

Townsville Ring Road Section 4

Annual Environmental Compliance Report for 2016/17

EPBC Referral No: 2012/6562



Wildlife observed on the project site during construction

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1.0 Introduction

The purpose of this document is to provide a template for Department of Transport and Main Road's (TMR) annual compliance reporting for the Townsville Ring Road Section 4 (TRR4) project. The TRR4 is a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The Commonwealth Minister for the Environment approved the TRR4 project on 2 May 2014, subject to approval conditions which must be met and/or adhered to. A variation to these approval conditions was granted on 31 October 2014 in relation to Condition 2's vegetation clearance levels.

The objective of this annual report is to demonstrate compliance with all EPBC Act approval conditions (Appendix A).

In doing so, the report will also address the project's compliance against requirements of the following:

- Mitigation and management measures provided as preliminary documentation, in support of the EPBC Act referral for the project;
- Mitigation and management measures within the Environmental Management Plan prepared through the planning phase of the project (EMP(P));
- TMR's Technical Specification for Environmental Management (MRTS51).

The act of preparing and publishing an annual compliance report will in itself ensure compliance with Conditions 9 and 10 of the EPBC Act approval, which have been stated in full below.

Condition 9

"The approval holder must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the plans and strategy 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."

Condition 10

"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, including implementation of any plans as specified in the conditions. Documentary evidence providing proof of the date of publication and non-compliance with any conditions of this approval must be provided to the Department at the same time as the compliance report is published. The approval holder must continue to comply with this condition until agreed to in writing by the Minister."

Further **Condition 11** states

"Upon the direction of the Minister, the approval holder must ensure that an independent audit of compliance with the conditions of approval is conducted and a report is 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."

The report structure is based on the commitments outlined in the TRR4 Monitoring Plan (AECOM, 2014), as approved by the Department of Environment (DOE). Those commitments have been divided between those that fall directly to TMR as the approval holder (Section 2.0), and those that are either delegated to the Construction Contractor, who is to report to TMR for the purpose of the monitoring plan, and or where TMR assists the Contractor in meeting the reporting requirements (Section 3.0). A summary of the project's direct compliance with the EPBC Approval conditions is provided in Table 1 to assist in an overall understanding of the status the project compliance in terms of ongoing activities and components of the project that are yet to be completed. Comments are provided to provide further confirmation or an explanation of further action required.

For the purposes of understanding continuity of conditions of approval, after approved variations have occurred, previous conditions have been included in Table 1 with ~~struck through~~ text to enable tracking the changed conditions.

Construction Completion

Construction of the Townsville Ring Road Section 4 was completed in late December 2016. This report covers the period October 2016 – December 2016. The road was officially opened to traffic on 12 December 2016. Any works conducted after that date was limited to defects correction and site disestablishment. As such, this report will be the final *Annual Compliance Report* for referral: 2012/6562, in accordance with Condition 10: *The **approval holder** must continue to comply with this condition until agreed to in writing by the **Minister***, pending agreement by the Minister.

The Department of National Parks, Sport and Racing will continue to report on the implementation of the Black Throated Finch Offset Site on TMR's behalf for the duration of the Offset Agreement.

Table 1 Summary of Compliance with Conditions

Compliance with Conditions of Approval	
Condition 1	<i>To ensure the protection of the Matters of National Environmental Significance (MNES), the Approval Holder must construct the road in accordance with Section 3.0 'Current Design for TRR4' and Appendix A Environmental Management Plan (EMP) of the Preliminary Documentation (PD).</i>
Compliant? (Y/N)	Yes
<p>Comment: The project is being constructed in accordance with Section 3.0 "Current Design for TRR4" and Appendix A Environmental Management Plan of the preliminary documentation. During the course of construction the project has not incurred a design change that requires any increase to the volume of habitat clearing that was approved under the variation approval granted on 31 October 2014. The details within the EMP supplied in the preliminary documentation remain current and have not undergone any additional revisions.</p> <p>2015-16: No change since previous compliance report.</p> <p>2016-17: The completed project has no significant variations to the design originally submitted and no impact on MNES.</p>	
Condition 2	<i>To minimise impacts to the habitat of the black-throated finch (southern) (<i>Peophila cincta cincta</i>) (BTF), the Approval Holder must not disturb, destroy or remove more than 68.24ha of remnant vegetation, including 49.19ha of BTF habitat.</i>
Compliant? (Y/N)	Yes
<p>Comment: The current status of clearing is:</p> <ul style="list-style-type: none"> • Total area cleared in BTF habitat: 49.0114 ha = under clearance limit by: 0.1786h • Total Remnant Vegetation cleared 66.49ha under clearance limit by: 1.742ha <p>Communications with the post referrals team have confirmed a self-assessment process to manage staying within the approved clearing amount is accepted as a process of managing compliance in relation to Black-throated Finch essential habitat as a result of the project.</p> <p>Currently the project has not exceeded the approved essential habitat clearing volumes and does not foresee a need to request any further variations to this condition.</p> <p>2015-16: No change since previous compliance report.</p> <p>2016-17: No change since previous compliance report.</p>	
Condition 3	<i>To minimise the impacts to MNES, the Approval Holder must:</i> <ul style="list-style-type: none"> • <i>Undertake mitigation actions in accordance with Section 6.3 of the PD.</i> • <i>Undertake the action in accordance with the EMP.</i>
Compliant? (Y/N)	Yes

<p>Comment: Mitigation Actions have been implemented in accordance with Section 6.3 of the PD and the EMP. These actions have been incorporated into project design, construction methodologies and maintenance activities.</p> <p>2015-16: No change since previous compliance report</p> <p>2016-17: No change since previous compliance report</p>	
Condition 4	<p>To ensure the protection of MNES, the Approval Holder must prepare and submit a Monitoring Plan to the Minister for approval prior to the Commencement of the Action. The Monitoring Plan must include adaptive management actions to monitor the effectiveness of mitigation measures, monitoring strategies, performance criteria and corrective actions to minimise impacts on MNES. The Approval Holder must not commence the action until the Minister has approved the Monitoring Plan. The approved Monitoring Plan must be implemented.</p>
Compliant? (Y/N)	Yes
<p>Comment: The original Monitoring Plan was approved by the Minister on 21 August 2014. Annual monitoring at strategic sites (Dam 1 and 3), and other component monitoring required throughout the project, as per the monitoring plan has occurred through the last 12 months of construction. Adaptive management actions have not been required to be implemented based on the monitoring outcomes from the last round of monitoring.</p> <p>2015-16: No change since previous compliance report</p> <p>2016-17: No change since previous compliance report</p>	
Condition 5	<p>To offset residual direct impacts to 42ha 49.19ha of BTF habitat, the Approval Holder must prepare and submit an Offset Management Plan to the Minister for approval. The Approval Holder must not Commence the Action until the Minister has approved the Offset Management Plan in writing. The approved Offset Management Plan must be implemented. The Offset Management Plan must:</p> <ol style="list-style-type: none"> a) Be consistent with the Department's Environmental Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy (October 2012). b) Provide the Department with a textual description and map to clearly define the location and boundaries of the offset area/s. This must be accompanied with the Offset Attributes and Shapefiles. c) Include timeframes and key milestones for implementation of offsets. d) Describe how the offset site will be protected and managed for the duration of the impacts of the Approved Action to achieve a net conservation gain for the BTF. e) Include discussion of the risks and uncertainties associated with the proposed offsets. f) Include effective management strategies to mitigate each potential impact including desired benchmarks, benchmarks, readily measureable performance indicators and goals; timeframes for reporting and implementation; corrective actions and contingency measures; and must specify the person/s responsible for implementing these strategies. g) Include details of the legally binding conservation mechanisms (Covenant arrangements).
Compliant? (Y/N)	Yes

<p>Comment: The original Monitoring Plan was approved by the Minister on 21 August 2014. As a consequence of failing to secure an agreement with the potential land manager for the proposed offset site (Port of Townsville), a revised offset proposal (Queensland Parks and Wildlife Service) was submitted for the Minister's consideration on 4 November 2015.</p> <p>2015-16: This revised Monitoring Plan was approved by the Minister on 1 August 2016.</p> <p>2016-17: No change since previous compliance report</p>	
Condition 6	<p><i>The offset site must be located within Lots 10 SP228126 and 12 E124175 near Pinnacles Quarry, off Granitevale Road, Pinnacles, approximately 25km south of Townsville CBD (as described in Section 6.4 'Offsets' of the PD). If by two years after the commencement of the action, the offset site has not been secured, a new offset proposal and offset management plan must be submitted and approved by the Minister. A new offset proposal and offset management plan may be prior to this date.</i></p> <p><i>Unless otherwise agreed to in writing by the Minister the approval holder must ensure that the offset area of 200ha within Lot 1 AP20165 at Attachment A is secured in perpetuity by 31 December 2019. A written notification providing the date the offset area was secured must be provided to the Department within 30 days.</i></p>
Compliant? (Y/N)	Yes
<p>Comment: Original Offset Management Plan approved by Minister on 21 August 2014.</p> <p>2015-16: The current compliance status with this condition remains unchanged, due to securing the Queensland Parks and Wildlife Service (QPWS) offset. Communications with QPWS indicate their preferred method of changing tenure (currently Land in trust to the Chief Executive of the Nature Conservation Act 1992) to a more secure tenure is to Gazette the land to National Park in the near future.</p> <p>2016-17: No change since previous compliance report</p>	
Condition 7	<p><i>To offset residual indirect noise impacts to 42 ha of BTF habitat the Black Throated Finch, the approval holder must undertake, or fund to undertake, research projects as outlined in Section 6.4.3 'Indirect Offsetting' of the PD. The final research projects must be identified in consultation with the BTF Recovery Team. The research outcomes must be published on the approval holder's website within four years (or timeframe otherwise agreed by Department) of commencement of the action. Outcomes of research undertaken by, or for, the approval holder must be used to inform management actions to improve habitat condition and utilisation of the secured offset site (described in condition 6).</i></p>
Compliant? (Y/N)	Yes
<p>Comment: An introductory meeting with James Cook University (JCU) Townsville was held 12 March 2014. TMR Letter sent to JCU 24 July 2014 seeking formal assistance with research topic and supervision of student. Letter to be written annually to DOE documenting progress.</p> <p>2015-16: A PhD candidate has commenced work on the research project. A Literature Review has been completed and the next stage of study is in progress. The PhD student commenced studies in April 2016. A request for a variation to this condition will only be required if a delay to the expected date of publishing goes past 2019. The current understanding is the studies are expected to take 3 years.</p> <p>2016-17: No change since previous compliance report.</p>	
Condition 8	<p><i>Within 30 days after the commencement of the action, the approval holder must advise the Department in writing of the actual date of commencement.</i></p>

Compliant? (Y/N)	Yes
Comment: The Department of Environment was notified in writing on 27 October 2014 that the project was commenced on 15 October 2014.	
Condition 9	<i>The approval holder must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the plans and strategy 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.</i>
Compliant? (Y/N)	Yes
Comment: The project utilises a records management system (UniPhi) and in TMR's document Management System (DMS) for all correspondence and reports. All Audits, Inspections, Non-Conformances and visits by administering authorities are recorded within both database systems. Any specific records are available on request. 2015-16: No change since previous compliance report 2016-17: No change since previous compliance report	
Condition 10	<i>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, including implementation of any plans as specified in the conditions. Documentary evidence providing proof of 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. The approval holder must continue to comply with this condition until agreed to in writing by the Minister.</i>
Compliant? (Y/N)	Yes
Comment: Annual Compliance Report published to TMR website 8 February 2016, 3 weeks late due to key project staff and TMR Communications staff being on Annual Leave during compulsory Christmas Closedown. 2015-16: Annual Compliance Report submitted on time. 2016-17: Final Annual Compliance Report submitted May 2017 due to project completion. A request to suspend further reporting is submitted with this report.	
Condition 11	<i>Upon the direction of the Minister, the approval holder 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.</i>
Compliant? (Y/N)	Yes
Comment: No independent audits have been directed by the Minister. As a part of the audit process for the project TMR internal audits include on-site provisions that relate to the EPBC referral conditions. These relate	

to all control plans within the Construction Environmental Management Plan (such as the erosion and sediment control plan), verification of weed declarations, verification of works staying within clearing extents, verification of passive dust recorder results and review of the minor incident log.

2015-16: No change since previous compliance report.

2016-17: No change since previous compliance report

Condition 12	<p>If the approval holder wishes to carry out any activity otherwise than in accordance with the plan/s as specified in the conditions, the approval holder must submit to the Department for the Minister's written approval a revised version of that plan/s. The varied activity shall not commence until the Minister has approved the varied plan/s in writing. The Minister will not approve a varied plan unless the revised plan/s would result in an equivalent or improved environmental outcome over time. If the Minister approves the revised plan/s, that plan/s must be implemented in place of the plan/s originally submitted.</p> <p>The approval holder may choose to revise the EMP, Monitoring Plan and the Offset Management Plan approved by the Minister under conditions 1, 4 and 5 of the approval without submitting it for approval under section 143A of the EPBC Act, if the taking of the action in accordance with the revised plans would not be likely to have a new or increased impact. If the approval holder makes this choice they must:</p> <ol style="list-style-type: none"> i. notify the Department in writing that the approved plan has been revised and provide the Department with an electronic copy of the revised plan; ii. implement the revised plan from the date that the plan is submitted to the Department; and iii. for the life of this approval, maintain a record of the reasons the approval holder considers that taking the action in accordance with the revised plan would not be likely to have a new or increased impact.
Compliant? (Y/N)	Yes
<p>Comment: A variation request was submitted in writing for the Minister's consideration on the 4th of November 2015 to address a number of changes, including clearing limits, parts of the monitoring plan and the Offset Management Plan.</p>	
Condition 12A	<p>The approval holder may revoke their choice under condition 12 at any time by notice to the Department. If the approval holder revokes the choice to implement a revised plan, without approval under section 143A of the Act, the plan approved by the Minister must be implemented.</p>
Compliant? (Y/N)	Yes
<p>Comment: Approval was granted by the Minister on 1 August 2016 to implement a revised plan.</p>	
Condition 12B	<p>If the Minister gives a notice to the approval holder that the Minister is satisfied that the taking of the action in accordance with the revised plan would be likely to have a new or increased impact, then:</p> <ol style="list-style-type: none"> i. Condition 12 does not apply, or ceases to apply, in relation to the revised plan; and ii. The person taking the action must implement the plan approved by the Minister. <p>To avoid any doubt, this condition does not affect any operation of conditions 12 and 12A in the period before the day the notice is given.</p> <p>At the time of giving the notice the Minister may also notify that for a specified period of time that condition 12 does not apply for one or more specified plan required under the approval.</p>

Compliant? (Y/N)	Yes
Comment: The Minister did not provide notice that the revised plan would have a new or increased impact.	
Condition 12C	<i>Conditions 12, 12A, 12B are not intended to limit the operation of section 143A of the EPBC Act which allows the person taking the action to submit a revised plan to the Minister for approval.</i>
Compliant? (Y/N)	Yes
Comment: The revised plan was approved by the Minister.	
Condition 13	<i>If the Minister believes that it is necessary or convenient for the better protection of listed threatened species, to do so, the Minister may request that the approval holder make specified revisions to the plan/s specified in the conditions and submit the revised plan/s for the Minister's written approval. The approval holder must comply with any such request. The revised approved plan/s must be implemented. Unless the Minister has approved the revised plan/s, then the approval holder must continue to implement the plan/s originally approved, as specified in the conditions.</i> <i>Note: Condition 13 was revoked on the date of this consolidated notice. (1 August 2016)</i>
Compliant? (Y/N)	Yes
Comment: No revisions to any plans or specifications submitted have been requested by the Minister.	
Condition 14	<i>If, at any time after five (5) years from the date of this approval, the approval holder has not commenced the action, then the approval holder must not commence the action without the written agreement of the Minister.</i> <i>Note: The date stated in condition 14 relates to the date of the approval decision (2 May 2014)</i>
Compliant? (Y/N)	Yes
Comment: The action has commenced within 5 months from the date of approval (2 May 2014).	
Condition 15	<i>Unless otherwise agreed to in writing by the Minister, the approval holder must publish all plan/s referred to in these conditions of approval on their website. Each plan must be published on the website within 1 month of being approved and must remain published for the duration of the approval.</i>
Compliant? (Y/N)	Yes
Comment: The plans referred to in the original referral have been published on the TMR website to enable public availability.	


2.0 TMR Compliance and Reporting Commitments

The following table sets out TMR's direct monitoring requirements as the approval holder which relate directly to the EPBC approval conditions.

Table 2 Compliance reporting requirements for TMR as a consequence of EPBC approval requirements

Monitoring Plan Reference No.	Subject	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
Record Keeping			
1	Maintain accurate records substantiating all activities associated with or relevant to the conditions of approval including measures taken to implement the plans and strategies required by the approval and make them available on request to DOE.	Continuous	Records are kept in the Project Folder File with actions and correspondence captured in the <i>UniPhi</i> system. The system is maintained by the Project Administration Team. All decisions are also captured by the Records Team.
Plan Preparation and Approval			
2	Prepare and submit an Offset Management Plan to the Commonwealth Environment Minister for approval.	Original Offset Management Plan approved by Minister on 21 August 2014. Updated Offset Management Plan approved 1 August 2016	Revised Offset Management Plan has been submitted to DoE for approval. Previous approval listed below. See attachment 1 G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\EPBC\NPSR Offset 60328085 TMR TRR4 Offset Management Plan Final
3	Prepare and submit a Monitoring Plan to the Commonwealth Environment Minister for approval which must then be implemented.	Original Monitoring Plan approved by Minister on 21 August 2014. Revised Monitoring Plan created to reflect the QPWS Offset site.	Original Monitoring Plan As per Condition 12, TMR may vary the monitoring Plan without submission for approval if the taking of the action would not have a new or increased impact. There will be no new or increased impact.

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Offset Provision			
4	Fund and undertake research projects on BTF	<p>Introductory Meeting with JCU held 12 March 2014</p> <p>TMR Letter sent to JCU 24 July 2014 seeking formal assistance with research topic and supervision of student.</p> <p>Letter to be written annually to DOE documenting progress.</p>	<p>See attachment 2</p> <p>G:\TOWD\PROGRAM\DELIVERY\TCC\26 8-10M-5\8.0 Environment\EPBC\JCU indir offset</p> <p>TMR has begun negotiations with James Cook University (JCU) to engage an appropriate student to undertake the research project. This is on-going due to the need to attract a suitable candidate. TMR has paid the first fee instalment of \$106,000 towards the project.</p> <p>JCU have advertised, calling for interested students. The project will commence once a suitable candidate has been approved. This will likely be 2016. Completion will likely be within 4 years of commencement.</p> <p>Action taken 2016, progress:</p> <p>A PhD candidate has commenced work on the research project. A Literature Review has been completed and the next stage of study is in progress.</p>
5	Final research topics selected via consultation with BTF Recovery Team	Selection of appropriate candidate not yet confirmed.	<p>“Understanding habitat quality of the Black-throated Finch southern subspecies <i>Poephila cincta cincta</i>”.</p> <p><i>The project would investigate the habitat requirements of the BTF, the factors that influence habitat quality, and how the habitat quality changes temporarily with rainfall and subsequent food availability. The project would also</i></p>

			<p><i>investigate the efficacy of management actions such as fire management, weed control and revegetation in creating or maintaining suitable habitat for BTF.</i></p> <p><i>Underlying research questions are:</i></p> <ul style="list-style-type: none"> - <i>What are the factors influencing habitat quality for BTF at local and landscape scales?</i> - <i>How does the suitability of habitat fluctuate across the region through months and years?"</i>
<p>6</p>	<p>Outcome of research undertaken be used to inform management actions at secured offset site.</p>  <p>27 October 2016 Lily Dam Black Throated Finch and Zebra Finch (photo by: QPWS)</p>	<p>Review of offset management plan to incorporate changes to management actions.</p>	<p>Awaiting outcomes of research. To be published upon determination.</p> <p>2015-16: TMR Environmental Officer met with QPWS Ranger in Charge responsible for the Offset Site and discussed dispersive soils, BTF habitat requirements and Breeding, as well as fire mgt. Knowledge gained from the TRR4 project was shared with QPWS. This included use of stripped topsoil and local native grass species in revegetation.</p> <p>2016/17: Learnings from RR4 being implemented at Offset site by QPWS. Photos to left supplied by QPWS following recent monitoring and weed treatment.</p>



27 October 2016 Lily Dam Black Throated Finch's (photo by: QPWS)



22 August 2016 Lily Dam Olive Hymenachne Distribution (photo by: QPWS)



13 February 2017 Lily Dam Olive Hymenachne Post Treatment (photo by: QPWS)

Publications			
7	Publication of each of the conditions and implementation of the plans specified in the EPBC conditions on TMR web site. Plans must be published on the website within 1 month of approval and must remain published for the duration of the approval.		
7a	EMP (P)	Lodged on website: 12 February 2014 as part of preliminary assessment	http://www.tmr.qld.gov.au/Projects/Name/T/Townsville-Ring-Road-Section-4.aspx Part 13 onwards
7b	Species Management Plan	Approved 29 August 2014	See attachment 3 G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\SMP complete\60285754-RE-EN-048 Rev B.pdf
7c	Offset Management Plan	Approved: 1 August 2016	See attachment 4

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7d	Monitoring Plan	Approved 21 August 2014	See attachment 5 G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\EPBC

TMR is also committed through EPBC Act referral preliminary documentation to a number of education and advocacy actions and operational management. These commitments are documented in Table 2 below.

Table 3 Advocacy, Education and Land Management Measures that require Compliance Monitoring

Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
Advocacy and Education			
8	<p>TMR to provide advice to the Department of Natural Resources and Mines (DNRM) regarding the conservation of BTF found on the state land parcel and to seek revised lease conditions for the state land related to:</p> <ul style="list-style-type: none"> • Vehicle and stock access and management on the state land. • Stock levels, land and water management in relation to BTF habitat on state land. • Pest control requirements (noxious and environmental weeds). • Fire regimes and fire breaks that could enhance the biomass of key grass species for BTF at critical times. 	<p>TMR meeting with DNRM on 7 March 2014</p> <p>TMR letter sent to DNRM on 29 May 2014</p>	<p>G:\TOWD\PROGRAMDELIVERY\TCC\268-10M-5\8.0 Environment\EPBC\RR4 Annual Env Compliance Report Docs</p> <p>See attachment 6</p>
9	<p>TMR to discuss feasibility with Recovery Team regarding including BTF populations in Saunders Creek / TRR4 alignment in the annual BTF waterhole count.</p>	<p>Dam 1 Waterhole Count was conducted in conjunction with the BTF Recovery Team October 2015.</p>	<p>The Dams in proximity to the TRR4 alignment that were surveyed during the planning phase were included as part of the 2015 Waterhole Count conducted by the BTF Recovery Team. Saunders Creek is dry along its length. TMR will discuss including Saunders Creek in the 2016 survey if conditions are suitable.</p>
10	<p>Provide findings and learnings about threatened species in TRR4 into the broader community.</p> <p>To raise awareness of BTF and other species management issues on TMR web site and available to other TMR projects.</p>	<p>TMR is investigating opportunities to complement BTF work with Belgian Gardens State School where BTF are kept in aviaries.</p>	<p>See attachment 7</p> <p>G:\TOWD\PROGRAMDELIVERY\TCC\268-10M-5\8.0 Environment\EPBC\RR4 Annual Env Compliance Report Docs</p>
Outcomes of Research into Indirect Offsetting			


Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
11	TMR will facilitate informal relationships between the researchers (in relation to the indirect offset) to ensure new findings can be incorporated or trialled at the TRR4 offset site.	Set up 6 monthly meetings with the researchers to share learnings	Refer to the above Research project.
Road Reserve Management – Operational Phase			
12	<p>TMR will manage the remaining road reserve in accordance with their weed and fire management practises to prioritise actions to improve BTF habitat conditions in remaining TRR4 road reserve: Specific techniques likely to be applied include:</p> <ul style="list-style-type: none"> • Slash perimeter fence line firebreaks during burning rotations to stimulate grass regrowth and seeding • Strategic timing of sections being burnt (cool dry season burns only) to increase grass seed yield; implement mosaic pattern of burns • Post construction burns in road reserve • Hydromulch trials in burnt sections. 	<p>A Low intensity Wildfire encroached upon Road Reserve 13 August 2015 between 19^o 16' 16.09", 146^o 39' 54.35"; 19^o 16' 41.62", 146^o 40' 21.4". These fires will stimulate grasses to germinate from seed (annuals) and regenerate from underground parts (perennials), providing an additional seed source a few months later during the resource bottleneck (end of Dry Season/start of Wet Season).</p>	<p>These issues cannot be addressed until after construction is complete.</p> <p>Weed treatments have occurred. Native Pigeon Grass (<i>Setaria surgens</i>) is self-germinating in respread topsoil beneath hydromulch.</p> <p>A Draft <i>TMR Burn Plan Ring Road 4</i> has been prepared to manage Fire in the road reserve. It is anticipated that implementation will occur from 2017 when site conditions permit.</p>


3.0 Contractor Compliance and Reporting Commitments


This section of the report documents the Contractor's obligations for mitigation measures and for monitoring as specified by the EMP(P), MRTS51.1 and other specifications for the project to TMR, so the department can fulfil its obligations under the EPBC Act and other state legislation.

Table 4 Contractor Compliance and Reporting Commitments


Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
Record Keeping			
13	Maintain accurate records substantiating all activities associated with or relevant to the conditions of approval including measures taken to implement the plans and strategies required by the approval and make these available to TMR.	TMR's Environmental Officer and Seymour Whyte's Coordinator Environment are both permanently located on-site. Regular meetings are held in offices and on site to discuss topical issues and resolve problems.	G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\Spotter Catcher Records G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\Meetings See Appendix D Register of Meetings below.
14	Reporting on meeting EMP (P) commitments.	Fortnightly by contractor, with monthly summaries provided to TMR	See attachments 8 and 9 G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\Spotter Catcher Records G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\Monthly Reports
Design			
15	TRR4 construction as per design approved by Commonwealth.	No report	As <i>Constructed</i> drawings will be available from July 2017 upon request. There have been no major changes to design affecting the development footprint or Matters of Environmental Significance (MNES).
16	Apply Dense Graded Asphalt in rural section.	No report	As <i>Constructed</i> drawings will be available from July 2017 upon request.

Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
			<p>There have been no major changes to design affecting the development footprint or Matters of Environmental Significance (MNES).</p>
17	Create water sources.	No report	<p>The completed construction has created a number of ephemeral depressions that retain water on the road reserve, but away from the road. This has in effect enhanced the availability of water resources to species such as the Black Throated Finch.</p> 

Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
			
State Approval Requirements Relating to Threatened Species			
18	Approval of Species Management Program by DEHP.	29 August 2014	<p>See attachment 3</p> <p>G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\01 Approvals\SMP to follow</p> <p>See attachment 11</p> <p>G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\01 Approvals\SMP to follow</p>
Site Induction			
19	Site induction covering matters of NES including Toolbox talks to ensure all workers are aware of location and reason for protection features across site.	Inductions are carried out prior to new staff or contractors entering site. Tool Box Talks are	<p>See attachment 12</p> <p>G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\EPBC\RR4 Annual Env Compliance Report Docs\2015_2016 Submission to DoE</p>

Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
		conducted weekly, with Pre-start meetings being daily.	
Clearance of Native Vegetation and Impact on Threatened Species			
20	Pre-clearance survey for all threatened species ¹ in clear and grub areas using appropriate search method for key species (bat and birds) checking of hollow logs at key waterways, riparian areas and searching for breeding activity.	<p>A Licenced Fauna Spotter/Catcher inspected all suspected refuges for signs of fauna. All trees were inspected immediately after being felled for signs of fauna.</p> <p>Noise and disturbance of approaching plant/equipment likely to flush fauna.</p>	<p>G:\TOWD\PROGRAMDELIVERY\TCC\268-10M-5\8.0 Environment\Spotter Catcher Records</p> <p>See attachment 13</p>
21	Mark out feeding, roosting, nesting sites for any threatened species that are in close proximity (5 m) to works area.	No threatened species identified within 5m of works area.	<p>BTF Nest Construction Jan 2016. Photos and notice to constructor.</p> 

¹ Especially for Bare-rumped sheath-tail bat, Black-throated finch, Squatter pigeon, and Short beaked echidna, but applies to any state or commonwealth threatened plant or animal species recorded.


Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
			
22	Native (remnant ²) vegetation clearance, remnant vegetation not to exceed 68.24 ³ hectares for project.	Total area cleared: 66.497203ha. = under clearance limit by: 1.742797ha	See attachment 14 G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment
23	Native vegetation clearing in BTF habitat not to exceed 49.19 ⁴ hectares.	Total area cleared in BTF habitat: 49.0114 ha = under clearance limit by: 0.1786ha	G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment See attachment 14
24	Staged clearing outside of breeding seasons for BTF and Bare-rumped sheathtail bat.	Vegetation Removal works commenced 15 Oct 2014 in order to avoid BTF and BRSTB Breeding Season.	G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\Spotter Catcher Records See attachment 13

² That is mapped as remnant vegetation on DEHP Regional Ecosystem mapping.

³ Update figure if there are changes in the EPBC approval conditions through the project (with all current approval conditions found in Appendix A). No further changes.


⁴ Update figure if there are changes in the EPBC approval conditions through the project (with all current approval conditions found in Appendix A). No further changes.


Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
25	If trees are found to be actively used by threatened microbats during pre-clearing surveys, then clearing those trees will be attempted at night to allow the bats to relocate to an alternative roosting site. If this is not possible the approved SMP provisions for sensitive clearing will apply and regard will be had for the location of other threatened species nearby.	No trees identified as having bats in residence prior to clearing. Only one tree found to have 8 bats during clearing works. They were caught and identified as Eastern Cave Bat (<i>Vespedelus troughtoni</i>) by Spotter/Catcher and released on site that evening.	G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\Spotter Catcher Records\Ring Road 4-Spotter Catcher Clearance Forms-complete.pdf See attachment 14
26	Licenced spotter catchers on call.	David Walton from <i>NQ Animal Control Services</i> was the Spotter/Catcher on the site. Dan Bamblett from <i>Hands on Wildlife</i> was on call to deal with ad hoc wildlife issues.	G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\Spotter Catcher Records See attachment 13 G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\Spotter Catcher Records\2015 See attachment 15
27	Inspection and marking of hollow bearing logs near watercourses.	All ground and arboreal hollows were identified and inspected (where practicable) prior to clearing and thoroughly inspected once felled.	G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\Spotter Catcher Records See attachment 13
28	Hand clearing of vegetation would occur in riparian areas to ensure soil stability.	All tree felling conducted by chainsaw operator with Spotter/Catcher in attendance. No mechanical removal of trees.	In all areas where no further geotechnical work occurred, trees were removed with the root ball remaining in place.



Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
29	Perimeter fencing prior to construction.	Perimeter fencing was mostly constructed after clearing works, prior to road construction. Remainder of fencing to be constructed in a manner that minimises vegetation removal and results in no additional BTF habitat being cleared.	
30	Waterways to be fenced to keep stock out.	Fences have been constructed across waterways to exclude stock with adjoining landholders required to modify fences with flood gates as needed.	Boundary Fences completed early in construction to exclude stock from site.
Weed Control			
31	Weed wash down facilities.	The Weed Washdown Facility is used routinely by	A weed washdown facility has been provided at the Dalrymple Rd depot and an audit found it to be in use.



Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
		plant/equipment entering and leaving site.	
32	Control of declared weeds found in TRR4 road reserve.	Weeds too drought affected during vegetation clearing works to uptake any herbicide so weed control not undertaken.	Refer to Section 4.4
33	Environmental weeds ⁵ (non- declared). Elimination of weeds in areas to be worked or trafficked prior to works commencing.	Weeds too drought affected during vegetation clearing works to uptake any herbicide so weed control not undertaken.	Refer to Section 4.4
34	Avoid stockpiling topsoil in weed affected areas.	Refer to Section 4.4	Refer to Section 4.4 All Topsoil has been stockpiled as a bund in cleared areas at the limit of clearing.
35	Elimination of weeds including invasive grasses from landscape treatments as per MRTS16E.	Weeds too drought affected during vegetation clearing works to uptake any herbicide so weed control not undertaken.	Refer to Section 4.4
Night Works			
36	In any area where threatened species are found nesting/roosting in the road reserve during construction, temporary lighting to be directed away from nest area.	No night works during vegetation removal works. Standard working hours 6:30am – 5:30pm. No threatened species found nesting during construction.	All vegetation clearing activities occurred during daylight hours. Isolated concrete pours were conducted at night at bridge locations. Lighting was directed at the immediate area of the pour to minimise impacts on wildlife.
37	Vegetation clearing activities in BTF and Squatter Pigeon areas will not occur at night.		
38	Limited construction works will occur at dusk or night.		
Dust			

⁵ Annexure MRTS51.1 Clause 11.2 identifies known species in the construction zone.



Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
39	Fugitive dust.	<p>Veg Clearing: Water truck serviced site every second day in first week, increasing to daily as project works grew in size. No sensitive receptors located in close proximity to site. Ground disturbance minimised to reduce exposure. Ground cover largely undisturbed. Mulch spread over most bare soils especially in proximity to gullies.</p> <p>Construction: Numerous water trucks on site. Haul roads of rock construction to minimise dust generation. Dust monitoring undertaken. Results collated. 1x exceedance immediately adjacent to residences. Exceedance not replicated in following month. Location of exceedance not in proximity to wildlife habitat.</p>	<p>G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\Photos General</p>  <p>Water Truck in use Jan 2016</p>
Water Quality			
40	Sediment and Erosion Control Plan requirements to be implemented.	As most of the ground cover remained undisturbed, mulch was spread over some of the remaining areas where risk of erosion was highest, at gullies. Most of the site is flat, so erosion risk is minimal.	See attachment 16
41	Water quality monitoring.	Refer to Section 4.8	Refer to Section 4.8



Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
		<p>All streams are dry due to the extended Dry Season, preceded by a failed Wet Season. No monitoring required.</p>	
42	<p>Rehabilitation of riparian areas post culvert and bridge construction will focus on restoring an appropriate mix of grass and woody vegetation. Where there is sufficient space, logs and stags with hollows reclaimed from clearing activities will be placed in these areas downstream of road infrastructure.</p>	<p>Culvert inlet/outlets are treated with ameliorants such as Gypsum and fertiliser and stabilised with Hydromulch and Bonded Fibre Matrix (BFM). A mixture of Japanese Millet and Couch are seeded over the sites to provide a low maintenance, highly resilient vegetative cover.</p>	<p>Previously incomplete work.</p> 


Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
			 <p data-bbox="1193 831 1534 858">Completed works (2017) below:</p>  <p data-bbox="1193 1321 1473 1348">Tributary of Saunders Ck.</p>


Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
			 <p data-bbox="1193 818 1713 847">Above and below: Outlet of Saunders Ck Bridge.</p> 


Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
			 <p data-bbox="1193 821 1612 853">Above and below: Inlet of Saunders Ck</p> 



Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
			 <p>Above and below: Saunders Ck.</p> 


Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
			 <p data-bbox="1193 815 1783 842">Above and below: Stoney Ck Bridge (downstream side)</p> 

Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
Noise			
43	Ensure that vehicles are serviced in accordance with manufacturing handbook.	All vehicle servicing is conducted by trained service technicians in accordance with manufacturer's guidelines.	
44	Vehicle and machinery speeds restricted in construction areas.	Speed restrictions of 40km/h are enforced on site. Much of the site is subject to Traffic Control.	
BTF and Squatter Pigeon Population Stability			
45	Population numbers.	<p>Refer to Section 4.2.</p> <p>Late Breeding Season Survey 2015 indicates a population of 2x colonies, each comprising approximately 20 individuals. Juveniles were present, indicating breeding had occurred. Overall, results of monitoring tend to indicate no observable change in BTF population size as a result of the construction activities.</p>	<p>Refer to Section 4.2.</p> <p>G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\Black throated Finch</p> <p>See attachment 17</p>  <p>Black Throated Finches within 10m of finished Hwy, 4 Nov 2016</p>

Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
			 <p data-bbox="1193 738 1877 802">Squatter Pigeon pair in table drain within 10m of finished Hwy, 4 Nov 2016</p> <p data-bbox="1193 818 1776 882">G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\Black throated Finch</p>
46	BTF breeding activity.	<p data-bbox="813 898 1037 930">Refer to Section 4.2.</p> <p data-bbox="813 946 1160 1066">Juveniles observed within flock during Breeding Season Survey at Dams, indicating breeding success.</p>	<p data-bbox="1193 898 1417 930">Refer to Section 4.2.</p> <p data-bbox="1193 946 1776 1010">G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\Black throated Finch</p> <p data-bbox="1193 1026 1395 1058">See attachment 18</p>
BTF Habitat Condition			
47	Reduction in weeds in road reserve.	<p data-bbox="813 1169 1037 1201">Refer to Section 4.1.</p> <p data-bbox="813 1217 1171 1361">Most weeds have been removed from the Road Reserve as part of the initial clear and grub works. Any remaining weeds on site are too drought stressed to</p>	<p data-bbox="1193 1169 1417 1201">Refer to Section 4.1.</p>

Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
		be effectively treated with herbicide.	
48	Increase in BTF grasses in road reserve particularly around perimeter fence/firebreaks.	<p>Refer to Section 4.1.</p> <p>During 2015-16, vegetation regrowth has been somewhat limited due to lack of rainfall. Most roadside batters have regenerated with native grasses following stripped topsoil being respread.</p>	<p>Refer to Section 4.1.</p>  <p>Photo above: Golden Beard Grass (<i>Chrysopogon fallax</i>) and Kangaroo Grass (<i>Themeda triandra</i>) regenerating on firebreaks (Jan 2016)</p>

Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
			 <p>Photo above: Pigeon Grass (<i>Setaria surgens</i>) naturally regenerating from stripped topsoil in revegetation areas (October 2016).</p>  <p>Photo above: Black Throated Finch feeding on Pigeon Grass regenerating in roadside batter hydromulch adjacent to asphalt. (October 2016)</p>

Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
Other – Construction Generally			
49	Public access will be restricted and discouraged by appropriate signage.	Public access has been restricted by fencing and piles of mulch across tracks to inhibit unauthorised access as part of a staged exit from site after vegetation removal works. Gates to adjoining lands are locked to prevent unauthorised access. Signage states that the area is a construction site and is closed to public access.	 <p data-bbox="1193 810 1720 842">Restricted Access at Mt Low Parkway (Jan 2016)</p>

4.0 Summary of Environmental Monitoring

4.1 Habitat Condition Monitoring

In October 2015, Northern Resource Consultants (NRC), conducted habitat condition monitoring on sections of the road reserve and sections immediately adjacent to the road (analogue site). All Road reserve sites were classified as “Very Good” on the Kaesehagen Condition Scale.

Ground cover assessments show that all sites contain a large percentage of native grasses and this supports the outcomes of BTF habitat suitability mapping.

SITE	LOCATION	LATITUDE	LONGITUDE	BEARING
1	Road Reserve	466869	7867121	170
1A	Analogue	466823	7867089	235
2	Road Reserve	465329	7868498	165
2A	Analogue	465306	7868368	75
3	Road Reserve	464633	7869318	175
3A	Analogue	464528	7869271	195

Excerpt from NRC TRR4 BTF Habitat Assessment 9 October 2015

4.2 BTF and Squatter Pigeon Population Stability

Dry season BTF monitoring conducted in July 2015 reported findings that were generally consistent with results obtained during preliminary BTF assessments in 2013/14. The monitoring recorded 2 BTF populations or colonies of approximately 20 birds each, in proximity to Dams 1 and 3. The maximum group size observed was 13 birds. No wet season monitoring has been conducted at this time as the project hasn't yet been in operation during a wet season.

2015-16: Dry season BTF monitoring conducted in late June 2016 reported findings of a flock with 31 BTF in proximity to Dam 1, with other smaller flocks sighted. This increased number of BTF could be attributed to the area having received double the rainfall compared to the 2015 survey. The Northern Resource Consultants (NRC) report states: “Given relatively high numbers of BTF continue to be recorded in the area surrounding Dam 1, it is unlikely the population has been impacted by the construction phase of the TRR4 project to date.”

4.3 Bog Figwort Restoration Site Monitoring

Soil containing Bog Figwort was stripped from an area of what will become Dalrymple Road. The soil has been stockpiled and segregated by bunting adjacent to what will become Kalynda Chase. As works reach localised completion, the stockpiled soil containing Bog Figwort propagules will be placed as a topsoil over small depressions that will hold water after rains, providing suitable conditions for germination.

Bog Figwort (*Rhamphicarpa australiensis*) was classified as Near Threatened at the time of project planning, however has since been declassified and is now considered to be Of Least Concern.

2015-16: No Bog Figwort have been sighted, however there has been insufficient rainfall to produce persistent standing water required to saturate the soil profile for long enough to trigger a germination event.



Figure X: Stripped Topsoil containing Bog Figwort propagules.

4.4 Weed Persistence Monitoring

No weed monitoring occurred due to extended dry season, making it difficult to identify any species in a dry or dead state. Figure Y below shows the rainfall deficit compared to the long term average.

Results of the habitat assessment surveys conducted by NRC show that native grass cover is high at all sites and the cover of exotic grass species is minimal. Subsequent surveys during optimal times of year will identify the extent of weed coverage and species composition.

The Conditions of Contract require the Constructor to arrange weed treatment prior to leaving site.

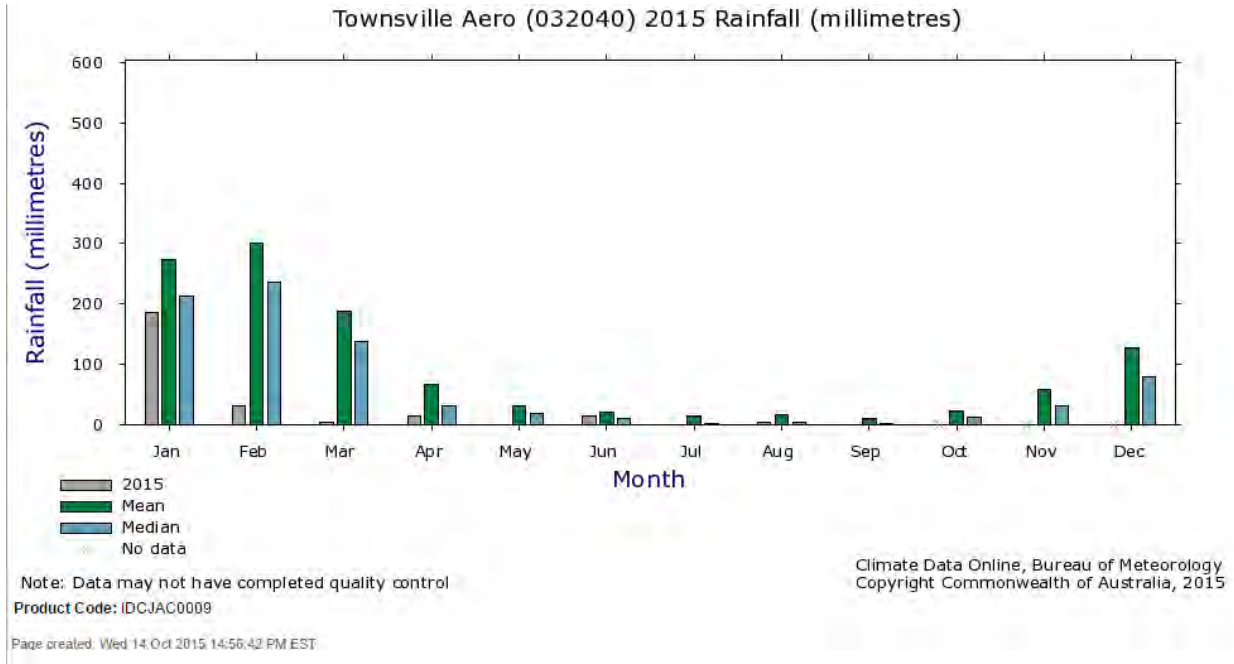


Figure Y: Rainfall deficit compared to long term average for Townsville Airport.

4.5 Fire Management Monitoring

No Fire Monitoring occurred in 2014/15, however fence lines were cleared and constructed. A wildfire occurred on adjacent land and burned up to and over the boundary. Approximately 5.4 hectares of road reserve was burned. The fire was a low intensity burn that consumed ground layers, with minimal scorch of other vegetation.



2016 – No wildfires or planned burns occurred on site during 2016

4.6 Water Quality Monitoring

There was no water in any of the drainage lines during the 2015/2016 period due to the prolonged dry season. No water quality monitoring could be performed as a minimum depth of water was not present in site watercourses. Monitoring locations have been identified for use when sufficient rain falls to generate runoff and sufficient stream depth to monitor.

WATER QUALITY MONITORING SCHEDULE													
CONTRACT NTHD-1284 TOWNSVILLE RING ROAD SECTION 4													
PROJECT No. 02-15-07													
	Location 1 - Stony Creek 100m UPSTREAM						Location 2 - Stony Creek 100m DOWNSTREAM						
	Turbidity (NTU)	pH	EC (uS/cm)	DO (mg/L)	Visible Hydrocarbon Sheen	Comments	Turbidity (NTU)	pH	EC (uS/cm)	DO (mg/L)	Visible Hydrocarbon Sheen	Comments	
	D/S < 22 NTU	6.5 - 8.0	D/S < 660uS/cm	D/S > 85%	Y or N		D/S < 22 NTU	6.5 - 8.0	D/S < 660uS/cm	D/S > 85%	Y or N		
Week Beginning	Date	Rainfall (previous 24hrs)	D/S <=15% of U/S	D/S <=0.7 of U/S	D/S <=10% of U/S	D/S <=10% of U/S	D/S <=15% of U/S	D/S <=0.7 of U/S	D/S <=10% of U/S	D/S <=10% of U/S			
14/12/2015													
21/12/2015													
28/12/2015													
4/01/2016	6/01/2016	unknown	409	6.1	317	79	N	approx. 200m over break	421	6	313	83	N
11/01/2016	11/01/2016	19	326	5.8	354	83	N		322	5.9	351	79	N
18/01/2016	20/01/2016	11	291	6	379	69	N		297	5.8	381	74	N
25/01/2016	26/01/2016							Nil water in creek					Nil water in creek
1/02/2016	2/02/2016	21	397	5.9	278	76	N		372	6.1	291	79	N
8/02/2016	9/02/2016	56	421	5.8	396	67	N		429	5.9	314	89	N
15/02/2016													
22/02/2016													
29/02/2016													
7/03/2016													

4.7 Air Quality Monitoring

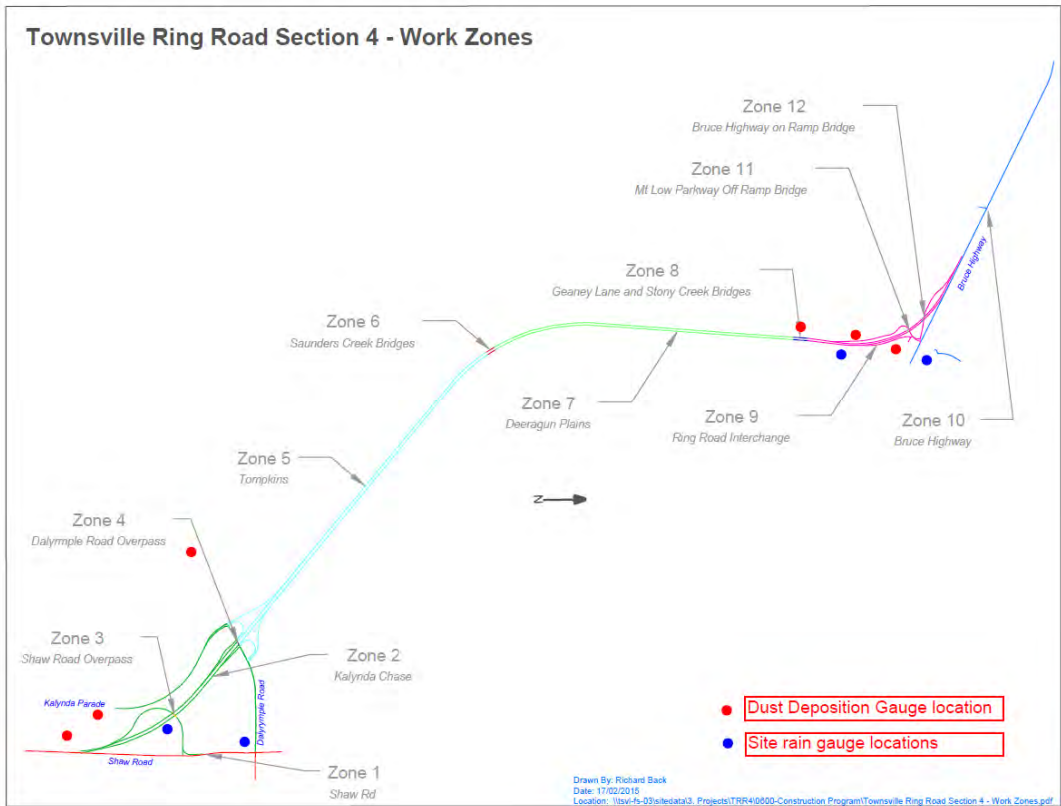
Vegetation Clearing: Air quality monitoring consisted of visual observations by project staff. Fugitive dust was managed by water truck operation.

Construction: Dust sampling was conducted from July 2015 onwards. Dust monitoring points were established along the job site, particularly in proximity to sensitive receptors.

Areas at high risk of creating fugitive dust have been identified and various techniques will be applied including tackifiers, temporary covers and irrigation. Dust levels are high due to ambient dust across the landscape caused by the failed 2014/15 Wet Season and prolonged Dry Season.

A number of exceedances of TMR's Dust Guidelines (4mg/m2 Insoluble Dry matter) were recorded during routine monitoring. Responses included:

- Provision of additional water trucks to suppress dust;
- Installation of sprinklers on embankments adjacent to sensitive receptors (residential areas).



TRR4 – ENCR#3 – Photo Inspection Report



Photo 1 – poly line tapped into main water line (running to quick fills)



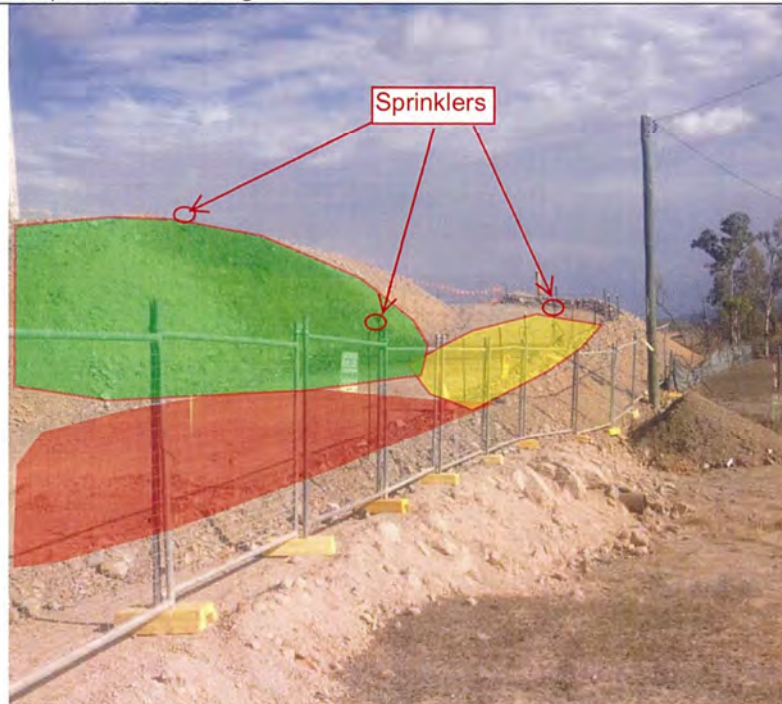
Photo 2 – Poly line running from stony creek to BR40 Abutment B



Photo 3 – Sprinkler at top of batter on BR40 abutment B



Photo 4 – Sprinkler positions and coverage



4.8 Noise Monitoring

Noise monitoring has been carried out at numerous sites along the alignment. No complaints have been received about excessive noise levels, however concerns had been raised about work out of hours, This was restricted to a small number of sub-contractors moving plant slightly out of nominated work hours.

Noise Monitoring:

	Date Start	Time Start	Date Finish	Time Finish	Location	Zone	Leq (dB(A))	Upper Limit	+ / -	Description of noise source	Sampling By
1	20/03/2015	10:47	24/03/2015	8:00	Woodlands Caravan Park	9	71.5	75	3.5	Background noise - traffic, rail line, caravan park, etc	S. Mount
2	23/06/2015	8:00	26/06/2015	21:00	Stony Creek (Geaney Ln)	8	80.1	75	-5.1	Monitor set for 4 days - 2 x exceedances of 75dBA recorded Friday 26/06/2015 between 1:30am and 2:00am which is outside of our working hours	S. Mount
3	30/07/2015	10:35	30/07/2015	17:10	Stony Creek (Geaney Ln)	8	72.5	75	2.5		S. Mount
4	31/07/2015	7:12	31/07/2015	16:15	Stony Creek (Geaney Ln)	8	70.4	75	4.6		S. Mount

Vibration Monitoring:

	Date	Time	Location	Zone	Particle Velocity - Vmax (mm/s)	LI ML T	+ / -	Description of vibration source	Sampling By
1	22/07/2015		Alford St	9	0.78	5	4.22	Embankment fill operations using Compactor and vibrate rollers	S. Mount
2	23/07/2015		Alford St	9	0.57	5	4.43	Embankment fill operations using Compactor and vibrate rollers	S. Mount
3	7/08/2015		Alford St	9	0.7	5	4.3	Embankment fill operations using Compactor and vibrate rollers	S. Mount
4	8/08/2015		Alford St	9	0.37	5	4.63	Embankment fill operations using Compactor and vibrate rollers	S. Mount

5.0 References

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- AECOM. September, 2012. Townsville Ring Road 4, Threatened Bat Roost Tree Survey, Unpublished report for Department of Transport and Main Roads, Townsville. Document No. 60264706-RE-EN-014.
- AECOM. September, 2012. Townsville Ring Road 4; Fauna and Flora Survey, Unpublished report for Department of Transport and Main Roads, Townsville. . Document No. 60264706-RE-EN-018.
- AECOM. June 2013. Northern Spadefoot Toad (*Notaden melanoscaphus*) Supplementary Information. Unpublished report for TMR. Document No. 60285754-RE-PM-015.
- AECOM. November, 2013. Bog Figwort (*Rhamphicarpa australiensis*). Background and Protocol for Translocation. Unpublished report for Department of Transport and Main Roads, Townsville. Document No. 60285754-RE-EN-023.
- AECOM. Jan 2014. Response to Information Request EPBC Reference 2012/6562. Doc No. 60285754-RE-EN-030.
- AECOM. July 2014. Townsville Ring Road Section 4 Monitoring Plan. Report prepared for Department of Transport and Main Roads. Document No. 60285754-RE-EN-045.
- AECOM. July 2014. Townsville Ring Road Section 4. Species Management Program. Report prepared for Department of Transport and Main Roads. Document No. 60285754-RE-EN-048.
- AECOM. August 2014. Impact Management Plan- Bog Figwort. Townsville Ring Road Section 4. Report prepared for Department of Transport and Main Roads. Document No. 60285754-RE-EN-049.
- AECOM. August 2014. Sustainable Harvest Plan – Bog Figwort. Townsville Ring Road Section 4. Report for Department of Transport and Main Roads. Document No. 60285754-RE-EN-051.
- AECOM. September 2014. Bog Figwort (*Rhamphicarpa australiensis*) Survey: Distribution and Abundance. Report for Department of Transport and Main Roads. Document No. 60285754-SU-EN-047.
- NRA. 2012. Townsville Ring Road Section 4 Project Black-throated Finch (*Poephila cincta cincta*) Assessment- June 2012, AECOM Australia Pty Ltd.
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- RPS. 2012. Townsville Ring Road, Stage 4; Assessment of Occurrence Threatened Bat Species, Unpublished report for AECOM Australia Pty Ltd, Reference: 60264706.
- RPS. 2013. Townsville Ring Road, Stage 4; Assessment of Bare-rumped Sheathtail Bat, Unpublished report for AECOM Australia Pty Ltd, Reference: 60264706.

Appendix A

EPBC and State Approval Conditions

Appendix A EPBC and State Approval Conditions

Appendix B

Reference Drawings

Appendix B Reference Drawings

As Constructed Drawings will be available after July 2017 upon request..

Appendix C

“As Constructed” Drawings

Appendix C 'As Constructed' Drawings

There are no *As Constructed* Drawings at this time.

Appendix D

Register of Meetings

RR4 Register of Environmental Meetings and Discussions

Date	Location	Participants	Topics
7/05/2015	Site office	M. McDermid S. Mount	Black Throated Finch Monitoring contractors to be engaged. Env Audit planned for next week.
22/05/2015	Site office and Worksite	M. McDermid S. Mount	Environmental Audit of site and Records
25/05/2015	Site office	M. McDermid S. Mount	Discussed minor oil spill from hydraulic hose burst.
4/06/2015	Site office	M. McDermid S. Mount	Environmental Catch-up
17/07/2015	Site	M. McDermid S. Mount	Dust exceedances, Clearing at Maxwell Street.
11/08/2015	Site Office	M. McDermid S. Mount	Recent Fire near site, Fire Response Plan for site not having any actual response activities for initial attack. Suggested Water Cart respond and initiate response where possible.
12/08/2015	Site Office	M. McDermid S. Mount	Discussed overnight fire and suggested abandoning the mulch pile on fire by spreading back into fire. Pile not extinguishable once alight.
20/08/2015	Site Office	M. McDermid S. Mount A. Wallace P. Barnes	Amelioration of Batters and Culvert Headwalls methodology.
2/09/2015	Worksite	M. McDermid S. Mount	Arranged Informal Wet Season Inspection of site for late Sept/Early Oct. Formal inspection 1st week of Nov. Follow up inspection end of Nov to ensure site is ready before Xmas closedown.
22/10/2015	Site Office	M. McDermid C. Sawyer	General Environmental catch up and discussion.
29/10/2015	Worksite - Kalynda Pde area	M. McDermid H. Singh-Samra A. Wallace P. Barnes A. Kudla B. Harding J. Schneekloth	Resolved batter treatment methodology after various trials with Excavator and Vibrating Padfoot Roller.
3/11/2015	Site Office	M. McDermid S. Mount	General Environmental catch up after Steve had been away 3 weeks. Discussed transition in thinking "From Production to Protection", in anticipation of the Wet Season.
9/11/2015	Site Office	M. McDermid S. Mount	Overnight rain. Discussed opportunity to raise Wet Season awareness.
10/11/2015	Site Office	M. McDermid S. Mount	More rain and Erosion and Sediment Control Devices.

11/11/2015	Worksite	M. McDermid S. Mount	12:30-2:30. Inspect site for ESC issues. Created a list of issues for improvement.
12/11/2015	Worksite and office	M. McDermid S. Mount	Environmental Audit of site and Records
13/11/2015	Office	M. McDermid S. Mount	Discussed removal and treatment of stockpiles placed over culvert headwalls. Multiple trucks working yesterday and today to remove piles at 11C and D today. Pile 10B to have Sediment Fence around base today, removed from site next week. All prior to forecast rain this weekend.
4/1/2016	Worksite and office	M. McDermid S. Mount	Water quality and ESC issues. Site inspection. Clear water with some tannin stains.
12/1/2016	Office	M. McDermid S. Mount	Revegetation. Cause of BFM failure. Dispersive soil treatments.
20/1/2016	Office	M. McDermid S. Mount	Shared BTF photos from recent sightings. Discussed BTF utilisation of habitat on site.
27/1/2016	Office	M. McDermid S. Mount	General catch up
5/2/2016	Office and Field	M. McDermid S. Mount A. Taylor	EPBC Compliance Inspection
9/28/2016	Office	M. McDermid S. Mount	ESC issues
15/2/2016	Office	M. McDermid S. Mount SWC staff Revegetation Contractors Staff	Planting Media Mgt Plan. (PMMP)
23/2/2016	Office/Field	M. McDermid S. Mount	Seal spill investigation

25/2/2016	Field	M. McDermid S. Mount DEHP staff	Investigate seal spill
2/3/2016	Office	M. McDermid S. Mount SWC staff Revegetation Contractors Staff	PMMP discussion
8/3/2016	Office	M. McDermid S. Mount C. McCall P. Barnes A. Kudla H. Singh-Samra	Seal spill and EHP visit
11/3/2016	Office	M. McDermid S. Mount	Dry Land Reveg Spec follow up
11/4/2016	Office	M. McDermid S. Mount SWC staff	Dry Land Spec meeting
20/5/2016	Office, Field	M. McDermid S. Mount G. Calvert	Env Audit of site
6/6/2016	Office	M. McDermid S. Mount	Compost Blanket
8/6/2016	Field	M. McDermid S. Mount	Clearing at BR 10
13/6/2016	Field	M. McDermid S. Mount	ESC controls at Shaw/Dalrymple Rd
16/6/2016	Field	M. McDermid S. Mount	ESC, Wet weather, O/S rock

21/6/2016	Office	M. McDermid S. Mount	Compost failures
12/7/2016	Office	M. McDermid S. Mount	General catch up. BTF count, injured animals, reveg.
18/7/2016	Office	M. McDermid S. Mount	Catch up
25/7/2016	Office	M. McDermid S. Mount	Gypsum spreading dust issue.
4/8/2016	Office and Field	M. McDermid S. Mount R. Wilson	Env Audit
15/8/2016	Office	M. McDermid S. Mount	Follow up Gypsum spreading
6/9/2016	Office	M. McDermid K. McMahan (QPWS)	Discussion of BTF habitat, dispersive soils, firebreaks on BTF offset site
7/9/2016	Field	M. McDermid S. Mount	Inspection of contaminants in compost stockpile
12/9/2016	Field	M. McDermid S. Mount	Post rain inspection of site
13/9/2016	Office	M. McDermid S. Mount	Parthenium on site discussion
28/9/2016	Field	M. McDermid S. Mount T. Lawrence	Site inspection prior to Steve leaving project

19/10/2016	Office	M. McDermid T. Lawrence	Arranged for camera to be installed to monitor Kestrel Nest BR10

Appendix E

Monthly Summary Reports

Appendix E Monthly Summary Reports

Commitment Reference #	Content	Monthly Summary Reports
<p>Condition 9</p> <p><i>“The approval holder must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the plans and strategy 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.”</i></p>		<p>G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\Monthly Reports</p> <p>See attachment 20 example</p>

Appendix F

Vegetation Clearing Maps / Spreadsheets

Appendix F Vegetation Clearing Maps / Spreadsheets

**NTHD-1284: Townsville Ring Road
Section 4**

Approval received from TMR to clear additional area

**RFI-Additional clearing areas request
(Surveyor plans attached)**

	Work Area Description	Approx. Chainage		RFI #37			RFI #50			RFI #50.1			Reason for clearing / comments
				BTF	Remnant	Non-Remnant	BTF	Remnant	Non-Remnant	BTF	Remnant	Non-Remnant	
				Area (m2)	Area (m2)	Area (m2)	Area (m2)	Area (m2)	Area (m2)	Area (m2)	Area (m2)	Area (m2)	
37.1	Culvert 42/B Inlet			0									As per RCC Design
37.2	Culvert 42/B Outlet			64									As per RCC Design
37.3	Culvert 41/A Inlet			37									As per RCC Design
50.1	RHS - Corner of main alignment and Dalrymple Rd	20150	20310				1663						SWC Design - on ramp
50.2	LHS - Corner of main alignment and Dalrymple Rd	20210	20340				306						SWC Design - off ramp
50.3	LHS - Shaw Rd off ramp	19030	19250					1414					SWC Design - additional lane - PI1
50.4	LHS - Shaw Rd off ramp	18454	18538						1187				SWC Design - extended south to correct aqua-planing
50.5	RHS - South of large open drain (drain extension)	25720	25900					1764	2480				Culvert WT14C (Diversion Drain MCW03) on RCC design. Not included in original clearing model.
50.6	LHS - South of large open drain (drain extension)	25440	25730					8305					Culvert WT14C (Diversion Drain MCW03) on RCC design. Not included in original clearing model.

50.7	LHS - Proposed site access / haul road between Geaney Lane and Stony Ck									764			Proposed site access and haul road (TCC Land)
50.8	LHS - Proposed site access / haul road between Geaney Lane and Stony Ck									2705			Proposed site access and haul road (TMR Land)
50.1.1	LHS - Shaw Rd off-ramp	19070	19240								1021		SWC Design
50.1.2	RHS - Main alignment	19750	19940								520		SWC Design
50.1.3	RHS - Main alignment	19955	20010								210		SWC Design
50.1.4	LHS - Kalynda Pde on-ramp	20790	20890								96		SWC Design
50.1.5	RHS - Main alignment	21370	21435									241	power line easement - SWC Design
50.1.6	RHS - Main alignment	21610	21660								156		SWC Design
50.1.7	LHS - Main alignment	21865	21920								156		SWC Design
50.1.8	LHS - Main alignment	21940	22050								231		SWC Design
50.1.9	LHS - Main alignment	23080	23135								222		SWC Design
50.1.10	RHS - Main alignment	23330	23365								89		SWC Design

50.1.1	LHS - Main alignment	24130	24440								579		SWC Design
50.1.1	LHS - Main alignment	24810	24865								85		SWC Design
F1	Area 1 - Shaw Rd exit ramp (228.5m lin)										685.5		2149.5m (lin) x 3.0m wide = 6,448.5m2 of clearing in total for fencing
F2	Area 2 - Daly Rd and Main alignment (1261m lin)										3783		
F3	Area 3 - LHS Main alignment (660m lin)										1980		
			TOTAL (m2)	101	0	0	1969	1148	7136	7292	2521.	241	
			TOTAL (Ha)	0.010	0	0	0.196	1.148	0.7136	0.729	0.252	0.0241	
				RFI #37			RFI #50			RFI #50.1			

Total BTF Habitat Cleared (Ha) (Prelim Works)	48.07
EPBC BTF Clearing Limit (Ha)	49.19
Remaining area on permit after Prelim Works complete (available to clear on permit) (Ha)	1.114
Total Additional BTF Habitat Clearing Proposed (Ha)	0.936
Remaining BTF area on permit after proposed additional clearing is completed (Ha)	0.178
EPBC Remnant Vegetation Clearing (including BTF) Limit (Ha)	68.24
EPBC Remnant Vegetation Clearing ONLY Limit (Ha)	19.05
Cleared during Early Works (Lester Franks) (Ha)	71.00
Additional area cleared at end of Early Works (Ha)	0.466
TOTAL AREA CLEARED DURING EARLY WORKS (Ha)	71.47

OK

Under Limit by 0.178ha

		Non-Remnant vegetation cleared during Early Works (Ha)	6.378
		TOTAL REMNANT VEGETATION CLEARED DURING EARLY WORKS (Ha)	65.09
		Proposed Additional Remnant Vegetation to clear (Ha)	1.400
		Proposed total remnant vegetation clearing (Ha)	66.49
		Balance of Remnant Vegetation remaining on Permit (Ha)	1.742

Difference OK

OK

Under Limit by 1.742ha

Appendix G

Habitat Condition Monitoring

Appendix G Habitat Condition Monitoring

[G:\TOWD\PROGRAMDELIVERY\TCC\268-10M-5\8.0 Environment\EPBC\RR4 Annual Env Compliance Report Docs](#)

Appendix H

BTF & Squatter Pigeon Monitoring Data

Appendix H BTF & Squatter Pigeon Monitoring Data

BTF Monitoring Plan Locations. <G:\TOWD\PROGRAMDELIVERY\TCC\268-10M-5\8.0 Environment\EPBC\BTF Monitoring Docs>

BTF Draft Monitoring results Breeding Season 2015. <G:\TOWD\PROGRAMDELIVERY\TCC\268-10M-5\8.0 Environment\EPBC\BTF Monitoring Docs>

Appendix I

Rehabilitation Monitoring Data

Appendix I Rehabilitation Monitoring Data

No Rehabilitation has been completed at this time. Data will be available later in the project.

Appendix J

Water Quality Monitoring Data

DRAFT

Appendix J Water Quality Monitoring Data

No water Quality Monitoring has been conducted to date due to limited rainfall.

