



Clarence River Crossing

Construction Compliance Report

Report 5

October 18 2018 - April 17 2019



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- Appendix A: Project Approval Compliance Table
- Appendix B: Water Quality Monitoring Results
- Appendix C: Noise and Vibration Monitoring Results
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Distribution of controlled copies

The most current version of this report will be available on the Fulton Hogan database for all project personnel. The document will be publicly available at <http://www.rms.nsw.gov.au/projects/northern-nsw/grafton-clarence-river-crossing/>.

Distribution of this report will be made through the Clarence River Crossing project document control system. The environmental management team will maintain, review and update this document on a six monthly basis.

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Revision History

Each new revision to the report will be distributed to all registered copyholders with an instruction that the superseded copy be destroyed or marked as superseded.

The revision number is included at the end of the document number, which is noted on each page. When amendments occur, the document or relevant section will be reissued with the revision number updated accordingly.

The Project Manager or Environmental Manager will approve amendments by initial in the Approval column below.

The following provides a record of amendments made to this document:

Revision	Date	Description	Page	Prepared By	Approved
1	June 2019	Draft for internal review	All	Project team	S. Leigh
2	June 2019	Review of internal draft, submission to RMS and ER	All	M. Bryson	S. Leigh
3	September 2019	Updated to include ER and RMS comments	All	M. Bryson	S. Leigh
4	November 2019	Updated section 5.1	24	M. Bryson	S. Leigh
5	February 2020	Updated to include DPI&E comments	All	M. Bryson	S. Leigh
6	April 2020	Final TfNSW comments	25	M. Bryson	S. Leigh

Abbreviations

CEMP	Construction Environmental Management Plan
CPESC	Certified professional in erosion and sediment control
DPIE	Department of Planning, Industry & Environment
DPIW	Department of Primary Industries - Water
EIS	Environmental Impact Statement
EMS	Environmental Management System
EPA	Environmental Protection Authority
EP&A Act	Environmental Planning & Assessment Act 1979
EPL	Environmental Protection Licence
ER	Environmental Representative
MCoA	Minister's Conditions of Approval
NCR	Non-conformance report
NML	Noise Management Level (RBL+5)
NSW	New South Wales
OOHW	Out of Hours Work
POEO Act	Protection of the Environmental Operations Act 1997
PPR	Preferred Project Report
RBL	Rating Background Level
RMS	Roads and Maritime Services
ROL	Road Occupancy Licence
SEPP	State Environmental Planning policy
SSI	State Significant Infrastructure

TMP	Traffic Management Plan
VENM	Virgin Excavated Natural Material

1.0 Introduction

The Clarence River Crossing entails a new 525-metre long road bridge crossing of the Clarence River, Grafton. The Bridge will comprise two traffic lanes (one in each direction), road shoulders and a pedestrian/cycle path and be located approximately 70-metres downstream of the existing Grafton Bridge, which will be retained. The Project will also consist of a replacement of a rail viaduct section in Pound Street, approach works and upgrades to sections of the local road network in both Grafton and South Grafton.

The Project is required to alleviate existing traffic congestion and safety issues that arise from increasing traffic demand and inherent design issues with the existing bridge. The Project is consistent with key strategic and transport planning policies including the State Infrastructure Strategy and the Mid North Coast Regional Strategy.

Key features of the project include:

- Construction of a new road bridge over the Clarence River, located approximately 70 meters downstream of the existing Grafton Bridge
- Upgrades to parts of the local road network in both Grafton and South Grafton including:
 - Realigning the existing Pacific Highway to join Iolanthe Street near Through Street
 - Providing a new roundabout at the intersection of Through Street and Iolanthe Street
 - Widening pound street to four lanes and approach to the new bridge
 - Providing traffic signals at the intersection at Pound street and Clarence Street
- Works to the existing rail viaduct section across Pound Street to provide sufficient vertical clearance from the Pound Street upgrade
- Construction of a new shared pathway for cyclists and pedestrians for access to and across the new bridge crossing
- Flood mitigation works including the uplift of sections of the existing levee system upstream of the current Grafton Bridge.

Benefits of the project include:

- Improve traffic efficiency between and within Grafton and South Grafton
- Reducing travel time and delays for local people and businesses in peak periods
- Support regional and local economic development
- New shared pathway to provide safe facilities for pedestrians and cyclists
- Flood mitigation works

The Clarence River Crossing is being delivered through a 'design and construct' process. Fulton Hogan was appointed by RMS on 13 September 2016 to deliver the project.

1.1 Background

Roads and Maritime Services (RMS) completed an environmental assessment of the Additional Crossing of the Clarence River at Grafton (the Project EIS) in August 2014. The Project EIS identified a range of environmental, social and planning issues associated with the construction and operation of the Additional Crossing of the Clarence River at Grafton and proposed measures to mitigate or manage those potential impacts.

The Project EIS was publicly exhibited in August 2014 for a period of 30 days. Following public exhibition, submissions from stakeholders were received and addressed by Roads and Maritime in the Submissions Report which was lodged with the Secretary of the Department of Planning and Environment in October 2014.

After consideration of the Project EIS and Submissions Report, the Minister for Planning approved the Additional Crossing of the Clarence River at Grafton Project under Section 115ZB of the Environmental Planning and Assessment Act 1979 (EP&A Act) on 19 December 2014 subject to the Minister's Conditions of Approval (CoA) being met (hereafter referred to as the Project Approval). The project is State Significant Infrastructure (SSI) approved under Part 5.1 of the EP&A Act.

For the purposes of this environmental assessment, the concept design described and assessed in the Project EIS and consequently approved by the Minister, is referred to as the Approved Project.

The CEMP and associated Management Plans were approved by DPE on 15 September, 2016.

1.2 Purpose of this report

The purpose of this compliance tracking report is to assess and provide a summary of the procedures and processes implemented to track compliance in regards to the conditions of approval on the Clarence River Crossing Project.

This is a requirement under the Minister's Condition of Approval (MCoA) A12 which specifies:

A12 – Compliance Tracking

“The proponent shall prepare and implement a Compliance Tracking Program to track compliance with the requirements of this approval. The program shall be submitted to the Secretary for approval prior to the commencement of construction and operate for a minimum of one year following commencement of operation, subject to the Secretary's review of the outcomes of the Independent Environmental Audit Report referred to in condition E5. The operation of the program may be extended if the Secretary determines that there has been unsatisfactory compliance. The program shall include but not necessarily be limited to:

- (a) provisions for the notification of the Secretary prior to the commencement of works prior to the commencement of construction and prior to the commencement of operation of the SSI (including prior to each stage, where works are being staged);*
- (b) provisions for periodic review of the compliance status of the SSI against the requirements of this approval;*
- (c) provisions for periodic reporting of compliance status to the Secretary, including but not limited to:
 - i. a Pre-Construction Compliance Report, prior to the commencement of constructions;*
 - ii. 6-monthly Construction Compliance reports, for the duration of construction; and*
 - iii. a Pre-Operation Compliance Report prior to the commencement of operation;**
- (d) a program for independent environmental auditing in accordance with AS/NZS ISO 19011:2014 – Guidelines for Auditing Management Systems;*
- (e) mechanisms for recording environmental incidents during construction and actions taken in response to those incidents;*
- (f) provisions for reporting environmental incidents to the Department and relevant public authorities during construction;*
- (g) procedures for rectifying any non-compliance identified during environmental auditing, review of compliance or incident management;*

- (h) provisions for ensuring all employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities; and*
- (i) Provisions for reporting complaints received in accordance with the Construction Complaints Management System required under condition C2 of this approval.*

The compliance tracking program was issued to DPE by RMS and approved by DPE on 10 October 2016.

During this reporting period, the Clarence River Crossing is compliant with the conditions of approval (**Appendix A**). A review of compliance for the six-month period from 18 October 2018 to the 17 April 2019 is provided in this report.

1.3 Relevant Documentation

Documentation relevant to this report includes:

- Additional crossing of the Clarence River at Grafton Instrument of Approval
- Environmental Impact Statement
- Submissions Report
- Hydrological Mitigation Report
- Construction Environmental Management Plan and sub plans

2.0 Project Update

Project works are proceeding generally in accordance with the construction program. During the reporting period there was a total of 74 rain days, 4 rain events were observed to exceed the 5 day 85th percentile rainfall depth value of 37.2mm. Total rainfall was 387mm for the reporting period. Project works were interrupted at times due to the rainfall events.

2.1 Levees

Levee works for the project are over 98% complete, with one small levee still required near the South Grafton bowling club.

There is temporary access through the Grafton levee within the project alignment to support construction of the new bridge. The access through the levee onto a clean rock working pad is used to access the northern side of the river and pier 7. This working pad will be operational until about September 2019.

The new Grafton stormwater pump station and Pound Street line has been pipe jacked through the levee to reduce the potential flood risk on the project.

All areas on the flood side of the levee are managed with environmental controls in place to ensure site materials are contained onsite. In the event of a flood warning all construction materials would be moved off pads and accesses. The northern levee access would be closed using temporary controls.

2.2 Demolition

No demolition works occurred during the reporting period. Final demolition works to be completed on the project will be the removal of fencing, redundant power poles, road signage and the Pound street rail bridge.

2.3 Utilities and service relocation

Utilities works have continued to progress in both Grafton and South Grafton, the general update to the status of work are as follows:

- 90% of water relocation completed
- 90% of sewer relocation completed
- 100% copper telecommunications cable relocation completed
- 95% of fibre optic cables have been installed
- 80% of the electrical service packages completed
- 70% of stormwater relocation completed

2.3.1 Drainage

Pavement drainage works have progressed in South Grafton and Grafton, the focus of these works has been:

- Pound Street drainage works are continuing and are about 75% complete
- Concrete open drains in fill 2 are now at approximately 95% complete, and will be completed in the short term

- Installation and head wall construction of the first stage of culvert 7 at Pound Street is now approximately 50% complete
- Subsoils and road drainage features are ongoing and concurrent to pavement works, they are about 50% complete through fill 2 and 75% complete for Pound and Clarence Street

2.3.2 Pump Station

Construction of the pump station structure was completed in August 2018. The remaining steps to reach final completion include:

- Installation of internal pump systems
- Inlet and outlet piping systems are under construction, completion pending design RFI
- Installation of the electrical works and pump control units

The pump station is expected to be completed within the next reporting period.



Figure 1 New pump infrastructure installed into the Grafton pump station

2.4 Earthworks

Earthworks have progressed well in the reporting period, completed works include:

- Clarence Street all earthworks complete
- 75% of Pound Street earthworks are complete
- Fill 3, the southern abutment to the bridge all earthworks complete

Staged works along the Pound Street and Iolanthe Street commercial zones have been managed to reduce the potential impacts on the businesses and maintain parking and access for the businesses which operate along those streets.



Figure 3 night works along Pound Street (left) and new footpath construction on Iolanthe Street, South Grafton (right)

2.4.1 Contaminated Land

During the reporting period there were several new contaminated land issues that were encountered.

The ‘*Rehabilitation Action Plan*’ for the asbestos contaminated topsoil is written. This plan details the management strategy that will be used to manage the contaminated topsoil into a permanent location.

Monitoring of the hydro-carbon plumes has been ongoing throughout the period, there are two areas where hydro-carbon affected soil is in the ground within the project boundary.

- Location at abutment A, project chainage 850. This area of land is former rail land which was used for engine maintenance. Plume has shown no signs of moving towards Alipou Creek or the Clarence River. Monitoring requirements are now complete
- Location at fill 1, near culvert 1, project chainage 400. This contamination was found during construction when an open drain was excavated. Investigations mapped the affected area, a decision was made to leave the contamination in the ground. Monitoring wells are installed around the perimeter of the plume. Ground water monitoring wells have shown no impacts of hydro-carbon mobilisation.

During the reporting period several new contaminated soil sources were encountered. New encounters included:

- An asbestos conduit found when excavating the C11 drain
- Asbestos within soil when excavating at the toe of the northern levee
- Asbestos encountered in the J2 open channel drain adjacent to Bunnings

When asbestos is encountered onsite works stop and contaminated land specialists are engaged to safely remove the materials. The process for safely removing the material is to isolate the work area with no other workers in the area. The area is wet down and material is safely removed into a lined

truck by an asbestos removalist. Air monitoring is in place to confirm asbestos fragments are not lost during the process.



2.4.2 Traffic management

Traffic management is required throughout works to ensure that public road users and workers are

Figure 4 Removal of bonded asbestos removed from South Grafton and taken to Grafton landfill

kept separated and safe.

A summary of traffic management activities during the reporting period is detailed below:

- Pound Street has been closed in one direction allowing staged pavement construction
- A number of traffic switches at Iolanthe St and the Pacific Highway for pavement and drainage construction
- About 50 new traffic control plans have been used on the project, extra plans were used for new traffic arrangements at Iolanthe Street

2.5 Temporary Works

The project has put in place a number of temporary facilities and sites to support construction, these include:

- Crane pads
- Site access roads
- Temporary boundary fencing and signage
- Construction jetty
- Construction pads at the bridge works areas
- Temporary access through the Grafton levee which includes a designed flood management strategy

- Temporary pavements in preparation for needed traffic switches

All temporary work areas have appropriate environmental controls in place which are maintained on a regular basis. Temporary work areas and facilities will be remediated at the completion of construction or as they becoming redundant.



Figure 5 Northern crane pad on the banks of the Clarence River, photo is looking east

2.6 Casting Yard

During the reporting period production at the casting yard was consistent and in line with the general construction program. 95% of the all segments are now completed. The final segments are planned to be cast mid May 2019.

The operations at the casting yard during the next reporting period will include:

- Repairs to segments
- Transport of segments from the casting yard to the bridge
- Removal of excess and no longer needed construction materials and waste



Figure 5 Aerial photo of the South Grafton casting yard

2.7 Bridge Works

Marine works are proceeding generally in accordance with the construction program. During the reporting period pier 6, 7 and 8 were completed. 5 pier diaphragms are now complete allowing the erection of segments of the bridge to proceed.

Erection of segments onto the new bridge proceeded well during the reporting period, the bridge superstructure is now more than 50% complete. All segments were installed using the marine works barge



Figure 6 Significant progress has been made on the new Grafton Bridge during the reporting period

Works on the northern side of the Clarence River have included extension of the crane pad to allow for a larger crane. The marine works are getting supported by two barges, works have proceeded well with good environmental controls and a low level of incident.



Figure 7 Marine works progress

2.7.1 Land Substructure

All land substructure works are complete.

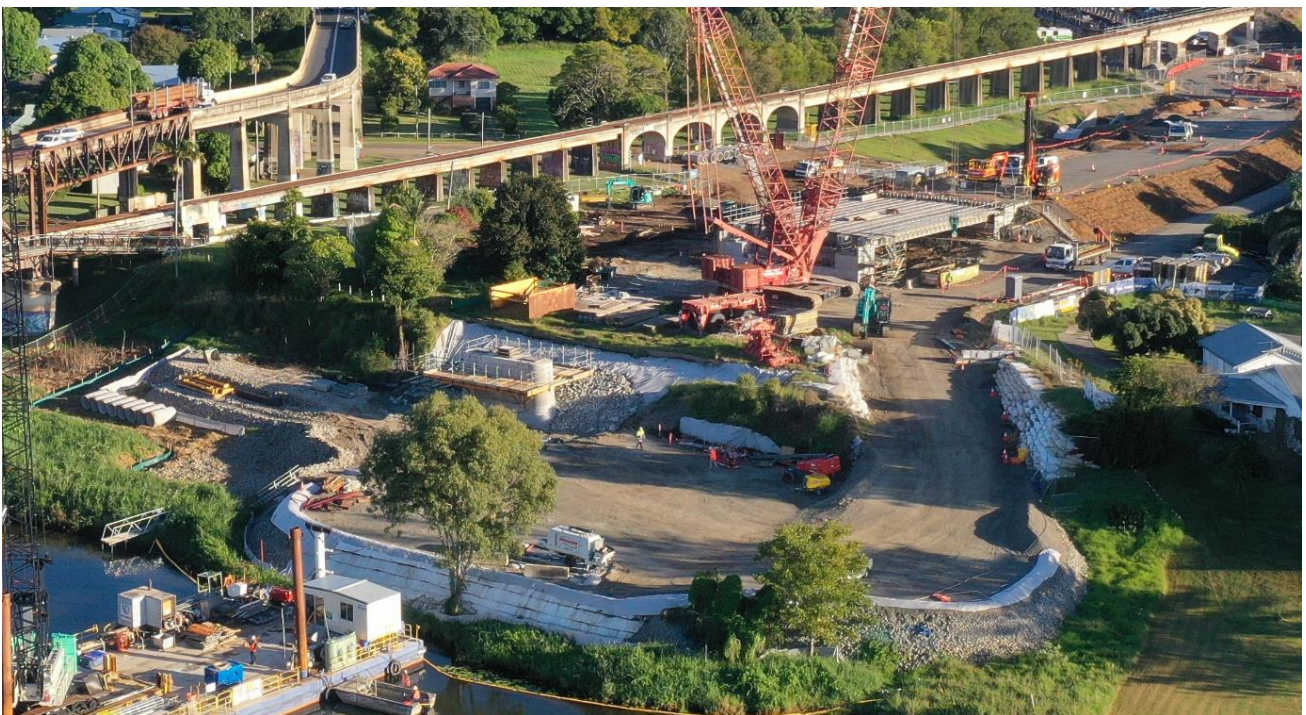


Figure 8 Pier 7 and 8 complete, super 'T' span over the new Greaves Street is also complete

2.8 Sustainability

The Clarence River Crossing project continues to implement and encourage a number of initiatives to promote sustainable outcomes across site. Current approaches include:

- Correct cigarette butt disposal campaign
- Return and earn program for plastic bottles promoted on the project with separate bins, signage and education programs
- Battery recycling facilities installed at the project offices
- Waste concrete is being made into reusable precast products at the project casting yard

The project has continued to recycle steel from all construction works. Water from onsite sediment basins has been recycled for onsite dust suppression. Surplus earth fill from the project has been tested and confirmed as clean and then supplied for local reuse in nearby developments.

3.0 Environmental Control and Performance

During the reporting period, the project implemented and maintained a high standard of environmental controls and management measures.

The project's environmental performance is reviewed and measured by RMS, northern project office, the project ER, EPA, local council, DP&E, SEEC (Project Soil Conservationist), and the NSW Department of Primary Industries – Fisheries.

3.1 Effectiveness of Environmental Controls

Environmental controls were effective during the reporting period. The project is implementing processes to ensure continuous improvement of the work site.

3.1.1 Soil and water management

The project continues to focus and invest resources into best practice erosion and sediment controls. The result of that investment is rainfall events have been observed to be well managed and not cause a measurable effect on receiving water ways.

Prior to heavy rainfall, site controls are reviewed and reinforced. Additional maintenance and controls are installed prior to shut down periods and long weekends ensuring maximum efficiency of the site during rainfall events.

Work progress in Grafton particularly around Pound Street and Clarence Street has allowed large areas of the site to be completed to final design features. Final design features include pavements, kerb and gutter, footpaths and landscaping. This stage of construction ensures the soil is locked away and the runoff from the project is clean



Figure 9 Completion of footpaths and kerb



Figure 10 Polymer application to an exposed batter on fill 1 (left) and an example of how clean and dirty water separation is being maintained (right).



Figure 11 Perimeter controls installed ahead of the northern levee pipe jacking works (left) and the northern crane pad extension (right)

Weekly environmental inspections capture the need for maintenance of controls and ensure all controls are functioning properly and are fit for purpose. Weekly environmental inspections are completed as a minimum and include prior to, during and after rainfall events and prior to new works commencing.

3.1.2 Flora and Fauna

Only minor clearing occurred during the reporting period this clearing was small trees and shrubs within the work zone that clashed with design features required to be built.

The *'Three-Toed Snake Tooth Skink Management Plan'* does not require monitoring of the TTSTS protection areas during construction. FH continues to go above and beyond the requirements of the management plan by applying extra mitigations such as during construction protection area monitoring. The result of the extra monitoring has confirmed that the TTSTS are surviving well in the protection areas. Both adults and juveniles were observed in the protection areas. This was the

second season of extra monitoring where juvenile skink hatched in that season were confirmed in the protection areas.



Figure 12 Juvenile TTSTS observed as surviving in the TTSTS protection area. This represents continual success of the protection areas

Monitoring of nest boxes throughout the reporting period did not show any use of nest boxes by micro bats. Monitoring requirements of the nest boxes has now been completed.

Further detail will be discussed in section 7.4.

3.1.3 Heritage

The project has stopped works 23 times for potential heritage finds. Of those stoppages two occurred within the reporting period. The potential heritage finds were:

- 1) A mooring anchor was pulled from the Clarence River when it became entangled in the barge anchor lines. The anchor was pulled to shore and assessed, after that assessment was complete the anchor was put back in the river to prevent oxidation and degradation
The assessment of the anchor found
 - to be likely from the late 19th century
 - Likely to be a mooring anchor kept in place for marking channel buoys or markers
 - Not considered to be a relict
 - That steps be taken to preserve the anchor.



Figure 12 Anchor pulled from the Clarence River during marine works and the moving of the barge anchors

4.0 Environmental Management System Overview

4.1 Environmental Management System Certification

The overall Environmental Management System (EMS) for the Project is described within the Construction Environmental Management Plan (CEMP) and relevant sub plans. The EMS for the Project has been prepared to comply with the requirements of AS/NZS ISO 14001 Environmental Management Systems.

Fulton Hogan was audited by 'Telarc' in early 2019 to review compliance with the ISO 14001 requirements, this audit found the FH business to have a compliant ISO management system that fosters continuous improvement.

4.2 Environmental Management Framework

The framework of the environmental management documents has been designed to comply with the requirements of ISO 14001 and to be consistent with the Guidelines for the preparation of an EMP (DP&I 2004).

The CEMP comprises relevant sections from Fulton Hogan’s Corporate Management System as well as a number of supporting documents (i.e. issue specific environmental sub plans) providing more detailed environmental management specifications.

4.3 Construction Environmental Management Plan

The CEMP is the key management tool in relation to environmental performance during the design and construction phases. The CEMP outlines Fulton Hogan’s approach to minimising and managing environmental risks associated with the construction phase of the project. The CEMP is a dynamic document that is reviewed and amended to incorporate additional requirements as required, including changes to the project team, organisational structure and responsibilities or as improvements to procedures and methodologies develop.

The CEMP has been prepared in accordance with a number of guidelines including:

- Guideline for the Preparation of Environmental Management Plans (DP&I 2004);
- RMS Specification G36 – Environmental Protection (Management Systems);
- ISO 14001:2004 – Environmental Management Systems; and
- ISO 19011:2003 – Guidelines for Quality and/or Environmental Management Systems Auditing;
- NSW Minister for Planning Conditions of Approval (MCoA); and
- EA and Submissions Report

The CEMP was approved by the Department of Planning and Environment in accordance with MCoA B35 on 5 October 2016.

Detailed environmental management sub plans have been prepared on key environmental elements and identified for the Project through the environmental assessment and approval process. They document aspects, impacts, safe-guards and monitoring requirements for each key environmental element, nominate who is responsible for implementing controls and note the frequency/timing of implementation.

Reviews of the project CEMP occur periodically to ensure the CEMP management system is up to date and applicable to the works which are occurring.

Table 4-1 CEMP and Sub-plans consistency with MCoA and ER review dates

Plan Name	Approved for use on the Project	Latest Revision Date	Summary of update
Construction Environmental Management Plan	15/09/16	Feb 2019	Refer to appendix A
Construction Contaminated Land Management Plan	15/09/16	October 2017	Not updated, supplementary plans have been written during construction
Construction Air Quality Management Plan	15/09/16	Feb 2019	Updated for the final stage of construction
Construction Flora and Fauna Management Plan	15/09/16	Feb 2019	Updated to include details of TTSTS

			observed during construction
Construction Flood Management Plan	15/09/16	Feb 2019	Updated to include extra details on the during construction flood management mitigations
Construction Heritage Management Plan	15/09/16	August 2016	No change
Construction Noise and Vibration Management Plan	15/09/16	October 2017	No Change
Construction Soil and Water Quality Management Plan	15/09/16	November 2017	No Change
Construction Waste and Energy Management Plan	15/09/16	August 2016	No Change
Construction Traffic and Access Management Plan	15/09/16	October 2017	No Change

5.0 Non-Compliances and environmental incidents

5.1 Compliance Management

A non-compliance is a failure to comply with the requirements of the Infrastructure Approval or any applicable licence, permit or legal requirement. These are identified through routine inspections, formal reviews such as auditing and compliance reporting, and incident management.

During the reporting period there were 3 non-compliances observed on the project.

Table 5-1 Non-compliance summary

Date	Description	Non-Compliant against	Status
November 2018	Unapproved OoHW undertaken by a street sweeper prior to 0700.	OoHW Procedure,	Closed
March 2019	A dust exceedance of 6.8/m ² /month was recorded at Pound Street (DMG1). This occurred when a stockpile within the working area of the Pound Street rail bridge needed moving. The method used to move the stockpile was poor, an excavator bucket slewing over the gauge. The new location of the stockpiled material was stabilised with grass and no further dust issues were observed.	CAQMP (AQ1)	Closed
11 May 2019 (Six monthly and periodic certification – October 2018 to March 2019)	OoHW 00138. Noise model was missing a truck in the calculation resulting in an incorrect noise model. Note: The issue described above was minor in nature and didn't result in a non-compliance to the modelled noise used in the approved permit	OoHW Procedure, CNVMP Annexure C, Approval pursuant to MCoA D3 (OoHW Agreement). OoHW procedure requires the proposed plant to be noise modelled.	Closed
11 May 2019 (Six monthly and periodic certification – October 2018 to March 2019)	A number of OoHW works were undertaken without conducting noise monitoring. (ref: OoHW Noise Monitoring Records) Note: The project has managed over 150 OOH events and this included a twelve-month period where no community complaint occurred. In the instances where noise monitoring was not undertaken this was justified because either: <ul style="list-style-type: none"> - The works were too far from a sensitive receiver to be able to be audible - The activity was a repeat activity that which had noise verification monitoring completed previously None of the events, which were not monitored, resulted in any issue or community complaint.	OoHW Procedure, CNVMP Annexure C, Approval pursuant to MCoA D3 (Agreement). OoHW procedure requires noise monitoring.	Closed
11 May 2019 (Six monthly and periodic certification – October 2018 to March 2019)	ER Inspection report close outs where three months behind. Note: Actions were closed out in line with the requirements of the submitted report. Reports have	Review corrective and preventative actions to ensure affective implementation of mitigation measures to	Closed

October 2018 to March 2019)	now been closed out and provided back to the project ER.	avoid or minimise the adverse impacts on the environment and/or identify change to the CEMP resulting from the audits and monitoring.	
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Table 5-2 Non-conformance summary

Date	Description	Resolution	Status
Nil	Nil	Nil	Nil

5.2 Incident Management

During the reporting period there were six events recorded as incidents - see tables 5-3 and 5-4 below.

Table 5-3 Recorded Incidents

RMS Incident Category	Nov	Dec	Jan	Feb	Mar	Apr	Total
Category 1				1	1		
Category 2					1	1	
Reportable Event		1					
Total	0	0	0	1	2	1	4

**Reportable events may include rainfall events that exceed the storage capacity of the onsite sediment basin or unexpected finds. These events are expected and anticipated during construction*

Table 5-4 Incident Summary

Date	Description	Agency reporting	Classification	Status
27 Feb 2019	Epoxy escaping the marine works area. Installed catch nets were slightly off centre and affected by the wind which allowed epoxy to leave the work area into the river Only a minor amount of epoxy was lost. The fixing detail of the catch nets was improved and no further incidents have been observed	<p><i>This incident was reported to:</i></p> <ul style="list-style-type: none"> - EPA - DPI Fisheries - RMS Environment <p><i>Incident reporting occurred immediately on the day of the event</i></p> <p><i>The project also reports incidents to all other agencies during the ERG meetings. Clarence Valley Council, the project ER and DP&E were also informed of the incident</i></p>	Cat 1	Closed

7 March 2019	Concrete line blockage caused by poor concrete. The line pressure built up and erupted onto the floating pontoons, a relatively small amount of concrete was lost into the Clarence River The management of concrete	<i>This incident was reported to:</i> <ul style="list-style-type: none"> - EPA - DPI Fisheries - RMS Environment <i>Incident reporting occurred immediately on the day of the event</i> <i>The project also reports incidents to all other agencies during the ERG meetings. Clarence Valley Council, the project ER and DP&E were also informed of the incident</i>	Cat 1	Closed
3 March 2019	Concrete washout onto topsoil. All materials contained onsite and cleaned up	<i>Minor site issue that was reported to RMS environment</i>	Cat 2	Closed
5 April 2019	Marine works, EWP working on a pontoon observed a small spill into the Clarence River. Marine spill procedure followed with all observed materials cleaned up very efficiently	<i>Minor site issue that was well managed and cleaned up. Reported to the RMS environment</i>	Cat 2	Closed

Note for table 5-4: reporting to DP&E under condition CoA A14 is required when there is 'significant offsite' impacts. The incidents described in the table above relate to issues managed onsite and did not result in significant offsite impacts.

6.0 Environmental representative reports and correspondence

The CEMP requires a suitably qualified and experienced person, independent of the project design and construction, to act as a principal point of assistance in relation to all questions and complaints regarding environmental performance. Updates to the CEMP, consistency assessments and any other plans required under MCoA are required to be signed off by the environmental representative (ER) as necessary. The ER is also required to monitor the implementation of environmental management plans and monitoring programs.

6.1 Environmental representative approvals

During the reporting period the project ER continues to review, provide feedback and inspect the project. There were less approvals required by the project ER in this six-monthly period due to the stage of construction.

The project Environment representative continues to attend the project and conduct site inspection, audits, chair the Environmental Review Group meeting and approve minor extra approvals/OOH permits as required.

Extra approvals and reviews conducted by the project Environmental Representative during the period include:

- Asbestos Management Options – reviewed.
- PESK Plans (Fill Area No. 2) – reviewed.
- Updated ERSED Plans – reviewed.
- December EPL Report (20959) – reviewed.
- Updated ERSED Plans – reviewed.
- Grafton Bridge Urban Design and Landscape Management Plan Design Plans – reviewed.
- Construction Compliance Report and Compliance Tracking Table (No. 4) – review and approved.
- Project Updates to CEMP and Sub Plans – review.
- Rail Bridge program of works – review.
- Northern Crane Pad Extension – review.
- Marine Works EWMS – review.
- Fill 1 Basin Removal – review.
- Pipe Jacking Works EWMS – review.
- OOH Steel Truss Rail Bridge Assembly – review and advice.
- OOH Villiers Street Roundabout – review and advice.
- Villiers Street Roundabout approval process – review and advice.
- Fill 1 Basin Removal – review.

Approved

- Updates to the project Construction Environmental Management Plan

6.2 Environmental Representative Reports and Outcomes

Site inspections with the environmental representative occur on a fortnightly basis. RMS and the project Environmental Representative alternate on the reporting of those site inspections

Table 6-1 ER inspection report comments

Report Number	Date	Issues/Comments	Status
23	15 November 2018	Ensure that any material tracked onto public roads is removed	Closed out
		Ensure adequate stockpile procedures, measures and controls are implemented, in particular prior to rain	Closed out
		ESC plan to be updated to capture changes and reviewed by project soil con	Closed out
		ESC plan to be updated to capture changes and reviewed by project soil con	Closed out
		Remove all residual water from drain that was contaminated with soil binder. Water contaminated with soil binder did not leave site	Closed out
		Ensure ongoing weed management practices are implemented	Closed out
24	12 December 2018	Install stabilised inlet to allow runoff from shared user path to run into basin	Closed out
		Confirm water from the drain is able to be conveyed to basin and not overtop onto shared user path	Closed out
		Ensure inlets to basin are stabilised appropriately and diversion bunds are installed and maintained prior to rainfall or end of day	Closed out
		Ensure appropriate measures and arrangements are in place for concrete wash out	Closed out
		Install a stabilised overtopping point on mulch bund	Closed out
		Install controls to drainage pit once works in immediate area are finished	Closed out
		Confirm that appropriate hydro mulch coverage has been applied	Closed out
		Extend mulch bund to capture water runoff before entering drain	Closed out
		Segregate materials with flagging and signage to prevent cross contamination	Closed out
		Maintain concrete washout to provide sufficient capacity for washing out and are cleaned out to an appropriate stockpiling location	Closed out
25	18 January 2019	Ensure mulch bunds are repaired and operating effectively	Closed out
		Ensure weed spraying continues and is maintained throughout the site	Closed out
		Stabilise disturbed areas as soon as practical or before rain	Closed out
		Remove and stabilise area that has slumped into drain	Closed out
26	30 January 2019	Maintain skink fence to provide adequate protection from construction works	Closed out
		Ensure that ERSED controls are installed and maintained prior to rain or end of day where required	Closed out
		Manage weeds as per G36, FFMP and Weed management Plan	Closed out
		Ensure dewatering is being followed as per CSWMP and EWMS	Closed out
		Ensure adequate capacity is maintained in concrete washouts and no spill of material or alkaline water occurs from washout	Closed out

		Stockpile material in appropriate locations as per the stockpile management protocol	Closed out
		Ensure site flagging is installed and maintained as required to prevent and offsite impacts or impact to sensitive areas	Closed out
		Ensure that clean water drains are maintained to minimise the impact of dirty water leaving site	Closed out
		Ensure ERSED controls are installed and maintained prior to rain or end of day	Closed out
25	14 February 2019	Confirm ERSED arrangements are appropriate and installed	Closed out
		Ensure capture curtain is installed and maintained to provide its desired function for capturing spills	Closed out
		Manage dust using appropriate measures when grouting	Closed out
		Empty containers observed. Store fuel containers in appropriate bunds	Closed out
		Ensure maintenance of the jetty and access ramp is implemented to manage and minimise the generation of fines and tracking onto the jetty	Closed out
		Ensure ERSED plans are developed, reviewed by soil con and measures implemented	Closed out
26	26 February 2019	Update ERSED plan to cover existing works and ensure plans are reviewed by project soil con	Closed out
		Ensure fuel and chemical storage is appropriate along with re-fueling procedures for pumps.	Closed out
		Ensure that the stockpile sites and individual stockpiles are managed as required, including waste management and review of concrete washout	Closed out
		Update ERSED plans in conjunction with project soil con	Closed out
		Review actions and controls for capturing excess epoxy dripping from segments to ensure the product is captured	Closed out
		Ensure stabilised inlet is installed as per G38 and bluebook. Reinstate controls prior to rain or end of the day	Closed out
		Install flagging to maintain project boundary	Closed out
		Ensure that ERSED plans are developed, reviewed and approved for use to cover existing work activities	Closed out
		Ensure measures are in place to minimise occurrence and street sweepers are used regularly	Closed out
27	12 March 2019	Ensure appropriate maintenance of stabilised access arrangement is undertaken, including cleaning and maintenance of fines on Greeves Street	Closed out
		Mark out project boundary and clearing limits to ensure there are no works outside the clearing limit or project boundary	Closed out
		Reinstate pit controls as required	Closed out
		Area may require some weed treatment and a review of the topsoil material prior to landscaping	Closed out
		Geofrab control appears to have fallen down along the batter of the drain which may generate fines and mobilise into the drain	Closed out
		Ensure that site access arrangements are maintained to minimise generation of fines and tracking onto public roads	Closed out
		Review current arrangements and ensure that appropriate controls are installed and maintained	Closed out
		Ensure that controls are installed, maintained and reinstated as per the approved PESCP prior to rain and/or at the end of the day	Closed out

28	11 April 2019	Ensure that appropriate weed management measures are implemented throughout the site	Closed out
		Extend geofab fence at toe of crane pad to provide further containment. Extend hydrocarbon / silt boom upstream and out into the waterway to enhance sediment capture. Remove overspill of fine material	Closed out
		Ensure that appropriate project flagging and/or fencing is in place and maintained	Closed out
		Ensure that TTSTS exclusion fences are installed and maintained as required	Closed out
		Ensure that concrete washouts are installed and maintained as per G36, G38, relevant ERSED plans and EWMS and CSWQMP	Closed out

7.0 Environmental Monitoring Closed out

Environmental monitoring is used to review potential environmental risks caused by project activity. It allows the project to assess and evaluate receiving environment trends and ensure installed controls are appropriate and effective.

A range of environmental monitoring is required during construction of the project. These measures are listed in the CEMP. The results of the monitoring programs are described in this section.

7.1 Water Quality

Water quality throughout the reporting period continues to be representative of background data and has not demonstrated any impacts resulting from construction. Decreases in water quality are typically observed following a large rainfall in the wider upstream catchment.

Only one rainfall event caused site sediment basins to fill and overtop into the receiving environment during the six-month period. This is a low number of overflows and is a result of the sediment basin design in South Grafton being larger than required. All managed discharges were compliant with the requirements of the approved soil and water management plan.

The project did not have any measurable effect on the background water quality of either Alipou Creek or the Clarence River during the reporting period. Rainfall events were well managed and site materials and waters contained on the site.

Water quality monitoring results are included in **Appendix B**.

7.1.1 Groundwater monitoring

The project has two underground sources of soil contamination that required monitoring during construction.

ARTC plume, identified pre-construction, a decision made not to remediate the land but install a monitoring regime. That ground water monitoring regime undertaken during construction has established that the plume is not moving or moving very slowly.

Culvert 1 plume, this area was identified during construction when excavating for the design open drain. Investigation during construction established the likely extent of the plume. A decision was made not to remediate the land but to put in place a ground water monitoring regime. That ground water monitoring is ongoing but is currently not showing evidence that the plume is moving away from the source area.

7.2 Noise and Vibration Monitoring

Noise monitoring was undertaken during standard construction hours for periodic (monthly) review, background noise assessments and for out of hours work assessments. All recorded noise levels were consistent with the anticipated levels as described in the approved Noise and Vibration Management Plan with no non-compliances.

42 out of hours work events were approved during the reporting period. Refer to table 7-1 below.

Table 7-1 Approved OOHW summary

The results of OOH noise monitoring for compliance tracking report 5 are summarised in the table below. A brief summary of the site conditions and monitoring includes:

- Background noise is consistently higher than the NML at each location monitored. This is due to several factors, including, early morning starts fall into the night period but the background noise from 0500 is dominated by increasing traffic over the existing bridge, which is higher than the NML. Background noise from birds in Grafton starts from about 0430 and is high, there are large groups of birds active in the established heritage trees that make noise of about 60-65dBA in the urban streets of Grafton.
- Pacific Highway traffic at night changes from cars to trucks, there is less volume of traffic but the noise is consistent from passing trucks
- The train line is active 24 hours a day in Grafton, both from shunting and moving carriages but also from train traffic through Grafton
- South Grafton commercial zone is located in an area away from residents, there is also significant attenuation provided by existing buildings and the rail embankment
- Many of the OOH works in the South Grafton marine zone were low noise works that were not audible over the traffic on the existing bridge, these type of works included early pre-start meetings, access to the work area, tying steel, formwork and engineering works
- Works on Pound Street were included in the EIS and are required to reduce impacts on businesses and the TAFE. It was always anticipated that OOH works along Pound Street would be a requirement during construction
- Concrete works are at times required OOH to ensure that concrete quality requirements

Approval no	Date	Period	Time	Activity	Justification	Monitoring Notes	Location	NCA	Predicted	NML	Observed noise	Approval pathway	Approved
95	24/10/18	Night	1800 - 0600	Services works	As required by service provider	The closest sensitive receivers are more than 200m from the works. The background noise at Ryan Street is traffic on the Pacific Highway, particularly truck noise. At Through Street the noise is less in the night but the consistent background noise of traffic on the highway and at Summerland way still dominated the noise.	South Grafton	NCA 8	37	46	52	Less than 5dBA above the RBL	Yes
096	1/1/19	night	24 Hour 7 days	Segment construction and Casting	community agreed to works to assist with accelerating	No complaints were received for this OOH period. Works were not audible at time of monitoring	Cast Yard	NCA 2	47	41	49	Agreement	Yes

					Segment construction								
099(a)	23/1/19	night	0400 to 0700	Concrete pour of Pier 8	Concrete temperatures	Background noise above the NML	Pier 8	NCA 6	51	40	69.4	Agreement	Yes
099(b)	19/2/19	night	0400 to 0700	Concrete pour of Pier 6 & 7	Concrete temperatures	Background noise above the NML	Pier 6 & 7	NCA 6	52	40	66.4	Agreement	Yes
105 (a)	15/1/19	day ooh	0600 to 0800	Segment Erection Piers 2, 3 & 4	Less than 5dBA above the RBL works approved to assist with accelerated bridge erection	Background noise above the NML	Pier 2,3 & 4	NCA 2	48	64	63.4	Less than 5dBA above the RBL	Yes
105 (b)	15/1/19	day ooh	1300 to 1700	Segment Erection Piers 2, 3 & 4	Less than 5dBA above the RBL works approved to assist with accelerated bridge erection	Background noise above the NML	Pier 2,3 & 4	NCA 2	48	64	63.4	Less than 5dBA above the RBL	Yes
105 (c)	15/1/19	day ooh	0600 to 0800	Segment Erection Piers 2, 3 & 4	Less than 5dBA above the RBL works approved to assist with accelerated bridge erection	Background noise above the NML. Traffic on the existing bridge into Grafton	Pier 2,3 & 4	NCA 2	48	64	72.4	Less than 5dBA above the RBL	Yes
105 (d)	15/1/19	day ooh	1800 to 1800	Segment Erection Piers 2, 3 & 4	Less than 5dBA above the RBL works approved to assist with accelerated bridge erection		Pier 2,3 & 4	NCA 2	48	64	47.6	Less than 5dBA above the RBL	Yes

106	19/1/19	day ooh	0700 - 1800	Asphalting works on Clarence St	Works will have significant impact on surrounding businesses if conducted within normal hours	Monitoring below predicted level. Construction noise intermittent	Clarence Street	NCA 4	71	53	68	Agreement	Yes
106 (a)	19/1/19	day ooh	1800 to 2000	Asphalting works on Clarence St	Delayed works required for the completion of Asphalting	Continuous works	Clarence Street	NCA 4	71	53		Emergency works	Yes
107	12/1/19	day ooh	1300 to 1700	Steel works and form work installation	Works Required to be completed in preparation for early morning concrete pour	Background traffic above NML	Pier 8	NCA 6	58	49	62.3	Less than 5dBA above the RBL	Yes
108(a)	18/1/19	night	0600 to 0700	Concrete Pour	Concrete temperatures	High wind unable to take a representative sample	Cnr of Pound & Villers St	NCA 5	64	40	High Wind	Agreement	Yes
108(b)	18/1/19	evening	1800 to 2000	Concrete saw cutting	Adequate time required for concrete to set	High wind unable to take a representative sample	Cnr of Pound & Villers St	NCA 5	71	44	(78.2)High Wind	Agreement	Yes
110	7/2/19	evening	1800 to 2000	Placement and welding of steel reinforcement on pier 7	Emergency works - risk to personnel and property		Pier 7	NCA 6	48	44	48	Emergency	Yes
111	22/2/19	evening	1800 to 2000	Laying and backfilling of water main	works completed outside normal hours to reduce impact of TAFE drive	Monitored noise within predicted range	Pound St Norther TAFE driveway	NCA 5	59	44	55	Agreement	Yes

					way occupation								
112	4/3/19	day ooh	0800 to 1800	Crane maintenance	Less than 5dBA above the RBL works approved to assist with accelerated bridge erection	Background noise, traffic on the existing bridge	Temp Jetty	NCA 2	41	64	72.8	Less than 5dBA above the RBL	Yes
114	13/3/19	evening	1800 to 1830	Removal of pier 6 shutters	Less than 5dBA above the RBL works approved to assist with accelerated bridge erection	Low noise works did not exceed background. Background above the NML	Pier 6	NCA 6	43	44		Less than 5dBA above the RBL	Yes
115	16/3/19	day ooh	0800 - 1700	Pier 5 Diaphragm Hydro Demolition	Pier 5 has become critical path and will delay the project should hydro demolition not continue outside of normal hours	Project specific respite offers provided. Background levels above the NML	Pier 5 and 7	NCA 6	56	49	69	Agreement	Yes
115 (A)	30/3/19	day ooh	1300 - 1800	Pier 5 Diaphragm Hydro Demolition	Pier 5 has become critical path and will delay the project should hydro demolition not continue outside of normal hours	Project specific respite offers provided. Background levels above the NML	Pier 5 and 7	NCA 6	56	49	70	Agreement	Yes
115 (b)	6/4/19	day ooh	0800 - 1700	Pier 5 Diaphragm Hydro Demolition	Pier 5 has become critical path and will delay	Project specific respite offers provided. Background levels above the NML	Pier 5 and 7	NCA 6	56	49	70	Agreement	Yes

					the project should hydro demolition not continue outside of normal hours								
118	43584	day eeh	1800-0600	Slab replacement works at Villiers St roundabout	A Road Occupancy Licence (ROL) is required to deliver the Villiers Street roundabout scope. The RMS traffic management centre has advised that it will not provide an ROL for undertaking the works during standard construction hours, hence OOH approval required.	Contingency: 09/05/2019 - 23/05/2019	Villiers st and Pound St round about	NCA 5	74	49	Not Used	Agreement	
120	8/4/19	evening	1800-2200	Rail Bridge Assembly	Agreement from residence and engagement of Project ER	Weekdays till 2200, Saturday +Sunday 0800- 1800	Rail Viaduct - Pound St	NCA 4	75	47	68	Agreement	Yes
121	2/4/19	night	1800 - 0600	Northern segment erection	Background noise above NML	Works took place only on weekends (Saturday and Sunday). Background noise above NML	Iolanthe/pacific highway tie in	NCA 7	39	42	55	Agreement	Yes
122	27/3/19	Night	0600 - 0700 1800 - 2000	Concrete stitch pour & stressing activities	Less than 5dBA above the RBL works	Background noise above NML, construction works not audible above background	Abutment A	NCA 2	38	41	62.3	Less than 5dBA above the RBL	Yes

122(a)	27/3/19	Night	1800 - 0000	Concrete stitch pour	Less than 5dBA above the RBL works	Background noise above NML, construction works not audible above background	Abutment A (south Grafton)	NCA 2	38	41	62.3	Less than 5dBA above the RBL	Yes
123	28/3/19	Night	0600 - 0700	Kerb prep (peg lines etc)	Less than 5dBA above the RBL works	-	Iolanthe St	NCA 1	32	37	not used	Less than 5dBA above the RBL	
125	2/4/19	Night	1800 - 0600	2 Stage switch at the Pacific highway and Iolanthe St	Less than 5dBA above the RBL works	Background noise above NML, construction works not audible above background	Iolanthe St	NCA 1	39	46	61.7	Less than 5dBA above the RBL	Yes
126	1/4/19	Evening	1800 - 2000	Rail bridge truss lowering	Emergency works - risk to personnel and property	Emergency works not monitored	Pound St	NCA 4	57	47		Emergency works	Yes
127	6/4/19	Evening	0800 - 1800	Drainage works across Iolanthe St	Less than 5dBA above the RBL works	Background noise from Pacific highway traffic. Does not represent construction activities	Iolanthe St	NCA 1	40	59	63.2	Less than 5dBA above the RBL	Yes
128						Permit not used							Yes
129	11/4/19	evening	0800-1800	Rectification of Pier 5 Diaphragm	Pier 5 has become critical path and will delay the project should these works not be completed	Weekdays until 2200, weekends until 1800	Pier 5	NCA 6	50	44	69.4	Agreement	Yes
131	17/4/19	Night	0600 - 0700	Through St concrete pour	Less than 5dBA above the RBL works	Monitoring Deemed unnecessary due to the location of the works on the existing Pacific Highway and the time of the works in the afternoon. Resident more than 200m from works, predominant noise is traffic	Through St	NCA 1	35	37		Less than 5dBA above the RBL	Yes

Out of hours works have been used to ensure the safe, on time and high quality delivery of the 'Additional Crossing of the Clarence River at Grafton'. Out of hours works for the reporting period have been done with the support of the project neighbours with only one complaint received for out of hours work during the period. Out of hours works have also been done at the request of the community to reduce impacts on the street scape and to limit impacts on businesses and the TAFE.

Vibration monitoring

The construction of the new road and bridge sub-structure does from time to time create vibration on the ground which can be felt at nearby sensitive receivers. For residents and businesses near the works this is often a new process which can be disconcerting. To alleviate that potential stress, the project team has been working hard to consult with neighbours about vibration works prior to them occurring.

Vibration monitoring was undertaken throughout the reporting period for the following activities:

- Compaction of fill during Clarence/Pound Street widening and upgrade works
- Fill 3 compaction activities

At no point throughout the reporting period was the monitoring limit of 15mm/s exceeded or 3mm/s for heritage items. All recorded levels were within acceptable parameters described in the approved Noise and Vibration Management Plan.

Vibration monitoring results can be seen in **Appendix C**.

7.3 Air Monitoring

Ambient air quality monitoring was undertaken in accordance with the Construction Air Quality Management sub-plan. Dust monitoring gauges are placed at 4 locations across site:

- DMG1 – Pound Street, Grafton
- DMG2 – Rail Station, South Grafton
- DMG3 – Bunnings, South Grafton
- DMG4 – Control, South Grafton

Air monitoring results for the reporting period are shown in figure 14 below.

Clarence River Crossing Dust Deposition Monitoring Results

All results are reported in g/m²/month - Total Insoluble Solids

All results greater than 4g/m²/month are shaded red

NS = Not sampled (include details e.g sample tampered with, funnel broken, etc)

Comments - Sample to be taken over 28 days (+ 2)

Sample Number	Month	Date Started	Date Finished	DMG1	DMG2	DMG3	DMG4	Monthly Average
				Grafton - Pound Street	Sth Grafton - Rail Station	Sth Grafton - Bunnings	Sth Grafton - Control Site	
29	November 2018	15-Oct-18	15-Nov-18	1.2	0.7	0.6	0.5	0.8
30	December 2018	15-Nov-18	17-Dec-18	0.5	0.7	2.8	0.2	1.1
31	January 2019	17-Dec-18	13-Jan-19	0.3	0.4	0.5	0.4	0.4
32	February 2019	15-Jan-19	14-Feb-19	1.3	1.3	1.9	0.7	1.3
33	March 2019	14-Feb-19	13-Mar-19	6.8	1.2	1.5	0.8	2.6
34	April 2019	13-Mar-19	16-Apr-19	1.3	1	1.4	0.2	1.0
35	May 2019	16-Apr-19	16-May-19	0.7	0.8	1.4	0.4	0.8
36								
Average g/m ²				1.2	0.8	1.2	0.6	
Number of exceedences (Total)				1	0	1	0	
Number of 'No Samples' (Total)				1	0	0	0	
Compliance				94%	100%	97%	100%	

Figure 14 Air monitoring results for the reporting period

There was one exceedance of the 4g per m² per month limit for the reporting period.

7.4 Flora and Fauna

Project ecologists have been onsite to carry out the following activities:

- pre-clearing inspections
- nest box monitoring
- Monitoring of the TTSTS protection areas

Note: Pre-demolition inspections of the Pound Street rail bridge will occur prior to the removal of that structure to ensure not bats or protection species are present.

All skink protection areas across the project progressively undergo habitat enrichment including new mulch and leaf litter, weed management, watering down during dryer periods and planting of native flora as well as audit checks for damage or further required works.

8.0 Audits and Inspections

8.1 Compliance Auditing

Regular auditing of the management system is completed during construction. This includes:

- Internal compliance audits undertaken by Fulton Hogan
- External compliance audits undertaken by the ER and RMS appointed auditors

The intent of these audits is to identify opportunities for improvement and any non-compliances during the course of construction so appropriate corrective actions can be implemented in a timely manner.

Table 8-1 below summarises the audits undertaken during the reporting period.

Table 8-1 Audit summary

Audit	Type of Audit	Date	Overview	Outcome
Telarc ISO compliance audit	External	December 2017	Compliance audit for the whole of the NSW region, reviewing the environmental management system in place	Compliant with no non conformances
Six monthly and periodic certification – October 2018 to March 2019	Independent	May 2019	Pursuant to the Services and Implementation Plan in the Deed of Appointment of ER, Schedule 30B – ER Services	3 non compliances were identified. A summary of findings is in table 5-1 of this document

8.2 Internal and external environmental inspections

The project completes weekly site inspections as a minimum to assess environmental performance and identify areas of improvement and maintenance. This includes prior to, during and after adverse weather events, clearing activities, high risk activities and the opening new works areas.

Each inspection provides an opportunity to improve environmental management across the project including new erosion and sediment control installations, improved site mitigation measures and general site improvements.

Inspections are completed consistent with the requirements of the project CEMP. Table 8-2 below summarises the inspections completed on the project.

Table 8-2 Inspections summary

Type of Inspection	Attendees	Duration
Weekly	Fulton Hogan Staff; environmental, engineers, foreman, leading hand, labourers, superintendents, management	Weekly
Wet Weather	Fulton Hogan Staff; environmental, engineers, foreman, leading hand, labourers, superintendents, management	As required
ER	Simon Williams (ER - GeoLINK)	Fortnightly

	Fulton Hogan Staff; environmental, engineers, foreman and superintendents	
RMS Northern Project Office	Jason Sheehan Fulton Hogan Staff; environmental, engineers, foreman and superintendents	Fortnightly
NSW EPA	Stan Viney Peter Higgs Fulton Hogan Staff; environmental, engineers, foreman and superintendents	As required
NSW DPI (Fisheries)	James Sakker Fulton Hogan Staff; environmental, engineers, foreman and superintendents	As required
DP&E	Michael Young Fulton Hogan Staff; environmental, engineers, foreman and superintendents	As required
Environmental Consultants	SEEC – Project Soil Conservationist Ecosure Ecology – Project Ecologist Sandpiper Ecology – Project Ecologist Cavvanba Fulton Hogan Staff; environmental, engineers, foreman and superintendents	As required
Clarence Valley Council	David Morrison Fulton Hogan Staff; environmental, engineers, foreman and superintendents	As required
ERG	RMS ER EPA Council DPI (Fisheries) DP&E Fulton Hogan Staff; environmental, construction manager	Bi-Monthly

9.0 Environmental Complaints

In accordance with MCoA C2 and C3, a complaint management system has been established on the project to address any community enquiries and complaints during the course of construction. There are four mechanisms that have been established to facilitate the lodgement of enquiries and complaints:

Table 9-1: Community contact details

Tool	Details
Project Information line (24-hour toll free)	The Project information line (1800 918 759) is a 24-hour toll free telephone number allowing the community to contact the community relations team at all times when work is being carried out on site, including out of hours work. Outside of working hours, a recorded message with voicemail is available.
Email Address	The email address (grafonbridgecommunity@fultonhogan.com.au) is monitored by the community relations team for incoming emails during business days.
Postal Address	The postal address (76-79 Pound Street, Grafton NSW 2460) is monitored by the project team for incoming letters.
Website	The RMS Additional Crossing of the Clarence River – Grafton Bridge website (www.rms.nsw.gov.au/grafonbridge) includes the contact tools and will be updated regularly to have the latest information about the project.

These tools will be in place until eight weeks after the date of construction completion.

Stakeholder complaints will be responded to and managed in accordance with

- AS-ISO 10002-2006 Complaints Handling (which has superseded AS 4269 Complaints Handling)
- Section 9.2 of the Construction complaints management system – Additional Crossing of the Clarence River at Grafton, Community consultation strategy

9.1 Complaints Management

The project engaged with the community in various forms of communication about one thousand times during the reporting period. Those engagements include: door knocks, letter box drops, phone calls, email, community information nights and visitors to the project community display centre.

The majority of communications and interactions with the community are positive with the local residents interested and supportive of the project. At times the construction activities can cause some impacts which can result in complaints. The project received 8 complaints in the reporting period a reduction from the previous period.

Table 9-1 Environmental complaints summary

Complaint #	Date	Environmental Relevance	Summary	Status
1	20 November 2018	Out of hours work	Resident thanked the project for sweeping his street but complained about the work occurring prior to 7am. Foreman was advised about the complaint and spoke to the driver of the street sweeper to ensure the work was carried out during normal construction hours.	Closed
2	18 January 2019	Dust	Business owner complained about dust from concrete scabbling at the Villiers Street roundabout. Foreman was advised and arranged for increased dust suppression	Closed
3	25 February 2019	Vibration	Resident asked whether vibration monitoring was occurring. Resident was advised that a 12-tonne roller was compacting fill near Bridge Street. While there was not an environment person on site that day, the same work would be occurring the next day and vibration monitoring would be undertaken and the results would be sent to the resident. The results the next day were that no impacts were observed over 2.83 mm/s and that the results were an indication of what the results would have been if vibration monitoring was undertaken on 25 February. The resident also was advised that the project had a number of records of vibration recordings for multiple rollers working in the same location.	Closed
4	26 February 2019	Landscaping	Business owner complained about lack of progress on landscaping adjacent to the business. Environment team arranged for mulch to be placed by the landscaper.	Closed
5	13 March 2019	Dust	Business owner complained about dust from earthworks on Pound Street. Foreman was advised to send a water cart through more frequently, monitor wind conditions and stage works appropriately.	Closed
6	15 March 2019	Vibration	Business owner complained about vibration from compaction works occurring on Pound Street. Foreman was advised and asked to turn the vibe off. Monitoring had already occurred multiple times in this location.	Closed
7	19 March 2019	Dust	Business owner complained about dust from earthworks on Pound Street. Works stopped and dust suppression was used. The works resumed with the foreman closely monitoring wind conditions and stage works appropriately.	Closed

9.2 Community Engagement Initiatives

Throughout the report period, ongoing consultation with directly impacted residents about upcoming work was carried out. A member of the community relations team was available at all times during standard working hours at the community display centre, 76-79 Pound Street, Grafton.

Community consultation for work has included but not been limited to:

- OOH works in Grafton and South Grafton
- Marine navigation
- Special events

-
- Business Liaison Groups with affected businesses in Grafton and South Grafton, providing updates on traffic and staging and program
 - Segment production
 - Marine works and progress
 - Traffic switches, staging and changes to access
 - Information provided to interested residents at the project community display centre

The project is maintaining and building on the positive and constructive relationship with the community and stakeholders to effectively address and manage issues as they emerge during construction. All contact with the community and stakeholders is recorded in the community contact database – Consultation Manager.

APPENDIX A

Project Approval Compliance Table

Additional Crossing of the Clarence River at Grafton (SSI-6103)

CoA Ref	Condition	Timing	Responsible Party	Status (open/closed)	Compliance comments
Part A - Admin Conditions					
A1.	In addition to meeting the specific performance criteria established under this approval, the Proponent shall implement all feasible and reasonable measures to prevent and/or minimise any harm to the environment that may result from the construction or operation of the SSI.	Pre-construction, construction, and operation	Contractor and RMS	Open	Measures used to reduce environmental impacts include additional environmental requirements in the SWTC, a series of FHC/ RMS environmental workshops, ERG meetings (in construction), CEMP and sub-plans, environmental work method statements for high-risk construction activities.
A2.	The Proponent shall carry out the SSI generally with the: <i>State significant infrastructure application SSI-6103;</i> (b) <i>Additional Crossing of the Clarence River at Grafton Environmental Impact Statement Main Volume and Appendices A - L, prepared by Roads and Maritime Services, dated August 2014;</i> (c) <i>Additional Crossing of the Clarence River at Grafton Submissions Report Main Volume and Appendices, prepared by Roads and Maritime Services, dated October 2014;</i> (d) <i>Correspondence from Roads and Maritime Services to the Department titled Grafton Bridge - Additional Crossing of the Clarence River at Grafton – Proposed Early Works dated 1 December 2014;</i> (e) <i>Modification request 1 and letter dated 24 September 2015 to modify the approval to update references to public authorities in the conditions of approval; and</i> (f) <i>Conditions of this approval</i>	(a) Pre-construction, construction, and operation	Contractor	Open	Addressed in compliance register. These sheets are updated regularly.
A3.	If there is any inconsistency between the above documents, the more recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.	Pre-construction, construction,	Contractor	Open	No inconsistency noted at this stage.
A4.	The Proponent shall comply with any reasonable requirement(s) of the Secretary arising from the Department's assessment of: (a) <i>any documentation or correspondence that is submitted in accordance with this approval; and</i> (b) <i>the implementation of any actions or measures contained in these documents.</i>	Pre-construction, construction, and operation	Contractor	Open	The project has an Excel sheet layer for DPE letters and applicable tracking. Refer extra Excel sheet layer for DPE letters and applicable compliance tracking.
A5.	This approval shall lapse 10 years after the date on which it is granted, unless the works the subject of this SSI approval are physically commenced on or before that date	Pre-construction, construction, and operation	RMS	Open	Construction started in October 2016 and will be completed within the ten years allowed under the approval.
A6.	The Proponent shall ensure that all licences, permits and approvals are obtained as required by law and maintained as required throughout the life of the SSI. No condition of this approval removes the obligation for the Proponent to obtain, renew or comply with such licences, permits or approvals.	Pre-construction, construction, and operation	Contractor and RMS	Open	Addressed in Deed, SWTC, G 36 and Environment Documents. Fulton Hogan has an approved EPL for the Rail Viaduct over Pound Street.

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A7.	The Proponent may elect to construct and/or operate the SSI in stages. Where staging is proposed, the Proponent shall submit a Staging Report to the Secretary prior to the commencement of each proposed stage. The Staging Report shall provide details of: (a) how the SSI would be staged, including general details of work activities associated with each stage and the general timing of when each stage would commence; and (b) details of the relevant conditions of approval, which would apply to each stage and how these shall be complied with across and between the stages of the SSI.	Pre-construction, construction	Contractor and RMS	Open	This matter has been discussed with DPE. The Department has confirmed on 15 September 2016 that a staging report is not required for the early opening of parts of the project (Clarence Street, Iolanthe Street and Spring Street) as indicated in the email provided from RMS dated 6 September 2016. Generally the Department requires a Staging Report where a project is opened to traffic, however, as the Additional Crossing of the Clarence River at Grafton project involves a new bridge, this project is considered to be different to a Pacific Highway Upgrade project. This detail on need for a staging report has been included in the Compliance Tracking Program and Pre-construction Compliance Report for CoA A7.
A8.	The Proponent shall ensure that any strategy, plan, program or other document required by the conditions of this approval and relevant to each stage (as identified in the Staging Report) is submitted to the Secretary no later than one month prior to the commencement of the relevant stage(s), unless otherwise agreed by the Secretary. Notes: • While any strategy, plan or program may be submitted on a progressive basis, the Proponent will need to ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times; and • If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program shall clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program	Pre-construction, construction	Contractor and RMS	Open	Noted, refer detail re staging above.
A9.	The Proponent shall ensure that employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities.	Pre-construction, construction	Contractor	Open	For early works induction training booklets are issued for all works. Addressed in FHC's induction program and environmental awareness training. This would also be considered in planning sessions and addressed in EWMSs.
A10.	The Proponent shall be responsible for environmental impacts resulting from the actions of all persons that it invites onto the site, including contractors, sub-contractors and visitors	Construction	Contractor	Open	The project has prepared and is implementing a CEMP onsite. All sub contractors are required to work under the project CEMP. Good outcomes have been observed on the project by implementing the CEMP including most recently the removal of the temporary marine working platforms and pipe jacking through the northern levee bank.
A11.	In the event of a dispute between the Proponent and a public authority, in relation to an applicable requirement in this approval or relevant matter relating to the SSI, either party may refer the matter to the Secretary for resolution. The Secretary's determination of any such dispute shall be final and binding on the parties.	Pre-construction, construction, and operation	Contractor and RMS	Open	To be undertaken if required.
A12.	The Proponent shall prepare and implement a Compliance Tracking Program , to track compliance with the requirements of this approval. The Program shall be submitted to the Secretary for approval prior to the commencement of construction and operate for a minimum of one year following commencement of operation, subject to the Secretary's review of the outcomes of the Independent Environmental Audit Report referred to in condition E5. The operation of the program may be extended if the Secretary determines that there has been unsatisfactory compliance. The Program shall include, but not necessarily be limited to: (a) provisions for the notification of the Secretary prior to the commencement of construction and prior to the commencement of operation of the SSI (including prior to each stage, where works are being staged) (b) provisions for periodic review of the compliance status of the SSI against the requirements of this approval; (c) provisions for periodic reporting of compliance status to the Secretary, including but not limited to	Pre-construction, construction, and operation	Contractor to prepare, and RMS input	Open	This table is Appendix A of the Compliance Tracking Program. Compliance is being managed under a shared compliance system by RMS and FHC, with regular updating. DPE approval letter dated 10 October 2016. The letter approved the Compliance Tracking Program and Pre-Construction Compliance Report. Modification 1 requirements raised in the DPE letter have been updated in this register.

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	<p>(j) a Pre-Construction Compliance Report, prior to the commencement of construction;</p> <p>(ii) 6-monthly Construction Compliance Reports, for the duration of construction; and</p> <p>(iii) a Pre-Operation Compliance Report prior to the commencement of operation;</p> <p>(d) a program for independent environmental auditing in accordance with AS/NZS ISO 19011:2014 – Guidelines for Auditing Management Systems;</p> <p>(e) mechanisms for recording environmental incidents during construction and actions taken in response to those incidents;</p> <p>(f) provisions for reporting environmental incidents to the Department and relevant public authorities during construction;</p> <p>(g) procedures for rectifying any non-compliance identified during environmental auditing, review of compliance or incident management;</p> <p>(h) provisions for ensuring all employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities; and</p> <p>(i) provisions for reporting complaints received in accordance with the Construction Complaints Management System required under condition C2 of this approval.</p>				
A13.	The Proponent shall notify the EPA in relation to any pollution incident in carrying out the SSI as required by the <i>Protection of the Environment (Operations) Act 1997</i> as required by that Act. The Proponent shall provide the Secretary with a record of any such notification.	Construction	Contractor and RMS	Open	EPA are advised of all applicable incidents. EPA are given construction updates generally which include information on waste management, threatened species management and other activities as they are occurring. EPA are consulted on all of the project EWMS. EPA attend the site regularly during construction.
A14	The Proponent shall notify the Secretary (using the contact name and phone number notified by the Department from time to time) of any incident (other than those relating to the Protection of the Environment (Operations) Act 1997) with actual or potential significant off-site impacts on people or the biophysical environment within 24 hours of becoming aware of the incident on weekdays, or the following business day on weekends. The Proponent shall provide full written details of the incident to the Secretary within seven days of the date on which the incident occurred.	Construction	Contractor and RMS	Open	Being undertaken as required.
A15	The Proponent shall meet the requirements of the Secretary or relevant public authority (as determined by the Secretary) to address the cause or impact of any incident, as it relates to this approval, reported in accordance with condition A14, within such period as the Secretary may require.	Construction	Contractor	Open	To be undertaken as required, in consultation with DPE and RMS.
Part B- Environmental Performance					

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B1.	The clearing of native vegetation shall be generally in accordance with the areas specified in the documents listed in condition A2, and with the objective of reducing impacts to any endangered ecological communities (EECs), threatened species and their habitat to the greatest extent practicable.	Pre-construction, construction	Contractor	Open	Minor clearing of the freshwater wetlands occurred for the northern crane pad extension during the reporting period. Details of the clearing was supplied to the RMS for the biodiversity offset report.
B2.	Prior to construction, pre-clearing surveys and inspections for EECs and threatened species shall be undertaken. The surveys and inspections, and any subsequent relocation of species, shall be undertaken under the guidance of a suitably qualified ecologist and shall be in accordance with the methodology incorporated into the approved Construction Flora and Fauna Management Plan required under condition D46(e).	Pre-construction	Contractor	Open	Pre clearing surveys have been undertaken by a qualified ecologist appointed by FHC prior to commencement of construction. This condition has been addressed in the CFFMP. FH and the project ecologists have undertaken the majority ecological works including pre-clearing surveys. The project ecologist is used to manage any ongoing matters as required by the CFFMP. The project has found 51 threatened skinks which have been moved safely away from the construction zone ahead of works. One extra hatchling was observed in a protection area in April 2018, this is a great outcome for the project confirming that the species are surviving and breeding in the protection areas.
B3.	The Proponent shall undertake flora and fauna surveys of those parts of the project area previously not surveyed, due to accessibility issues, prior to the commencement of construction that affects those areas. Should threatened species, communities or habitats be identified, these shall be offset and addressed in the Biodiversity Offset Statement required under condition D1.	Pre-construction	RMS	Open	Surveys of missed areas have been undertaken by RMS in January/ February 2016. These surveys have been undertaken and 2-3 Three toed Snake Tooth Skink found in these missing lots. Further surveys were undertaken on the project and outside the project. An TTSTS MP has been prepared. DPE has been advised of the missing lot survey results and referral to the DoE re EPBC.. EPBC referral has been determined 30/06/2016 as "Not Controlled Action". Work is being undertaken in accordance with TTSTS Management plan. .
B4.	The Proponent shall undertake a targeted rehabilitation program post construction to restore riparian habitat to at least the pre-construction condition or better, unless otherwise agreed by DPI (Fisheries) and NOW.	Construction, Operation	Contractor	Open	Has been addressed in consultation with agencies and in the FFMP, UDLP and revegetation plans. The rehabilitation of the riparian areas will be targeted to follow the completion of the superstructure.
B5.	Vegetation shall be established in or adjacent to disturbed areas and include species which may provide habitat for wildlife following the completion of construction in the vicinity of the disturbed area. Revegetation is to be consistent with the Urban Design and Landscape Plan required under condition D42.	Construction, Operation	Contractor	Open	Has been addressed in consultation with agencies and in the FFMP, UDLP and revegetation plans. TTSTS MP measures have been included in the UDLP, RMS have raised the importance of this issue. As noted above, impacts on vegetation have been reduced in Grafton at 31, 33, 37, and 13-17 Pound Street and 4 McClymont Place. The project 'Urban Design and Landscaping Plan' has been reviewed by DP&E and approved.

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B6.	Scour protection measures shall be implemented prior to and during construction on the banks of the Clarence River in the vicinity of the bridge works to protect the riverbank from erosion and instability during construction and operation.	Pre-construction, construction	Contractor	Open	The Clarence River riparian vegetation has been maintained and protected for construction. Only very minor cut stump clearing has occurred to allow for the jetty and pontoon construction. Post rainfall inspections during the reporting period confirm no visible bank erosion as a result of construction. Erosion and Sediment Control Plans have been developed in consultation with a qualified CPESC to ensure that construction activities in the vicinity do not impact on the banks of the Clarence River. The measures included in the plan are monitored and updated accordingly.
B7.	The Proponent shall consult with and provide feasible and reasonable assistance to NSW State Emergency Service and Council, prior to operation of the SSI, to: (a) prepare any new or necessary update(s) to the relevant evacuation, traffic management and flood plans and documents in relation to flooding events in Grafton and South Grafton, to reflect changes to flooding levels, flows and characteristics; and (b) prepare or update community evacuation information, to improve the community's awareness of the risk of flooding and the need to evacuate Grafton and South Grafton prior to the levees overtopping.	Pre-construction, construction	Contractor	Open	FH has consulted with SES and council on emergency response. FH will continue to work with these groups throughout construction. RMS has provided mapping showing changes to the flood behaviour to SES and Council.
B8.	Any drainage works that are intended to be operated by Council shall be designed in consultation with Council. Facilities such as back-up generators shall be provided to ensure continued operation of the Pound Street pumping station during electrical power outages.	Pre-construction	Contractor	Open	This condition is being addressed through detailed design in consultation with RMS and Clarence Valley Council.
B9.	The SSI shall be constructed and operated to comply with section 120 of the <i>Protection of the Environment Operations Act 1997</i> , which prohibits the pollution of waters.	Construction, Operation	Contractor and RMS	Open	In accordance with CoA D46 (c) a Construction Soil and Water Quality Management Plan (CSWQMP) was prepared and submitted to the Secretary for approval. The Plan outlines the mitigation and management measures that would be implemented during construction to ensure compliance with section 120 of the Protection of the Environment Operations Act 1997. Planning sessions are held for earthworks to optimise controls and PESCPs. Innovation has been achieved at Fill 1 to divert dirty water away from the Clarence. Other innovations including ESCs, basins and land irrigation are being adopted.
B10.	All water from the SSI shall be appropriately treated prior to discharge, to protect the quality of the receiving waters.	Construction, Operation	Contractor and RMS	Open	In accordance with CoA D46 (c) a Construction Soil and Water Quality Management Plan (CSWQMP) was prepared and submitted to the Secretary for approval. The Plan outlines the mitigation and management measures that will be implemented during construction to meet water quality criteria for all off site water discharges. Planning sessions are held for earthworks to optimise controls and PESCPs. Innovation has been achieved at Fill 1 to divert dirty water away from the Clarence. All sediment basins on the project continue to be well managed, the multistage over sized design has resulted in very few overflows in the two years of construction to date.

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B11.	In the event that remediation of contaminated soils is required, the Proponent shall engage a suitably qualified and experienced contaminated land consultant to prepare a validation report upon completion of the remediation. The validation report shall verify that the site has been remediated consistent with the remediation action plan for the project and to a standard consistent with the clean-up criteria for the site.	Pre-construction, construction	Contractor and RMS	Open	The project has a 'Contaminated Land Management Plan'. There are several issues with contaminated land which the project is managing they include: Bonded asbestos removed from houses during demolition, unexpected finds of bonded asbestos found in the soil works stopped whilst contaminated material removed, ARTC contaminated soil including asbestos and hydrocarbons - asbestos is capped awaiting removal at the end of the project. Monitoring of groundwater has shown the contaminated plume is not leaching away from the find area or impacting receiving waterways, diesel contamination found in the soil at culvert 1 area has been capped and groundwater monitoring in place, bonded asbestos found in site won topsoil planned to be encapsulated in permanent batter widening. The management strategy and recommended measures has been developed and implemented in consultation and under the guidance of a Contaminated Land specialist and suitably qualified Contaminated Land Auditor.
B12.	The Proponent shall engage an accredited NSW Site Auditor to prepare a Site Audit Report and Site Audit Statement to determine the land use suitability. The Site Audit Report shall summarise the information reviewed by the auditor and provide the basis for the conclusions contained in the Site Audit Statement. The Statement and Report shall be submitted to the Secretary within seven days of the report being finalised and prior to the commencement of site preparation or excavation activities within areas identified as requiring remediation. A copy of the report shall also be submitted to Council for its information.	Pre-construction	RMS and Contractor	Open	A contaminated land auditor from the approved EPA list is appointed to oversee the management of the south Grafton diesel contamination. The groundwater monitoring and modelling to demonstrate this area is stable in the ground will be reviewed independently by the auditor. An accredited NSW Site Auditor was engaged for the encapsulation of topsoil containing asbestos materials (ACM) in South Grafton batter widening. The remedial action plan was reviewed by the auditor and Interim audit advice provided to enable these works to begin.
B13.	Impacts to Aboriginal heritage shall be minimised to the greatest extent practicable through both detailed design and construction, particularly with regard to encroachment on the Aboriginal dreaming site Golden Eel (AHIMS site number 12-6-0326). Where impacts are unavoidable, works shall be undertaken in accordance with the strategy outlined in the Construction Heritage Management Plan required under condition D46(d).	Pre-construction, construction	Contractor	Open	Management strategies are included in the project Construction Heritage Management Plan (CHMP). The CHMP was prepared in consultation with OEH, NSW Heritage Council and Aboriginal groups. Heritage issues have also been included in site environmental induction training. Permanent fencing has been installed on the eastern side of the corridor west of Alipou Ck in South Grafton. A meeting of Ngerrie LALC and RMS discussed Aboriginal heritage issues on 8 Feb 2016 and again on 28 June 2016. There have been further meetings with the LALC organised by Fulton Hogan. A consistency review was prepared for an additional construction area east of the project boundary and at closer to the important Alipou creek cultural site. Ngerrie LALC approved the boundary extension and have taken part in onsite heritage inductions discussing the history and significance of the site with construction crews.
B14.	Prior to the commencement of construction in proximity to the following heritage items: CZB18, CZB25, CZB26, CZB27, CZB28, CZB30, CZB31, CZB32, CZB33 and CZB35, the Proponent shall complete all archival recordings, including photographic recording of these heritage items, unless otherwise agreed by the Secretary.	Pre-construction	Contractor and RMS	Open	Archival reports have been addressed by Biosis heritage consultants. Also included this detail in the CHMP. The reports were forwarded to relevant agencies in November 2016.
B15.	Prior to construction partially affecting the following heritage items: CZB10, CZB11, CZB19, CZB20, CZB21 and CZB37, the Proponent shall complete archival recordings of existing condition, including photographic recording of these heritage items, unless otherwise agreed by the Secretary. The Proponent shall ensure the project is conducted in a sympathetic manner that minimises impact to these sites.	Pre-construction	Contractor and RMS	Open	Archival reports have been addressed by Biosis heritage consultants. Also included this detail in the CHMP. The reports were forwarded to relevant agencies in November 2016.
B16.	Archival recording shall be undertaken by an experienced heritage consultant, in accordance with the Guidelines issued by the Heritage Council of NSW. The areas containing heritage items shall be clearly identified and/or fenced until the completion of the archival recordings. Within 6 months of completing the archival recording, the Proponent shall submit a report containing the archival and photographic recordings and the historical research, where required, to the Department, the Heritage Council of NSW, Australian Rail Track Corporation, the local library and the local Historical Society.	Pre-construction	Contractor and RMS	Open	Has been addressed by Biosis heritage consultants. Also include this detail in the CHMP. Note updated Sched 28 amended requirement.

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B17.	A monitoring program shall be implemented for construction works in the vicinity of the flood levee in highly archaeologically sensitive areas and overseen by an appropriately qualified archaeologist. Any previously unidentified heritage items shall be managed in accordance with the procedures detailed in the Construction Heritage Management Plan provided under condition D46(d) of this approval	Pre-construction, construction	Contractor and RMS	Open	The project archaeologist attended all the levee works as required and to manage several unexpected finds. The project archaeologist provided advice, gave onsite training and inductions and assessed heritage issues which arose. Sites of heritage significance near the works were protected and no impacts were observed.
B18.	Prior to the commencement of construction, the Proponent shall implement 'no-go' exclusion zones to prevent access and protect the following heritage item: FMW29.	Pre-construction	Contractor	Open	The item was signposted during levee works close to the ship wreck. No impacts occurred. The construction of the bridge will not go near this site. A marine exclusion area has been implemented on the Clarence River, this area is downstream of the current bridge. The marine exclusion is also the heritage site exclusion
B19.	The Proponent shall not destroy, modify or otherwise physically affect the heritage items listed in Table 8-46 in the <i>Additional Crossing of the Clarence River at Grafton Environmental Impact Statement Main Volume</i> (RMS, August 2014).	Pre-construction, construction	Contractor	Open	The CHMP has addressed this condition. Heritage sites are included in Sensitive Area Plans. Important all heritage items are included in the GIS sensitive area plan layers, including those additional items addressed in the June 2016 Built Heritage report.
B20	Identified impacts to heritage sites shall be minimised where feasible and reasonable through both detailed design and construction, particularly with regard to retained locally listed historic properties and the existing Grafton Bridge. Where impacts are unavoidable, works shall be undertaken in accordance with the actions to manage heritage construction impacts required by condition D46(d) and under the guidance of an appropriately qualified heritage specialist.	Pre-construction, construction	Contractor and RMS	Open	This condition is being addressed through detailed design and in the CHMP.
B21.	This approval does not allow the Proponent to destroy, modify or otherwise physically affect human remains as part of the SSI	Pre-construction, construction	Contractor	Open	Addressed in the CHMP.
B22.	The Proponent shall not destroy, modify or otherwise physically affect any heritage items outside the SSI footprint, unless otherwise agreed by the Secretary in accordance with condition D41.	Pre-construction, construction	Contractor	Open	Addressed in the CHMP and managed during construction, including using the Sensitive Area Plans.
B23.	The measures to protect heritage sites near or adjacent to the SSI during construction shall be detailed in the Construction Heritage Management Plan required under condition D46(d).	Pre-construction	Contractor	Open	The CHMP has addressed this condition. The boundary fence has been installed on the eastern side of the works on South Grafton to protect sensitive areas to the east.
B24.	In relation to new or modified local road, parking, pedestrian and cycle infrastructure, the SSI shall, where feasible and reasonable, be designed: (a) in consultation with the Council; (b) to take into consideration existing and future demand, road safety and traffic network impacts; (c) to meet relevant design, engineering and safety guidelines, including Austroads Guide to Traffic Engineering Practice; and (d) be certified by an appropriately qualified person that has considered the above matters.	Pre-construction	Contractor	Open	This condition is being addressed by Fulton Hogan through detailed design in consultation with Council, TAFE and local businesses.
B25	The Proponent shall ensure that the SSI is designed to minimise land take impacts to surrounding properties as far as feasible and reasonable, in consultation with the affected landowners.	Pre-construction	Contractor	Open	Addressed in detailed design. Retention of 13 and 15 Pound Street has reduced construction noise impacts and improved the street scape. Other initiatives include staging works during construction to reduce the impacts on businesses and sensitive receivers. Works that are being built in stages or OOH to reduce impacts include: Clarence St carpark constructed early to provide car parking ; Clarence St and Pound St asphaltting OOH to reduce impacts on residential access and noise impacts on the TAFE; clearing works OOH to reduce impacts on the TAFE ; Iolanthe St works completed behind barriers to maintain traffic flows ; Pacific highway connection and staging plans modified to reduce impacts on South Grafton Businesses.

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B26	The Proponent shall, in consultation with relevant landowners, construct the SSI in a manner that minimises intrusion and disruption to surrounding properties, unless otherwise agreed by the landowner.	Pre-construction, construction	Contractor	Open	Ongoing consultation throughout construction with neighbours and sensitive receivers is continuing to ensure the project is built with respect to people possibly affected by the works.
B27	Any damage caused to property as a result of the SSI shall be rectified or the landowner compensated, within a reasonable timeframe, with the costs borne by the Proponent. This condition is not intended to limit any claims that the landowner may have against the Proponent.	Pre-construction, Construction, operation	Contractor	Open	Noted.
B28	Utilities, services and other infrastructure potentially affected by construction and operation shall be identified prior to construction to determine requirements for access to, diversion, protection, and/or support. Consultation with the relevant owner and/or provider of services that are likely to be affected by the SSI shall be undertaken to make suitable arrangements for access to, diversion, protection, and/or support of the affected infrastructure as required. The cost of any such arrangements shall be borne by the Proponent.	Pre-construction	Contractor	Open	This condition is being addressed through detailed design. Design changes are completed with ongoing consultation, design modifications help to ensure landholders, service providers and asset owners needs are met
Part C - Community Information and Reporting					
C1.	<p>C1. Prior to the commencement of construction or as otherwise agreed by the Secretary, the Proponent shall prepare and implement a Community Communication Strategy to the satisfaction of the Secretary. The Strategy shall provide mechanisms to facilitate communication between the Proponent (and its contractor(s)), the Environmental Representative (see condition D43), the Council and community stakeholders (particularly adjoining landowners) on the construction environmental management of the SSI. The Strategy shall include, but not be limited to:</p> <p>(a) identification of stakeholders to be consulted as part of the Strategy, including affected and adjoining landowners;</p> <p>(b) procedures and mechanisms for the regular distribution of information to community stakeholders on construction progress and matters associated with environmental management;</p> <p>(c) the formation of community-based focus groups for key environmental management issues for the SSI. The Strategy shall provide detail on the structure, scope, objectives and frequency of the community-based focus groups;</p> <p>(d) procedures and mechanisms through which the community stakeholders can discuss or provide feedback to the Proponent and/or Environmental Representative in relation to the environmental management and delivery of the SSI;</p> <p>(e) procedures and mechanisms through which the Proponent can respond to enquiries or feedback from the community stakeholders in relation to the environmental management and delivery of the SSI; and</p> <p>(f) procedures and mechanisms that would be implemented to resolve issues/ disputes that may arise between</p>	Pre-construction	Contractor	Open	A Community Communication Strategy (CCS) has been prepared and submitted to the Secretary prior to commencement of construction. DPE approval letter dated 6 October 2016.

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	<p><i>parties on the matters relating to environmental management and the delivery of the SSI. This may include the use of an appropriately qualified and experienced independent mediator.</i></p> <p>Issues that shall be addressed through the Community Communication Strategy include (but are not necessarily limited to):</p> <ul style="list-style-type: none"> <i>(i) flooding and hydrology matters, including levee works;</i> <i>(ii) traffic management (including parking, property access, pedestrian access);</i> <i>(iii) noise and vibration mitigation and management;</i> <i>(iv) heritage matters;</i> <i>(v) landscaping and urban design matters;</i> <i>(vi) construction staging, hours and activities;</i> <i>(vii) the relocation of moorings including a strategy for consulting with affected mooring owners;</i> <i>(viii) biodiversity matters; and</i> <i>(ix) socio-economic, property and land use impacts, including impacts to recreational and commercial river users</i> 				
C2.	<p>Prior to the commencement of pre-construction and construction, or as otherwise agreed by the Secretary, the Proponent shall ensure that the following are available for community enquiries and complaints for the duration of construction:</p> <p style="text-align: right;">(a) a</p> <p><i>24 hour telephone number(s) on which complaints and enquiries about the SSI may be registered;</i></p> <p>(b) a postal address to which written complaints and enquires may be sent;</p> <p>(c) an email address to which electronic complaints and enquiries may be transmitted; and</p> <p>(d) a mediation system for complaints unable to be resolved. The telephone number, the postal address and the email address shall be published in newspaper(s) circulating in the local area prior to the commencement of construction and prior to the commencement of operation. This information shall also be provided on the website (or dedicated pages) required by this approval.</p>	Prior to pre-construction, Prior to construction, prior to operation.	Contractor and RMS	Open	The web site is being updated progressively by RMS and Fulton Hogan. A toll free number is established and well publicised in all communications material since the development of the project. Postal address is established to the RMS Grafton office and publicised in all communications material and on the website. A dedicated Grafton Bridge email address is established and managed by the contractor as addressed in Community Communications Strategy. RMS placed advertisements prior to commencement of construction on two occasions (between 12 October and 19 October) in the Grafton Coastal Views, Grafton Daily Examiner and Clarence Valley Review.
C3.	<p>Prior to the commencement of pre-construction and construction, or as otherwise agreed by the Secretary, the Proponent shall prepare and implement a Construction Complaints Management System consistent with AS 4269: <i>Complaints Handling</i> and maintain the System for the duration of construction and up to 12 months following completion of the SSI. Information on all complaints received, including the means by which they were addressed and whether resolution was reached, with or without mediation, shall be maintained in a complaints register and included in the construction compliance reports required by condition A12 of this approval. The information contained within the System shall be made available to the Secretary and relevant agencies on request.</p>	Prior to pre-construction	Contractor and RMS	Open	<p>Consultation Manager database is established which manages and tracks consultation, feedback and complaints. This has been managed by the contractor through construction.</p> <p>Fulton Hogan's Construction Complaints Management System is described in the Community Communications Strategy.</p>

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C4.	<p>Prior to the commencement of pre-construction and construction, or as otherwise agreed by the Secretary, the Proponent shall establish and maintain a new website, or dedicated pages within an existing website, for the provision of electronic information associated with the SSI, for the duration of construction and for 12 months following completion of the SSI. The Proponent shall, subject to confidentiality, publish and maintain up-to-date information on the website or dedicated pages including, but not necessarily limited to:</p> <p>(a) information on the current implementation status of the SSI; (b) a copy of the documents listed in condition A2, and any documentation supporting modifications to this approval that may be granted from time to time; (c) a copy of this approval and any future modification to this approval; (d) a copy of each relevant environmental approval, licence or permit required and obtained in relation to the SSI; (e) a copy of each current strategy, plan, program or other document required under this approval; (f) the outcomes of compliance tracking in accordance with condition A12 of this approval; and (g) details of contact point(s) to which community complaints and enquiries may be directed, including a telephone number, a postal address and an email address.</p>	Prior to pre-construction	Contractor and RMS	Open	The Grafton Bridge web site has been established for a long period and is regularly updated with Community Updates and notifications. The EIS, submissions report and planning approval documents are on the website. http://www.rms.nsw.gov.au/projects/northern-nsw/grafton-clarence-river-crossing/environmental-impact-statement.html
Part D - Construction Environmental Management, Reporting and Auditing.					
D1.	<p>Prior to the commencement of operation of the SSI, the Proponent shall prepare a Biodiversity Offset Statement in consultation with the EPA. The Statement shall: (a) confirm the threatened species, communities and their habitat (in hectares) cleared and their condition; and (b) provide details of measures to offset impacts of the SSI on native vegetation, including threatened species, communities and their habitats, including the timing, responsibility, management and monitoring, and implementation of the offset measures.</p> <p>Biodiversity impacts shall be offset in accordance with the document Principles for the Use of Biodiversity Offsets in NSW (DECCW, 2008). A copy of the statement shall be submitted to the Secretary and EPA.</p>	Construction	Contractor and RMS		Biodiversity Offset Statement will be prepared in consultation with the DPE and EPA. It is important to note that the project is approved to impact 0.41 ha of EEC vegetation. Remaining impacts to vegetation include weeds/ planted native vegetation. TTSTS impacts would need to be considered. Vegetation impacts have been reduced on the levees and somewhat on the Grafton bridge side of the project. The Biodiversity Offset Statement is currently in draft format.
D2.	<p>Construction activities associated with the SSI shall be undertaken during the following standard construction hours:</p> <p>(a) 7:00 am to 6:00 pm Monday to Friday, inclusive; and (b) 8:00 am to 1:00 pm Saturday; and (c) at no time on Sunday or public holidays.</p>	Construction	Contractor	Open	Hours of work and Out-of-Hours Work Protocol have been included in the CNVMP. The CNVMP has been submitted to the Secretary for approval and was approved as part of the CEMP. OOH works are being undertaken where there is justification and the project can comply with condition D3 or D4 of the project approval

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D3.	<p>Construction works outside the standard construction hours may be undertaken in the following circumstances:</p> <p><i>(a) construction works that generate noise and vibration that is:</i></p> <p><i>(i) LAeq(15 minute) noise levels no more than 5 dB(A) above rating background level at any residence in accordance with the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009); and</i></p> <p><i>(ii) LAeq(15 minute) noise levels no more than the noise management levels specified in Table 3 of the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009) at other sensitive receivers; and</i></p> <p><i>(iii) continuous or impulsive vibration values, measured at the most affected residence, that are no more than those for human exposure to vibration, specified for residences in Table 2.2 of Assessing Vibration: a technical guideline; and</i></p> <p><i>(iv) intermittent vibration values, measured at the most affected residence, that are no more than those for human exposure to vibration, specified for residences in Table 2.4 of Assessing Vibration: a technical guideline; or</i></p> <p><i>(b) where a negotiated agreement has been reached with affected receivers, where the prescribed noise and vibration levels cannot be achieved; or</i></p> <p><i>(c) for the delivery of materials required outside the standard construction hours by the NSW Police Force or other authorities for safety reasons; or</i></p> <p><i>(d) where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm, or</i></p> <p><i>(e) out-of-hours work in accordance with condition D4.</i></p>	Construction	Contractor	Open	Out of hours works have been required for a number of reasons in the reporting period, those reasons included: operations at the pre cast yard, new services construction, services connections, concrete pours to manage temperature and critical works that were not audible. The approval pathway for the works has been under condition D3 the works were either done with a negotiated agreement or they were inaudible.
D4.	<p>Construction activities which cannot be undertaken during the standard construction hours for technical or other justifiable reasons (Out of Hours work) may be permitted with the approval of the Environmental Representative. Out of Hours work shall be undertaken in accordance with an approved Construction Environment Management Plan or Construction Noise and Vibration Management Plan for the SSI, where that plan provides a process for the consideration of Out of Hours work. This consideration includes:</p> <p><i>(a) process for obtaining the Environmental Representative's approval for Out of Hours work;</i></p> <p><i>(b) details of the nature and need for activities to be conducted during the varied construction hours;</i></p> <p><i>(c) justifies the varied construction hours in accordance with the Interim Construction Noise Guideline (DECC, 2009);</i></p> <p><i>(d) provides evidence that consultation with potentially affected receivers, that the issues raised have been addressed and all feasible and reasonable mitigation measures have been put in place; and</i></p> <p><i>(e) provides evidence of consultation with the EPA and Council on the proposed work outside the standard construction hours.</i></p>	Construction	Contractor	Open	Out of hours works have been required for a number of reasons in the reporting period, those reasons included: new services construction, services connections, concrete pours to manage temperature and critical works that were not audible. The approval pathway for the works has generally been under condition D3 the works were either done with a negotiated agreement or they were inaudible.
D5.	<p>Construction activities resulting in impulsive or tonal noise emission (such as rock breaking, rock hammering, pile driving) shall only be undertaken:</p> <p>(a) between the hours of 8:00 am to 6:00 pm Monday to Friday;</p> <p>(b) between the hours of 8:00 am to 1:00 pm Saturday; and</p> <p>(c) in continuous blocks not exceeding three hours each with a minimum respite from those activities and works of not less than one hour between each block.</p> <p>For the purposes of this condition 'continuous' includes any period during which there is less than a one hour respite between ceasing and recommencing any of the work the subject of this condition.</p>	Construction	Contractor	Open	See CNVMP
D6.	The Proponent shall, where feasible and reasonable, limit high noise impact activities and work to the mid-morning and mid-afternoon periods.	Construction	Contractor	Open	See CNVMP

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D7.	The SSI shall be constructed with the aim of achieving the construction noise management levels detailed in the <i>Interim Construction Noise Guideline</i> (DECC, 2009). All feasible and reasonable noise mitigation measures shall be implemented and any activities that could exceed the construction noise management levels shall be identified and managed in accordance with the Construction Noise and Vibration Management Plan required under condition D46(a).				See CNVMP. At residence vibration monitoring is undertaken as required and results discussed at each ERG.
D8.	The SSI shall be constructed with the aim of achieving the following construction vibration goals: (a) for structural damage to heritage structures, the vibration limits set out in the German Standard DIN 4150-3: <i>Structural Vibration – Part 3 Effects of vibration on structures</i> ; (b) for damage to other buildings and/or structures, the vibration limits set out in the British Standard BS 7385-1:1990 – <i>Evaluation and measurement of vibration in buildings - Guide for measurement of vibration and evaluation of their effects on buildings (and referenced in Australian Standard 2187.2 – 2006 Explosives – Storage and use – Use of explosives)</i> ; and (c) for human exposure, the acceptable vibration values set out in <i>Assessing Vibration: A Technical Guideline</i> (Department of Environment and Conservation, 2006).	Construction	Contractor	Open	The project is undertaking vibration monitoring for all works which cause vibration near sensitive receivers. Monitoring was undertaken at multiple locations during the reporting period, those locations included but were not limited to: works at the Pound Street rail bridge, roadworks in Pound, Clarence and Greaves Street, impact driving of pile casings for piers 7 and 8 and other project works that needed vibration monitoring
D9.	Wherever feasible and reasonable, piling activities shall be undertaken using quieter construction methods, such as bored piles or vibrated piles rather than impact or percussion piling methods.	Construction	Contractor	Open	The project has had to drive piles at pier 7, 8 and the rail bridge. These works did cause short term bursts of loud noise, affected residents were given a location to be outside of their home during these periods. EPA was also advised of these works
D10	During construction, affected educational institutions shall be consulted and reasonable steps taken to ensure that noise generating construction works in the vicinity of affected buildings are not timetabled during examination periods where practicable, unless other reasonable arrangements to the affected institutions are made at no cost to the affected institution.	Construction	Contractor	Open	The TAFE situated in Grafton NSW shares boundaries with the project on Clarence and Pound streets. The project consults with TAFE about upcoming works, access, disruption to services and changes to traffic. Consultation takes place on average twice a month. The project has done the following to mitigate impacts on the TAFE: working outside of normal construction hours to reduce impacts during class times, improved temporary pavements to reduce dust, scheduled only low noise activities during exams.
D11.	The Proponent shall undertake a review of the operational noise mitigation measures proposed to be implemented for the SSI, within six months of commencing construction, unless otherwise agreed by the Secretary. The review shall be submitted for the approval of the Secretary, and be prepared in consultation with the EPA, and shall:	Construction	Contractor	Open	Operational Noise report submitted to DP&E and approved by Secretary on 4/8/2017.
D12.	Where feasible and reasonable, operational noise mitigation measures shall be implemented at the start of construction (or at other times during construction) to minimise construction noise impacts.	Pre - Construction and Construction	Contractor	Open	RMS is undertaking at residence treatment and is endeavouring to complete this prior to the start of road and bridge construction. The project will have noise mitigations included such as low noise pavements and noise walls. At the completion of construction the model used in the operational noise report will be tested with onsite monitoring of actual noise. Most of the noise treatments for the project are completed at local residents and educational facilities. The next major piece of works will be the construction of a new noise wall
D13.	Access to all properties shall be maintained during construction, where feasible and reasonable, unless otherwise agreed by the relevant property owner or occupier. Any access physically affected by the SSI shall be reinstated to at least an equivalent standard, unless agreed with by the property owner.	Construction	Contractor	Open	See CTAMP. CTAMP has been submitted to the Secretary for approval. This plan was approved with the CEMP. Works have been scheduled and implemented to ensure that access to properties is maintained during construction works in consultation with the affected property owners.
D14.	Safe pedestrian and cyclist access through or around worksites shall be maintained during construction. In circumstances where pedestrian and cyclist access is restricted due to construction activities, a satisfactory alternate route shall be provided and signposted.	Construction	Contractor	Open	Access has been maintained through the worksite at all times for pedestrians travelling from town, across the existing bridge and through South Grafton. The access has been moved at times but always remained open and safely presented for pedestrians. Safety and amenity has been maintained by sealing the path and providing temporary lighting

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D15.	Construction vehicles (including staff vehicles) associated with the SSI shall be managed to: (a) minimise parking or queuing on public roads; (b) minimise idling and queuing in local residential streets where practicable (c) minimise the use of local roads (through residential streets and town centres) to gain access to construction sites and compounds; and (d) adhere to the nominated haulage routes identified in the Construction Traffic and Access Management Plan required under condition D46(b)	Construction	Contractor	Open	Parking for the project works have been modified to reduce the traffic and visual effects on neighbours and the community. Where possible traffic is directed through the project away from public roads, for example this method has been used to bring in concrete trucks for sub-structure works in Grafton.
D16.	Where feasible and reasonable, the Proponent shall provide alternative temporary parking spaces for formal on-street parking spaces removed and/or impacted by the construction of the SSI. The location and number of temporary or relocated parking spaces shall be determined in consultation with Council and affected businesses. The alternative parking spaces shall be provided prior to commencement of construction activities that impact on parking spaces within the SSI footprint.	Construction	Contractor	Open	See CTAMP. CTAMP has been submitted to the Secretary for approval and approved by DPE. Pound St carpark has been completed and open to traffic. This 28 space carpark will provide alternate parking for the TAFE and adjacent businesses during construction.
D17.	Upon determining the haulage route(s) for construction vehicles associated with the SSI, and prior to construction, an independent and qualified expert shall prepare a Road Dilapidation Report for local roads outside the SSI boundary. The Report shall assess the current condition of the road and describe mechanisms to restore any damage that may result due to their use by traffic and transport related to the construction of the SSI. The Report shall be submitted to Council for review prior to the commencement of haulage. Following completion of construction, a subsequent Report shall be prepared to assess any damage that may have resulted from the construction of the SSI. Measures undertaken to restore or reinstate local roads affected by the SSI shall be undertaken in a timely manner, in accordance with the reasonable requirements of Council, and at the full expense of the Proponent. <i>Note:</i> <ul style="list-style-type: none"> • Nothing in this condition restricts the Proponent commencing adjustments and minor upgrades to the existing road network to cater for construction traffic and installation of temporary project signage prior to the commencement of construction. 	Construction	Contractor	Open	A road dilapidation report was completed prior to construction vehicles accessing public roads, the reports were compiled in March 2017.
D18.	Where available and practicable, and of appropriate chemical and biological quality, stormwater, recycled water or other water sources shall be used, where feasible and reasonable, in preference to potable water for construction activities, including concrete mixing and dust control.	Construction	Contractor	Open	This condition has been addressed in the CSWQMP. The issues has also been discussed at the ERG meetings in July and Aug 2016. Water source options have been discussed at ERGs. Fulton Hogan will where possible recycle captured site waters to aid this extra capacity will be provided in site sediment basins. Blue book requirements to empty sediment basins after rainfall will also be met
D19.	Soil and water management measures consistent with <i>Managing Urban Stormwater - Soils and Construction Volumes 1 and 2, 4th Edition</i> (Landform, 2004) shall be employed during the construction of the SSI to minimise soil erosion and the discharge of sediment and other pollutants to land and/or water.	Construction	Contractor	Open	This condition has been addressed in the CSWQMP. Innovation has been applied at Fill 1 to divert dirty water away from the Clarence and improvement treatment.
D20.	Works in riparian areas and on riverfront land shall be undertaken in accordance with NOW guidelines for controlled activities on waterfront land, as applicable				The project has managed temporary works to reduce the amount of potential impacts on waterfront land. Riparian vegetation has been maintained and protected with only minor clearing on the southern side of the Clarence River. The temporary access pad on the north side of the Clarence River leaves a small buffer of riparian vegetation. Impacts to the degraded EEC on the north side of the river has been reduced to the minimum extent possible. The riparian vegetation will be revegetated as part of the final landscaping treatments on the north and south side of the Clarence River.
D21.	The Proponent shall consult with the NSW State Emergency Service during detailed design on feasible and reasonable measures to maximise the evacuation capability of Grafton and South Grafton during a major flood emergency.	Pre-construction	Contractor and RMS	closed	The project has consulted with CVC and SES during the detailed design phase to implement measures that will maximise the flood evacuation capability of Grafton and South Grafton during a major flood event.

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D22.	<p>The Proponent shall undertake further flood modelling based on the detailed design of the SSI. The flood modelling shall consider the recommendations of WMAwater outlined in Appendix A <i>EIS flooding and hydrology technical paper peer review</i> in the document listed in condition A2(c), and:</p> <p>(a) include a detailed floor level survey of potentially affected properties, as identified in the flood modelling;</p> <p>(b) update the flood frequency analysis and application of the latest hydrological practice of the new Australian Rainfall and Runoff publication;</p> <p>(c) assess the same design flood events as those in the EIS, including the probable maximum flood (PMF) event; and</p> <p>(d) assess and report all flood height changes to a resolution no coarser than 1cm.</p>	Pre-construction	Contractor and RMS	Open	<p>WBM are undertaking the flood modelling for RMS. WMA are the appointed RMS independent hydrologic consultant. KBR have prepared the Hydrological Mitigation report.</p> <p>The Hydrological Mitigation Report was approved by the secretary on 6/7/2016 in accordance with D23. The HMR included further flood modelling based on the detailed design of the new bridge and the recommendations from WMAwater outlined in Appendix A EIS flooding and hydrology technical paper peer review.</p>
D23.	<p>The Proponent shall prepare a Hydrological Mitigation Report that details all feasible and reasonable flood mitigation measures for properties where flood impacts are predicted to increase as a result of the SSI. The Report shall be prepared by a suitably qualified and experienced expert, whose appointment has been approved by the Secretary. The Report shall:</p> <p>(a) be informed by the detailed surveys (e.g. floor levels) of potentially affected properties and the results of the flood modelling of the detailed design carried out under condition D22 of this approval and in consultation with EPA and Council;</p> <p>(b) include mitigation measures based on documented flood management objectives for affected properties. The flood management objectives shall cover flood level (height), duration, velocity and direction, and flood evacuation and be developed in consultation with Council and the SES;</p> <p>(c) ensure mitigation measures that include changes to the height of the levees have no detrimental impact on residences and urban land uses protected by the levees and properties downstream of the SSI;</p> <p>(d) identify properties in those areas likely to have an increased/exacerbated flooding impact and detail the predicted impact. The types of impacts to be considered include all those examined in the EIS including but not limited to changes in flood levels and velocities, alteration to drainage, reduction in flood evacuation access or capability and impacts on infrastructure,;</p> <p>(e) identify mitigation measures to be implemented to address these impacts;</p> <p>(f) identify measures to be implemented to minimise scour and dissipate energy at locations where flood velocities are predicted to increase as a result of the SSI;</p> <p>(g) demonstrate consistency with the flood management objectives in subsection (b);</p> <p>(h) be developed in consultation with directly-affected landowners, and Council and in relation to public assets and community flood evacuation issues; and</p> <p>(i) where house raising is proposed, ensure habitable floor levels are raised to a minimum height of the 100 year ARI flood plus 0.5m freeboard, unless justified by site-specific assessment.</p> <p>Where the flood management objectives in subsection (b) cannot be complied with, the Proponent shall achieve compliance through modified design of the SSI; or achieve an acceptable level of mitigation of impacts through at property design measures (e.g. raised access tracks, flood refuge, house raising) in consultation with affected landowners. The Report shall be submitted for the approval of the Secretary one month prior to the commencement of construction within the floodplain that has potential to alter flood behaviour, unless otherwise agreed by the Secretary. Construction shall not commence on any components of the SSI that have potential to alter flood conditions until such time as works identified in the hydrological mitigation report have been completed, unless otherwise agreed by the Secretary.</p>	Pre-construction	RMS	closed	<p>Schedule 41.Future Approvals to be obtained by RMS. "The Secretary of the Department of Planning and Environment's approval required by condition D23. of the Planning Minister's Approvals in respect of the Hydrological Mitigation Report".</p> <p>KBR have prepared the Hydrological Mitigation report and DPE have approved it.</p> <p>(a) potentially affected properties have been identified. Floor level surveys have been completed.</p> <p>(b) Flood management objectives have been set in the HMR and have been developed in consultation with Council and SES.</p> <p>(c) the proposed levee mitigation measures have no measurable impact on properties downstream of the new bridge.</p> <p>(d) potentially affected properties have been identified. Floor level surveys have been completed and directly affected property owners have been consulted with. One shed floor has been raised slightly.</p> <p>(e) Likely mitigation measures have been identified in the HMR.</p> <p>(f) Flood velocities are mostly not predicted to increase. Where they do increase, the potential impact is addressed in the HMR.</p> <p>(g) Flood management objectives are identified in the HMR and they form the basis for determining flood impact on properties</p> <p>(h) Directly affected landowners and Council have been consulted with regard to refinement of public assets (levee). This consultation is ongoing.</p> <p>(i) No house raising is required. One shed floor has been raised.</p> <p>Mitigation measures are being determined in consultation with landowners.</p> <p>The HMR has been submitted to DPE and approved by DPE on 6/7/2016.</p> <p>Levee mitigation measures are mostly completed with some minor works still to be undertaken.</p>

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D24.	Based on the mitigation measures identified in the Hydrological Mitigation Report, the Proponent shall prepare and implement a final schedule of feasible and reasonable flood mitigation measures proposed at each directly-affected property in consultation with the landowner, and consistent with the flood management objectives described in condition D23(b). The schedule shall be provided to the relevant landowner(s) prior to the implementation/construction of the mitigation works, unless otherwise agreed by the Secretary. A copy of each schedule of flood mitigation measures shall be provided to the Department and Council prior to the implementation/construction of the mitigation measures on the property.	Pre-construction	RMS	Open	Copies of the final mitigation measures have been provided to relevant land owners, CVC and provided to DP&E.
D25.	The Proponent shall undertake engineering and property investigations of the Grafton and South levees prior to detailed design to inform the structural capability of changes to the levees. Any work to augment the structure of the levees shall be carried out in consultation with Council and affected landowners. Note: Should additional assessment of work arising from the engineering and property investigations of the levees be required, the proponent shall undertake a review of the consistency of those works with the SSI approval. Work that is inconsistent with the SSI may require a modification of the approval.	Pre-construction, construction	RMS	Open	RMS organised regular meetings with Council, OEH and SES to progress levee upgrading works. PWD have undertaken an engineering assessment of the levees and detailed design of the levee works for RMS. Levee works are mostly completed with some minor works still to be undertaken . All work has been carried out in accordance with plans approved by Clarence Valley Council and the private landowners of individual properties impacted.
D26.	The proposed Grafton and South Grafton levee flood mitigation measures shall be implemented prior to construction commencing in the Clarence River, including pier/pile construction and the installation of temporary in-river rock platforms, unless otherwise agreed by the Secretary.	Pre-construction	Contractor	Open	Grafton and South Grafton flood levee mitigation measures implemented with secretary approval received 29/3/2017 to allow commencement of construction in the Clarence River.
D27	The Proponent shall employ a suitably qualified and experienced independent hydrological expert, whose appointment has been endorsed by the Secretary, to provide independent advice for all hydrological matters, including assistance to landowners in resolving feasible and reasonable mitigation measures.	Pre-construction, construction	RMS	closed	WMA are the appointed RMS independent hydrologic consultant. The appointment of WMA Water has been approved by DPE on 27/11/2015.
D28	During detailed design, the Proponent shall undertake a detailed drainage study of the SSI adjacent to the northern and southern approach roads within the levees to ensure there are no adverse impacts to property or existing infrastructure. The study shall be carried out in consultation with Council and include the design of the Pound Street drainage basin and pumping station, and Council's existing drainage and flood relief systems.	Pre-construction	Contractor and RMS	closed	A detailed drainage study has been undertaken for the areas adjacent to the SSI for the northern and southern approach roads. This study was undertaken in consultation with CVC and SES.
D29.	The SSI shall be constructed in a manner that minimises dust emissions from the site, including wind-blown and traffic-generated dust and tracking of material onto public roads. All activities on the site shall be undertaken with the objective of preventing visible emissions of dust from the site. Should such visible dust emissions occur at any time, the Proponent shall identify and implement all feasible and reasonable dust mitigation measures, including cessation of relevant works, as appropriate, such that emissions of visible dust cease.	Construction	Contractor	Open	Addressed in the CAQMP. CAQMP has been submitted to the Secretary for approval and approved as part of the CEMP. Construction measures to reduce dust emissions include the use of water carts, mud tracking controls, revegetation, monitoring wind conditions and other measures. Dust monitoring results are discussed at monthly ERGs.
D30.	Dangerous goods, as defined by the Australian Dangerous Goods Code, shall be stored and handled strictly in accordance with: (a) all relevant Australian Standards;(b) for liquids, a minimum bund volume requirement of 110% of the volume of the largest single stored volume, within the bund; and (c) the Environment Protection Manual for Authorised Officers: Bunding and Spill Management, technical bulletin (Environment Protection Authority, 1997). In the event of an inconsistency between the requirements listed from (a) to (c) above, the most stringent requirement shall prevail to the extent of the inconsistency.	Construction	Contractor	Open	This has been addressed in CWEMP submitted to the Secretary for approval and approved as part of the CEMP.
D31.	Waste generated outside the site shall not be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence or waste exemption under the Protection of the Environment Operations Act 1997, if such a licence is required in relation to that waste.	Construction	Contractor	Open	Waste is not been received on the project. Waste will be managed through the correct waste stream and taken to licenced facilities as required.

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D32.	The reuse and/or recycling of waste materials generated on site shall be maximised as far as practicable, to minimise the need for treatment or disposal of those materials off site.	Construction	Contractor	Open	This has been addressed in CWEMP submitted to the Secretary for approval and approved as part of the CEMP. Clearing material has been used for timber eg Men Shed and used for mulch for landscaping and erosion and sediment control. As much as possible of the house demolition materials were recycled. Topsoil is recycled as well as waste concrete and steel where possible. Recycled paper is used in site offices.
D33.	All liquid and/or non-liquid waste generated on the site shall be assessed and classified in accordance with Waste Classification Guidelines (Department of Environment, Climate Change and Water, 2009).	Construction	Contractor	Open	This has been addressed in CWEMP submitted to the Secretary for approval and approved as part of the CEMP.
D34.	All waste materials removed from the site shall only be directed to a waste management facility or premises lawfully permitted to accept the materials.	Construction	Contractor	Open	This has been addressed in CWEMP submitted to the Secretary for approval and approved as part of the CEMP.
D35.	The Proponent shall ensure that all plant and equipment used at the site is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Construction	Contractor	Open	This has been addressed in CWEMP submitted to the Secretary for approval and approved as part of the CEMP.
D36.	The sites for ancillary facilities that are associated with the construction of the SSI and that have not been identified and assessed in the documents listed in condition A2 shall: (a) be located more than 50 metres from a waterway, including the Clarence River; (b) be located within or adjacent to the SSI boundary; (c) have ready access to the road network or direct access to the construction corridor; (d) be located to minimise the need for heavy vehicles to travel through residential areas; (e) be located in areas of low ecological significance and require no clearing of native vegetation; (f) be located on relatively level land; (g) be separated from the nearest residences by at least 200 metres (or at least 300 metres for a temporary batching plant); (h) be above the 20 year ARI flood level unless a contingency plan to manage flooding is prepared and implemented; (i) not unreasonably affect the land use of adjacent properties; (j) provide sufficient area for the storage of material to minimise, to the greatest extent practical, the number of deliveries required outside standard construction hours; and (k) be located in areas of low heritage conservation significance (including areas identified as being of Aboriginal cultural value) and not impact on heritage sites beyond those already impacted by the SSI. The Proponent shall undertake an assessment of the facility against the above criteria in consultation with the relevant public authority(s) and the Council. The site and relevant environmental management measures shall be included in the Construction Environmental Management Plan required under condition D45.	Pre-Construction, Construction	Contractor	Open	This has been addressed in Appendix A5 of the CEMP. Ancillary facilities include two houses on Pound Street that have been retained rather than demolished. This is all within the SSI corridor. An approved ancillary area is located on the eastern site of Iolanthe Street, north of Bunnings. The casting yard is within the EIS/ CEMP approved corridor/ approved ancillary area. The area around the new Gwydir Highway roundabout is an approved ancillary area.

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CoA Ref	Condition	Timing	Responsible Party	Status (open/closed)	Compliance comments
D37.	<p>Ancillary facilities that have not been previously identified and assessed in the documents listed in condition A2, and do not meet the criteria set out under condition D36, shall be approved by the Environmental Representative prior to its establishment. In obtaining this approval, the Proponent shall consult with the relevant public authority(s) and the Council, and demonstrate to the satisfaction of the Environmental Representative, how the potential environmental impacts can be mitigated and managed to acceptable standards. The outcomes of the assessment shall be documented in a report and include, but not necessarily be limited to:</p> <p>(a) details on the site location and access arrangements; (b) a description of the activities to be undertaken including the hours of use and storage of dangerous goods; (c) outcomes of the assessment of the site against the locational criteria set out in condition D36; (d) an assessment of the environmental impacts on the site and the surrounding environment, including, but not limited to noise, vibration, air quality, traffic and access during site establishment and operation, flora and fauna, heritage, erosion and sedimentation, water quality and light spill; (e) details of the mitigation, monitoring and management procedures specific to the ancillary facility that would be implemented to minimise environmental impacts; and (f) demonstrated overall consistency with the approved SSI (including impacts identified in the documents listed in condition A2). A copy of the report shall be included in the Construction Environmental Management Plan required under condition D45.</p>	Pre-Construction, Construction	Contractor	Open	This has been addressed in Appendix A5 of the CEMP. Assessment of ancillary sites against these criteria will be undertaken by Fulton Hogan where proposed in consultation with RMS. Refer additional ancillary sites under MCoA D 36.
D38.	<p>Notwithstanding condition D37, ancillary facilities that that have not been previously identified and assessed in the documents listed in condition A2 and result in additional impacts to biodiversity, heritage, flooding and noise beyond those approved for the SSI, shall be approved by the Secretary prior to their establishment. In order to obtain this approval, the Proponent shall undertake an assessment of the ancillary facility in accordance with condition D37 and forward a copy of the assessment report to the Secretary, as part of the approval submission, at least one month prior to the establishment of the facility.</p>	Pre-construction	Contractor and RMS	Open	This will be undertaken by Fulton Hogan in consultation with RMS where proposed. An office ancillary site in Pound/ Greaves St has been approved, all within the SSI corridor. The two houses used were originally to be demolished, but are now retained, improving street amenity.
D39.	<p>All ancillary facilities and access points shall be rehabilitated to at least their preconstruction condition or better, unless otherwise agreed by the landowner where relevant.</p>	Construction	Contractor	Open	This will be undertaken by Fulton Hogan in consultation with RMS.
D40.	<p>Where changes are made to the boundary or use of an ancillary facility, including facilities identified in the documents listed in condition A2, the Proponent shall assess the facility against the criteria set out in condition D36 If the ancillary facility site:</p> <p>(a) does not meet the criteria set out under condition D36 the Proponent shall seek the approval of the Environmental Representative in accordance with condition D37; or (b) results in impacts to biodiversity, heritage, flooding and noise beyond those approved for the SSI, the Proponent shall seek the approval of the Secretary in accordance with condition D38. The relevant approval shall be obtained prior to the establishment of the ancillary facility.</p>	Pre-construction	Contractor and RMS	Open	This will be undertaken by Fulton Hogan in consultation with RMS where proposed.
D41.	<p>The Proponent may undertake archaeological investigations at ancillary sites that do not meet the criterion set out in condition D36, where this is required to assess the potential Aboriginal and non-Aboriginal archaeological impacts of the ancillary facility provided they are undertaken under a methodology prepared to the satisfaction of the Secretary in consultation with EPA.</p>	Pre-construction	Contractor	Open	This will be undertaken by Fulton Hogan in consultation with RMS where proposed. A archaeologist/ LALC site walk over was undertaken for the Woods ancillary area (had been heritage assessed previously in the EIS) and Robertson easement.

Additional Crossing of the Clarence River at Grafton (SSI-6103)

CoA Ref	Condition	Timing	Responsible Party	Status (open/closed)	Compliance comments
D42.	<p>The Proponent shall prepare and implement an Urban Design and Landscape Management Plan prior to the commencement of permanent built works and/or landscaping, unless otherwise agreed by the Secretary, to present an integrated landscape and design for the SSI. The Plan shall be prepared in accordance with the Roads and Maritime Services urban design and visual guidelines, and the design principles and revegetation guidelines outlined in the EIS. The Plan shall be prepared by an appropriately qualified expert in consultation with EPA, including the Heritage Division, Council and community, and submitted to the Secretary for approval. The Plan shall include, but not necessarily be limited to:</p> <p>(a) <i>identification of design principles and standards based on -</i></p> <ul style="list-style-type: none"> <i>(i) local environmental values,</i> <i>(ii) heritage values,</i> <i>(iii) urban design context,</i> <i>(iv) sustainable design and maintenance,</i> <i>(v) community amenity and privacy,</i> <i>(vi) relevant design standards and guidelines including "Crime Prevention Through Environmental Design Principles", and</i> <i>(vii) the urban design objectives outlined in the EIS Technical Paper Urban Design and Landscape Concept Report;</i> <p>(b) <i>details on the location of existing vegetation and proposed landscaping (including use of indigenous and endemic species where possible). Details of species to be replanted/revegetated shall be provided in a Revegetation Strategy, including their appropriateness to the area and habitat for threatened species;</i></p> <p>(c) <i>a description of locations along the corridor directly or indirectly impacted by the construction of the SSI (e.g. temporary ancillary facilities, access tracks, etc.) and details of the strategies to progressively rehabilitate regenerate and/or revegetate the locations with the objective of promoting biodiversity outcomes and visual integration;</i></p> <p>(d) <i>appropriate roadside plantings and landscaping in the vicinity of heritage items and ensure no additional heritage impacts;</i></p> <p>(e) <i>appropriate landscape treatments on flood levees to ensure the structural integrity of the levees is not compromised;</i></p> <p>(f) <i>strategies for progressive landscaping of environmental controls (such as erosion and sedimentation controls, drainage controls);</i></p> <p>(g) <i>responsibilities for maintaining landscaping treatments and areas of regeneration and revegetation;</i></p> <p>(h) <i>location and design treatments for any associated footpaths and cyclist elements, and other features such as seating, fencing, materials and signs;</i></p> <p>(i) <i>a lighting plan lighting (with lighting in accordance with AS/NZS 1158 Lighting for Roads and Public Spaces series as relevant and AS 4282-1997 Control of the Obtrusive Effect of Outdoor Lighting) including lighting designs;</i></p> <p>(j) <i>an assessment of the visual screening effects of existing vegetation and the proposed landscaping and built elements. Where properties have been identified as likely to experience high visual impact as a result of the SSI and high residual impacts are likely to remain, the Proponent shall, in consultation with affected landowners, identify opportunities for providing at-property landscaping to further screen views of the SSI. Where agreed with the landowner, these measures shall be implemented during the construction of the SSI;</i></p> <p>(k) <i>graphics such as sections, perspective views and sketches for key elements of the SSI, including, but not limited to built elements of the SSI;</i></p> <p>(l) <i>final design details of the proposed external materials and finishes for the bridge and noise barriers, including schedules and a sample board of materials and colours</i></p>	Pre-construction	Contractor	Open	The Urban Design and Landscaping plan for the project has received conditional approval. The project is required to give another update once the final details of the pump station are known.

Additional Crossing of the Clarence River at Grafton (SSI-6103)

CoA Ref	Condition	Timing	Responsible Party	Status (open/closed)	Compliance comments
	<p><i>schedules and a sample board of materials and colours</i></p> <p>(m) monitoring and maintenance procedures for the built elements, including performance indicators, responsibilities, timing and duration; and</p> <p>(n) evidence of consultation with EPA, Council and community on the proposed urban design and landscape measures prior to finalisation of the Plan.</p> <p>Note:</p> <ul style="list-style-type: none"> The Urban Design and Landscape Plan shall be consistent with any revegetation and biodiversity offsets established for the SSI under the conditions of this approval. 				
D43.	<p>Prior to the commencement of construction of the SSI, or as otherwise agreed by the Secretary, the Proponent shall nominate for the approval of the Secretary a suitably qualified and experienced Environmental Representative(s) that is independent of the design and construction personnel. The Proponent shall employ the Environmental Representative(s) for the duration of construction, or as otherwise agreed by the Secretary. The Environment Representative(s) shall:</p> <p>(a) be the principal point of advice in relation to the environmental performance of the SSI;</p> <p>(b) monitor the implementation of environmental management plans and monitoring programs required under this approval and advise the Proponent upon the achievement of these plans/programs;</p> <p>(c) have responsibility for considering and advising the Proponent on matters specified in the conditions of this approval, and other licences and approvals related to the environmental performance and impacts of the SSI;</p> <p>(d) ensure that environmental auditing is undertaken in accordance with the Proponent's Environmental Management System(s);</p> <p>(e) be given the authority to approve/reject minor amendments to the Construction Environment Management Plan. What constitutes a "minor" amendment shall be clearly explained in the Construction Environment Management Plan;</p> <p>(f) be given the authority to approve/reject Out of Hours Works in accordance with condition D4. These works shall be conducted in accordance with the Out of Hours Works Protocol (OOHW Protocol) required in accordance with condition D46(a)(vi);</p> <p>(g) be given the authority to approve/reject ancillary facilities in accordance with conditions D36 and D37;</p> <p>(h) be given the authority and independence to require reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur; and</p> <p>(i) be consulted in responding to the community concerning the environmental performance of the SSI where the resolution of points of conflict between the Proponent and the community is required.</p>	Pre-construction	RMS	Open	Simon Williams has been appointed the Environmental Representative for the project/ approved by DPE on 16/1/2015.
D44.	<p>The Environmental Representative shall prepare and submit to the Secretary a monthly report on the Environmental Representative's actions and decision on matters specified in condition D43 for the preceding month. The reports shall be submitted within seven (7) days from the end of each month for the duration of construction of the SSI, or as otherwise agreed by the Secretary. Notwithstanding, the Environmental Representative shall be given the independence to report to the Secretary at any time and/or at the request of the Secretary.</p>	Construction	RMS	Open	The Project Environmental Representative restarted in early 2016 and increased presence at 20 September, 2016. Recommended monthly reports from October 2016 as agreed with DPE.

Additional Crossing of the Clarence River at Grafton (SSI-6103)

CoA Ref	Condition	Timing	Responsible Party	Status (open/closed)	Compliance comments
D45.	The Proponent shall prepare and implement a Construction Environmental Management Plan for the SSI, prior to the commencement of construction, or as otherwise agreed by the Secretary. The Plan shall be prepared in consultation with relevant agencies and Council and outline the environmental management practices and procedures that are to be followed during construction. The Plan shall be prepared in accordance with the <i>Guideline for the Preparation of Environmental Management Plans</i> (Department of Infrastructure, Planning and Natural Resources, 2004) : SEE CRITIRIA Clause D45 (a) - (d)(x) of Consolidated instrument Grafton Bridge Modification Document	Pre-Construction	Contractor and RMS	Open	CEMP has been submitted to the Secretary for approval. The following associated management plans have also been submitted to the Secretary for approval: - CNVMP - CSWQMP - CFFMP - CAQMP - CCLMP - CFMP - CHMP - CTAMP. The CEMP and Management Plans were approved by DPE.
D46.	As part of the Construction Environmental Management Plan for the SSI, the Proponent shall prepare and implement: SEE CRITIRIA Clause D46 (a) - (f)(vii) of Consolidated instrument Grafton Bridge Modification Document				DPE CEMP approval was received on 4 October 2016, subject to addressing 4 conditions. DPE issue another letter dated 5 October 2016 correcting errors in the CEMP plan list.
Part E - Operational Environmental Management, Reporting and Auditing					
E1.	The SSI shall be designed and operated with the objective of not exceeding the road noise criteria outlined in the NSW Road Noise Policy (Department of Environment, Climate Change and Water, 2011).	Pre-construction, Operation	Contractor and RMS	Open	There are extensive Environmental Document requirements for design and operation in regards to noise. The SWTC App 4 includes extensive operational noise requirements. The Operational Noise Management Report has been considered as part of detailed design
E2.	The Pumping Station at Pound Street shall be designed and operated (including regular maintenance and testing) to not exceed the noise criteria in the <i>NSW Industrial Noise Policy</i> (2000).	Pre-construction, construction, operation	Contractor	Open	The operational noise report establishes the project criteria for long term noise management goals in section 2.5. The specific assessment for the pump station is in section 4.8 of the same report. The final model of the pump will need to be checked against the assumptions and noise modelling of that used in section 4.8. This review will be completed in the next reporting period.

Additional Crossing of the Clarence River at Grafton (SSI-6103)

CoA Ref	Condition	Timing	Responsible Party	Status (open/closed)	Compliance comments
E3.	<p>The Proponent shall undertake operational noise monitoring, to compare actual noise performance of the SSI against noise performance predicted in the review of noise mitigation measures required by condition D11 within 12 months of the commencement of operation of the SSI, or as otherwise agreed by the Secretary. The Proponent shall subsequently prepare an Operational Noise Compliance Report to document this monitoring. The Report shall include, but not necessarily be limited to:</p> <p>(a) noise monitoring to assess compliance with the operational noise levels predicted in the review of operational noise mitigation measures required under condition D11 and documents listed in condition A2;</p> <p>(b) a review of the operational noise levels in terms of criteria and noise goals established in the NSW Road Noise Policy 2011;</p> <p>(c) methodology, location and frequency of noise monitoring undertaken, including monitoring sites at which SSI noise levels are ascertained, with specific reference to locations indicative of impacts on sensitive receivers;</p> <p>(d) details of any complaints and enquiries received in relation to operational noise generated by the SSI between the date of commencement of operation and the date the report was prepared;</p> <p>(e) any required recalibrations of the noise model taking into consideration factors such as noise monitoring and actual traffic numbers and proportions;</p> <p>(f) an assessment of the performance and effectiveness of applied noise mitigation measures together with a review and if necessary, reassessment of feasible and reasonable mitigation measures; and</p> <p>(g) identification of additional feasible and reasonable measures to those identified in the review of noise mitigation measures required by condition D11, that would be implemented with the objective of meeting the criteria outlined in the NSW Road Noise Policy 2011, when these measures would be implemented and how their effectiveness would be measured and reported to the Secretary and the EPA.</p> <p>The Proponent shall provide the Secretary and the EPA with a copy of the Operational Noise Report within 60 days of completing the operational noise monitoring referred to in (a) above or as otherwise agreed by the Secretary.</p>	Pre-construction, construction, operation	RMS	Open	Operational noise monitoring will be undertaken within 12 months of the commencement of operation.
E4.	<p>Prior to the commencement of operation, the Proponent shall incorporate the SSI into existing environmental management systems administered by the Proponent and prepared in accordance with the AS/NZS ISO 14000 or similar Environmental Management System series. If there is an inconsistency between the existing environmental management systems and the conditions of this SSI approval, the requirements of this SSI approval shall prevail.</p>	Construction, Operation	Contractor and RMS	Open	To be undertaken closer to operation.
E5.	<p>Within 18 months of the commencement of operation, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the SSI. This audit shall:</p> <p>(a). <i>be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;</i></p> <p>(b). <i>include consultation with the relevant agencies and Council;</i></p> <p>(c). <i>assess the environmental performance of the SSI and assess whether it is complying with the requirements in this approval, and any other relevant approvals (including any assessment, plan or program required under these approvals);</i></p> <p>(d). <i>review the adequacy of any approved strategy, plan or program required under the abovementioned approvals; and</i></p> <p>(e). <i>recommend measures or actions to improve the environmental performance of the SSI, and/or any strategy, plan or program required under these approvals.</i></p>	Operation	RMS	Open	<p>To be undertaken in operation.</p> <p>Sch 41. Future Approvals to be obtained by RMS. "The Secretary of the Department of Planning and Environment's approval required by condition E5. of the Planning Minister's Approvals in respect of the suitably qualified, experienced and independent team of experts to conduct an Independent Environmental Audit of the SSI (as defined in the Planning Minister's Approvals)".</p>

CoA Ref	Condition	Timing	Responsible Party	Status (open/closed)	Compliance comments
E6.	Within 90 days of commissioning this audit, or as otherwise agreed by the Secretary, the Proponent shall submit a copy of the audit report to the Secretary and relevant public authorities, together with its response to any recommendations contained in the audit report. Should the Audit identify unsatisfactory compliance with the SSI approval, the Secretary may require an additional Audit to be undertaken at a later date(s).	Operation	RMS	Open	To be undertaken in operation.
E7.	The Proponent shall maintain the SSI in accordance with the documents listed in condition A2 and any strategy, plan, program or other document required by the conditions of this approval.	Operation	RMS	Open	Noted.

APPENDIX B

Water Quality Monitoring Results



B-1: Surface water quality monitoring completed during the reporting period

Clarence River Crossing

Monthly Surface Water Quality Results

Date	Monitoring	Sample Location	Site	Turbidity (NTU)	pH	Conductivity	Temp (C)	Observations			Flow	
								Oil/Grease	Algae	Debris	Rate	Colour
22/11/2018	Dry	Boat Ramp South	US2	9.02	8.55	218	27.1	No	No	No	Moderate	Clear
22/11/2018	Dry	Alipou Creek	US3	46.7	8.43	195	27.6	Yes	No	No	Nil	Brown
22/11/2018	Dry	Pound Street	DS1	11.51	8.63	209	27	No	No	No	Nil	Clear
22/11/2018	Dry	DS River/Butters Lane	DS2	7.39	8.75	235	27.7	No	No	No	Nil	Clear
10/01/2019	Dry	Sailing Club	US1	8.85	8.94	79.9	29.8	No	No	No	Nil	Clear
10/01/2019	Dry	Boat Ramp South	US2	9.48	8.01	126.3	30	No	No	No	Nil	Clear
10/01/2019	Dry	Alipou Creek	US3	9.34	8.18	154.6	28.6	No	No	No	Slow	Tannin Heavy
10/01/2019	Dry	Pound Street	DS1	4.01	9.28	144.7	28.9	No	No	No	Nil	Clear
10/01/2019	Dry	DS River/Butters Lane	DS2	9.26	8.24	138.4	28.7	No	Yes	No	Nil	Clear
19/02/2019	Dry	Sailing Club	US1	6.5	7.95	245	29.1	No	No	No	Slow	Clear
19/02/2019	Dry	Boat Ramp South	US2	5.38	7.39	360	29.4	No	No	No	Nil	Brown
19/02/2019	Dry	Alipou Creek	US3	7.06	7.85	100.4	27.6	No	No	No	Nil	Brown
19/02/2019	Dry	Pound Street	DS1	6.37	8.05	280	28.7	No	No	No	Nil	Brown
19/02/2019	Dry	DS River/Butters Lane	DS2	6.3	7.32	287	29.2	No	No	No	Nil	Brown
28/03/2019	Overcast	Sailing Club	US1	2.49	6.59	655	24.1	No	No	No	Nil	Clear
28/03/2019	Overcast	Boat Ramp South	US2	3.29	6.8	633	24.2	No	No	No	Nil	Clear
28/03/2019	Overcast	Alipou Creek	US3	6.8	7.6	646	25.8	No	No	No	Slow	Tannin Heavy
28/03/2019	Overcast	Pound Street	DS1	3.19	6.56	729	25.5	No	No	No	Nil	Clear
28/03/2019	Overcast	DS River/Butters Lane	DS2	5.49	6.52	712	24.6	No	No	No	Nil	Clear
30/04/2019	Dry	Sailing Club	US1	3.4	7.62	587	22.4	No	No	No	Nil	clear
30/04/2019	Dry	Boat Ramp South	US2	2.99	7.54	619	22.3	No	No	No	Nil	Clear
30/04/2019	Dry	Alipou Creek	US3	18.6	7.94	859	19.2	No	No	No	Nil	Tannin Heavy
30/04/2019	Dry	Pound Street	DS1	8.19	7.59	617	22.3	No	No	No	Nil	Clear
30/04/2019	Dry	DS River/Butters Lane	DS2	4.6	7.6	754	22.4	No	No	No	Nil	Clear
22/05/2019	Dry	Sailing Club	US1	6.31	6.99	737	22.9	No	No	No	Nil	Clear
22/05/2019	Dry	Boat Ramp South	US2	2.95	7	750	22	No	No	No	Nil	Clear
22/05/2019	Dry	Alipou Creek	US3	9.13	7.25	651	19.8	No	No	No	Nil	Brown
22/05/2019	Dry	Pound Street	DS1	5.23	6.67	734	22.1	No	No	No	Nil	Clear
22/05/2019	Dry	DS River/Butters Lane	DS2	9.3	7.03	750	22.4	No	No	No	Nil	Brown

B-2: Ground water quality monitoring completed during the reporting period.

Date Sampled	Monitoring	Sample Location	Depth (m)	Temp (C)	pH	Conductivity (µs/cm)	PAH's	Dissolved Metals	BTEX/ TPH	Comments
29/011/2018	6689/1	Field Bank	[NT]	18.4	5.3	<50	No	No	No	Distilled water
29/011/2018	6689/2	Field Duplicate (SW1)	[NT]	21.8	6.4	739	No	No	No	Very turbid
29/011/2018	6689/3	SW1 South Sentinel	0.62	21.5	6.4	740	No	No	No	Very turbid
29/011/2018	6689/4	SW2 Middle Sentinel	2.25	20.5	6.3	911	No	No	No	Turbid
29/011/2018	6689/5	SW3 North Sentinel	5.65	22.8	5.9	382	No	No	No	Turbid
29/011/2018	6689/6	MW05	4.07	21.6	6.9	1470	No	No	No	Grey, slight odour
29/011/2018	6689/7	MW03	3.65	21.3	6.6	520	No	No	No	Turbid
29/011/2018	6689/8	PMW1	4.14	21.3	6.5	648	No	No	No	Turbid
29/011/2018	6689/9	MW06	4.59	21.3	6.0	851	No	No	No	Turbid

B-3: Water quality monitoring locations, including extra locations sampled for construction



APPENDIX C

Noise and Vibration Monitoring Results

C-1: Periodic monthly Noise monitoring results

Monitoring Type	Date	Time (24 hr)	Works Activity	Works Location	Monitoring Location	NML (RBL+ 5)	LAeq15	LAmx	LAmn	LA10	LA90	Compliant	Additional comments
Spot check	30/10/2018	7:30	Pier 2 diaphragm pour	Pier 2	Greaves st	58	62	7.6	54.8	64.2	57.6	Yes	See Minuted detail. Compliant. Dominant noise source was Bent St traffic.
Periodic (monthly)	27/11/2018	10:00	Clarence Street HBB placement	Clarence St	18 Clarence St	58	72.4	82.5	64.3	74	69.5	Yes	Construction noise inaudible. Dominant noise source was traffic
Periodic (monthly)	27/11/2018	10:45	Pile Break Back and Abutment works	Pier 6-7	10 Pound St	54	73.4	84.3	67.8	75.4	69.3	Yes	See Minuted detail. Compliant. Dominant noise source was traffic
Periodic (monthly)	27/11/2018	11:30	Fill 3 Construction	Fill 3	5 Kent Street	58	69.8	79.8	60.5	71.4	62.4	Yes	See Minuted detail. Compliant. Dominant noise source was traffic
Periodic (monthly)	27/11/2018	12:15	Crane Pad construction	Abutment A	3 Riverside Drive	69	76.1	79.4	70.4	77.6	72.2	Yes	See Minuted detail. Compliant High level a result of traffic
Periodic (monthly)	27/11/2018	13:00	Crane Pad construction	Abutment A	Butters Lane Residence	49	58.4	67.6	52.6	60.8	54.2	Yes	See Minuted detail. Compliant
Periodic (monthly)	12/12/2018	12:50	Lifting and Relocation of Construction Materials	Abutment B	3 Riverside Drive	69	74.1	87.8	66.8	76.5	70.4	Yes	See Minuted detail. Compliant High level a result of traffic
Periodic (monthly)	12/12/2018	12:30	Fill Instillation, Excavation and Compaction	Fill 3 (abutment B)	5 Kent Street	58	75.9	90.9	65.2	78.8	69	Yes	See Minuted detail. Compliant High level a result of traffic
Periodic (monthly)	12/12/2018	12:10	Pier Head Construction	Pier 8 - Abutment B	10 Pound St	54	67.9	87.1	60.4	69.5	64.8	Yes	See Minuted detail. Compliant
Periodic (monthly)	12/12/2018	12:30	Cutting of fill	Fill 1 Road Widening	Butters Lane Residence	49	66.3	84.6	58	68.2	62.3	Yes	See Minuted detail. Compliant
Periodic (monthly)	18/12/2018	9:45	Heavily bound Placement	Al's Mechanical	18 Clarence St	58	71.5	86	60.6	73.6	65.3	Yes	See Minuted detail. Compliant
Out of hours	11/1/19	18:30	Concrete Saw Cutting	Villiers St Round About	18 Clarence St	44	78.2	84.1	63	79.9	16.4	Yes	See Minuted detail. Compliant – agreement with community
Out of hours	12/1/19	14:10	Steel Fixing - Permit 107	Pier 8	10 Greaves St	58	62.3	74.2	53	65.2	61.4	Yes	See Minuted detail. Compliant - agreement with community
Out of hours	17/1/19	18:10	Erection Of Segments - Permit 105	Pier 3	8 Greaves Street	44	63.4	78.4	52.3	68.1	62.1	Yes	See Minuted detail. Compliant – agreement with community
Periodic (monthly)	23/01/2019	8:45	Steel works on pier 8	Pier 8 + Abutment B	10 Pound St	54	63.8	87.6	56.5	64.7	60.4	Yes	See Minuted detail. Compliant

Periodic (monthly)	23/01/2019	9:05	Box Out of footpath	Shared user Path	5 Kent Street	58	76.1	90.2	70.8	77.9	73.7	Yes	See Minuted detail. Compliant High level a result of traffic
Periodic (monthly)	23/01/2019	9:30	Marine and bridge works	Pier 3	3 Riverside Drive	69	71.5	83.9	64.5	73.8	68.2	Yes	See Minuted detail. Compliant High level a result of traffic
Periodic (monthly)	23/01/2019	9:50	Road Alignment Compaction	Fill 1	18 Clarence St	58	72.9	85.7	57.2	76.7	61.3	Yes	See Minuted detail. Compliant
Out of hours	24/01/2019	4:15	Pier 8 Pour	Pier 8	9 Greaves St	36	70.8	81.9	66.1	72.1	68.2	Yes	Surrounding residence consulted and agreed to high noise works
Out of hours	24/01/2019	4:30	Pier 8 Pour	Pier 8	5 Greaves St	36	79	89.5	75	81.1	77.2	Yes	Surrounding residence consulted and agreed to high noise works
Out of hours	29/1/19	18:15	Erection Of Segments - Permit 105	Span 3	Riverside Drive	64	72.4	86	60.4	74.6	69.8	Yes	See Minuted detail. Compliant - agreement with community
Out of hours	2/2/19	18:05	Pier head erection - permit 105	Pier 4 Span	Butters Lane Residence	44	47.6	76	43.2	49.6	43.9	Yes	See Minuted detail. Compliant - agreement with community
Out of hours	7/02/2019	5:30	Steel fixing and welding	Pier 7 Crane Pad	5 Greaves ST	44	70	82.2	62.5	71.5	66.7	Yes	See Minuted detail. Compliant - agreement with community
Out of hours	19/02/2019	5:10	Pier 6 concrete Pour	Gate 15, Pier 7, Pier 6	2 Kent St	40	62.6	77.3	44.9	68.1	47.2	Yes	See Minuted detail. Compliant - agreement with community
Out of hours	19/02/2019	4:30	Pier 6 concrete pour	Pier 7 Pad	9 Greaves St	40	62.6	78.7	56.4	63.7	60.4	Yes	See Minuted detail. Compliant - agreement with community
Out of hours	19/02/2019	4:15	Pier 6 concrete pour	Pier 7 Pad	5 Greaves St	40	66.4	78.4	61.4	67.4	64	Yes	See Minuted detail. Compliant - agreement with community
Out of hours	19/02/2019	4:50	Pier 6 concrete pour	Pier 7 Pad	5 Kent St	49	72.4	86.5	66.2	74.2	68.5	Yes	See Minuted detail. Compliant - agreement with community
Out of hours	20/02/2019	15:30	Pier 7 Pour	Pier 7	5 Kent St	49	69.9	85.5	63.6	71.4	66.3	Yes	See Minuted detail. Compliant - agreement with community
Out of hours	20/02/2019	4:10	Pier 7 Pour	Pier 7	9 Greaves ST	40	60.9	78.1	56.3	62.1	58.5	Yes	See Minuted detail. Compliant - agreement with community
Out of hours	20/02/2019	4:00	Pier 7 Pour	Pier 7	5 Greaves St	40	71.5	77.1	67.4	72.6	70.5	Yes	See Minuted detail. Compliant - agreement with community
Periodic (monthly)	26/02/2019	12:00	Heavily bound Placement	Pound St	16 Clarence St	58	68.4	82.8	44.6	63.4	56.3	Yes	See Minuted detail. Compliant. Dominant noise source was traffic
Periodic (monthly)	26/02/2019	12:50	Excavator movements	Fill 3	10 Pound St	54	62.3	85.3	52.3	60.2	58.6	Yes	See Minuted detail. Compliant

Periodic (monthly)	26/02/2019	13:30	Fill construction	Fill 3/ Rail Viaduct	5 Kent Street	58	65.7	86.8	54.6	66.2	58.3	Yes	See Minuted detail. Compliant. Dominant noise source was traffic
Periodic (monthly)	26/02/2019	13:45	Segment Erection	Pier 2/ Temp Jetty	3 Riverside Drive	69	73.5	94.3	63.4	73.9	68.2	Yes	See Minuted detail. Compliant
Periodic (monthly)	26/02/2019	14:10	Segment Erection	Pier 2/ Temp Jetty	Butters Lane Residence	49	59.3	68.7	53	60.9	56.4	Yes	See Minuted detail. Compliant
Periodic (monthly)	4/03/2019	10:15	Steel fixing and formwork installation	Pier 5/ Fill 3	10 Pound St	54	72.8	93.7	56.4	70.4	59.9	Yes	See Minuted detail. Compliant
Periodic (monthly)	6/03/2019	09:00	Box Out and upper zone placement	Rail Bridge	16 Clarence St	58	71.4	91.2	61.9	73	65.5	Yes	See Minuted detail. Compliant
Periodic (monthly)	6/03/2019	9:40	Excavation and Drainage installation	Fill 3	5 Kent Street	58	77.7	90.9	66.9	81	71.3	Yes	See Minuted detail. Compliant
Periodic (monthly)	11/03/2019	9:10	Segment Erection	Pier 2/3	3 Riverside Drive	69	73.2	85	64.6	76	69.1	Yes	See Minuted detail. Compliant
Periodic (monthly)	11/03/2019	8:00	Segment Erection/ Fill 1 widening	Pier 2/3 / Fill1	Butters Lane Residence	49	64.5	75.8	59.2	66	62	Yes	See Minuted detail. Compliant
Out of hours	23/03/2019	13:15	Hydro demolition	Pier 7/ 5	8 Greaves Street	49	69	80.7	59.8	72.5	63.3	Yes	See Minuted detail. Compliant - agreement with community
Out of hours	2/04/2019	21:15	Segment preparation	Cast Yard	27 Through	43	66	96.2	56.6	69.2	60.2	Yes	See Minuted detail. Compliant - agreement with community
Out of hours	2/04/2019	21:45	Segment preparation	Cast Yard	ARTC Barracks	47	69	93	57.1	68.7	61.8	Yes	See Minuted detail. Compliant - agreement with community
Out of hours	2/4/19	9:20	Traffic switch Iolanthe /spring St	Iolanthe and spring St Intersection	28 Through St	43	61.7	70.8	49.6	64.8	520.4	Yes	See Minuted detail. Compliant – CoA D4
Out of hours	6/4/19	13:30	Hydro demolition	Pier 5	2 Fitzroy St	53	70	72.6	66.2	74.6	68.5	Yes	See Minuted detail. Compliant - agreement with community
Out of hours	6/4/19	15:00	Drainage Installation	Iolanthe St	28 Through St	49	63.2	71.8	52.7	65.8	53.2	Yes	See Minuted detail. Compliant - agreement with community
Out of hours	12/4/19	18:20	Diaphragm Rectification works - Permit 129	Pier 5	8 Greaves St	44	69.4	79	61.2	72.1	66.87	Yes	See Minuted detail. Compliant - agreement with community

C-2: Vibration monitoring completed during the reporting period

Date	Start Time	End Time	Construction Activity	Plant	Nearest Receiver	Monitoring location	Structure	Building Structure Requirement (mm/s)	Recorded Peak (mm/s)	Screening level Exceeded (7.5 mm/s)	No. of Exceedances	Action
1/11/18	6:00	9:00	Box Out & SMZ placement	smooth drum roller, Pozi track, excavator	39 Villiers St.	39 Villiers St.	Residential	20	1.56	No	0	-
5/11/18	14:03	16:30	SMZ + HBB placement	smooth drum roller, Pozi track, excavator	18 Clarence Street	18 Clarence Street	Residential	20	4.70	No	0	-
6/11/18	9:26	14:00	Box Out & SMZ placement	smooth drum roller, Pozi track, excavator	39 Villiers St.	39 Villiers St.	Residential	20	5.80	No	0	-
7/11/18	8:45	14:00	Fill 3 construction	Pad Foot roller, Pozi track, excavator	22 Pound St	22 Pound St	Residential	20	2.41	No	0	-
9/11/18	8:12	14:00	SMZ + HBB placement	smooth drum roller, Pozi track, excavator	39 Villiers St.	39 Villiers St.	Residential	20	5.81	No	0	-
23/11/18	9:38	12:32	Fill 3 construction	Pad Foot roller, Pozi track, excavator	22 Pound St	22 Pound St	Residential	20	1.22	No	0	-

12/02/2019	1030	1700	Pound St Box Out	2 x 14 T Exactor	TAFE heritage building	TAFE heritage building	Heritage	15	11.9	Yes	1	Exceedance of the screening criteria only
13/02/2019	0600	1400	Pound St Box Out	2 x 14 T Exactor	TAFE heritage building	TAFE heritage building	Heritage	15	1.48	No	0	-
14/02/2019	0600	1400	Pound St Box Out	2 x 14 T Exactor	TAFE heritage building	TAFE heritage building	Heritage	15	4.32	No	0	-
26/02/2019	0600	1400	Drainage instillation Fill 3	3 x 14 T Exactor	11 Pound St	13 Pound St	Residential	20	2.83	No	0	-
27/2/2019	0600	1400	Gate 13 Haul road & Crane pad construction	1x Pad Foot Roller 2 x 14 T Exactor	11 Pound St	13 Pound St	Residential	20	9.79	Yes	8	Exceedance of the screening criteria only
08/03/2019	0700	1430	Construction of haul road	Pad Foot Roller and pozi track	11 Pound St	13 Pound St	Residential	20	5.91	No	0	-
20/03/2019	0700	1430	Construction of haul road	Pad Foot Roller and pozi track	11 Pound St	13 Pound St	Residential	20	4.47	No	0	-

APPENDIX D

Air Quality Monitoring Results

Nov 2018

Test Report Number: 6721

Date Issued: 28/11/2018

Tested between: 20/11/18 and 28/11/18



Results

Sample#	Sample Description	Date On	Date Off	Number of Days	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
					g/m2/mth	g/m2/mth	g/m2/mth	mm
			Units Method Code Limit of Report	days AS 3580.10.1	AS 3580.10.1 0.1	AS 3580.10.1 0.1	AS 3580.10.1 0.1	AS 3580.10.1 1
6721/1	Control	15/10/2018	15/11/2018	31	0.5	0.2	0.3	75
6721/2	DMG2 Rail	15/10/2018	15/11/2018	31	0.7	0.4	0.3	86
6721/3	DMG3 Bunnings	15/10/2018	15/11/2018	31	0.6	0.4	0.2	93
6721/4	Pound Street	15/10/2018	15/11/2018	31	1.2	0.5	0.7	81

Results have been approved and report finalised on 28/11/2018

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Dec 2018

Test Report Number: 6867

Date Issued: 14/01/2019

Tested between: 20/12/18 and 14/01/19



Results

Sample #	Sample Description	Date On	Date Off	Number of Days	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
					g/m2/mth AS 3580.10.1 0.1	g/m2/mth AS 3580.10.1 0.1	g/m2/mth AS 3580.10.1 0.1	mm AS 3580.10.1 1
6867/1	Control	15/11/2018	17/12/2018	32	0.2	0.2	<0.1	174
6867/2	DMG 2 Rail	15/11/2018	17/12/2018	32	0.7	0.6	0.1	157
6867/3	DMG 3 Bunnings	15/11/2018	17/12/2018	32	2.8	2.2	0.6	173
6867/4	Pound Street	15/11/2018	17/12/2018	32	0.5	0.4	0.1	168

Results have been approved and report finalised on 14/01/2019

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Jan 2019

Test Report Number: 6975

Date Issued: 29/01/2019

Tested between: 18/01/19 and 29/01/19



Results

Sample#	Sample Description	Date On	Date Off	Number of Days	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
			Units Method Code Limit of Report	days AS 3580.10.1	g/m2/mth AS 3580.10.1 0.1	g/m2/mth AS 3580.10.1 0.1	g/m2/mth AS 3580.10.1 0.1	mm AS 3580.10.1 1
6975/1	Control	17/12/2018	13/01/2019	27	0.4	0.4	<0.1	40
6975/2	DMG 2 Rail	17/12/2018	13/01/2019	27	0.4	0.4	<0.1	43
6975/3	DMG 3 Bunnings	17/12/2018	13/01/2019	27	0.5	0.5	<0.1	40
6975/4	Pound Street	17/12/2018	13/01/2019	27	0.3	0.3	<0.1	41

Results have been approved and report finalised on 29/01/2019

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Feb 2019

Test Report Number: 7086

Date Issued: 28/02/2019

Tested between: 19/02/19 and 28/02/19



Results

Sample#	Sample Description	Date On	Date Off	Number of Days	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
			Units Method Code Limit of Report	days AS 3580.10.1	g/m2/mth AS 3580.10.1 0.1	g/m2/mth AS 3580.10.1 0.1	g/m2/mth AS 3580.10.1 0.1	mm AS 3580.10.1 1
7086/1	Control	15/01/2019	14/02/2019	30	0.7	0.7	<0.1	25
7086/2	DMG2 Rail	15/01/2019	14/02/2019	30	1.3	1.2	0.1	24
7086/3	DMG3 Bunnings	15/01/2019	14/02/2019	30	1.9	1.6	0.3	22
7086/4	Pound Street	15/01/2019	14/02/2019	30	1.3	1.0	0.3	26

Results have been approved and report finalised on 28/02/2019

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Mar 2019

Test Report Number: 7171

Date Issued: 27/03/2019

Tested between: 19/03/19 and 27/03/19



Results

Sample#	Sample Description	Date On	Date Off	Number of Days	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
				days AS 3580.10.1	g/m2/mth AS 3580.10.1 0.1	g/m2/mth AS 3580.10.1 0.1	g/m2/mth AS 3580.10.1 0.1	mm AS 3580.10.1 1
7171/1	Control	14/02/2019	13/03/2019	28	0.8	0.5	0.3	19
7171/2	DMG2 Rail	14/02/2019	13/03/2019	28	1.2	0.9	0.3	18
7171/3	DMG3 Bunnings	14/02/2019	13/03/2019	28	1.5	1.3	0.2	19
7171/4	Pound Street	14/02/2019	13/03/2019	28	6.8	6.0	0.8	18

Results have been approved and report finalised on 27/03/2019

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Apr 2019

Test Report Number: 7382

Date Issued: 3/05/2019

Tested between: 23/04/19 and 3/05/19



Results

Sample#	Sample Description	Date On	Date Off	Number of Days	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
			Units Method Code Limit of Report	days AS 3580.10.1	g/m2/mth AS 3580.10.1 0.1	g/m2/mth AS 3580.10.1 0.1	g/m2/mth AS 3580.10.1 0.1	mm AS 3580.10.1 1
7382/1	Control	13/03/2019	16/04/2019	34	0.2	0.2	<0.1	74
7382/2	DMG2 Rail	13/03/2019	16/04/2019	34	1.0	0.6	0.4	80
7382/3	DMG3 Bunnings	13/03/2019	16/04/2019	34	1.4	1.0	0.4	80
7382/4	Pound Street	13/03/2019	16/04/2019	34	1.3	1.2	0.1	80

Results have been approved and report finalised on 3/05/2019

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May 2019

Test Report Number: 7507

Date Issued: 28/05/2019

Tested between: 20/05/19 and 28/05/19



Results

Sample #	Sample Description	Date On	Date Off	Number of Days	Insoluble Solids	Ash	Combustible Matter	Calculated Rain
			Units Method Code Limit of Report	days AS 3580.10.1	g/m2/mth AS 3580.10.1 0.1	g/m2/mth AS 3580.10.1 0.1	g/m2/mth AS 3580.10.1 0.1	mm AS 3580.10.1 1
7507/1	Control	16/04/2019	16/05/2019	30	0.4	0.2	0.2	70
7507/2	DMG2 Rail	16/04/2019	16/05/2019	30	0.8	0.4	0.4	64
7507/3	DMG3 Bunnings	16/04/2019	16/05/2019	30	1.4	1.0	0.4	71
7507/4	Pound Street	16/04/2019	17/05/2019	31	0.7	0.4	0.3	78

Results have been approved and report finalised on 28/05/2019

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