



Commonwealth approval EPBC 2013/6963 conditions compliance tracking and management annual report

Nambucca Heads to Urunga Pacific Highway Upgrade

February 2016 – January 2017

January 2017

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Attachments

Attachment 1	In Situ Flora Monitoring Report
Attachment 2	Sensitive Area Plans (SAPs)
Attachment 3	Threatened Flora Translocation Monitoring Report
Attachment 4	Annual Fauna Monitoring Summary Report
Attachment 5	July 2016 EPBC Surveillance Checklist

Glossary / Abbreviations

Acronyms used in this document

Acronym	Definition
BEM	Benchmark Environmental Management
CAR	Corrective Action Request
CEMP	Construction Environmental Management Plan
Clear Milkvine	Marsdenia longiloba
Cryptic Forest Twiner	Tylophora Woollsii
Ecos	Ecos Environmental Pty Ltd
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ER	Environmental Representative - A suitably qualified and experienced person independent of project design and construction personnel employed for the duration of construction. The principal point of advice in relation to all questions and complaints concerning environmental performance.
NCR	Non Conformance Report
NGOMP	Norton and Griffin Offset Management Plan
SAP	Sensitive Area Plan
SES	Sandpiper Ecological Surveys
TFOMP	Threatened Flora Offset Management Plan
TFMP	Threatened Flora Management Plan
TFOS	Threatened Flora Offset Strategy

Introduction

Purpose of this document

The purpose of this document is to facilitate demonstration by Roads and Maritime Services (Roads & Maritime) of satisfactory compliance with the Commonwealth approval conditions for the Nambucca Heads to Urunga Pacific Highway Upgrade project with particular reference to Condition 24, which requires an annual report addressing compliance with each of the conditions of approval. The report covers the third period from February 2016 to January 2017.

For each condition, one or more actions are identified which, once implemented, will achieve satisfactory compliance with the condition. Where appropriate, the timing for completion of individual actions is identified.

For each action, the minimum relevant documentation to support demonstration of compliance is identified. This documentation would inform any future compliance audit.

Where an approval condition makes reference to information being provided to the Commonwealth Minister for the Environment, the associated action(s) assumes that this information will be provided, in the first instance, to the Commonwealth Department of the Environment.

Key dates

The timing for compliance with certain approval conditions is linked to specific dates as follows:

- Commonwealth approval: 26 November 2013
- Start of construction: 4 December 2013
- Scheduled completion of construction: March 2017
- Expiry of Commonwealth approval 1 January 2031
- Publish Annual Compliance Report 4 March 2017

Responsibility for compliance

Responsibility for compliance with all approval conditions sits with Roads & Maritime.

NSW planning approval

Condition 29 (of the Commonwealth approval) provides for the use of plans, strategies or reports required under the NSW approval to satisfy the requirements of the Commonwealth approval, subject to provision of a separate document demonstrating how the document addresses the relevant Commonwealth approval requirements.

Specialists in the fields of flora and fauna have been engaged by Roads & Maritime and the construction contractor to undertake various ecology-related management activities with regard to complying with the NSW planning approval and the CEMP. The following specialist had been engaged to undertake ecology related activities prior to the EPBC approval:

- Benchmark Environmental Management (BEM) has prepared an ecological monitoring program that addresses relevant matters in the NSW planning approval. The ecological monitoring program has been incorporated into the CEMP for the contractor to implement during construction.
- Ecos Environmental (Ecos) has been engaged by Roads and Maritime to prepare a Threatened Flora Translocation Program that addresses relevant matters in the NSW planning approval and has additionally been engaged by the contractor to provide advice on the implementation of the

translocation program and provide specialist advice on flora to implement other CEMP requirements.

- Sandpiper Ecological Surveys (SES) has been engaged by the contractor to provide specialist advice on fauna to implement CEMP requirements.

This document contains actions relevant to compliance with Commonwealth approval requirements.

Definitions for action status conditions

TBA	To Be Arranged - Further works required prior to starting action.
In progress	Action initiated but not yet complete.
Ongoing	Action in place but ongoing works required to ensure compliance.
Complete	Action completed.

Non Compliances with EPBC Conditions

No non-compliances for the period were recorded.

Condition 1

The person taking the action must not clear more than:

- a) 171 ha of Koala habitat;
- b) 184 ha of Grey-headed Flying-fox habitat
- c) 166 ha of Spotted-tail Quoll habitat;
- d) 73 ha of habitat for the Swift Parrot and Regent Honeyeater; and
- e) 36 ha of habitat for the Cryptic Forest Twiner and Clear Milkvine.

Action	Timing	Status	Compliance evidence
1.1 Progressive review of area cleared	Regularly during construction	Complete	Record of clearing numbers
1.2 Review outstanding clearing requirements at 75% clearing to confirm clearing limitation targets will be met	Construction (75% clearing)	Complete	Memo provided 18-6-2014
1.3 Confirm clearing limitation targets have been met	Post-construction	Complete	As built survey of actual clearing area.

Final Clearing Quantities (EN1 FDD + Additions)			
Habitat Type	Final Clearing Quantity (ha)	Limit (ha) as per Condition 1 Approval	Current Difference showing remaining habitat (ha) under Condition 1 Approval
Koala	157.89	171	13.11
Grey-headed Flying-fox	170.84	184	13.16
Spotted –tail Quoll habitat	71.40	166	94.60
Swift Parrot and Regent Honeyeater	71.40	73	1.60
Cryptic Forest Twiner and Clear Milkvine	34.11	36	1.89

Mainline clearing was completed during 2014. Small amount of clearing was undertaken throughout 2015 and 2016.

Clearing has now been completed and the table above shows the final figures for each habitat type. Clearing totals for each habitat type were below the limits in accordance with Condition 1.

Condition 2

Within 30 days of the completion of *construction* works, the person taking action must:

- a) notify the Minister in writing of the completion of construction; and
- b) provide a report (supported by appropriate mapping) that clearly shows the location of all vegetation and EPBC species habitat cleared as a result of the action, and that demonstrates compliance with Condition 1.

Action	Timing	Status	Compliance evidence
2.1 Prepare works as executed Environmental and Clearing Plans to show extent of clearing.	Within 30 days of construction completion	TBA	Report & supporting mapping
2.2 Calculate final clearing quantity and include in summary table.	Within 30 days of construction completion	TBA	Report & supporting mapping
2.3 Provide written notification (letter) of completion of construction and report to Dept of the Environment	Within 30 days of construction completion	TBA	Notification letter Completed document transmittal form or equivalent

Completion of construction works is expected in early 2017. Once completion of construction is achieved, Roads and Maritime will ensure actions 2.1 – 2.3 are undertaken to ensure compliance with Condition 2.

Condition 3

The *person taking the action* must undertake progressive rehabilitation of *EPBC species' habitat* in areas where *temporary infrastructure* is to occur or, where *short term* impacts are anticipated. Where appropriate, the landscaping / rehabilitation of these areas must be done in a manner that targets the needs and requirements of *EPBC species*.

Action	Timing	Status	Compliance evidence
3.1 Finalise urban design and landscape plan to capture rehabilitation and revegetation temporary works and areas of short term impact.	Pre-construction or prior to any works in EPBC species habitat areas during construction	Approved Feb 2015	Urban Design and Landscape Plan
3.2 Implement rehabilitation / landscaping of affected areas as per landscape design.	Following cessation of use of affected areas	Completed	No EPBC species habitat was cleared as part of the creation of temporary infrastructure

Note: Urban Design Landscape Plan was approved by NSW Department of Planning (DoP) in February 2015.

Landscape planting commenced on Wednesday 4th November 2015. All permanent landscaping works have been completed across the project. Ongoing maintenance works including weed management will be undertaken by the contractor for three years following construction completion under their deed requirements.

No EPBC species habitat was cleared as part of the creation of temporary infrastructure or short term impacts as part of the project.

All sites classified as Temporary Infrastructure for the project were located in areas where no confirmed EPBC habitat was located, and also no Biometric vegetation communities were cleared for the creation of these sites i.e. located in areas previously cleared for agricultural or Forestry purposes.

Condition 4

At completion of construction (and every three years thereafter for the life of this approval or until *the Minister* has agreed in writing that further revisions are no longer required) a progress report assessing the effectiveness of restoring habitat on site (in accordance with Condition 3) must be provided to *the Minister*.

Action	Timing	Status	Compliance evidence
4.1 Annual Compliance Report Number 3 to Dept of the Environment	March 2017	Complete	SAP's showing temporary infrastructure was not located within EPBC Species habitat (Attachment 2)

Landscape planting commenced on Wednesday 4th November 2015. All permanent landscaping works have been completed across the project. Ongoing maintenance works including weed management will be undertaken by the contractor for three years following construction completion under their deed requirements.

No EPBC species habitat was cleared as part of the creation of temporary infrastructure or short term impacts as part of the project.

All sites classified as Temporary Infrastructure for the projects were located in areas where no confirmed EPBC habitat was located, and also no Biometric vegetation communities were cleared for the creation of these sites i.e. located in areas previously cleared for agricultural or Forestry purposes.

Condition 5

Prior to *commencement of the action* the person taking the action must engage a *suitably qualified expert* to:

- a) map any areas of habitat for EPBC species that lie adjacent to the construction zone;
- b) map the locations of known individuals of Clear Milkvine and Cryptic Forest Twiner that lie adjacent to the construction zone;
- c) map any areas of lowland rainforest of subtropical Australia that lie adjacent to the construction zone; and
- d) clearly mark exclusion zones along (or around) these areas on site.

Action	Timing	Status	Compliance evidence
5.1 Engage suitably qualified expert	Prior to start of construction	Complete	Ecos Environmental mapped vegetation and habitat types with information included in SAPs.
5.2 SAPs to show required items	Prior to construction in affected areas	Complete	SAPs drafted prior to start of construction. SAPs – amended as required with any updated information
5.3 Exclusion zones to be marked on site as appropriate	Prior to construction in affected areas	Complete	Exclusion zone delineation installed prior to construction in affected areas and maintained as required. Ongoing compliance documented through surveillance checklist.
5.4 SAPs Updated	Construction	Complete (last revised October 2014)	SAPs updated following new information or removal of sensitive area. Tracked through updated revision of the SAPs. (Refer to Attachment 2)

Condition 6

To mitigate and reduce indirect impacts on the *exclusion zones* identified as a requirement of Condition 5, the *person taking the action* must:

- a) ensure that temporary and high visibility fencing will be erected to restrict access to *exclusion zones*. Temporary fencing must be of a design appropriate to deter the passage of vehicles or placement of construction materials, equipment and waste, in *exclusion zones* where accidental incursion could reasonably occur;
- b) implement measures to prevent the spread or establishment of new or additional weed species, soil or plant pathogens into these *exclusion zones* as a result of *construction*;
- c) implement stormwater management measures to prevent the unintentional diversion or discharge of stormwater during both construction and operation over *exclusion zones*; and
- d) implement targeted measures for managing construction impacts to *Cryptic Forest Twiner* and *Clear Milkvine* associated with dust, sedimentation and erosion.

Action	Timing	Status	Compliance evidence
6.1 Implement protection measures:			
(a) Fencing of exclusion zones	During construction	Complete	Exclusions zones installed prior to clearing. Exclusion delineation to be maintained until construction completion. Environmental surveillance checklist documenting compliance.
(b) Prevent spread of weeds, soil or pathogens	During construction	Complete	CEMP measures include implementation of Roads and Maritime best practice measures detailed in the biodiversity guidelines. Including plant wash down prior to entry onto site and separation and segregation of weed infested topsoil. Environmental surveillance checklist documenting compliance.
(c) Stormwater measures to prevent discharge of stormwater during construction and operation over exclusion zones	Detailed design and during construction	Complete	Detailed design includes the retention and treatment of road runoff adjacent to sensitive areas. CEMP measures include implementation of best practice erosion and sediment controls during construction. Environmental surveillance checklist documenting compliance

Action	Timing	Status	Compliance evidence
(d) Implement target measures to manage construction impacts to threatened flora.	During construction	complete	<p>Directly and indirectly impacted threatened flora removed from site through implementation of Threatened Flora Management Plan.</p> <p>CEMP includes best practice measures to manage dust and erosion and sedimentation impacts. Environmental surveillance checklist documenting compliance.</p> <p>Progressive revegetation to be undertaken to provide dense ground cover that excludes weeds. Revegetation checklists maintained monthly.</p>
6.2 Monitor In-situ Roadside Threatened Flora	Every 6 months for the first two years and then yearly for 5 years.	Ongoing (Refer to Attachment 1 for Year three Summary Report)	Summary of roadside threatened plant monitoring prepared and included in the annual translocation monitoring report (Attachment 1)

Monthly weed management reports are submitted by Lend Lease to Roads and Maritime. The reports identify areas of concern and track the progress of weed eradication activities.

In Situ road side threatened flora monitoring has been completed for as required by ECOS

- Five in-situ Slender Marsdenia plants within 10 metres of the edge of clearing/construction were monitored. There were no mortalities after three years. All appeared healthy, most with active shoot growth and in similar condition to last year.

Condition 7

The *person taking the action* must engage a *suitably qualified expert* to undertake pre-clearing fauna searches within all areas proposed for disturbance, including: hollow bearing trees, logs, existing culverts and bridges, no earlier than 48 hours prior to the removal of vegetation occurring in that area to ensure that the area is free of the *Koala* and *Spotted-tail Quoll*.

Action	Timing	Status	Compliance evidence
7.1 Engage suitably qualified expert	Prior to start of construction	Complete	Sandpiper Ecological Surveys engaged by contractor in accordance with SWTC Appendix 5. (Refer to Attachment 4 Annual Fauna Monitoring Summary Report)
7.2 Pre-clearing fauna searches identified as activity in fauna management plan (or equivalent)	Prior to start of construction	Complete	BEM Ecological Monitoring Program
7.3 Undertake pre-clearing fauna searches as required	Prior to start of construction in specified areas	Complete	Environmental surveillance checklist.

- Minor clearing was undertaken during the reporting period. No fauna was captured or Hollow bearing trees recorded during pre-clear inspections. No further clearing works are scheduled for the approved Project.
- Sections 2.1 and 3.2 of the ecological monitoring program prepared by BEM and the approved CEMP addresses undertaking pre-clearing fauna searches and fauna relocation.
- Section 5 of the ecological monitoring program prepared by BEM addresses reporting.

Condition 8

The *person taking the action* must implement measures to relocate and/or ensure the appropriate care of individuals of *EPBC species* that are identified during searches referred to in condition 7.

Action	Timing	Status	Compliance evidence
8.1 Provide for appropriate fauna relocation measures in CEMP documentation	Prior to construction	Complete	Fauna rescue procedure contained with the FFMP. A specific koala relocation strategy has been prepared and forms an attachment to the Clearing and Grubbing Environmental Work Method Statement.
8.2 Relocate affected fauna as per procedures in ecological monitoring program	As part of pre-clearing activities	Complete	Environmental surveillance checklist. (refer to Attachment 6)

Note:

- CEMP contains fauna rescue procedure and a specific koala relocation strategy was developed by SES in consultation with NSW EPA Senior Threatened Species Officer.
- No EPBC fauna was relocated or EPBC threatened flora observed during the reporting period.

Condition 9

Prior to commencement of the action the person taking the action must engage a suitably qualified expert to collect baseline data on local populations of the Koala and Spotted-tail Quoll. The data must address the likely densities and distribution of these species within all habitat adjacent to the construction footprint that are likely to contain these species and that are likely to be adversely impacted by the action (as determined by a suitably qualified expert).

Action	Timing	Status	Compliance evidence
9.1 Engage suitably qualified expert	Prior to start of construction	Complete	Roads & Maritime engagement of BEM.
9.2 Review existing baseline data and assess adequacy with regard to specified matters for management of impacts on identified fauna species	Prior to completion of clearing.	Complete	Short report or equivalent documenting review outcomes and any identified information gaps
9.3 Where substantive information gaps are identified, develop strategy to obtain required information	Prior to construction activity in adjacent to areas containing potential habitat for either of the two species	Complete	Short report or equivalent documenting methodology used for monitoring, results of monitoring and compiling the new results with existing information.

Note:

- BEM provided the report in August 2014 that consolidates actions 9.2 and 9.3. The report concluded that the local koala population in the vicinity of the Project corridor is of low density. Consequently, the available information is insufficient to determine an accurate estimate of the koala population. However, assuming there is a low density of koalas in the locality, the Project corridor appears to traverse only a small number of home ranges of individual koalas. The project design incorporates a combination of fauna exclusion fencing and fauna underpass structures within 500 metres of each sample site where koala activity was recorded. The Project is expected to have minimal impact on the viability of the local koala population by preventing direct mortalities during vegetation clearing and operation and by maintaining opportunities for safe koala movement across the Project corridor once operational.
- In reference to Spotted Tail Quolls, no quolls were identified during the study. This is not definitive evidence that the species does not occur in the study area. Whether there is a resident population is uncertain but the distribution of records and presence of recent (2010) records are sufficient to conclude that quolls utilise the study area. Quolls are predicted to occur at low densities and with heightened awareness records may be obtained during construction or in the operational phase. Given the predicted occurrence of quolls the implementation of specific measures, such as underpasses and fauna fencing is warranted to enable quolls to effectively cross the upgraded highway.
- Koala surveys completed by OEH (Jon Turbill) for Bellingen and Nambucca Shire Councils were also used to assess the need for fauna fencing. Following a meeting onsite, further fauna fencing was specified for the south of Oyster Creek. This followed Kola sightings to the immediate east of Oyster Creek during OEH monitoring.

Condition 10

The *person taking the action* must construct and maintain *fauna crossings* and fencing in areas that are likely to benefit the Koala and *Spotted-tail Quoll*.

Action	Timing	Status	Compliance evidence
10.1 Provide for fauna crossings and fencing in detailed design	During design	Completed	Final design showing required fauna crossings and fencing. Refer to Attachment 5 for the Underpass monitoring report.
10.2 Construct fauna crossings and fencing	Construction	Completed	Refer to Attachment 5 for the Underpass monitoring report.
10.3 Undertake regular maintenance of fauna crossings and fencing	Post-construction	Ongoing monitoring as per the Ecological Monitoring Program	Annual reporting and/or maintenance inspection reports

Note:

- Construction of the permanent fauna fencing commenced in June 2015.
- All combined /dedicated fauna crossing have been completed and installation of the vertical and horizontal refuge poles that offer connection from the mitigation structures to the adjacent native vegetation. A total of 22 combined and 4 incidental crossing have been constructed on the project
- The project scope has increase to include approximately 4km of additional permanent fauna fencing to be installed around the Waterfall Way intersection. The fencing will start at the Shortcut/South arm intersection and work its way to the northern most extent of the project. This followed the Koala road kill recorded in August 2014 immediately south of the existing Waterfall Way Interchange. This work was completed in the first half of 2016.
- Fauna Fencing was completed in August of 2016.

Condition 11

The *person taking the action* must engage a *suitably qualified expert* to advise on the design and location of *fauna crossings*, fencing and road medians, for the purpose of maintaining habitat connectivity and facilitating the safe passage of the *Koala* and *Spotted-tail Quoll* across the Pacific Highway.

A *suitably qualified expert* must also be engaged to design a comprehensive monitoring program that tests the *long term success* of these measures.

Action	Timing	Status	Compliance evidence
11.1 Design development in consultation with NSW EPA Biodiversity Specialist	During design	Complete	Environmental Design Fauna Crossing Refinements report approved by NSW DP&I.
11.2 Engage suitably qualified expert to design monitoring program	Prior to start of construction	Complete	Roads and Maritime engagement of BEM
11.3 Prepare monitoring program	Prior to start of construction	Complete	BEM Ecological Monitoring Program

Note:

- Monitoring addressed via Section 3.5 of BEM ecological monitoring program.
- The Before-After Control Versus Impact (BACI) design of the monitoring program requires the monitoring of the fauna crossings prior to the installation of the fauna fence (i.e. before the underpass structures become operational).
- The first stage of the construction phase underpass monitoring was conducted in October and November 2014. The second stage was undertaken in February and March 2015.
- The 1st year of Operational phase underpass monitoring is scheduled for Year 2 of Operation as per the BEM ecological monitoring program

Condition 12

To inform the *long term success of fauna crossings*, fencing and road medians the *person taking the action* must engage a *suitably qualified expert* to prepare a strategy for monitoring and recording any road kill sightings of the *Koala* and *Spotted-tail Quoll* along the *Pacific Highway*. Prior to *commencement of the action*, the road kill monitoring and recording strategy must be implemented.

Action	Timing	Status	Compliance evidence
12.1 Ecological Monitoring Program to include road kill monitoring and recording strategy	Prior to start of construction	Complete	Section 3.5.3 of the Ecological Monitoring Program specifies road mortality monitoring and recording strategy
12.2 Implement strategy	Prior to start of construction and ongoing during construction	Complete	Environmental surveillance checklist. Summary provided below.
12.3 Report on outcomes of monitoring strategy	Construction Post-construction	Ongoing	Annual reporting

Threatened Fauna Road Kill – Summary:

Date	Species	Location
-	-	-

There were no recorded EPBC Species road kills for the reporting period.

- Attachment 4 details the Annual Fauna monitoring reports completed for the project.

2.2 Road-kill Surveys

Road-kill surveys along the Pacific Highway were undertaken throughout the clearing phase (i.e. December to July). A weekly two-way vehicle traverse between the Waterfall Way interchange and the Nambucca Heads exit (Link Road) was conducted. The survey was conducted at speeds of 50-80kph. The single traverse was supplemented by multiple shorter traverses during weekly movement throughout the site. Care was taken to avoid duplicating records and all records subsequent to the full traverse were vetted. Data collected included: survey date, species or species group (e.g. wallaby, possum, and bird), location (distance to nearest cross-road), presence of clearing within past 48hrs and presence of safety barriers or exclusion fence. Safety requirements prohibited pedestrian access onto the existing highway and therefore it was not possible to closely inspect road-killed fauna to improve accuracy of identification.

3.3 Road Kill Survey

A total of 102 records of road-killed fauna were obtained between 17 December 2013 and 29 September 2014 (Table B6, Appendix B). Twenty species and several species groups (i.e. snake, bird) were identified during the survey. The ability to identify species depended

on the degree to which the carcass had been degraded and location within the road alignment. Animals on the pavement were easier to identify than those on the verge.

For comparison, the sample area was divided into two sections, adjoining clearing (Link Road to 250m north Ballard's Road & 600m north Short Cut Road to Waterfall Way overpass – total of 12.71km) and no clearing (250m north Ballard's Road to 500m North Short Cut Road – total of 8.95km). Fifty-nine records occurred adjacent to the clearing section and 43 adjacent to non-cleared areas. In the clearing section six records occurred within 48 hours of clearing with a further 34 records after clearing but outside the 48 hour period. In total, 68% of records adjacent to the cleared section occurred after clearing. Between 4 July and 29 September 29 road-kills were recorded, 20 of which (or 69%) occurred in the cleared section. In comparison, of the 73 records between 17 December and 30 June 53% occurred in the cleared section.

Four records occurred in areas with concrete barriers and all were after clearing. Eight records occurred within or near the area with temporary koala fence, several of which occurred near the end of fencing. The two koala road-kills are not included in the data presented as neither was recorded during a road-kill survey.

The alignment was divided into nine sections based on the frequency of road-kills. Sections include:

- Deep Creek area - Chainage 63850-65600; 1750m (12 records; 67% after clearing).
- Valla Beach Road area - Chainage 66100-67700; 1600m (18 records; 100% after clearing).
- Burkes Lane area - Chainage 68200-69600; 1400m (10 records; 40% after clearing).
- Jacksons area - Chainage 69700-71300; 1600m (4 records; nil after clearing).
- Ballard's Road area – Chainage 71500-72750; 1250m (8 records; 50% after clearing).
- Dalhousie Creek to Tower Road; 1500m (5 records).
- Martells Road area; 1100m (9 records).
- Urunga township; 3800m (25 records).

Condition 13

One year following the *completion of construction works*, the *person taking the action* must provide a report to *the Minister* detailing the success and/or failings of *fauna crossings*, fencing and road medians in achieving their intended purpose. The report must address (but need not be limited to):

- a) baseline data collected as a requirement of conditions 9 and 12;
- b) the number, *design* and location of *fauna crossings*, fencing and road medians, accompanied by maps and photographs;
- c) details of a monitoring program to determine the *long-term success* of *fauna crossings*, fencing and road medians (including timing, duration, methodology, and performance objectives);
- d) the success of *fauna crossings* to date; and
- e) a comparison of data / results from other projects involving upgrades to the *Pacific Highway* regarding the long-term success of fauna crossings and/or fencing;

The report must be updated on a three-yearly basis until the *long term success* of *fauna crossings* has been proven or *the Minister* has agreed in writing that further revisions are no longer required. All updated reports must be provided to *the Minister* within three years of the last report having being submitted.

Action	Timing	Status	Compliance evidence
13.1 Provide fauna crossings, fencing and road medians outcomes report to Dept of the Environment	By March 2018	TBA	Transmittal form (and any confirmation of receipt)
13.2 Provide updated fauna crossings, fencing and road medians outcomes report to Dept of the Environment	By March 2021	TBA	Transmittal form (and any confirmation of receipt)
13.3 Provide updated fauna crossings, fencing and road medians outcomes report to Dept of the Environment	By March 2024	TBA	Transmittal form (and any confirmation of receipt)
13.4 Provide updated fauna crossings, fencing and road medians outcomes report to Dept of the Environment	By 3 March 2027	TBA	Transmittal form (and any confirmation of receipt)
13.5 Provide updated fauna crossings, fencing and road medians outcomes report to Dept of the Environment	By March 2030	TBA	Transmittal form (and any confirmation of receipt)

Condition 14

Should monitoring associated with conditions 11 to 13 demonstrate that the use of *fauna crossings* and/or fencing is not achieving its intended purpose or is having a detrimental effect upon *EPBC species* (as determined by *the Minister*), *the Minister* may request that the *person taking the action* implement alternative forms of mitigation and/or corrective actions to address the relevant impacts to *EPBC species*. Such measures must be implemented as requested.

Action	Timing	Status	Compliance evidence
14.1 Implement additional mitigation/corrective actions	As and when directed by the Minister	TBA	Annual reporting or as directed by the Minister

Condition 15

The *person taking the action* must implement a salvage and translocation program for all individuals of *Clear Milkvine* and *Cryptic Forest Twiner* that are proposed to be cleared as a result of *the action*. Translocation procedures must be developed and implemented by a *suitably qualified expert* in accordance with *Guidelines for the Translocation of Threatened Plants in Australia* prepared by the Australian Network for Plant Conservation.

Action	Timing	Status	Compliance evidence
15.1 Engage suitably qualified expert	Prior to construction	Complete	Engagement of Ecos to prepare Threatened Flora Management Plan.
15.2 Develop translocation procedures	Prior to construction	Complete	Ecos TFMP developed in consultation with NSW EPA Biodiversity Specialist and approved by NSW DP&I.
15.3 Implement translocation procedures	During construction	Complete	Annual reporting. First report completed January 2015. Second report completed January 2016 (See Attachment 3)

Notes:

- These two species are referenced in Section 2.7 (*Establishment of translocation areas*) of the BEM ecological monitoring program by their scientific names, ie *Marsdenia longiloba* (Clear Milkvine), and *Tylophora woollsii* (Cryptic Forest Twiner).
- A Threatened Flora Translocation Program was developed by Ecos in consultation with the NSW Biodiversity Specialist and approved by the NSW DP&I. The program includes a salvage and translocation program for all individuals of *Clear Milkvine* and *Cryptic Forest Twiner* that are proposed to be cleared and the program is considered to meet the requirements of Condition 15. The translocation monitoring report is detailed in Attachment 3.

The annual monitoring report for 2016 found that;

- After three years all species maintained a relatively high survival rate except *Tylophora sp.* The survival rate of Slender Marsdenia in Sectors A, F and J ranged from 66.7% to 82.7%, well above results for this species on the Bonville project (30-50%). Experimental addition of fertiliser (stemming from the Bonville results) found that fertiliser had a slight negative effect on performance at the low concentration applied, but the difference was not statistically significant. The survival rate of Slender Marsdenia varied between sectors from 19.1% to 41.5%. Slender Marsdenia performed much better than *Tylophora sp.* After 3 years, *Tylophora sp.* had a survival rate of 21.6% to 48.3%. The survival rate of *Tylophora sp.* varied from 7% to 21.8%.
- Overall, the fertiliser experiment with Slender Marsdenia and *Tylophora sp.* found that application of artificial slow release fertiliser at low concentration in year 1 and year 2 had a negative effect on the growth and survival of Slender Marsdenia and *Tylophora sp.*, but the effect was small and not statistically significant.

Condition 16

One year following the *completion of construction works*, the person taking the action must provide a report to *the Minister* detailing the long term success of the translocation program. The report must include, but need not be limited to:

- a) background information on translocated species (in relation to ecological requirements and life history);
- b) the scope of the translocation program (with respect to timing, duration, methodology, and objectives, as well as comprehensive details on the recipient translocation site(s) and how they meet the ecological requirements of each species);
- c) details of a comprehensive monitoring program to determine the *long-term success of translocation*; and
- d) the success of translocation to date.

Action	Timing	Status	Compliance evidence
16.1 Prepare translocation outcomes report addressing specified matters and other relevant matters	March 2018	TBA	Completed report
16.2 Provide translocation outcomes report to Dept of the Environment	March 2018	TBA	Transmittal form (and any confirmation of receipt)

Condition 17

The report must be updated on a three-yearly basis to provide further insights on the *long-term success* of translocation. All reports must be provided to *the Minister* and made available on the *person taking the action's* website for the life of this approval or until *the Minister* has agreed in writing that further revisions are no longer required.

Action	Timing	Status	Compliance evidence
17.1 Update translocation outcomes report (update #1) and provide to Dept of the Environment	March 2021	TBA	Completed report Transmittal form (and any confirmation of receipt)
17.2 Update translocation outcomes report (update #2) and provide to Dept of the Environment	March 2024	TBA	Completed report Transmittal form (and any confirmation of receipt)
17.3 Update translocation outcomes report (update #3) and provide to Dept of the Environment	March 2027	TBA	Completed report Transmittal form (and any confirmation of receipt)
17.4 Update translocation outcomes report (update #4) and provide to Dept of the Environment	March 2030	TBA	Completed report Transmittal form (and any confirmation of receipt)

Note:

- Uploading of the reports to the project website is addressed via compliance with Condition 29.

Condition 18

With reference to the *department's offset policy*, the *person taking the action* must provide for the *Minister's approval* a threatened flora offset strategy for the *Clear Milkvine* and *Cryptic Forest Twiner*, within 12 months of the date of this approval. *The Minister* will only approve the Threatened Flora Offset Strategy (TFOS), if it demonstrates how a threatened flora offset meeting no less than 90 % of the direct offset requirements (as determined *by the department* in accordance with the offset user guide) will be legally secured in perpetuity within two years of the date of this approval.

Note: At the time the offset required by condition 18 is submitted for approval, the person taking *the action* may ask the Minister to consider that the salvage and translocation program required by condition 15, meets 10% of the offset requirements for the *Clear Milkvine* and *Cryptic Forest Twiner*.

Action	Timing	Status	Compliance evidence
18.1 Prepare TFOS in accordance with Dept of the Environment offset policy and addressing specified matters	By 26 Nov 2014	Completed	Completed TFOS
18.2 Submit TFOS to Dept of the Environment for approval	By 26 Nov 2014	Final Report approved by DoE 19/07/2016	Transmittal form (and any confirmation of receipt)

Action 18.1:

- Prepare brief for tender (Complete)
- Tender assessment – (Complete)
- Draft for Roads and Maritime review expected (Complete)
- Roads and Maritime review (Complete)
- Final of the TFOS (Complete)

Action 18.2:

- Submitted to DoE for approval 21/11/2014
- Comments received from DoE 02/09/2015
- Amended report provided to DoE 02/10/2015
- Variation letter submitted to DoE on 20/11/2015 to request the removal of a timeframe to secure the offset property in perpetuity and tie that in with the approval of the TFOMP.
- Comments received from DoE 30/11/2015
- TFOS was resubmitted in 2/6/2016
- **The TFOS was approved by DoE on 19/07/2016 and was published on the projects website.**

Condition 19

The *person taking the action* must provide a plan for the management and delivery of the offset requirements of the threatened flora offset to *the Minister* for approval no later than 30 June 2015. The Threatened Flora Offset Management Plan (TFOMP) must include, but need not be limited to:

- a) map(s) and *shapefiles* that clearly define the location and boundaries of the offset;
- b) details on the *quality* of the offset;
- c) information about *Clear Milkvine* and *Cryptic Forest Twiner* (in relation to ecology, biology and conservation status) to inform appropriate management actions;
- d) performance objectives and management actions that will enable maintenance and enhancement of *Clear Milkvine* and *Cryptic Forest Twiner* the offset and habitat covered by the plan;
- e) demonstration that any management actions to be undertaken will not adversely impact *EPBC species* (for example, this may apply to herbicide usage);
- f) a description of funding arrangements or agreements including work programs and responsible entities;
- g) an assessment of the baseline population and distribution for *Clear Milkvine* and *Cryptic Forest Twiner* within the offset, including:
 - i) the number of plants protected and their location;
 - ii) plant and habitat condition; and
 - iii) age classes.
- h) measures for regular monitoring of the status of individuals of *Clear Milkvine* and *Cryptic Forest Twiner* and their habitat as measured against the baseline population and distribution, including:
 - i) fluctuations in population size and distribution;
 - ii) life cycle patterns
 - iii) habitat requirements; and
 - iv) response to disturbances and/or management actions.
- i) Provision to revise the approved threatened flora offset management plan in response to the findings of research associated with condition 20(h).

The approved TFOMP must be implemented within seven days of its approval.

Action	Timing	Status	Compliance evidence
19.1 Prepare TFOMP addressing specified matters and other relevant matters	By 30 Jun 2015	IComplete	Completed TFOMP
19.2 Provide TFOMP to Dept of the Environment for approval	By 30 Jun 2015	Complete (revised document was resubmitted to DoE on 7/11/2016)	Transmittal form (and any confirmation of receipt)

Action	Timing	Status	Compliance evidence
19.3 Implement TFOMP	Within 7 days of Minister's approval	TBA	Annual reporting
19.4 Report on outcomes of TFOMP	During construction Post-construction	TBA	Annual reporting

Action 19.1:

- GHD engaged and property surveys completed
- An area within Boambee State Forrest has been identified and Roads and Maritime are currently negotiating with State Forests regarding protection of this area in perpetuity as a Flora Reserve.
- Roads and Maritime wrote to DoE on 30/06/2015 requesting urgent consideration of the TFOS and seeking an extension of time to submit the TFOMP by 3 months, until 30/09/2015.

Action 19.2

- TFOMP was submitted to DoE on the 02/10/2015 for approval.
- Comments received from DoE on 30/11/2015.
- The revised document was resubmitted to DoE on 7/11/2016.

Condition 20

Within three months from the date of this approval, the person taking the action must provide to the Minister, a strategy that details how, and when, the Norton Offset Site and Griffin Offset Site (as described in the referral documentation), will be legally secured in perpetuity by the person taking the action.

If the EPBC species habitat cleared as a result of the action is less than the impacts described in the referral documentation then any surplus biodiversity offset areas included in the offset management plans referred to in condition 19 and condition 21 could be secured as biodiversity offsets for other actions undertaken by the person taking the action and included in the offset strategies for those actions.

Action	Timing	Status	Compliance evidence
20.1 Prepare strategy to legally secure offset sites in perpetuity	By 26 Feb 2014	Complete	Both Norton and Griffin sites have been purchased by Roads and Maritime.
20.2 Provide strategy to Dept of the Environment	By 26 Feb 2014	Complete	Letter provided to Dept on 11-2-2014

Condition 21

Within 12 months from the date of this approval, the *person taking the action* must provide to the *Minister* for approval, a plan for the management of the Norton Offset Site and Griffin Offset Site. The Norton and Griffin Offset Management Plan (NGOMP) must be targeted to the ecological requirements of the *Koala*, *Grey-headed Flying-fox*, *Spotted-tail Quoll*, *Regent honey eater* and *Swift Parrot* and build upon the ideas and concepts described in the *referral*. The plan must include, but need not be limited to:

- a) map(s) and *shapefiles* that clearly define the location and boundaries of the offset sites;
- b) details on the quality of the offset with reference to all *EPBC species* this plan is intended to protect;
- c) information about the *Koala*, *Grey-headed Flying-fox*, *Spotted-tail Quoll*, *Regent honey eater* and *Swift Parrot* (in relation to ecology, biology and conservation status) to inform appropriate management actions;
- d) the results of targeted field surveys within both offset sites (undertaken at any ecologically appropriate time of the year) to assess habitat suitability and presence / absence of individuals in relation to the *Koala*, *Grey-headed Flying-fox*, *Spotted-tail Quoll*, *Regent honey eater* and *Swift Parrot*;
- e) clear performance objectives and management actions that will enable maintenance and enhancement of habitat within the offset area, as well as contribute to the better protection of individuals and/or populations of *EPBC species* onsite;
- f) an assessment of the baseline population for *EPBC species* which are detected within the offset area during field surveys;
- g) demonstration that any management actions to be undertaken will not adversely impact *EPBC species* (for example, this may apply to pest control);
- h) a description of funding arrangements or agreements including work programs and responsible entities;
- i) details of a comprehensive long term monitoring program for determining the effectiveness of management actions;
- j) commitments to undertake contingency measures and corrective actions in the event that performance objectives are not met; and
- k) anticipated timeframes for achieving performance objectives.
- l) The approved Norton and Griffin offset management plan must be implemented within seven days of its approval.

Action	Timing	Status	Compliance evidence
21.1 Prepare NGOMP addressing specified matters and other relevant matters	By 26 Nov 2014	Complete	Completed NGOMP

Action	Timing	Status	Compliance evidence
21.2 Provide NGOMP to Dept of the Environment	By 26 Nov 2014	Completed - submitted to DoE on the 11/12/14 Re-submitted on the 23/12/16	Transmittal form (and any confirmation of receipt)
21.3 Implement NGOMP	Within 7 days of Minister's approval	Ongoing	Annual reporting

Note:

- It is assumed that satisfactory documentary evidence of implementation of the NGOMP would be provided through annual reporting.

Action 21.1:

- Prepare brief for tender (Complete)
- Tender assessment (Complete);
- Draft for Roads and Maritime review (Complete);
- Roads and Maritime review (Completed)

Action 21.2:

- Final - (Complete)
- Submitted to DoE for approval on the 11/12/14.
- Comments received from DoE on February 2016
- NGOMP re-submitted for approval on 23 December 2016.

Action 21.3:

Contractor engaged and works completed by Roads and Maritime for the Property works as specified in the NGOMP including;

- the demolition of the existing building,
- removal of rubbish including asbestos, and
- survey works for boundary fencing.

Condition 22

Within one month after the commencement of *the action*, the *person taking the action* must advise *the Department* in writing of the actual date of commencement.

Action	Timing	Status	Compliance evidence
22.1 Provide written advice to Dept of the Environment of actual date of commencement	4 Jan 2014	Complete	Signed copy of letter on Roads & Maritime letterhead. Provided to Dept on 4-1-2014.

Condition 23

The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement any management plans or reports required by this 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 compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits may also be publicised through the general media.

Action	Timing	Status	Compliance evidence
23.1 Quarterly review of the EPBC conditions compliance tracking program.	Quarterly	Ongoing	First review March 2014 Second review June 2014 Third Review September Forth Review October 2014. Fifth Review December 2014 Sixth Review February 2015 Seventh Review April 2015 Eighth Review June 2015 Ninth review August 2015 Tenth review October 2015 Eleventh review February 2016 Twelfth review May 2016 Thirteenth review July 2016 Fourteenth review December 2016
23.2 Provide records to Dept of the Environment as requested	As requested	TBA	Transmittal form (and any confirmation of receipt)

Condition 24

Within three months of every one year anniversary of the commencement of *the action*, the *person taking the action* must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. Documentary evidence providing proof of the date of publication and noncompliance with any of the conditions of this approval must be provided to *the Department* at the same time as the compliance report is published.

Action	Timing	Status	Compliance evidence
24.1 Prepare compliance report and upload to project website	By 4 Mar 2015	Complete	Report uploaded to project website. Advice provided to Dept on date of publication and any non-compliances.
24.2 Prepare compliance report and upload to project website	By 4 Mar 2016	Complete	Report uploaded to project website. Advice provided to Dept on date of publication and any non-compliances.
24.3 Prepare compliance report and upload to project website	By 4 Mar 2017	TBA	Report uploaded to project website. Advice provided to Dept on date of publication and any non-compliances.
24.4 Prepare compliance report and upload to project website	By 4 Mar 2018	TBA	Report uploaded to project website. Advice provided to Dept on date of publication and any non-compliances.
24.5 Prepare compliance report and upload to project website	By 4 Mar 2019	TBA	Report uploaded to project website. Advice provided to Dept on date of publication and any non-compliances.
24.6 Prepare compliance report and upload to project website	By 4 Mar 2020	TBA	Report uploaded to project website. Advice provided to Dept on date of publication and any non-compliances.
24.7 Prepare compliance report and upload to project website	By 4 Mar 2021	TBA	Report uploaded to project website. Advice provided to Dept on date of publication and any non-compliances.
24.8 Prepare compliance report and upload to project website	By 4 Mar 2022	TBA	Report uploaded to project website. Advice provided to Dept on date of publication and any non-compliances.
24.9 Prepare compliance report and upload to project website	By 4 Mar 2023	Ongoing	Report uploaded to project website. Advice provided to Dept on date of publication and any non-compliances.

Action	Timing	Status	Compliance evidence
24.10 Prepare compliance report and upload to project website	By 4 Mar 2024	TBA	Report uploaded to project website. Advice provided to Dept on date of publication and any non-compliances.
24.11 Prepare compliance report and upload to project website	By 4 Mar 2025	TBA	Report uploaded to project website. Advice provided to Dept on date of publication and any non-compliances.
24.12 Prepare compliance report and upload to project website	By 4 Mar 2026	TBA	Report uploaded to project website. Advice provided to Dept on date of publication and any non-compliances.
24.13 Prepare compliance report and upload to project website	By 4 Mar 2027	TBA	Report uploaded to project website. Advice provided to Dept on date of publication and any non-compliances.
24.14 Prepare compliance report and upload to project website	By 4 Mar 2028	TBA	Report uploaded to project website. Advice provided to Dept on date of publication and any non-compliances.
24.15 Prepare compliance report and upload to project website	By 4 Mar 2029	TBA	Report uploaded to project website. Advice provided to Dept on date of publication and any non-compliances.
24.16 Prepare compliance report and upload to project website	By 4 Mar 2030	TBA	Report uploaded to project website. Advice provided to Dept on date of publication and any non-compliances.

Condition 25

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*.

Action	Timing	Status	Compliance evidence
25.1 Identify potentially suitable auditor(s)	On direction of the Minister	TBA	Tenderer(s) proposal(s) documenting expertise
25.2 Provide auditor's details to Dept of the Environment for approval	On direction of the Minister	TBA	Transmittal form (and any confirmation of receipt)
25.3 Auditor to develop audit criteria	Following receipt of Minister's approval	TBA	Completed audit criteria
25.4 Provide audit criteria to Dept of the Environment for approval	Following receipt of Minister's approval	TBA	Transmittal form (and any confirmation of receipt)
25.5 Conduct audit and document findings	Following receipt of Minister's approval	TBA	Completed audit report
25.6 Provide audit report to Dept of the Environment	At completion of audit	TBA	Transmittal form (and any confirmation of receipt)

- No independent audit of compliance has been requested from *the Minister* to date.

Condition 26

If the *person taking the action* wishes to carry out any activity otherwise than in accordance with the TFOS, TFOMP, or NGOMP as specified in these conditions, the *person taking the action* must submit to *the Department for the Minister's* written approval a revised version of that TFOS, TFOMP, or NGOMP. The varied activity shall not commence until the Minister has approved the varied TFOS, TFOMP, or NGOMP in writing. *The Minister* will not approve a varied TFOS, TFOMP, or NGOMP unless the revised TFOS, TFOMP, or NGOMP will result in an equivalent or improved environmental outcome over time. If *the Minister* approves the TFOS, TFOMP, or NGOMP then that TFOS, TFOMP, or NGOMP must be implemented in place of the TFOS, TFOMP, or NGOMP originally approved.

Action	Timing	Status	Compliance evidence
26.1 Assess potential departure(s) from TFOS, TFOMP and/or NGOMP as relevant	As required	TBA	Consistency assessment
26.2 Revise TFOS, TFOMP and/or NGOMP as relevant	As required	TBA	Revised TFOS, TFOMP and/or NGOMP as relevant
26.3 Provide revised TFOS, TFOMP and/or NGOMP as relevant to Minister for approval	As required	TBA	Transmittal form (and any confirmation of receipt)
26.4 Implement revised TFOS, TFOMP and/or NGOMP as relevant in accordance with the Minister's written approval	Prior to any action that would not be consistent with the original approval or subsequent modified approval(s)	TBA	Annual reporting

Condition 27

If *the Minister* believes that it is necessary or convenient for the better protection of listed threatened species and communities to do so, *the Minister* may request that the *person taking the action* make specified revisions to TFOS, TFOMP, or NGOMP specified in these conditions and submit the varied TFOS, TFOMP, or NGOMP for *the Minister's* written approval. The *person taking the action* must comply with any such request. The revised approved TFOS, TFOMP, or NGOMP must be implemented. Unless *the Minister* has approved the TFOS, TFOMP, or NGOMP, then the *person taking the action* must continue to implement the TFOS, TFOMP, or NGOMP originally approved, as specified in these conditions.

Action	Timing	Status	Compliance evidence
27.1 Revise TFOS, TFOMP and/or NGOMP as relevant as per directed by the Minister	As directed by the Minister	TBA	Completed revised TFOS, TFOMP and/or NGOMP as relevant
27.2 Provide revised TFOS, TFOMP and/or NGOMP as relevant to Dept of the Environment for approval	As directed by the Minister	TBA	Transmittal form (and any confirmation of receipt)
27.3 Implement revised TFOS, TFOMP and/or NGOMP as relevant in accordance with Minister's written approval	As directed by the Minister	TBA	Annual reporting

Condition 28

If, at any time after five years from the date of this approval, the *person taking the action* has *not substantially commenced the action*, then the *person taking the action* must not *substantially commence the action* without the written agreement of *the Minister*.

Action	Timing	Status	Compliance evidence
28.1 Obtain written agreement of the Minister to substantially commence the project	As required after 25 Nov 2018	Complete	Minister's written agreement. Action substantially commenced on the 4 December 2013

Condition 29

Unless otherwise agreed to in writing by *the Minister*, the *person taking the action* must publish all management plans and reports referred to in these conditions of approval on their website. Each management plan or report must be published on the website within 1 month of being approved, or where approval is not required, on the same day as the report is provided to *the Minister*.

Note

Any plan, strategy or report that has been prepared as a requirement of a state legislation approval (in relation to *the action*) may be used to satisfy the requirements of any of the above conditions, providing the relevant criteria have been met (as specified in these conditions). Where the option is employed, the plan, strategy or report must be accompanied by a standalone document detailing where each of the relevant criteria have been addressed within that plan, strategy or report. This note is particularly relevant to conditions 13, 16, 17, 19, 21 and 25.

Action	Timing	Status	Compliance evidence
29.1 Upload approved NGOMP to project website (21)	Within 1 month of the Minister's approval	TBA	NGOMP uploaded to project website
29.2 Upload approved TFOMP to project website (19)	Within 1 month of the Minister's approval	TBA	TFOMP uploaded to project website
29.3 Upload fauna crossings, fencing and road medians outcomes report to project website (13)	3 Dec 2017	TBA	Report uploaded to project website
29.4 Upload translocation outcomes report to project website (16)	3 Dec 2017	TBA	Report uploaded to project website
29.5 Upload updated fauna crossings, fencing and road medians outcomes report to project website (13)	3 Dec 2020	TBA	Report uploaded to project website
29.6 Upload updated translocation outcomes report to project website (17)	3 Dec 2020	TBA	Report uploaded to project website
29.7 Upload updated fauna crossings, fencing and road medians outcomes report to project website (13)	3 Dec 2023	TBA	Report uploaded to project website
29.8 Upload updated translocation outcomes report to project website (17)	3 Dec 2023	TBA	Report uploaded to project website
29.9 Upload updated fauna crossings, fencing and road	3 Dec 2026	TBA	Report uploaded to project website

Action	Timing	Status	Compliance evidence
medians outcomes report to project website (13)			
29.10 Upload updated translocation outcomes report to project website (17)	3 Dec 2026	TBA	Report uploaded to project website
29.11 Upload updated fauna crossings, fencing and road medians outcomes report to project website (13)	3 Dec 2029	TBA	Report uploaded to project website
29.12 Upload updated translocation outcomes report to project website (17)	3 Dec 2029	TBA	Report uploaded to project website
29.13 Upload compliance audit report to project website (25)	Same day as provided to the Minister	As required	Report uploaded to project website

Note:

- Number in parentheses under 'Action' refers to approval condition

Report Completion Register		
January 2016		
Report	Date Completed	Date Uploaded
TFOS	21/11/2014 (approved 19/7/2016)	18/8/2016
TFOMP	02/10/2015 and re-submitted on 7/11/16 (not yet approved)	--
NGOMP	11/12/2014 and re-submitted on the 23/12/16 (not yet approved)	--
Fauna crossings, fencing and road medians outcomes	--	--
Translocation outcomes report	--	--
Compliance audit report	--	--

Attachment 1

In Situ Flora Monitoring Report

To protect threatened species locations this appendix will not be made publically available.

Attachment 2

Sensitive Area Plans (SAPs)

This appendix will not be made publically available to protect heritage sensitive locations.

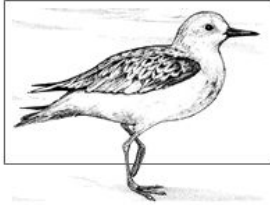
Attachment 3

Threatened Flora Translocation Monitoring Report

To protect threatened species locations this appendix will not be made publically available.

Attachment 4

Annual Fauna Monitoring Summary Report



Sandpiper Ecological Surveys

PO Box 401
ALSTONVILLE
NSW 2477

Phone: 02 6683 4373
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sandpipereco@optusnet.com.au
ABN: 82 084 096 828

Biodiversity Survey

Project Management

Impact Assessment

Ecological Monitoring

Specialist Surveys

Michael Browne
Environmental Manager
Lend Lease Engineering
NH2U Pacific Highway Upgrade
Michael.Browne@lendlease.com

25 July 2016

cc Clive Wightwick

Dear Mick,

RE: Nest box monitoring winter 2015, summer and winter 2016.

Sandpiper Ecological was contracted by Lend Lease Engineering to conduct bi-annual year three and four construction phase nest box inspections as per the WC2U Stage 1 Ecological Monitoring Program (BEM 2013). The following provides a brief update on results of inspections carried out in winter 2015, summer 2016 and winter 2016.

Both the proportion of boxes occupied and those showing evidence of use rose during the reporting period (Table 1). This resulted in an overall level of nest box use (i.e. sum of boxes occupied and those showing evidence of use) rising steadily from 56% in winter 2015 to 59% in summer 2016 and 65% in winter 2016.

The most commonly observed fauna were sugar gliders (*Petaurus breviceps*) with 9 individuals recorded in winter 2015, 42 individuals in summer 2016 and 30 in winter 2016. Other notable records included a probable brushtail phascogale (*Phascogale tapoatafa*) nest in a scansorial box (L3) and successive use of a parrot box (J17) by rainbow lorikeets (*Trichoglossus haematodus*) where eggs were present in winter 2015 and two nestlings present in winter 2016.

Boxes were in good condition although one microbat box (J27) required hinge repair and one large glider box (Q14) required re-installation after the tree it was installed on fell down. Four boxes reported missing from winter 2015 and summer 2016 inspections were installed during winter 2016 inspection. Total number of boxes inspected across the three inspections further varied due to access restrictions and because the first inspection was carried out before phase 2 nest boxes were installed.

A small number of boxes (3.1% - 7.1%) showed evidence of European bee occupation, mostly abandoned hives. European bees generally abandon smaller volume nest boxes.

Further details on nest box use are provided in Appendix A.

Table 1: Number and proportion of boxes occupied or showing evidence of use by vertebrate fauna. *Phase 2 boxes not installed, Allen property not inspected. **Phase 2 boxes inspected and Allen property inspected. ***Phase 2 boxes inspected, Allen property not inspected.

Inspection	No. of boxes inspected	No. of boxes occupied (%)	No. of boxes showing evidence of use (%)	No. boxes occupied or showing evidence of use (%)	No. of boxes with evidence of European bees (%)	No. of boxes to be repaired/replaced (%)
Winter 2015	161*	14 (8.7%)	76 (47%)	90 (56%)	5 (3.1%)	0 (0%)
Summer 2016	223**	31 (14%)	101 (45.3%)	132 (59%)	16 (7.1%)	1 (0.4%)
Winter 2016	200***	34 (17%)	96 (48%)	130 (65%)	13 (6.5%)	1 (0.5%)

Please call me if you wish to discuss,

Regards,



Brendan Taylor
Senior Ecologist

Appendix A.

Table A1: Results from inspection of NH2U nest boxes during winter 2015, summer 2016, winter 2016. SuG = Sugar Glider; CBTP = Common Brushtail Possum; small petaurid = sugar or squirrel glider; SEBTP = Short-eared Brushtail Possum; BtP = brushtail possum sp.; CRTP = Common Ringtail Possum; FTG = Feathertail Glider; ONJ = Owlet Nightjar; ante = Antechinus; Phas = Brush-tailed Phascogale.

Box Number	Box Type	Winter 2015		Summer 2016		Winter 2016	
		Fauna	Signs/Evidence of use	Fauna	Signs/Evidence of use	Fauna	Signs/Evidence of use
H1	Large Glider		Phase 2. Not installed yet	Nil	Nil	Nil	Nil
H2	Medium Parrot		Phase 2. Not installed yet	Nil	Few old scattered leaves, ante?	Nil	Few scattered leaves
H3	Scansorial Mammal		Phase 2. Not installed yet	Nil	Nil	Nil	Extensive bowled leaf nest, petaurid
I1	Microbat		Allen property - no access	Nil	Nil		Allen property - no access
I2	Possum		Allen property - no access	Nil	Scattered leaf, old honeycomb, BtP?		Allen property - no access
I3	Small glider		Allen property - no access	Native beehive	Nil		Allen property - no access
I4	Medium Parrot		Allen property - no access	Nil	Bracken, drey material, RTP?		Allen property - no access
I5	Possum		Allen property - no access	Nil	Nil		Allen property - no access
I6	Large glider		Allen property - no access	Nil	Flattened leaves, some scruff marks on bark around entrance (RE), BtP struggling to get in?		Allen property - no access
I7	Black Cockatoo		Allen property - no access	Nil	Nil		Allen property - no access
I8	Medium Parrot		Allen property - no access	Nil	Chew marks around entrance, Unknown		Allen property - no access
I9	Microbat		Allen property - no access	Nil	Nil		Allen property - no access
I10	Possum		Allen property - no access	Nil	Old honeycomb, twigs etc, rodent?		Allen property - no access
I11	Scansorial mammal		Allen property - no access	Sugar Glider x 1	Old leaf nest - sugar glider		Allen property - no access
I12	Small glider		Allen property - no access	Nil	Old leave nest - sugar glider		Allen property - no access
I13	Possum	Nil	Nil	Nil	Nil	Nil	Nil
I14	Medium Parrot	Nil	Nil	Nil	Old leaf nest - petaurid	Nil	Petaurid nest
I15	Scansorial mammal	2 sugar glider	NA	Nil	Old leaf nest- sugar glider	Nil	Petaurid nest
I16	Microbat	Nil	Nil	Nil	Nil	Nil	Nil
I17	Medium Parrot	Nil	Nil	Nil	Leaves and twigs, rodent? Ante?	Nil	Very fresh leaf nest, FTG?

Box Number	Box Type	Winter 2015		Summer 2016		Winter 2016	
		Fauna	Signs/Evidence of use	Fauna	Signs/Evidence of use	Fauna	Signs/Evidence of use
I18	Small glider	Nil	Prob petaurid leaf nest	Nil	Globular leaf nest - old, FTG?	Nil	Fresh leaf nest. FTG or petaurid
I19	Possum	CBtP	Nil	Nil	Messy scattered leaf nest, ONJ?	Nil	Flattened leaf nest, CBTP
I20	Small glider	Nil	Probable petaurid leaf nest	Nil	Old leaf nest, FTG/sugar	Sugar Glider x 3	Leaf nest
I21	Black Cockatoo	Nil	Small amount of very old leaf; probable CBTP	Nil	Nil		Allen property - no access
I22	Large glider	Nil	Nil	Nil	Old euc nest		Allen property - no access
I23	Scansorial mammal	1 sml petaurid	Prob sugar glider	Sugar glider x 4	Old leaf nest - sugar glider		Allen property - no access
I24	Small glider		No Access - Allen property	Native beehive	Nil		Allen property - no access
I25	Large glider		No Access - Allen property	Nil	Few scattered old leaves, old honeycomb, black sot?		Allen property - no access
I26	Scansorial mammal		No Access - Allen property	Native beehive	Nil		Allen property - no access
I27	Possum		No Access - Allen property	Nil	Feathers, ONJ?		Allen property - no access
I28	Microbat		No Access - Allen property	Nil	No		Allen property - no access
I29	Scansorial mammal		No Access - Allen property	Native beehive	Nil		Allen property - no access
I30	Possum		No Access - Allen property	Nil	Scattered flattened leaves, BtP?		Allen property - no access
I31	Small glider	Nil	Leaf nest - probable petaurid	Sugar glider x 4	Old leaf nest - sugar glider	Sugar Glider x 4	Leaf nest
I32	Possum	Nil	Leaf nest - probable petaurid	Nil	Messy flattened leaf nest, BtP?	Nil	Very old leaf nest
K1	Possum	Nil	Black ants	Nil	Nil	Nil	CBTP marks, chewing on outside entrance
K2	Microbat	Nil	Nil	Nil	Nil	Nil	Nil
K3	Small glider	Nil	Euc leaf layer, Pet/FtG (pr)	Sugar Glider x 1	Old leaf nest, denning for the night?	Sugar Glider x 3	Leaf nest
K4	Large glider	Nil	Euc leaf nest, Pet (pr); abandoned europ bee hive	Nil	Messy leaf nest, chewed leaves, rodent?	Nil	Leaves, some bark, scan mamm?
K5	Medium Parrot	Nil	Old euc leaf nest(pet(pr)); Abandoned europ bee hive	Native bees	Nil	Native beehive	Nil
K6	Scansorial mammal	Nil	Euc leaf nest, ftg/Pet (pr)	Nil	Old leaf nest - sugar glider	Nil	Messy leaf nest, ante
K7	Large glider	Nil	Old lvs/twigs, CRP(pr)	Nil	Old bracken, drey, RTP	Nil	Drey material
K8	Possum	Nil	Thick bracken drey,CRP(pr)	Nil	Old Bracken drey, RTP?	Nil	Old drey material
K9	Possum	Nil	Nil	Nil	Poss some scat, rodent?	Nil	Nil
K10	Large glider	Nil	Euc leaf nest, ftg/Pet (pr)	Nil	Very old leaf, old ant nest material, rodent?	Nil	Nil

Box Number	Box Type	Winter 2015		Summer 2016		Winter 2016	
		Fauna	Signs/Evidence of use	Fauna	Signs/Evidence of use	Fauna	Signs/Evidence of use
K11	Possum		Thick scrub; need to cut path (machete)	Nil	Some scat, couple leaves, rodent?	SEBTP x 1	Some leaf
K12	Microbat		Thick scrub; need to cut path (machete)	Nil	Nil	Nil	Nil
K13	Scansorial mammal		Thick scrub; need to cut path (machete)	Nil	Nil	Nil	Nil
K14	Medium Parrot	Nil	Euc leaf nest, ftg/Pet (pr)	Nil	Few leaves, latrine corner, Antechinus?	Nil	Antechinus nest and latrine Cnr
K15	Small glider	Nil	Old Euc leaf nest, Pet (pr)	Nil	Old leaf nest, sugar glider	Nil	Used petaurid nest
K16	Possum	Nil	Black ants	Nil	Fresh flat leaf nest, BtP?	Nil	Messy leaf nest, prob CBTP
K17	Large glider	Lace monitor	Nil	Nil	Scat, Antechinus?	Nil	Few scattered leaves, prob petaurid
K18	Microbat	Nil	Nil	Nil	Nil	Nil	Nil
K19	Small Owl	Nil	CBTP den	Nil	Euro beehive	Nil	Few old leaves, prob CBTP. Old euro beehive
K20	Small glider	Nil	Euc leaf nest, Pet (pr)	Nil	Large, globular nest, FTG?	Nil	Old petaurid nest
K21	Medium Parrot	Nil	Black ants	Nil	Nil	Nil	Nil
K22	Possum	Nil	Black ants	Nil	Spread, flattened leaves, BtP	CBTP x 1	Leaves
K23	Scansorial mammal	Nil	Black ants	Nil	Nil	Nil	Nil
K24	Large forest owl	Nil	CBTP den	Nil	Old euc leaves, bracken, casuarina leaves. Spreading from CBP?	Nil	CRTP drey material
K25	Microbat	Nil	Nil	Nil	Nil	Nil	Nil
K26	Possum	Nil	Old Euc leaf nest, Pet (pr)	Nil	Scattered leaves, BtP	Nil	CBTP nest
K27	Small Owl	Nil	Bark; put in @install?	Nil	Scattered, flattened leaves	Nil	Few scattered leaves, CBTP
K28	Large glider	Nil	Euc leaf nest, Pet (pr)	Nil	Nil	Nil	Messy leaf nest
K29	Scansorial mammal	Nil	Black ants	Nil	Nil	Nil	Nil
K30	Small glider	Nil	Euc leaf nest, Pet (pr)	Nil	Old leaf nest - sugar glider	Nil	Old leaf nest, petaurid
K31	Medium Parrot	Nil	CBTP den	Nil	Old leaf nest petaurid, honeycomb, chew marks at entrance	Nil	Old RTP drey
K32	Possum	Nil	Nil	Nil	Nil	Nil	Nil
K33	Scansorial mammal	Nil	Old Euc leaf nest, Pet (pr)	Nil	Old leaf nest - sugar glider	Nil	Petaurid nest
K34	Small glider	Nil	Euc leaf nest, Pet (pr)	Nil	Old leaf nest - petaurid	Nil	Fresh petaurid nest
K35	Microbat	Nil	Nil	Nil	Nil	Nil	Nil
K36	Possum	Nil	Nil	Nil	Nil	Nil	Nil

Box Number	Box Type	Winter 2015		Summer 2016		Winter 2016	
		Fauna	Signs/Evidence of use	Fauna	Signs/Evidence of use	Fauna	Signs/Evidence of use
K37	Medium Parrot	Nil	Euc leaf nest, Pet (pr)	Nil	Old leaf nest, petaurid?	Nil	Old leaf
K38	Scansorial mammal	SuGx2	Thick euc leaf nest	Sugar Glider x 3	Old leaf nest - sugar glider	Nil	Fresh petaurid Nest
K39	Medium Parrot	Nil	Euc leaf nest, Pet (pr)	Nil	Nil	Nil	Nil
K40	Microbat	Nil	Nil	Nil	Nil	Sugar Glider x 3	Leaf nest
K41	Black Cockatoo	CBTP	Nil	Nil	Nil	Nil	Possible wear/marks
K42	Possum	Nil	euc lvs & scat latrine , Achinus(pr)	Nil	Scattered leaves, BtP?	Nil	Nil
K43	Large glider	Nil	Thick euc lvs, Lge glider(Po)/Pet(pr)	Nil	Scattered leaf nest prob petaurid	Nil	Old leaf, prob CBTP
K44	Large glider	Nil	nil	Nil	Scat, poss Ante?	Nil	Lots of leaf, latrine Cnr, more petaurid then ante. Wear on the tree at exit
K45	Scansorial mammal	Nil	Euc leaf nest, FtG(pr)	Nil	Leaves, latrine corners, scan mamm?	Nil	Extensive messy leaf nest
K46	Possum	Nil	Old euc lvs, BtPoss(pr)	Nil	Old leaf material, BtP? ONJ?	Nil	Ante nest and latrine Cnr
K47	Small glider	Nil	Old euc leaf nest, Pet (pr) & black ants	Nil	Old leaf nest - petaurid	Nil	Old leaves, CBTP
K48	Small glider	Nil	Euc leaf nest, Pet (pr) & rodent/Achinus scats	Nil	Old scrappy leaf nest, rodent?	Nil	Old petaurid nest as well as latrine Cnr.
K49	Possum	Nil	Old euc lvs, BtPoss(pr)	Nil	Old flat scrappy leaf nest, BtP?	Nil	Used petaurid nest
K50	Large glider	Nil	Abandoned europ bee hive	Nil	Old honeycomb, few leaves	Nil	Old leaf nest, scan or CBTP
K51	Scansorial mammal	Nil	Black ants	Nil	Old honeycomb, leaf nest, petaurid	Nil	Few leaves, old euro beehive
K52	Possum	Nil	Nil	Nil	Nil	Nil	Old leaf (ante) euro beehive, ants
K53	Medium Parrot	Nil	Black ants	Nil	Nil	Nil	Nil
K54	Microbat	Nil	Nil	Microbat spp. x 6	Nil	Nil	Nil
K55	Small glider	Nil	Black ants	Nil	Nil	Nil	Nil
K56	Medium Parrot	Nil	Bark; put in @install?	Sugar glider x 3 (at least)	Sugar glider nest	Nil	Nil
K57	Large glider	Nil	Old euc lvs, BtPoss(pr)/lge glider(Po)	Nil	Flattened leaves, unsure	Nil	Old scrappy leaf nest, old petaurid
K58	Possum	Nil	Nil	Nil	Nil	Nil	Old scattered leaf nest, CBTP?
K59	Microbat	Nil	Nil	Nil	Nil	Nil	Nil
K60	Black Cockatoo	Nil	Nil	Nil	Nil	Nil	Few leaves, FTG
K61	Small glider	Nil	Black ants	Nil	Nil	Nil	Nil

Box Number	Box Type	Winter 2015		Summer 2016		Winter 2016	
		Fauna	Signs/Evidence of use	Fauna	Signs/Evidence of use	Fauna	Signs/Evidence of use
K62	Scansorial mammal	Nil	Euc leaf nest, ftg/Pet (pr)	Nil	Very old leaf nest - FtG	Nil	Nil
K63	Possum	Nil	Black ants	Nil	Nil	Nil	Old leaf, latrine Cnr. Ante
K64	Medium Parrot	Nil	Old euc leaf nest, Pet (pr) & black ants	Nil	Very old leaf material - petaurid	Nil	Nil
K65	Possum	Nil	Nil	Nil	Nil	Nil	Few old leaves
K66	Black Cockatoo	Nil	Few euc lvs, BtPoss(pr)	Nil	Spread, flat leaves, BtP	Nil	CBTP marks
K67	Large glider	Nil	Black ants	Nil	Nil	Nil	CBTP marks
J1	Medium Parrot	Nil	Euc leaf nest, Pet (pr)	Nil	Old scattered leaves, old honeycomb	Nil	Extensive leaf nest (petaurid), chewing at entrance, old euro beehive and ants
J2	Possum	Nil	Euc leaf nest, Pet (pr)	Nil	Few old scattered leaves, BtP	SEBTP x 1	Extensive leaf nest, old euro beehive
J3	Scansorial mammal	Native bees	Box full of hive	Native beehive	Nil	Native beehive	Nil
J4	Small glider	Nil	Euc leaf nest, Pet (pr); chewed entr	Nil	Chew marks at entrance, leaf nest - FTG/Sug	Nil	Old petaurid nest, still in use, some fresh leaf
J5	Small Owl	CBP	Nil	Nil	Fresh scattered leaf, old honeycomb - BtP	Sugar Glider x 1	Extensive leaf nest
J6	Large glider	Nil	Old Euc leaf nest, Pet (pr)	Nil	Extensive leaf nest - petaurid?	Nil	Extensive leaf nest, then scattered, CBTP?
J7	Microbat	Nil	Nil	Nil	Nil	Nil	Nil
J8	Scansorial mammal	Nil	Euc leaf nest, Pet (pr)	Native beehive	Nil	Native beehive	Nil
J9	Possum	Nil	Black ants	Nil	RTP material but flattened? WtT?	CBTP x 1	Leaf nest
J10	Microbat	SuGx2	Thick euc leaf nest	Nil	Wear, scratch/chew marks from sugars	Nil	Leaf and chewing, FTG
J11	Possum	Not found					Reinstalled 13/7/16
J12	Small glider	Native bees	Box full of hive	Native beehive	Nil	Nil	Native beehive
J13	Medium Parrot	Not found					Reinstalled 13/7/16
J14	Small glider	Nil	Euc leaf nest, Pet (pr)	Nil	Extensive old leaf nest, globular, FTG?	Nil	Petaurid leaf nest
J15	Small Owl	Nil	Euc leaf nest, Pet (pr)	Nil	Old petaurid nest? Then flattened by BtP?	CBTP x 1	Leaf nest
J16	Large glider	Nil	Euc leaf nest, Pet (pr)	Nil	Significant leaf nest, petaurid?	Nil	Large petaurid leaf nest
J17	Medium Parrot	Eggs x2(rainbow L'keet)	Saw 2x perch on branch & 1 enter box	Nil	Old feathers, RL, fledged?	R.Lorikeet nestlings x 2	Latrine corner
J18	Possum	Nil	Euc leaf nest, Pet (pr)	Nil	Old flattened leaf, BtP	CBTP x 1	Leaf nest

Box Number	Box Type	Winter 2015		Summer 2016		Winter 2016	
		Fauna	Signs/Evidence of use	Fauna	Signs/Evidence of use	Fauna	Signs/Evidence of use
J19	Scansorial mammal	Nil	Euc leaf nest, Pet (pr); chewed entr	Sugar Glider x 4	Old sugar glider nest	Sugar Glider x 3	Old leaf nest plus new additional fresh leaf
J20	Large glider	Nil		Nil	Bark strips and leaves, RTP?	CBTP x 1	Leaf nest, scratch marks on tree
J21	Small glider	Nil		Native beehive	Nil	Native beehive	Nil
J22	Black Cockatoo	Nil		CBtP x 2	CBtP den	Nil	Nil
J23	Small Glider	N/A	Phase 2. Not installed yet	Nil	Fresh leaf nest - petaurid	Nil	Chewing on outside, fresh leaf, petaurid
J24	Possum	N/A	Phase 2. Not installed yet	Nil	Nil	Nil	Nil
J25	Scansorial mammal	N/A	Phase 2. Not installed yet	Nil	Nil	Nil	Nil
J26	Medium Parrot	N/A	Phase 2. Not installed yet	Nil	Nil	Nil	Few scattered leaves, ante?
J27	Microbat	N/A	Phase 2. Not installed yet	Nil	Possible wear? Microbats?	Nil	Nil
J28	Small glider	N/A	Phase 2. Not installed yet	Sugar Glider x 5 (prob)	Leaf nest - sugar glider	Sugar Glider x 6	Leaf nest
J29	Medium Parrot	N/A	Phase 2. Not installed yet	Nil	Old leaf nest - petaurid	Nil	Old extensive leaf nest, petaurid
J30	Small Glider	N/A	Phase 2. Not installed yet	Sugar Glider x 1	Leaf nest - sugar glider	Nil	Old leaf nest, petaurid
L1	Medium parrot	Nil	Black ants	Nil	Nil	Nil	Fresh messy leaf nest, ante
L2	Small glider	Nil	Black ants	Nil	Nil	Nil	Nil
L3	Scansorial mammal	Nil	Euc leaf nest, Pet (pr)	Nil	Skull, small sticks, poss feather. Bird? Rodent?	Nil	Bark, leaf nest, small skull, possible phas?
L4	Possum	Nil	Nil	Nil	Nil	Nil	Few scattered leaves, CBTP
L5	Microbat	Nil	Nil	Nil	Nil	Nil	Nil
L6	Scansorial mammal	Not found	Removed during clearing		Removed during clearing		Reinstalled 13/7/16
L7	Medium parrot	Nil	Euc leaf nest, Pet (pr)	Nil	Old leaf nest, petaurid	Nil	Old petaurid leaf nest
L8	Large glider	Nil	Nil	Nil	Fresh leaf nest, petaurid	Nil	Old scattered leaf nest
M1	Possum	Nil	Few euc lvs, BtPoss(pr)	Nil	Old spread out leaves, BTPoss	Nil	CBTP marks
M2	Microbat	Nil	Nil	Nil	Nil	Nil	Nil
M3	Scansorial mammal	Nil	Black ants	Nil	Nil	Nil	Nil
M4	Small glider	Nil	Black ants	Nil	Nil	Nil	Nil
M5	Microbat	Nil	Nil	Nil	Nil	Nil	Nil
M6	Small owl	Nil	Petaurid den - box 1/3rd full of leaf	Nil	Large old euc leaf nest	Nil	Extensive leaf nest, old petaurid then used by something else
M7	Scansorial mammal	Nil	Black ants	Nil	Old sugar nest, old honeycomb	Nil	Old petaurid nest, old euro beehive
M8	Microbat	Nil	Nil	Nil	Nil	Nil	Nil

Box Number	Box Type	Winter 2015		Summer 2016		Winter 2016	
		Fauna	Signs/Evidence of use	Fauna	Signs/Evidence of use	Fauna	Signs/Evidence of use
M9	Large glider	Nil	Few euc lvs, BtPoss(pr)	Nil	Some old leaf, RTP?	Lace Monitor x 1	Old leaf, scratch marks
M10	Medium Parrot	Nil	Few lvs/brk- rodent(pr)	Nil	Nil	Nil	Nil
M11	Possum	Nil	Few euc lvs, BtPoss(pr)	Nil	Spread out leaves and twigs, wear, Poss spp.	Nil	Chewing at entrance, CBTP bum marks
M12	Small glider	Nil	Black ants	Nil	Nil	Nil	Nil
M13	Possum	CBP	Entr. chewed	Nil	BTP den, scattered, flattened leaves	ONJ x 1	Old scattered leaf, chewing at entrance.
M14	Scansorial mammal	Nil	Euc leaf layer, SuG/FtG (pr)	Nil	Nil	Nil?	Fresh scattered leaf nest, chewing at entrance.
M15	Black Cockatoo	Nil	Nil	Nil	Nil	Nil	Hard to see, check on comp
M16	Large glider	Nil	Euc leaf nest, Pet (pr)	Nil	Old extensive petaurid nest	Nil	Old scattered leaf nest, old euro beehive, petaurid?
M17	Medium parrot	Nil	Euc leaf nest, Pet (pr)	Nil	Old leaf, ants, petaurid prob	Nil	Old scattered leaf
M18	Scansorial mammal	Nil	Euc leaf nest, Pet (pr)	Nil	Old globe leaf nest, FTG?	Nil	Fresh petaurid leaf nest
M19	Possum	Nil	Few euc lvs, BtPoss(pr)	Nil	Few scattered leaves, old euro bee honeycomb, brushy?	Nil	Old scattered leaves, CBTP
M20	Large glider	Nil	Euc leaf nest, Pet (pr)	Nil	Old petaurid nest, euro bee honeycomb, termites	Nil	Old scattered leaves, CBTP, old euro beehive.
M21	Small glider	Lace monitor	Nil	Nil	Nil	Lace Monitor	Few old leaves
M22	Microbat	Nil	Nil	Nil	Nil	Nil	Nil
M23	Scansorial mammal	Nil	Euc leaf nest, Pet (pr)	Sugar Glider x 2	Leaf nest - sugar glider	Nil	Old leaf nest, petaurid
M24	Black Cockatoo	Nil	Poss CBTP - old leaf material	Nil	Poss, scan? Latrine corner?	Nil	Few leaves, scrappy material at base?
M25	Large Glider	Nil	Euc leaf nest, Pet (pr)	Nil	Freshish leaf, no structure. ONJ? Entrance open	Nil	Old scrappy leaf nest, CBTP?
N1	Large Glider	Nil	Euc leaf nest, Pet (pr)	Lace Monitor x 1	Old leaf nest, Petaurid scattered by Lace Monitor	Nil	Messy leaf nest
N2	Possum	Nil	Nil	Nil	Nil	Nil	CBTP marks
N3	Scansorial mammal	Nil	Nil	Nil	Old leaf nest, prob petaurid	Nil	Petaurid leaf nest
N4	Scansorial mammal	Nil	Black ants	Nil	Nil	Nil	Nil
N5	Large Glider	Nil	Abandoned euro bee hive	Nil	Old honeycomb	Nil	Extensive fresh leaf nest
N6	Small Glider	N/A	Phase 2. Not installed yet	Sugar Glider x 1	Some fresh euc leaf	Nil	Few leaves
N7	Small Glider	N/A	Phase 2. Not installed yet	Sugar Glider x 2	Fresh leaf	Sugar Glider x 1 (min)	Fresh petaurid leaf nest
N8	Small Glider	N/A	Phase 2. Not installed yet	Nil	Extensive leaf nest - FTG	Nil	Fresh petaurid leaf nest

Box Number	Box Type	Winter 2015		Summer 2016		Winter 2016	
		Fauna	Signs/Evidence of use	Fauna	Signs/Evidence of use	Fauna	Signs/Evidence of use
O1	Large glider	Nil	Euc leaf nest, Pet (pr)	Nil	Old leaf nest, prob petaurid	Nil	Extensive messy leaf nest
O2	Scansorial mammal	Nil	Black ants	Nil	Old insect remains in one corner, rodent?	Nil	Fresh petaurid nest
O3	Small glider	Nil	Black ants	Nil	Nil	Nil	Nil
O4	Large glider	Pic on britestar	Pic on britestar	Nil	Old scat, rodent, Antechinus?	Nil	Some bark, scat. Ante
O5	Scansorial mammal	Nil	Euc leaf nest, SuG/FtG (pr)	Nil	Messy leaf/stick nest, rodent/Antechinus?	Nil	Messy twiggy leaf nest, scan mammal
O6	Small glider	Nil	Nil	Nil	Nil	Nil	Few fresh leaves
O7	Small owl	N/A	Phase 2. Not installed yet	Nil	Nil	Lace Monitor x 1	Nil
O8	Medium Parrot	N/A	Phase 2. Not installed yet	Sugar Glider x 2	Fresh loose leaf nest	Green Tree Snake x 1	Old petaurid nest
O9	Scansorial	N/A	Phase 2. Not installed yet	Nil	Nil	Nil	Med fresh petaurid leaf nest
O10	Possum	N/A	Phase 2. Not installed yet	Nil	Nil	Nil	Nil
O11	Microbat	N/A	Phase 2. Not installed yet	Nil	Nil	Nil	Nil
O12	Possum	N/A	Phase 2. Not installed yet	Nil	Nil	Nil	Nil
O13	Scansorial mammal	N/A	Phase 2. Not installed yet	Nil	Nil	Nil	Nil
O14	Microbat	N/A	Phase 2. Not installed yet	Nil	Nil	Nil	Nil
O15	Large forest owl	N/A	Phase 2. Not installed yet	Nil	Nil	Nil	Nil
O16	Possum (ad)	N/A	Phase 2. Not installed yet	Nil	Nil	Nil	Nil
O17	Small glider	N/A	Phase 2. Not installed yet	Nil	Nil	Nil	Fresh leaf, old euro beehive
O18	Small glider	N/A	Phase 2. Not installed yet	Sugar Glider x 1	Fresh leaf nest - Sugar Glider	Nil	Fresh petaurid nest
P1	Microbat	Nil	Nil	Nil	Nil	Nil	Nil
P2	Small glider	Nil	Black ants	Nil	Nil	Nil	Nil
P3	Scansorial mammal	Nil	Black ants	Nil	Nil	Nil	Nil
P4	Large glider	Nil	Abandoned europ bee hive	Nil	Nil	Nil	Nil
P5	Medium Parrot	Nil	Euc leaf nest, Pet (pr)	Nil	Leaf nest - petaurid - Loosely packed leaves	Nil	Old petaurid nest
Q1	Possum	Nil	Nil	Owlet Nightjar x 1	Nil - no nesting material, roost.	Nil	Nil
Q2	Scansorial mammal	SuG x2	Fresh Euc leaf nest	Nil	Old leaf nest prob FTG	Nil	Old leaf nest, petaurid
Q3	Medium Parrot	Nil	Ants & Fresh Euc leaf nest-SuG(pr)	Nil	Old leaf nest - petaurid	Nil	Old petaurid leaf n
Q4	Small Owl	Nil	Various lvs/scats-rodent(Po)	European bees	Nil	Nil	Old euro beehive, some leaf litter
Q5	Small glider	Nil	Fresh Euc leaf nest ball-FtG(pr)	Nil	Leaf nest - FTG	Sugar Glider x 2	Leaf nest

Box Number	Box Type	Winter 2015		Summer 2016		Winter 2016	
		Fauna	Signs/Evidence of use	Fauna	Signs/Evidence of use	Fauna	Signs/Evidence of use
Q6	Scansorial mammal	Nil	Nil	Nil	Leaf nest, ftG?	Nil	Fresh petaurid leaf nest
Q7	Large glider	Nil	Nil	Nil	Nil	Nil	Nil. Old euro beehive
Q8	Possum	Nil	Nil	Nil	Nil	Nil	Nil
Q9	Medium parrot	Nil	Ants & Fresh Euc leaf nest-SuG(pr)	Nil	Old leaf nest, prob petaurid	Nil	Old leaf
Q10	Large glider	Nil	Ants	Nil	Nil	Lace monitor x 1	Nil
Q11	Possum	Nil	Nil	Nil	Nil	Nil	Nil
Q12	Small glider	N/A	Phase 2. Not installed yet	Sugar Glider x 1	Leaf nest - Sugar Glider	Nil	Fresh petaurid nest
Q13	Medium Parrot	N/A	Phase 2. Not installed yet	Nil	Nil	Nil	Nil
Q14	Large glider	N/A	Phase 2. Not installed yet	Nil	Bees, ants, old leaf material		Re-installed 13/7/16
Q15	Microbat	N/A	Phase 2. Not installed yet	Nil	Nil	Microbat sp. x 1	Nil
Q16	Small owl	N/A	Phase 2. Not installed yet	Nil	Nil	Nil	Nil
Q17	Small glider	N/A	Phase 2. Not installed yet	Sugar Glider x 3	Leaf nest - Sugar Glider	Sugar Glider x 1	Leaf nest
Q18	Medium Parrot	N/A	Phase 2. Not installed yet	Nil	Nil	Nil	Nil
Q19	Large forest owl	N/A	Phase 2. Not installed yet	Nil	Nil	Nil	Nil
Q20	Possum (ad)	N/A	Phase 2. Not installed yet	Nil	Nil	Nil	Nil
R1	Large glider	Nil	Phase 2. Not installed yet	Nil	Nil	Nil	Nil
R2	Scansorial mammal	Nil	Fresh Euc leaf nest ball-FtG(pr)	Sugar Glider x 4	Leaf nest - Sugar Glider	Sugar Glider x 1	Leaf nest
R3	Microbat	Nil	Nil	Nil	Nil	Nil	Nil
R4	Possum	Nil	Nil	Nil	Nil	Lace Monitor x 1	Nil
R5	Large glider	Nil	Old Euc lvs	Nil	Nil	Nil	Nil
R6	Scansorial mammal	Nil	Fresh Euc leaf nest-SuG(pr)	Nil	Old leaf nest- Sugar Glider	Sugar Glider x 1	Leaf nest
R7	Large glider	Nil	Fresh Euc leaf nest-SuG(pr)	Nil	Substantial old leaf nest, petaurid/poss something else	Nil	Extensive petaurid nest
R8	Possum	Not found					Reinstalled 13/7/16
R9	Medium parrot	Nil	Old Euc leaf nest-SuG(pr)	Nil	Old leaf nest, petaurid	Nil	Old petaurid nest
R10	Small Glider	N/A	Phase 2. Not installed	Nil	Old leaf nest, petaurid	Sugar Glider x 1	Leaf nest
R11	Large Forest Owl	N/A	Phase 2. Not installed	Nil	Nil	Nil	Nil

Attachment 5

July 2016 EPBC Surveillance Checklist

ROADS AND MARITIME SERVICES

H.10 PACIFIC HIGHWAY UPGRADE

Report No:

Project: NH2U

Date: 26/07/2016

Contract No:

EPBC Act – Commonwealth Approval - Field

Commonwealth Approval EPBC 2013/6963

Location: Site General June 2016

Cl.	PROCESS	COMMENTS	Conforms Y / N
Condition No3			
	The <i>person taking the action</i> must undertake progressive rehabilitation of <i>EPBC species' habitat</i> in areas where <i>temporary infrastructure</i> is to occur or, where <i>short term</i> impacts are anticipated. Where appropriate, the landscaping / rehabilitation of these areas must be done in a manner that targets the needs and requirements of <i>EPBC species</i> .	Landscaping works 98% complete	Y
Condition No6			
a)	Ensure that temporary and high visibility fencing will be erected to restrict access to <i>exclusion zones</i> . Temporary fencing must be of a design appropriate to deter the passage of vehicles or placement of construction materials, equipment and waste, in <i>exclusion zones</i> where accidental incursion could reasonably occur.		Y
b)	Implement measures to prevent the spread or establishment of new or additional weed species, soil or plant pathogens into these <i>exclusion zones</i> as a result of <i>construction</i> .	Weed management is tracked through the monthly report	Y
c)	Implement stormwater management measures to prevent the unintentional diversion or discharge of stormwater during both construction and operation over <i>exclusion zones</i> ; and	Final drainage works complete	Y
d)	Implement targeted measures for managing construction impacts to <i>Cryptic Forest Twiner</i> and <i>Clear Milkvine</i> associated with dust, sedimentation and erosion.		Y
Condition No7			
	The <i>person taking the action</i> must engage a <i>suitably qualified expert</i> to undertake pre-clearing fauna searches within all areas proposed for disturbance, including: hollow bearing trees, logs, existing culverts and bridges, no earlier than 48 hours prior to the removal of vegetation occurring in that area to ensure that the area is free of the <i>Koala</i> and <i>Spotted-tail Quoll</i>		Y
Condition No8			
	The <i>person taking the action</i> must implement measures to relocate and/or ensure the appropriate care of individuals of <i>EPBC species</i> that are identified during searches referred to in condition 7.		Y
Condition No12			
	To inform the <i>long term success</i> of <i>fauna crossings</i> , fencing and road medians the <i>person taking the action</i> must engage a <i>suitably qualified expert</i> to prepare a strategy for monitoring and recording any road kill sightings of the <i>Koala</i> and <i>Spotted-tail Quoll</i> along the <i>Pacific Highway</i> . Prior to <i>commencement of the action</i> , the road kill monitoring and recording strategy must be implemented..	Fauna fencing complete except for bridge access gates, all gaps within the fencing have been sealed with the use of temporary fencing in consultation with Brian Tolhurst from EPA	Y

COMPLIANCE: YES	NO	NCPSN/MEMO #
DETAILS:		
SURVEILLANCE OFFICER		DATE: / /
Follow-up Action:		
Matters arising:	NCPSN No.	Contractor's NCR No.
	Date: / /	Date: / /
CAR No.		
Date: / /		
ENGINEER COMMENTS:		
Closed out:		
RESIDENT/PROJECT ENGINEER		Date: / /



Fauna exclusion fencing being completed at SB20 fauna underpas



Fauna underpass with internal and external fauna furniture installed





Glider pole installed within the northern widened median