

Townsville Ring Road Section 4

Annual Environmental Compliance Report For 2014/15

EPBC Referral No: 2012/6562



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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).

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 1 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 pending approval currently.	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. 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 to be approved by the Minister.	Original Monitoring Plan Updated Monitoring Plan – Draft titled: 2015updatemonitoring plan.docx currently in review for submission.
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\268-10M-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>
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 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>
6	Outcome of research undertaken be used to inform management actions	Review of offset management	Awaiting outcomes of research. To be

	at secured offset site.	plan to incorporate changes to management actions.	published upon determination.
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\PROGRAMDELIVERY\TCC\268-10M-5\8.0 Environment\SMP complete\60285754-RE-EN-048 Rev B.pdf
7c	Offset Management Plan	Approved:	See attachment 4 G:\TOWD\PROGRAMDELIVERY\TCC\268-10M-5\8.0 Environment\EPBC\NPSR Offset
7d	Monitoring Plan	Approved 21 August 2014	See attachment 5 G:\TOWD\PROGRAMDELIVERY\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 2 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			
11	<p>TMR will facilitate informal relationships between the researchers (in relation to the indirect offset) to ensure new findings can be incorporated</p>	<p>Set up 6 monthly meetings with the researchers to share</p>	<p>Refer to the above Research project.</p>

Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
	or trialled at the TRR4 offset site.	learnings	
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° 16' 16.09", 146° 39' 54.35"; 19° 16' 41.62", 146° 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>

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 3 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	<p><i>As Constructed</i> drawings will not be available until after construction is complete.</p> <p>There have been no major changes to design affecting the development footprint.</p>
16	Apply Dense Graded Asphalt in rural section.	No report	<p><i>As Constructed</i> drawings will not be available until after construction is complete.</p> <p>There have been no major changes to design affecting the development footprint.</p>

Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
17	Create water sources.	No report	Evidence will be provided after completion of construction. These items will likely be the last constructed.
State Approval Requirements Relating to Threatened Species			
18	Approval of Species Management Program by DEHP.	29 August 2014	See attachment 3 G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\01 Approvals\SMP to follow See attachment 11 G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\01 Approvals\SMP to follow
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 conducted weekly, with Pre-start meetings being daily.	See attachment 12
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</p>	G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\Spotter Catcher Records See attachment 13


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
		to flush fauna.	
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.	
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 sheath-tail 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
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	Licensed spotter catchers on call.	David Walton from <i>NQ Animal</i>	G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0

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
		Control Services 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.	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.
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.	


Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
			
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 plant/equipment entering and leaving site.	A weed washdown facility has been provided at the Dalrymple Rd depot and an audit found it to be in use.
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

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
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			
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</p>	G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\Photos General

Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
		<p>exceedance immediately adjacent to residences. Exceedance not replicated in following month. Location of exceedance not in proximity to wildlife habitat.</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.	<p>Refer to Section 4.8</p> <p>All streams are dry due to the extended Dry Season, preceded by a failed Wet Season. No monitoring required.</p>	Refer to Section 4.8
42	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	Culvert inlet/outlets are treated with ameliorants such as Gypsum and fertiliser and stabilised with Hydromulch and Bonded Fibre Matrix (BFM). A mixture of	This work is not yet complete.

Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
	these areas downstream of road infrastructure.	Japanese Millet and Couch are seeded over the sites to provide a low maintenance, highly resilient vegetative cover.	
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.	Refer to Section 4.2. 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.	Refer to Section 4.2. G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\Black throated Finch See attachment 17
46	BTF breeding activity.	Refer to Section 4.2. Juveniles observed within flock during Breeding Season Survey at Dams, indicating breeding success.	Refer to Section 4.2. G:\TOWD\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\Black throated Finch See attachment 18
BTF Habitat Condition			

Monitoring Plan Reference No.	Issue	Annual Monitoring or Reporting Outcome (Incl. Dates)	TMR File or Web Site Reference
47	Reduction in weeds in road reserve.	<p>Refer to Section 4.1.</p> <p>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 be effectively treated with herbicide.</p>	Refer to Section 4.1.
48	Increase in BTF grasses in road reserve particularly around perimeter fence/firebreaks.	<p>Refer to Section 4.1.</p> <p>To date, no vegetation has grown due to lack of rainfall.</p>	Refer to Section 4.1.
Other – Construction Generally			
49	Public access will be restricted and discouraged by appropriate signage.	<p>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>	

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 Dam s 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.

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.



Figure X: Stripped Topsoil containing Bog Figwort propagules.

4.4 Weed Persistence Monitoring

No weed monitoring due to extended dry. 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.

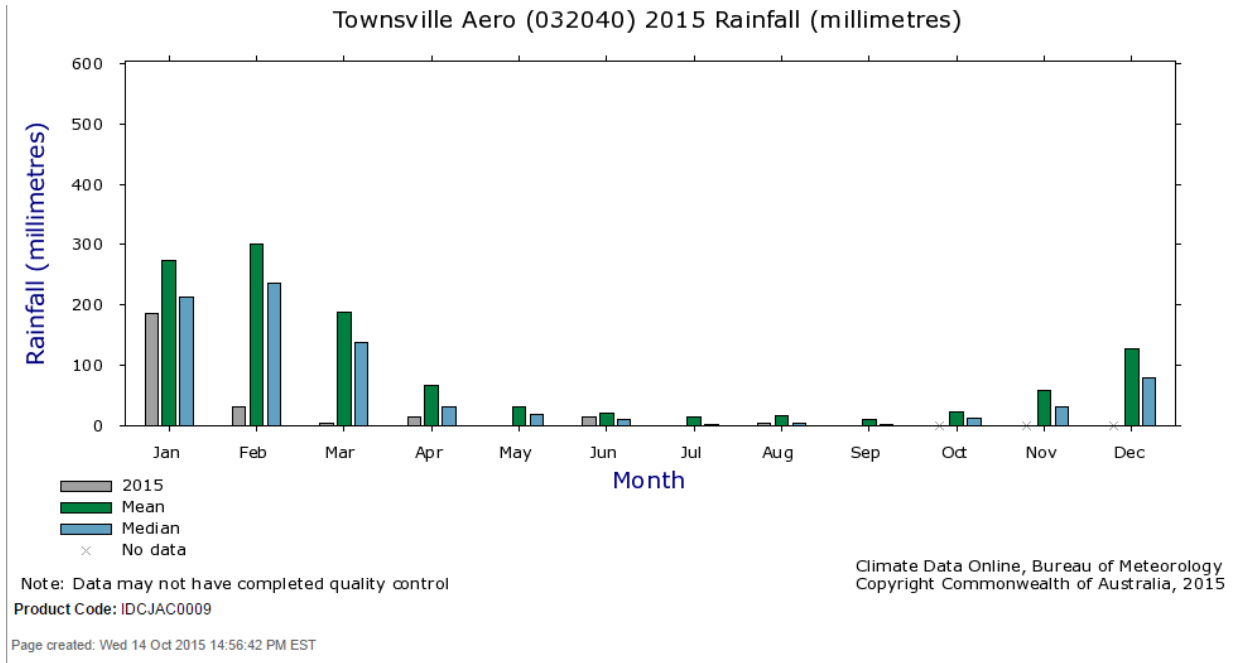


Figure Y: Rainfall deficit compared to long term average for Townsville Airport.

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.



4.6 Water Quality Monitoring

There was no water in any of the drainage lines due to the prolonged Dry Season. No Water quality Monitoring could be performed. Monitoring locations have been identified for use when sufficient rain falls to generate runoff and sufficient stream depth to monitor.

4.7 Air Quality Monitoring

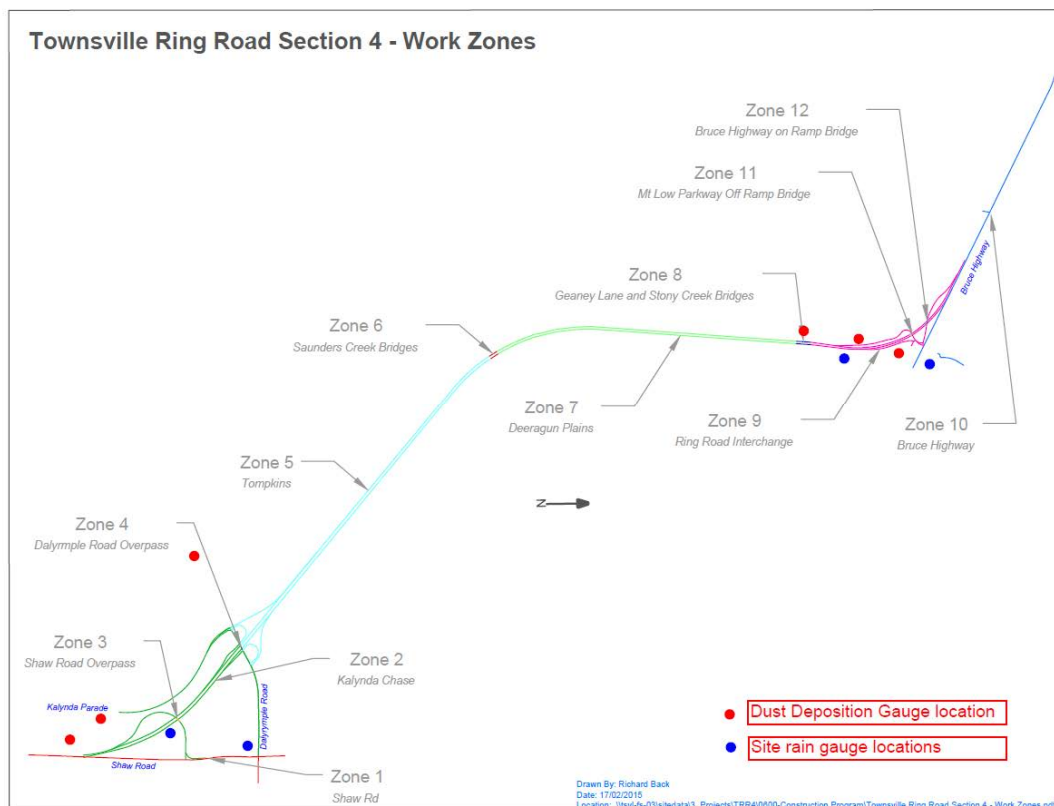
Vegetation Clearing: Air Quality Monitoring consisted of visual observations by project staff. Fugitive dust was managed by water truck operation.

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) as seen in photographs included in the monthly report.



TRR4 – ENCR#3 – Photo Inspection Report



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



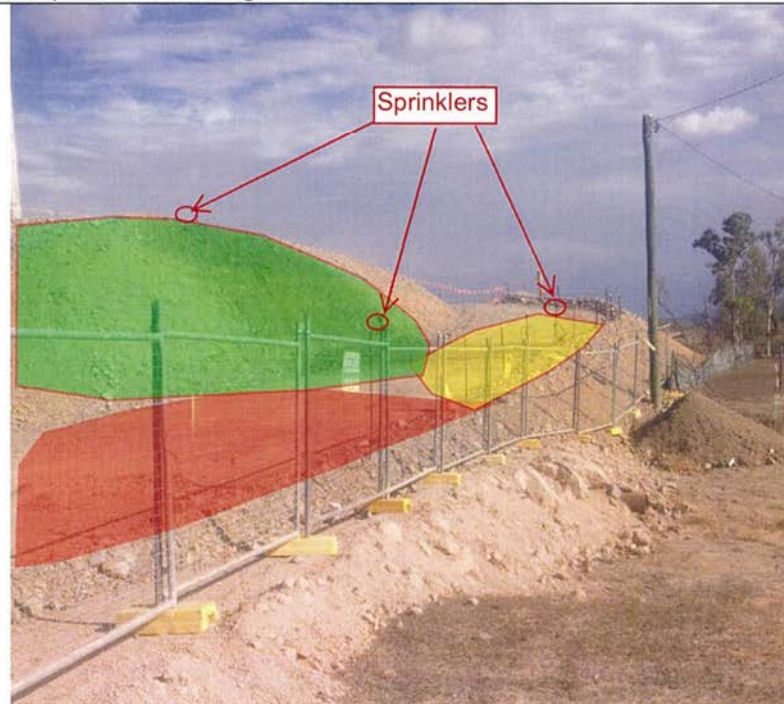
Photo 2 – Poly line running from stony creek to BR40 Abutment B



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.

[See attachment 19](#)

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)	LIMIT	+ / -	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

D R A F T

Appendix A

EPBC and State Approval Conditions

Appendix A EPBC and State Approval Conditions

Appendix B

Reference Drawings

Appendix B Reference Drawings

There are no Reference Drawings at this time.

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. Create 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 stock placed over culvert headwalls. Multiple trucks working yesterday and today to remove pile 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.

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)**

		Approx. Chainage		RFI #37			RFI #50			RFI #50.1			
		From	To	BTF	Remnant	Non-Remnant	BTF	Remnant	Non-Remnant	BTF	Remnant	Non-Remnant	Reason for clearing / comments
	Work Area Description			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.	LHS - Proposed site access / haul road								764				Proposed site access and haul

50. 1.1 2	LHS - Main alignment	24 81 0	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 3	7136	7292	2521. 5	241
			TOTAL (Ha)	0.010 1	0	0	0.196 9	1.148 3	0.7136	0.729 2	0.252 15	0.0241
				<u>RFI #37</u>			<u>RFI #50</u>			<u>RFI #50.1</u>		

	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
	Non-Remnant vegetation cleared during Early Works (Ha)	6.378

OK

Under Limit
by 0.178ha

		TOTAL REMNANT VEGETATION CLEARED DURING EARLY WORKS (Ha)	65.09	Difference	OK
		Proposed Additional Remnant Vegetation to clear (Ha)	1.400		
		Proposed total remnant vegetation clearing (Ha)	66.49	OK	
		Balance of Remnant Vegetation remaining on Permit (Ha)	1.742		

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\PROGRAM\DELIVERY\TCC\268-10M-5\8.0 Environment\EPBC\BTF Monitoring Docs>

BTF Draft Monitoring results Breeding Season 2015. <G:\TOWD\PROGRAM\DELIVERY\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.

