.26 | 7042247.44 |
| 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 |
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| 20 | 508629.58 | 7042162.09 |
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| 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 |
| 38 | 509047.08 | 7042290.64 |
| 39 | 509055.55 | 7042281.34 |
| 40 | 509051.68 | 7042257.20 |
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| 46 | 508999.79 | 7042292.13 |
| 47 | 508989.46 | 7042312.37 |
| 48 | 508973.19 | 7042310.39 |
| 49 | 508943.03 | 7042319.12 |
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| 53 | 508921.83 | 7042250.55 |
| 54 | 508917.25 | 7042238.58 |
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| 56 | 508909.01 | 7042212.53 |
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Projection/ Datum : Map Grid of Australia (MGA) Zone 56, Geocentric Datum of Australia (GDA) 1994

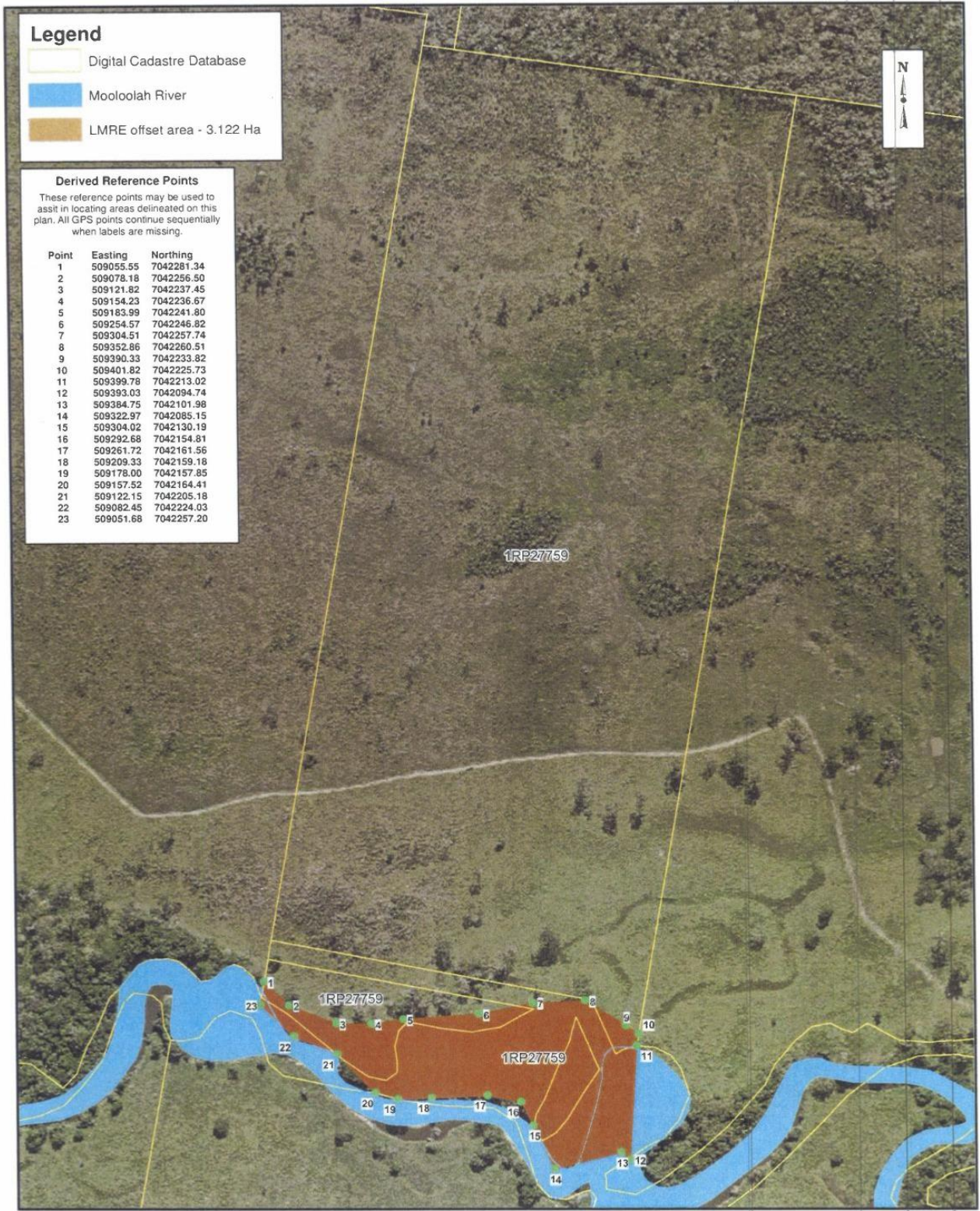
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**Mooloolah River
 Lower Mooloolah River Environment
 Reserve (LMRE Reserve)**

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





Legend

- Digital Cadastre Database
- Moolooloh 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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| 7 | 509304.51 | 7042257.74 |
| 8 | 509352.86 | 7042260.51 |
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| 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 |
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| 18 | 509209.33 | 7042159.18 |
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| 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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**Moolooloh River
Lower Moolooloh River Environment
Reserve (LMRE Reserve)**

Plan No/ Job No: **Map3**

Issue: **A** Date: **13/03/2017**

Drawn by: **R Friend**

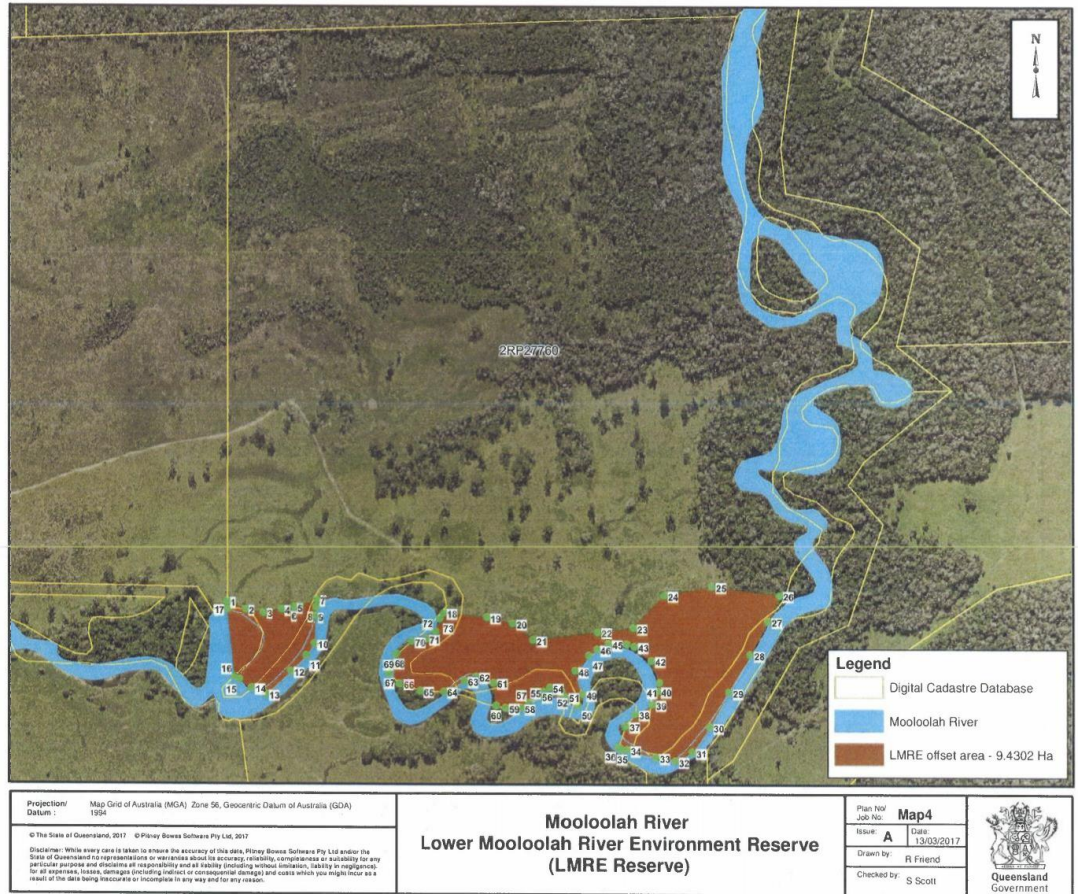
Checked by: **S Scott**



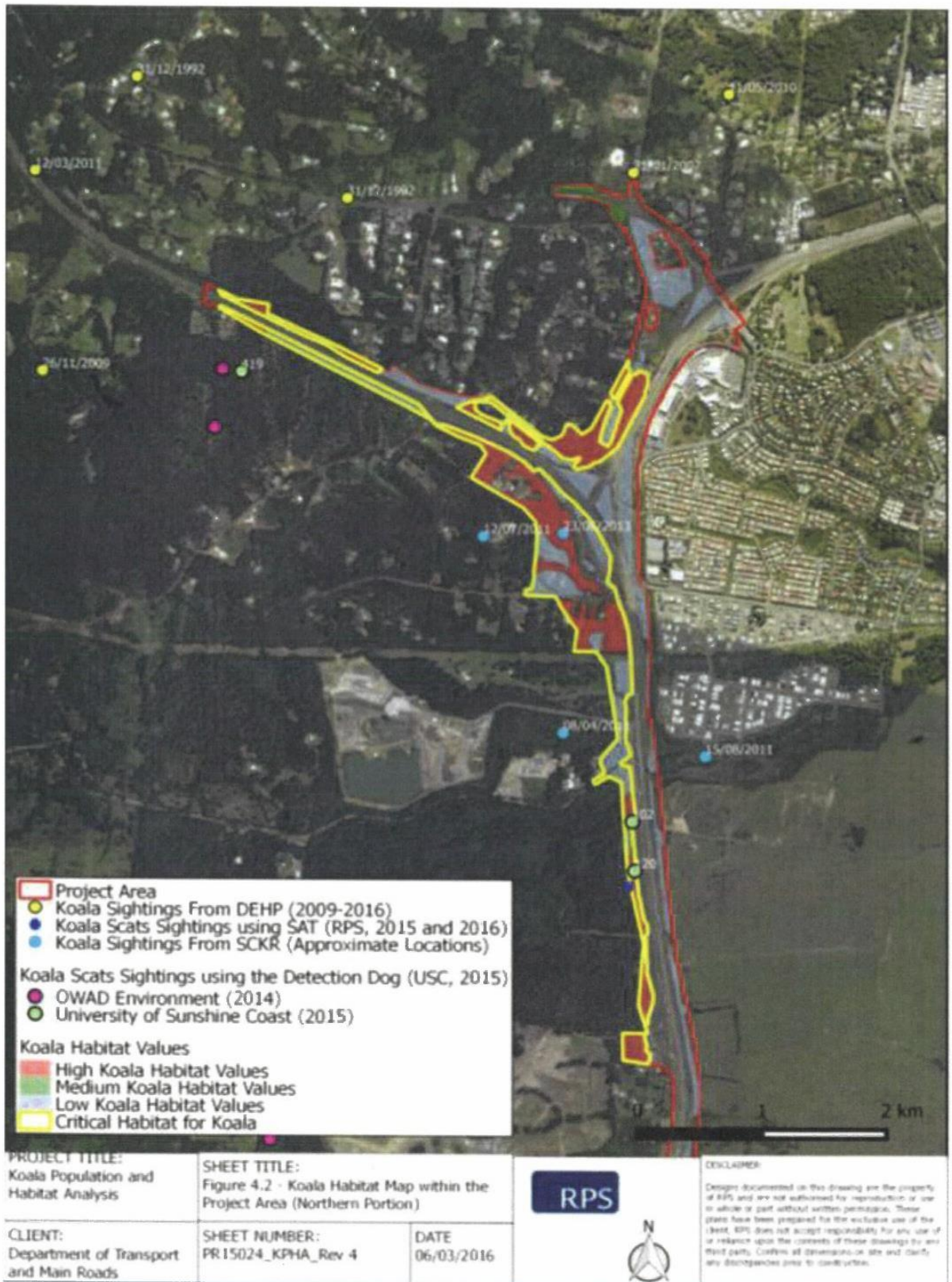
Derived Reference Points

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

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|-------|-----------|------------|
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| 29 | 510159.89 | 7041919.1 |
| 30 | 510120.17 | 7041864.79 |
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| 33 | 510026.41 | 7041829.3 |
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| 72 | 509717.48 | 7042111.21 |
| 73 | 509727.85 | 7042132.15 |



Attachment D



PROJECT TITLE:
Koala Population and Habitat Analysis

CLIENT:
Department of Transport and Main Roads

SHEET TITLE:
Figure 4.2 - Koala Habitat Map within the Project Area (Northern Portion)

SHEET NUMBER:
PR15024_KPHA_Rev 4

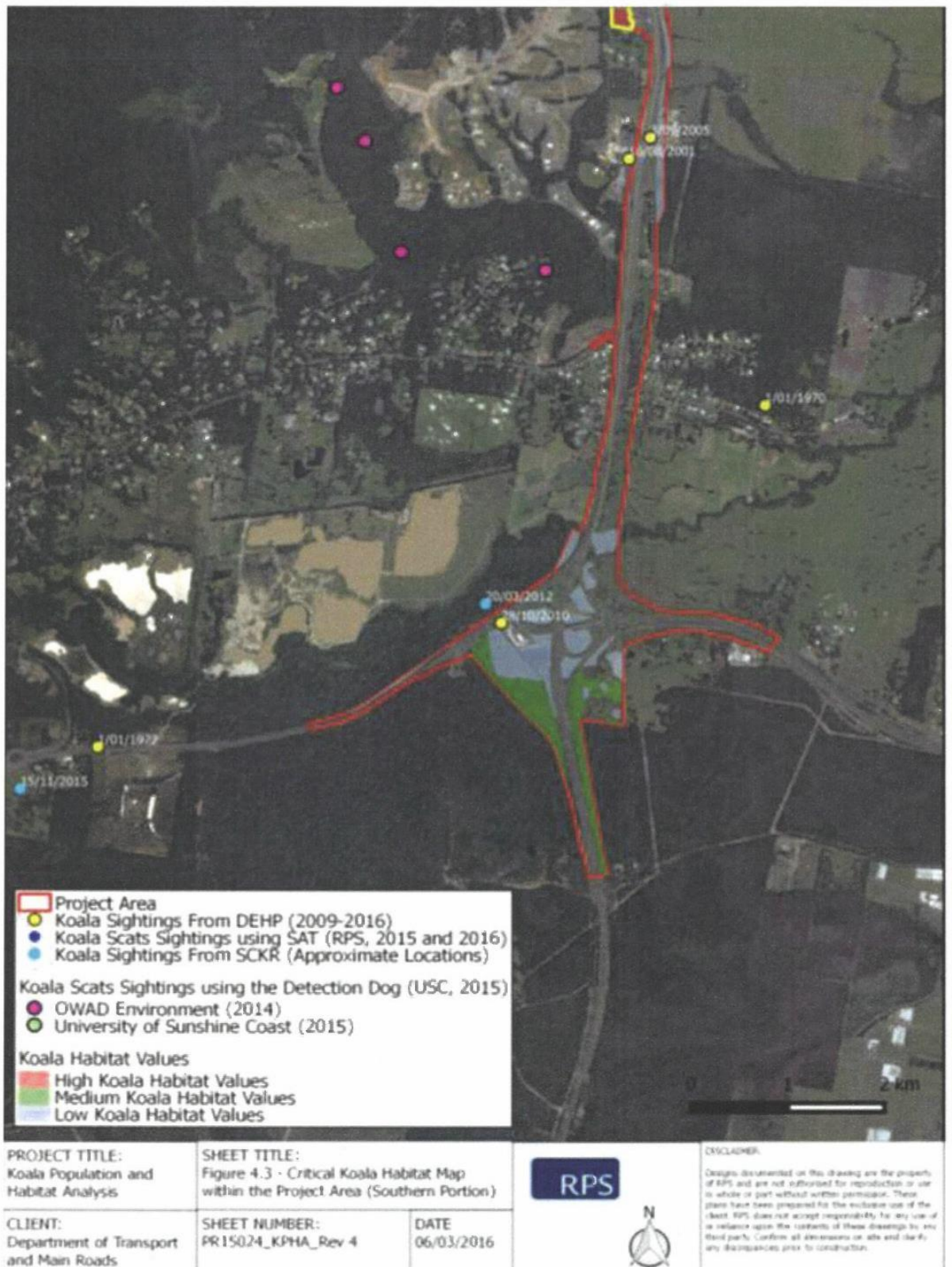
DATE:
06/03/2016

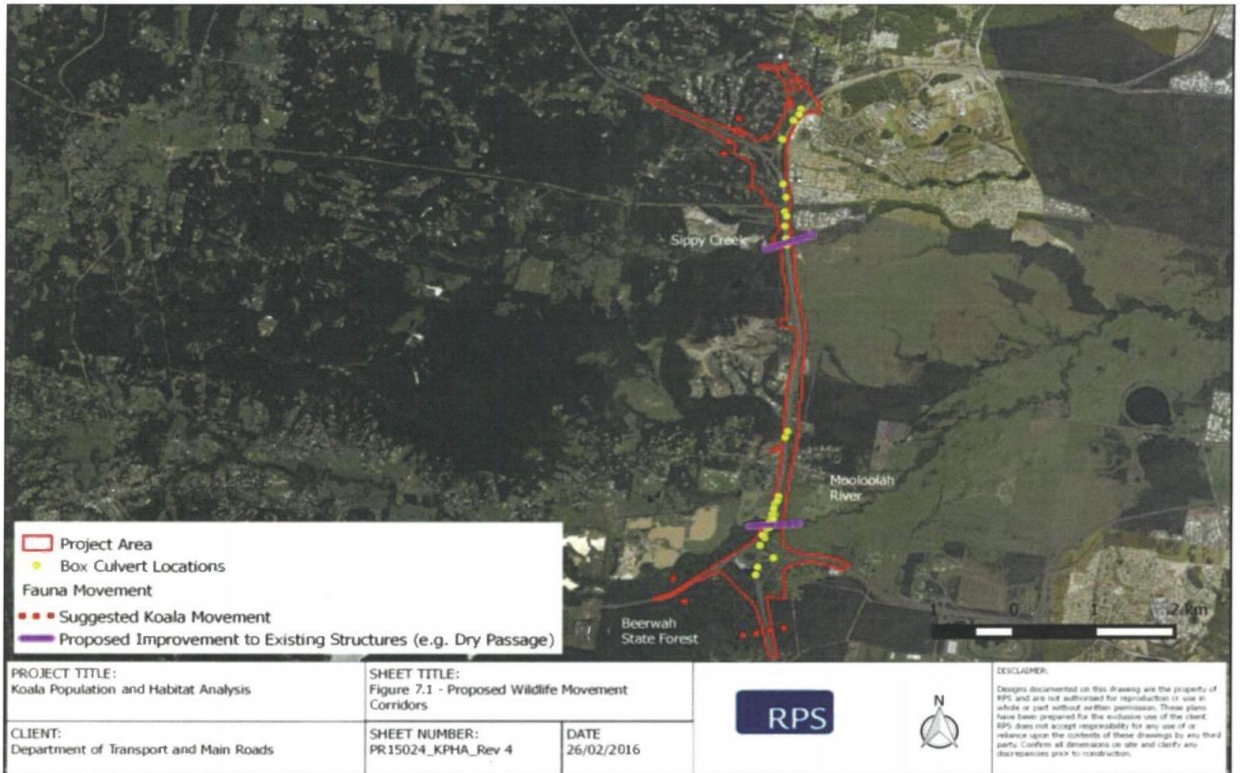
RPS

N

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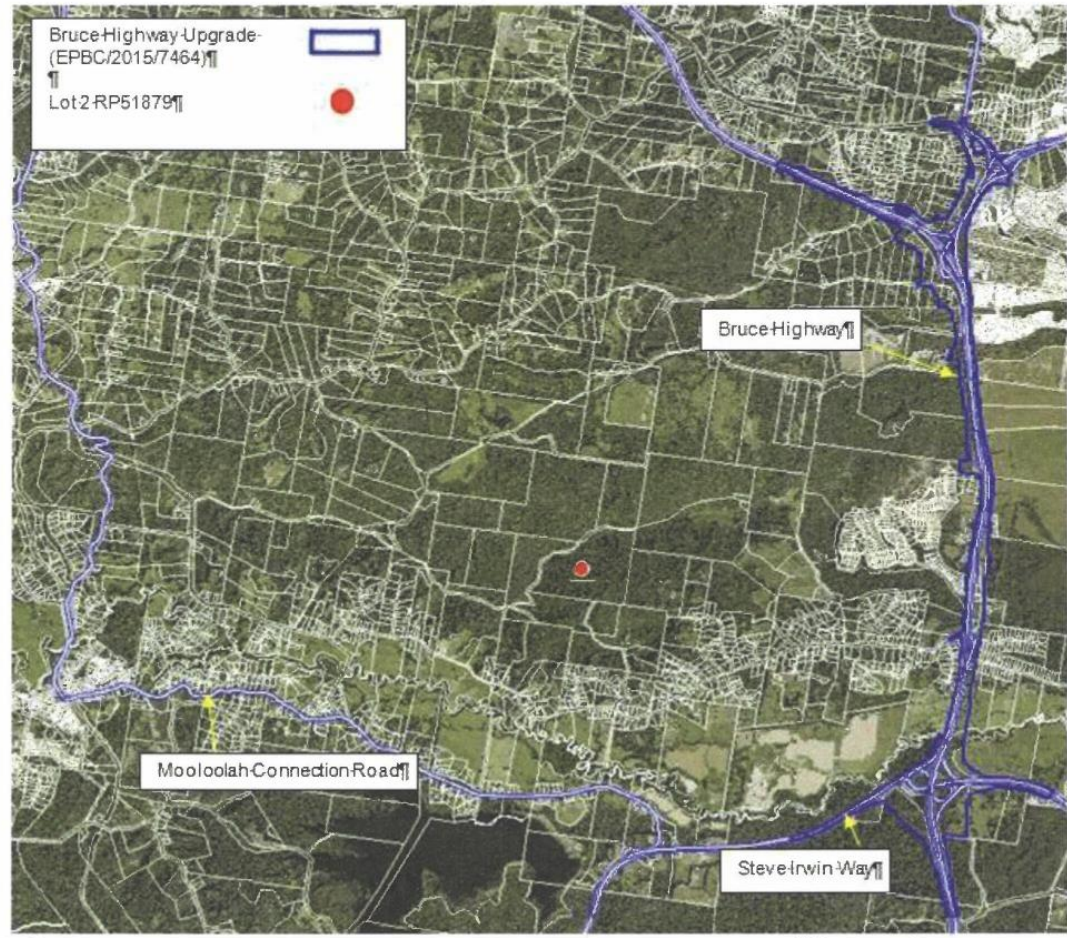
Attachment D (continued)



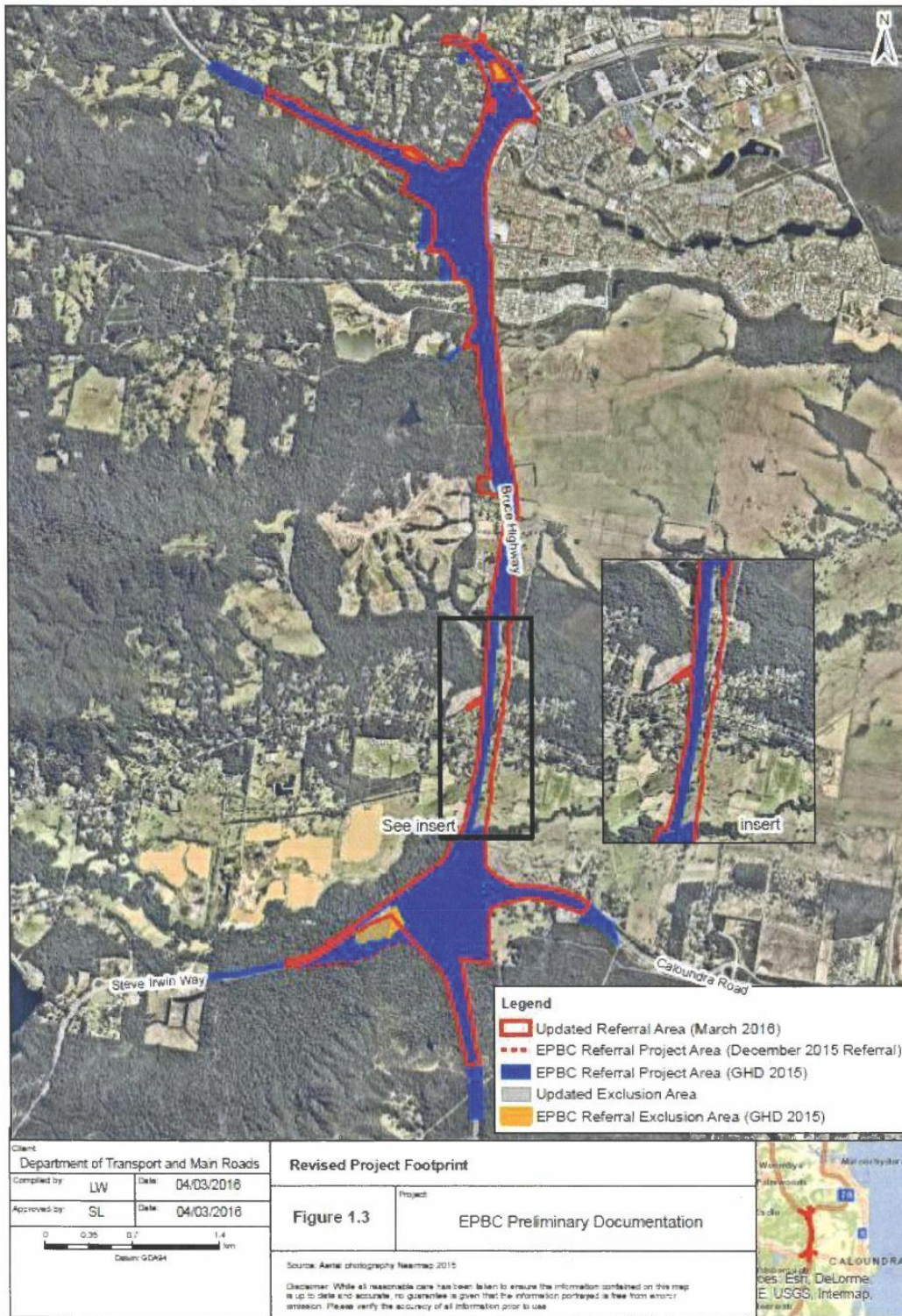


Attachment F

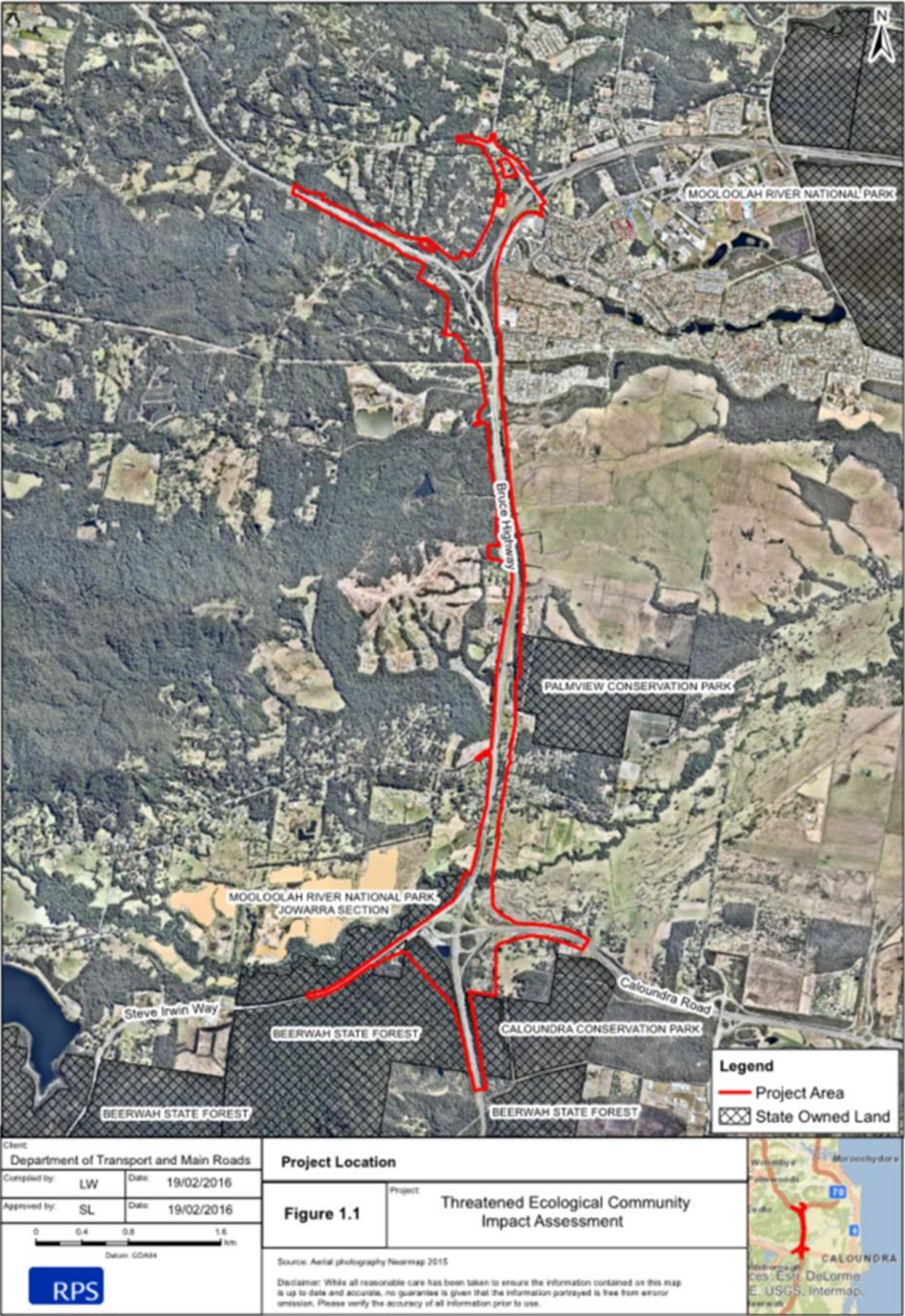
Lot 2 RP51879 (Missing Link Road, Glenview)



Attachment G



Appendix B – CR2SM Project Site Threatened Ecological Community



Appendix C – As-Built Clearing Diagrams

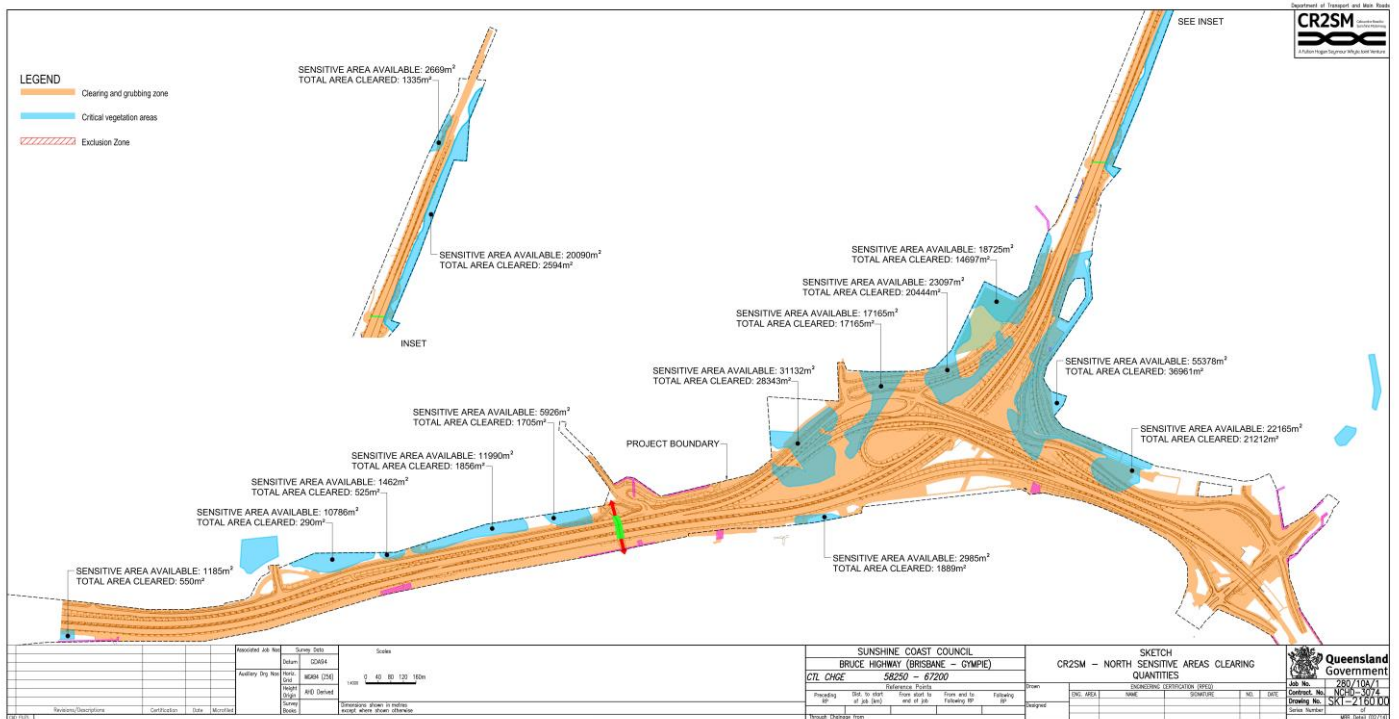


Figure 1: Medium and high value koala habitat cleared to date - North

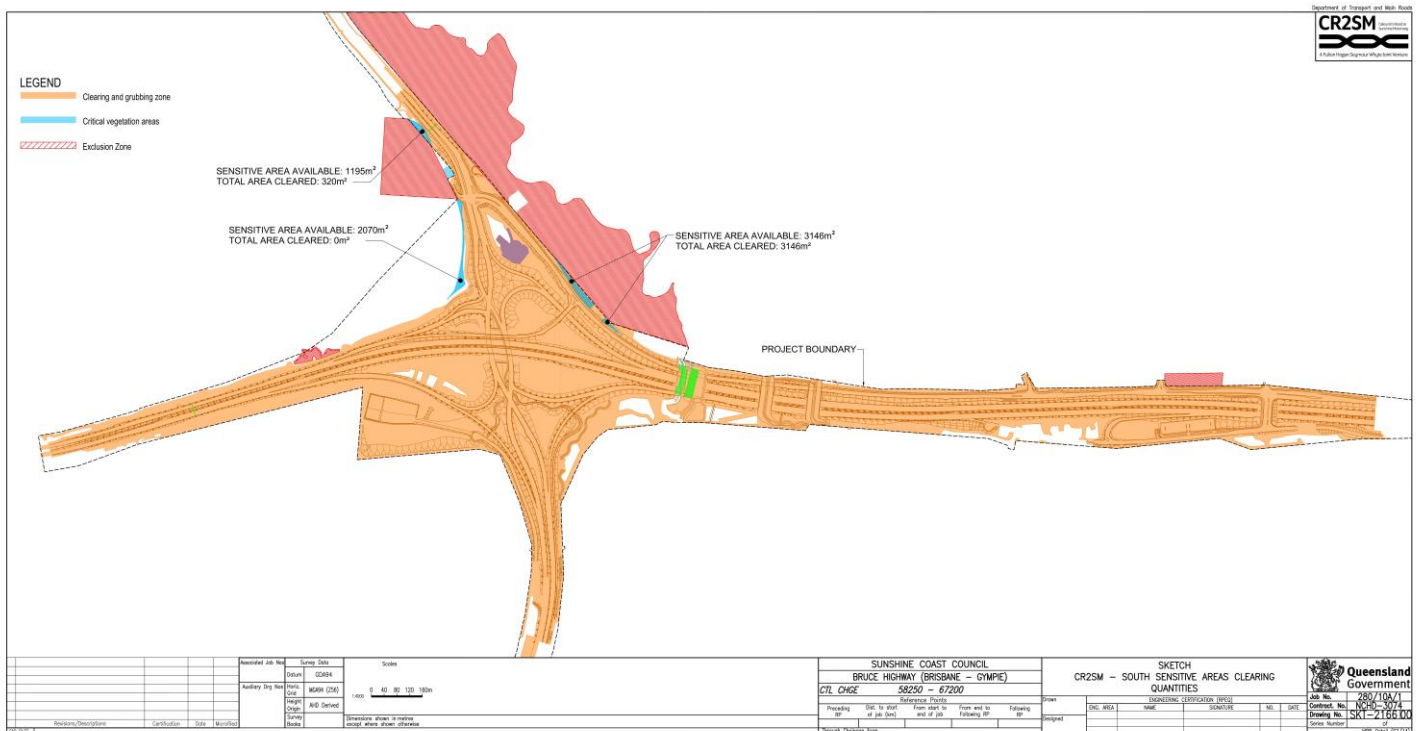
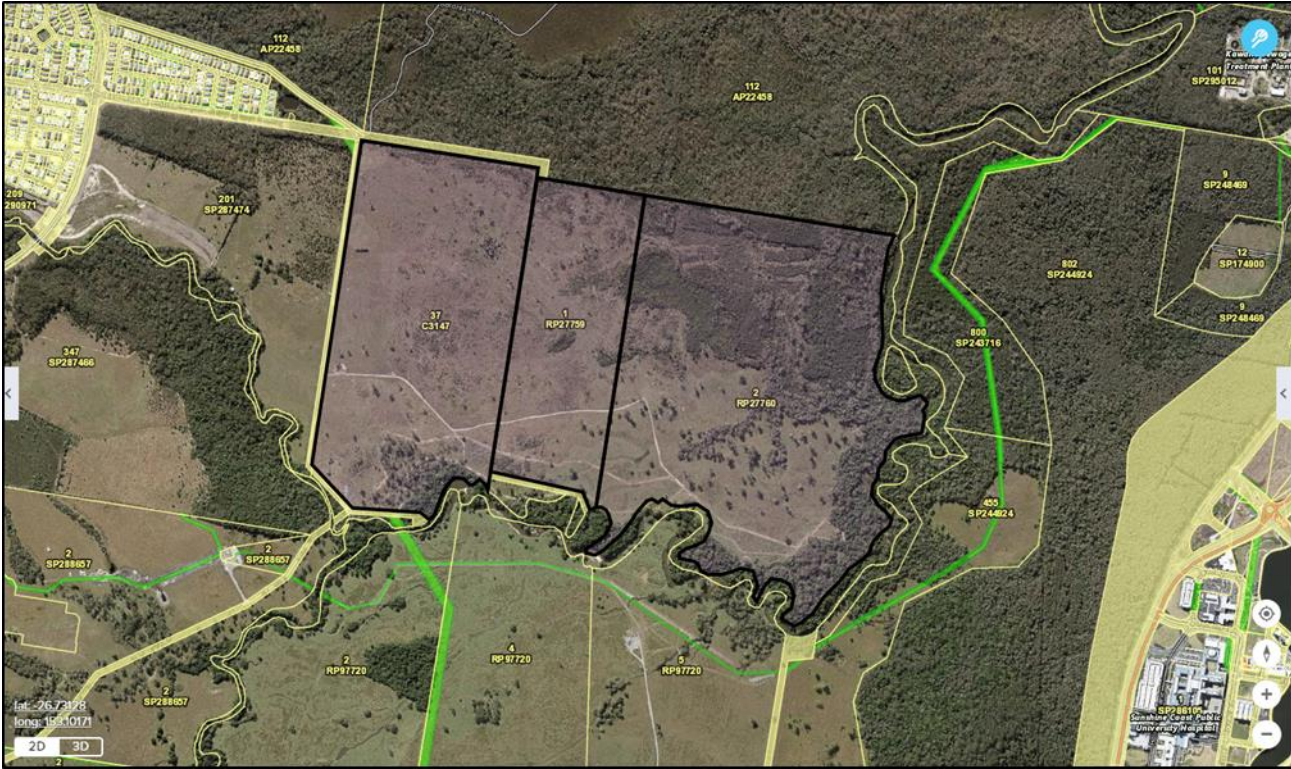


Figure 2: Medium and high value koala habitat cleared to date - South



Figure 3: Total TEC cleared

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

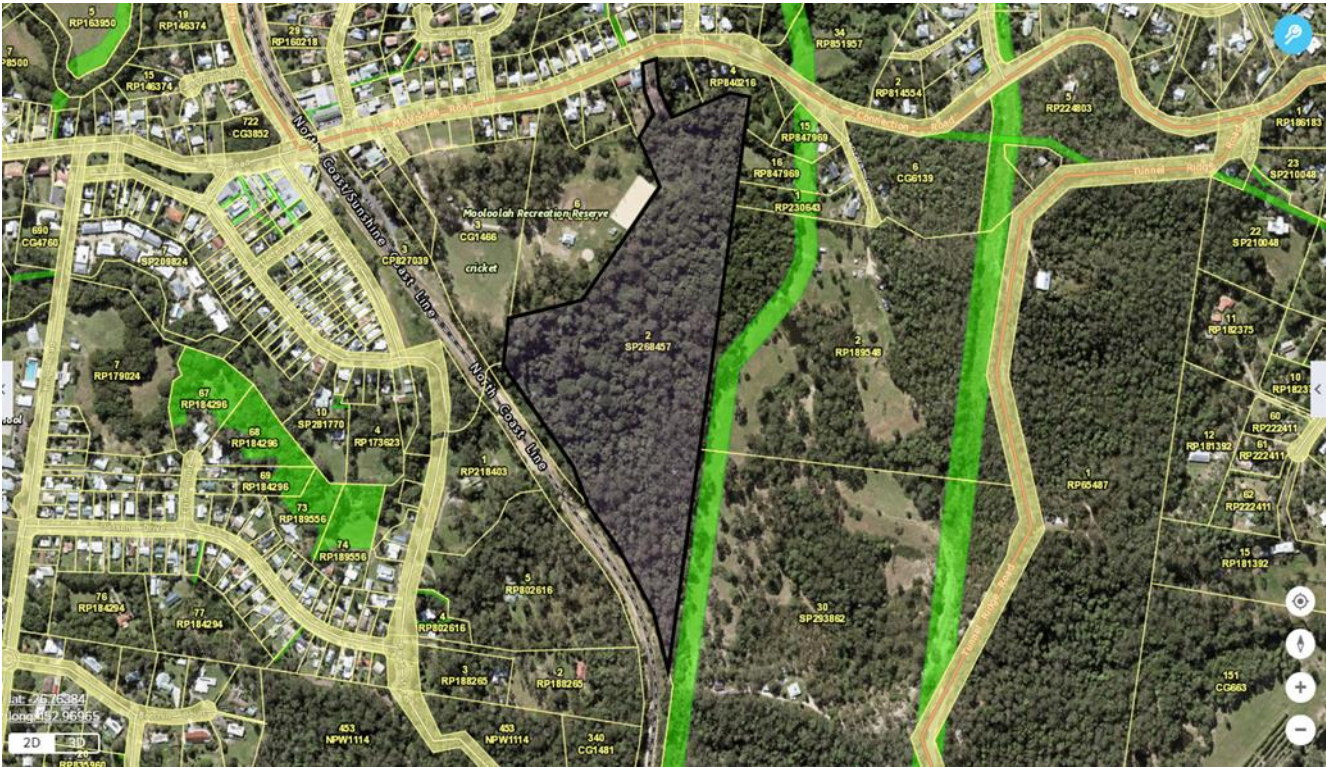


Lower Mooloolah River Environmental Reserve Offset Site.



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

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 1600
Maroochydore Queensland 4558

Telephone 1800 749 022
Website www.tmr.qld.gov.au
Email brucehwycr2sm@tmr.qld.gov.au
ABN 39 407 690 291

Appendix H – Non-Conformance List

Table: Project Identified Non-Conformances and Corrective Actions

| Non Compliance Detail | Detected By | Date of Non-Compliance | Agencies Notified | | | | How the Non-conformance will be corrected | Who is responsible for correcting the NC | Date Corrective Action | What measures have/will be taking to avoid recurrence | Status 2020-2021 |
|---|---------------------|------------------------|-------------------|-------------------|-------|-----------------------|--|--|------------------------|--|--|
| | | | Agency | Date notification | Via | By | | | | | |
| 2019-2020 Reported Non Compliance | | | | | | | | | | | |
| The OEMP revision 3 - Table 4.2 Fauna Management Pre-clear requires the establishment of temporary fauna (koala and giant barred frog) exclusion fencing surrounding construction sites to prevent fauna access. Temporary fencing has been removed in anticipation of installation of permanent fencing in several locations, however design changes and pending design change requests have resulted in a time lag between temporary and permanent. In cases where permanent fencing has not progressed, re-installation or maintenance of temporary frog fencing has been undertaken. Project logistics, switches, disciplines, significant weather, flooding and programming has provided challenging circumstances across the project in regard to the conditions. | Internal Audit | Sep-20 | DoAWE | 15-Feb-21 | email | Dallas Frazier (FHSW) | Project Non-Conformances have been raised. Contractor progressively installing permanent fencing at an earlier construction stage and where construction allows. Temporary barriers were implemented. | Dallas Frazier (FHSW) | Feb-21 | Maintenance of temporary fencing and expedited permanent fencing construction has been programmed and currently being completed. Areas where design clarifications were occurring, temporary fences were installed to manage intermediate staging until final design approval or clarification. All works now completed and permanent fauna fencing installed across the project | Non conformance closed. Installation of all permanent fauna fencing has been completed |
| 2018-2019 Reported Non Compliance | | | | | | | | | | | |
| The OEMP Revision 3, 4 - Table 4.1 (Weed management) requires implementation of the weed hygiene protocols, which include the following: Footwear must be thoroughly cleaned and disinfected at the commencement of fieldwork. Audit shows this may not have been undertaken at all times. | Third party Auditor | Sep-19 | DoAWE | 13-Dec-19 | email | Aline Rolim (FHSW) | A project Non Conformance has been raised. Weed control and maintenance is occurring at the site. Vehicle washdown is being undertaken. Weed audits have been undertaken prior to construction and successful weed removal is undertaken at least 2 weeks prior to clearing. | Dallas Frazier (FHSW) | Ongoing | Ongoing management of weeds to ensure no new infestations on site and therefore, no risk of weed spread. | Non conformance closed Site is continuing with weed management practices on site as per EMP-O and until completion of maintenance period (August 2023) |

Table Cont'd: Project Identified Non-Conformances and Corrective Actions

| Non Compliance Detail | Detected By | Date of Non-Compliance | Agencies Notified | | | | How the Non-conformance will be corrected | Who is responsible for correcting the NC | Date Corrective Action | What measures have/will be taking to avoid recurrence | Status 2019-2020 |
|--|-------------|--------------------------|-------------------|-------------------|-------|--------------------|---|--|------------------------|---|---|
| | | | Agency | Date notification | Via | By | | | | | |
| 2018-2019 Reported Non Compliance Con'td | | | | | | | | | | | |
| The OEMP revision 3 - Table 4.2 <i>Fauna Management Pre-clear requires the establishment of temporary fauna (koala and giant barred frog) exclusion fencing surrounding construction sites to prevent fauna access.</i> Partial compliance. All temporary giant barred frog barrier has been installed at required locations. Temporary fauna barriers have been partially installed across construction works. | TMR | June 2018 Ongoing | DoAWE | 13-Dec-19 | email | Aline Rolim (FHSW) | Project Non Conformances have been raised. The Contractor is progressively installing permanent fencing at an earlier construction stage and where construction allows. Temporary barriers will also be implemented. | Dallas Frazier (FHSW) | Jun-20 | Expedited permanent fencing construction underway. | Non conformance closed. Installation of all permanent fauna fencing has been completed |

Appendix I – Fauna Furniture Locations



Figure 1. Permanent fauna fence with frog exclusion fencing and Koala escape pole adjacent to Bruce Highway



Figure 2. Completed Steve Irwin Way Fauna passage



Figure 3 and 4. Completed Southern Fauna passage



Figure 5. Completed Northern Fauna passage



Figure 6, 7 and 8. Fauna structures installed at Sippy Creek



Figure 9 and 10. Fauna structures installed at Mooloolah River



Figure 11. Rope Bridge across Steve Irwin Way

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