





Transport
Roads & Maritime
Services

A large aerial photograph showing a highway bridge under construction over a wide river. The bridge structure is visible, with construction equipment and materials on the site. The surrounding landscape includes green fields, trees, and a small settlement.

Oxley Highway to Kempsey
**Construction compliance
tracking report -
22 January 2015 to 21 July 2015**

September 2015

Aerial view of a construction site featuring several large, circular concrete-lined ponds or basins. One pond contains green water. The site is surrounded by trees and vegetation.Aerial view of a highway construction site showing a long, straight section of road with retaining walls on one side. The area is bordered by a dense forest of tall trees.

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Summary

Background

On behalf of the Australian and NSW governments, Roads and Maritime Services (Roads and Maritime) is currently constructing the Oxley Highway to Kempsey Pacific Highway Upgrade (the Project). The Project is 37 kilometres in length, commencing approximately 700 metres north of the Oxley Highway interchange and continuing northwards to tie in with the dual carriageways of the Kempsey to Eungai Pacific Highway Upgrade.

Roads and Maritime will construct and open the Project in stages. The stages of the Project are:

- The Sancrox Traffic Arrangement works located about two kilometres north of the Oxley Highway / Pacific Highway intersection.
- Kundabung to Kempsey Stage consisting of about 14 kilometres of dual carriageway, commencing north of Barrys Creek near Kundabung (chainage 24,000) and connecting to the Kempsey Bypass at Stumpy Creek (Chainage 37,800).
- Oxley Highway to Kundabung Stage consisting of about 24 kilometres of dual carriageway, commencing just north of the Oxley Highway / Pacific Highway intersection (chainage 700) and connecting with the Kundabung to Kempsey stage just north of Barrys Creek (chainage 24,000).

Compliance Tracking Program

Roads and Maritime prepared a Compliance Tracking Program (CTP) in response to the MCoA B24. The CTP, among other things, details information that will typically be included in the construction compliance tracking reports, including:

- Scope of the activities undertaken during the reporting period.
- Performance of environmental controls that have been implemented.
- Compliance with CoA and revised SoCs as recorded in the compliance tracking tables.
- Non-compliances during the reporting period.
- Detail of all incidents recorded and action taken during the reporting period.
- Outcomes of monitoring undertaken over the reporting period and review of compliance against relevant criteria.
- Significant outcomes of audits and environmental review group (ERG) inspections undertaken during the reporting period.
- Detail of substantiated environmental complaints received, responses taken and current status (ie open or closed).

This report provides the information outlined above.

Key construction activities

Construction continued on all stages of Project during the reporting period. Some of the key activities included:

- Operation of major site compounds on all stages including the installation of infrastructure for a batch plant on Stage 2. Some minor satellite ancillary facilities have been established during the period.
- Vegetation clearing including the implementation of a two-stage clearing process on Stage 2 and Stage 3 construction. Much of the vegetation cleared has been mulched and stored for later reuse.
- Topsoil stripping and storage for future reuse during restoration and landscaping activities.
- Progress on earthworks on all stages.
- Installation of environmental controls including clean water diversions, temporary and permanent water quality control basins, sediment fencing and in-line check structures.
- Culvert and bridge works on all stages of construction. This has included bridge works for crossings of the Pacific Highway, Hastings River and Wilsons River.
- Paving of some areas on Stage 1.
- Minor rehabilitation activities on Stage 1 and Stage 2.

Approvals

There were 10 statutory approvals in effect during the reporting period:

- Commonwealth controlled action approval (held by Roads and Maritime).
- Part 3A project approval, as modified in 2012 and 2013 (held by Roads and Maritime).
- Environmental Protection Licence 20419 for Stage 1 works (held by Ferrovial Agroman (Australia) Pty Ltd).
- Environmental Protection Licence 20487 for Stage 2 works (held by McConnell Dowell Constructors (Australia) Pty Ltd).
- Environmental Protection Licence 20482 for Stage 3 works (held by Lend Lease Engineering Pty Ltd).
- Surface water permit (30PE002479) from NSW Office of Water (held by by McConnell Dowell Constructors (Australia) Pty Ltd).
- Surface water permit (30PE002489) from NSW Office of Water (held by by McConnell Dowell Constructors (Australia) Pty Ltd).
- Surface water permit (30PE002490) from NSW Office of Water (held by by McConnell Dowell Constructors (Australia) Pty Ltd).
- Surface water permit (30PE002491) from NSW Office of Water (held by by McConnell Dowell Constructors (Australia) Pty Ltd).
- Approval of Mockingbird Quarry Rehabilitation Review of Environmental Factors by National Parks and Wildlife Service (approval received on 1 July 2015).

Implementation and performance of environmental controls

Construction activities were undertaken commensurate with the implementation of environmental management measures and procedures documented in the Stage 1, Stage 2 and Stage 3 construction environmental management plans. Controls were generally effective at avoiding or minimising environmental impacts.

Impacts on adjacent landowners were minimised as far as practicable with the early implementation of Project boundary fencing, alternative access arrangements and extensive landowner consultation. Three complaints were received by a single complainant in relation to a temporary private access through the construction corridor. The Project team responded urgently to these complaints and provided a spotter at the access at times when construction was in progress to minimise the perceived risk experienced by the complainant.

Impacts on native vegetation were controlled through pre-clearing surveys, delineation of areas to be cleared and those to be protected, and the implementation of a two-stage clearing protocol. The loss of hollows attributable to vegetation clearing across the Project is being offset by the relocation of salvage hollows and the installation of nest boxes on Stage 2 and Stage 3. More than 60 per cent of proposed nest boxes have been installed up to and including this reporting period (ie about 150 on Stage 2 and about 280 on Stage 3),

Erosion and sediment controls, including temporary and permanent water quality control basins, were implemented as early as possible following clearing and prior to topsoil removal to control water quality. Management and maintenance of these basins, along with various other in-train erosion and sediment control measures, is a key priority and are being implemented in accordance with the "Blue Book".

Managing the propagation of airborne dust particulates has been a high priority during this reporting period. The exposure of large areas of unconsolidated soils and below average rainfall has necessitated the implementation of various mitigation measures including, but not limited to, sterile cover crops to stabilise areas, use of water carts, sealing high trafficked areas such as compounds with bitumen and adapting construction activities. While a number of dust complaints have been received during the reporting period, dust monitored across the Project indicates that dust levels remain below the annual rolling average criteria of $4\text{g}/\text{m}^2/\text{month}$.

Heritage sites to be retained have been protected during construction. Sensitive areas have been delineated with barrier fence and signage. These sites are inspected routinely as part of an ongoing environmental inspection programme.

Environmental monitoring

Air quality monitoring on the Project indicates that dust deposition rates are within the requirements of the respective construction environmental management plans. Individual monthly exceedances were experienced, however, these were generally attributable to factors unrelated to the Project. Dust deposition rates remain below the annual rolling average criteria of $4\text{g}/\text{m}^2/\text{month}$.

Construction noise monitoring was undertaken on all stages of the Project during the reporting period. There were a number of exceedances of the calculated noise management levels. However, in nearly all instances these were unrelated to noise attributable to the Project. Existing traffic on the Pacific Highway was the primary source of elevated noise levels experienced during monitoring.

Surface water and groundwater quality monitoring has been undertaken in the lead up and during construction. The results of this monitoring and an associated discussion will be provided in a separate water quality report.

Community engagement

Fifty-four complaints were received during the reporting period. The main broad categories related to dust, worker behaviour, traffic management, road design and property access. Roads and Maritime and its construction partners respond to complaints on a case by case basis and have invested substantial resources to investigate the causes and implementing additional management practices where necessary. This has included at times additional site resources, changes or improvements to site practices and direct liaison with complainants with the provision of additional information as required. All complaints, with the exception of six, were closed out during the reporting period. The open complaints relate to road design, construction noise and the location of local bus stops and are the subject of ongoing assessment. Complainants have been kept informed of progress.

Roads and Maritime has engaged the community and stakeholders in a number of ways during the reporting period. In excess of 180 face to face meetings have been held, more than 35 householder letters/notification distributed and the Project website updated. There have also been three public displays during the reporting period.

Other matters

Roads and Maritime's construction partners on Stage 1, Stage 2 and Stage 3 carried out a diversity of general induction and subject-specific training during the reporting period. In excess of 4000 general inductions have been carried out to date covering environmental awareness, safety and quality matters. Specific erosion and sediment control training has also been undertaken across the Project by the soil conservationist.

Inspections by the Environmental Representative generally occur fortnightly and resulted in minor improvement suggestions on topics such as maintenance of erosion and sedimentation controls. While some issues and deficiencies were identified during the inspections, positive feedback was also received on good site planning and management practices.

There were 42 incidents on the Project during the reporting period. Six were categorised as category 1 incidents in accordance with the Roads and Maritime environmental incident reporting and classification procedure. Category 1 incidents related to water quality impacts, failure of erosion and sediment controls and vegetation clearing. A number of actions were initiated in response to the incidents both at the time and following debriefs to prevent reoccurrences. Follow up action included further training of staff and contractors, amendments to procedures and the implementation of additional controls. More than 50 per cent of incident during the period related to minor fuel and/or hydraulic oil spills due to equipment failures. All of these were minor and contained to the immediate works site.

Innovations and highlights

To promote environmental best practices on the Oxley Highway to Kempsey Upgrade Project, environmental innovations that benefit the upgrade and reduce environmental impacts are encouraged and tabled for discussion in many forums: daily pre-start talks, toolbox talks, weekly construction team meetings, environmental

team meetings, management team meetings, regulatory inspections and internal and external audits.

Innovations and highlights during the reporting period have included, but are not limited to:

- The use of stockpile covers with recycled content (contains recycled advertising signage)
- The modification and use of recycled intermediate bulk carrier (IBC) pods for aquatic fauna protection / dissipater structures during waterway pump around operations
- The fabrication and use of temporary batter chutes during restoration activities to minimise the need for batter re-working following paving.

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1 Introduction

1.1 The Project

On behalf of the Australian and NSW governments, Roads and Maritime Services (Roads and Maritime) is currently constructing the Oxley Highway to Kempsey Pacific Highway Upgrade (the Project). The Project is 37 kilometres in length, commencing approximately 700 metres north of the Oxley Highway interchange and continuing northwards to tie in with the dual carriageways of the Kempsey to Eungai Pacific Highway Upgrade. The Project involves the duplication of the existing highway, except for sections in the vicinity of the Hastings River and Wilsons River that deviate from the existing highway, and a bypass of Telegraph Point. The existing highway will be retained wherever possible for use as a service road or local road connection. Figure 1-1 shows the location of the project.

Roads and Maritime will construct and open the project in stages. The stages of the project are:

- The Sancrox Traffic Arrangement works located about two kilometres north of the Oxley Highway / Pacific Highway intersection. It is anticipated that this stage of the Project will open to traffic late 2015.
- Kundabung to Kempsey Stage consisting of about 14 kilometres of dual carriageway, commencing north of Barrys Creek near Kundabung (chainage 24,000) and connecting to the Kempsey Bypass at Stumpy Creek (Chainage 37,800). It is anticipated that this stage of the Project will open to traffic at the end of 2016.
- Oxley Highway to Kundabung Stage consisting of about 24 kilometres of dual carriageway, commencing just north of the Oxley Highway / Pacific Highway intersection (chainage 700) and connecting with the Kundabung to Kempsey stage just north of Barrys Creek (chainage 24,000). It is anticipated that this stage of the Project will open to traffic mid 2017.

1.2 Project approval

On 8 December 2006, the Project was declared by the then Minister for Planning to be a project to which Part 3A of the *Environmental Planning and Assessment Act 1979* applies. An environmental assessment was prepared and placed on public exhibition for 30 days between September and October 2010. Following consideration of submissions made during the exhibition period, the submissions report, including changes to the proposal following consideration of submissions, was submitted to the Minister for Planning and Infrastructure seeking approval. Approval of the Project was granted on 8 February 2012, subject to a number of Conditions of Approval (MCoA).

At the request of Roads and Maritime, the Minister modified the approval on 20 November 2012 to allow for minor ancillary facilities (lunch sheds, office sheds and portable toilet facilities) that do not comply with the locational criteria for ancillary facilities (MCoA C28) to be assessed and approved by the Environmental Representative. On 15 November 2013, the approval was further modified to provide certainty with regard to the management of heritage during construction and allow for pre-construction detailed survey and salvage of heritage sites not listed in the MCoA and/or environmental assessment.

On 24 January 2014, the Project (inclusive of all modifications) was approved under the *Commonwealth Environment Protection Biodiversity Conservation Act 1999* (EPBC Act), subject to 15 conditions. At the request of Roads and Maritime, a variation to the approval was provided on 3 June 2014 to extending the timeframe for submission of the Biodiversity

Offset Management Plan under condition 5. On 10 October 2014, a further variation to the approval was provided in relation to the definition of the Project corridor detailed at definition 1 of the approval.

Figure 1-1 Location of Oxley Highway to Kempsey Project



1.3 Commencement of construction

Under MCoA B24 (a) of the Project approval, Roads and Maritime notified the Director-General that construction of the Oxley Highway to Kempsey Pacific Highway Upgrade commenced on 22 July 2014.

1.4 Purpose of this report

This report has been prepared to address MCoA B24 (c) of the planning approval that deals primarily with compliance matters. Under MCoA B24 (c) a report outlining the status of compliance must be provided to the Director-General at least one month prior to the commencement of construction and operation, and at other intervals during construction.

Roads and Maritime prepared a Compliance Tracking Program (CTP) in response to the MCoA B24. The CTP was subsequently approved by the Director-General on 22 July 2013, and among other things, outlines the frequency and nature of compliance reporting. Pre-construction compliance reports for each stage of construction have previously been submitted to the Director-General. This report has been prepared to address Roads and Maritime's commitment to provide a report on the status of compliance at six monthly intervals during construction.

Section 2.3 of the CTP details information that will typically be included in the construction compliance tracking reports. Table 1-1 lists the commitments made by Roads and Maritime and where each has been addressed in this report.

Table 1-1 Requirements for six monthly construction compliance tracking reports

Req. No	Requirement	Where presented in this report
1	Scope of the activities undertaken during the reporting period.	Section 1
2	Performance of environmental controls that have been implemented.	Section 3
3	Compliance with CoA and revised SoCs as recorded in the compliance tracking tables.	Section 2
4	Non-compliances during the reporting period.	Section 6
5	Detail of all incidents recorded and action taken during the reporting period.	Section 6
6	Outcomes of monitoring undertaken over the reporting period and review of compliance against relevant criteria.	Section 4
7	Significant outcomes of audits and environmental review group (ERG) inspections undertaken during the reporting period.	Section 6
8	Detail of substantiated environmental complaints received, responses taken and current status (ie open or closed).	Section 5

Roads and Maritime will make this, and future compliance tracking reports, publically available on the Project website.

1.5 Construction activities and progress during the reporting period

Between 22 January 2015 and 21 July 2015, construction activities were undertaken on all stages of the Project. Table 1-2 outlines the key construction activities either in progress or completed within the reporting period.

Table 1-2 Key construction activities during the reporting period

Activity	Detail of progress
Stage 1 – Sancrox	
Environmental controls	<p>Temporary construction basins installed earlier during the Project were removed during March 2015 through the basin decommissioning process outlined in the EPL. The basins were located in the formation and required removal to allow for the on-going construction of the Project. Alternative controls such as bunds to hold water on the formation where implemented.</p> <p>Controls including sumps, sediment and filter fence, geotextile fabric covering of exposed areas, mulch bunds, rock socks, rock checks and sand bags where required continue to be implemented across the Project.</p> <p>The majority of culverts and pipes were installed/finalised during the reporting the period. This has allowed for offsite water to be conveyed through the site through permanent structures rather than temporary controls.</p> <p>Ground stabilisation activities through revegetation (topsoil and hydromulch application, and hand seeding) were undertaken at several locations (outlined below) across the site.</p> <p>The removal of stockpiled material from site continued during this reporting period.</p>
Compounds	<p>The main site compound north of Sancrox Road between the Pacific Highway and quarry access remained in operation during the reporting period. No additional compounds were established.</p>
Vegetation clearing	<p>Nearly all clearing was completed during previous reporting periods. Roads and Maritime's Stage 1 construction partner has prepared a post clearing report and provided it to Roads and Maritime on 17 July 2015. Minor clearing for boundary fencing and permanent drainage remains outstanding.</p>
Earthworks	<p>Earthworks in progress during the reporting period included:</p> <ul style="list-style-type: none"> • Importation of fill for all service roads • Further progress on Cut 1 • Decommissioning temporary water quality basins • Installation of permanent drainage • Removal of stockpiled material to approved locations • Installation of subsoil drains.
Structures	<p>During the reporting period works included:</p> <ul style="list-style-type: none"> • Installation of bridge piers • Pouring of bridge deck • Installation of bridge parapets

Activity	Detail of progress
	<ul style="list-style-type: none"> • The commencement of concreting on the southeast roundabout • Completion of box culvert on SSR2.
Paving	The Pacific Highway widenings and a small area of Sancrox Road were paved during the reporting period. Outstanding paving will be completed during the subsequent reporting period.
Rehabilitation	<p>Small areas of rehabilitation were in progress or completed using either hydromulch or hand seeding during the reporting period. Locations included:</p> <ul style="list-style-type: none"> • Service installation areas located outside the main alignment • Northern portion of the northeast roundabout • Permanent drainage structures across the site • Cut and fill batters of SSR1 • Northern section of the south east roundabout.
Stage 2 – K2K	
Environmental controls	<p>Various environmental controls were installed at key locations along the corridor in preparation for, or subject to, construction works during the reporting period. These controls included:</p> <ul style="list-style-type: none"> • Ten temporary water quality basins • Eight permanent water quality basins • Clean water catch drains • Sacrificial pipes in clean water flow lines • Sediment fencing, mulch bunds and silt traps • Clearing limit temporary fencing • Sensitive area fencing and signage • Piling pads at Pipers and Stumpy creeks • Temporary and permanent revegetation
Fauna mitigation	Both permanent and temporary fauna fencing have been installed through this reporting period. The main focus has been on the areas of high ecological significance ie state forests areas. Giant Barred and Green Thighed frog exclusion fencing has also been installed adjacent to the works at Smiths and Pipers creeks, as well as Maria River.
Compounds	<p>The main site compound off Kundabung Road was established and commenced operation during the previous reporting period. However, a concrete batch plant has been added and will commence operation in subsequent reporting periods.</p> <p>The ancillary facility at Gate 5 was moved to a private property adjacent to the Project on the western side of the existing highway.</p>
Vegetation clearing	Clearing of about 45 hectares of vegetation.
Earthworks	Earthwork cut and fill operations progressed during the reporting period. About 30 per cent, or 441,000 cubic metres of material was processed.
Structures	<p>Bridge works commenced at:</p> <ul style="list-style-type: none"> • Pipers Creek

Activity	Detail of progress
	<ul style="list-style-type: none"> • Smiths Creek • Stumpy Creek • Kundabung Road overpass. <p>Works at these sites include the installation of waterway diversions as required, piling pads, piling and concrete works (headstocks and piers).</p> <p>The installation of box culverts continued at various locations across the Project.</p> <p>Sacrificial pipes / waterway diversions were installed at a number of locations to facilitate the offline installation of permanent drainage infrastructure.</p>
Paving	No paving undertake to date. Paving / concrete trials will commence with material from the recently established batch plant during the subsequent reporting period.
Rehabilitation	<p>About five hectares of native vegetation rehabilitation was undertaken during the reporting period. This has included the hydromulch application of seed from:</p> <ul style="list-style-type: none"> • Native grasses • Frangible shrubs • Tall shrubs. <p>This has been applied to areas such as cut faces, permanent basins and vegetated drains.</p>
Stage 3 – OH2Ku	
Environmental Controls	<p>Various environmental controls were installed at key locations along the corridor in preparation for, or subject to, construction works during the reporting period. These controls included:</p> <ul style="list-style-type: none"> • 23 temporary water quality basins, of which five basins will be converted to permanent basins. • Clean water diversion drains. • Temporary waterway crossings. • Sediment fencing, mulch berms, bunding around stockpiles with pump-out capabilities, and geotextile fabric lined drains. • Clearing limit fencing. • Sensitive area fencing and signage. • Silt curtains and hydrocarbon booms at bridge construction sites.
Fauna mitigation	Construction commenced on dedicated and share fauna/waterway culverts. Further measures will be installed during subsequent reporting periods.
Compounds	The main site compound north of the Hastings River and a number of satellite compounds established during the previous reporting period continued to operate. Several additional small satellite compounds were also established during this reporting period.
Vegetation Clearing	Clearing of about 103 hectares of vegetation.
Earthworks	Cut to fill operations continued across the Project with approximately 334,000 cubic metres of material cut during the reporting period.

Activity	Detail of progress
Paving	Batch plant design progressed through the reporting period with the installation of the first batch plant planned for the second half of 2015.
Rehabilitation	Permanent rehabilitation works commenced during the reporting period with about 96,000 square metres of hydromulch applied.
Other	About 7.3 kilometres of boundary fencing, two kilometres of fauna fencing and two fauna drop-down structures were installed during the reporting period.



View southeast of Sancrox Traffic Arrangement works (St 1)



View northwest of new bridge over the existing Pacific Highway (St 1)



View east of alignment as it crossed over the Hastings River (St 3)



View looking south at the Blackmans Point Interchange (St 2)



View north along alignment toward the Hastings River (St 3)



View south from the Wilsons River floodplain (St 3)



View south along alignment of the Wilsons River crossing (St 3)



View of water quality control infrastructure and clear water drainage south of Cooperabung Creek (St 2)



View of Stage 2 main construction compound, Kundabung (St 2)



View south along alignment of the Kundabung interchange, Kundabung (St 2)



View south along alignment from the Kempsey Bypass tie-in (St 2)

2 Approvals

2.1 Statutory approval

Table 2-1 lists the statutory approvals in effect during the reporting period.

Table 2-1 Statutory approvals

Stage	Approval	Authority	Holder	Date of issue
All	Commonwealth controlled action approval as modified in June and October 2014	Department of the Environment	Roads and Maritime	24 January 2014
All	Part 3A project approval as modified in 2012 and 2013	NSW Planning and Environment	Roads and Maritime	8 February 2012
1	Environmental Protection Licence 20419 Scheduled activities: <ul style="list-style-type: none"> Crushing, grinding or separating Land-based extractive activity 	Environmental Protection Authority - NSW	Ferrovia Agroman (Australia) Pty Ltd	10 April 2014
1	Surface water extraction permit (Permit under Part II the Water Act 1912)	New South Wales Office of Water	Ferrovia Agroman (Australia) Pty Ltd	30 April 2015 (6 month permit)
2	Environmental Protection Licence 20487 Scheduled activities: <ul style="list-style-type: none"> Crushing, grinding or separating Land-based extractive activity Road construction 	Environmental Protection Authority - NSW	McConnell Dowell Constructors (Australia) Pty Ltd	10 November 2014
2	Surface Water Permit 30PE002479	NSW Office of Water	McConnell Dowell Constructors (Australia) Pty Ltd	31 October 2014

Stage	Approval	Authority	Holder	Date of issue
2	Surface Water Permit 30PE002489	NSW Office of Water	McConnell Dowell Constructors (Australia) Pty Ltd	27 April 2015
2	Surface Water Permit 30PE002490	NSW Office of Water	McConnell Dowell Constructors (Australia) Pty Ltd	27 April 2015
2	Surface Water Permit 30PE002491	NSW Office of Water	McConnell Dowell Constructors (Australia) Pty Ltd	27 April 2015
2	Review of Environmental Factors – Mockingbird Quarry Rehabilitation	National Parks and Wildlife Service	McConnell Dowell Constructors (Australia) Pty Ltd	1 July 2015
3	Environmental Protection Licence 20482 Scheduled activities: <ul style="list-style-type: none"> • Crushing, grinding or separating • Land-based extractive activity • Road construction 	Environmental Protection Authority - NSW	Lend Lease Engineering Pty Limited	19 September 2014

2.2 Compliance with approvals

Appendix A of this report present the conditions of the NSW Minister for Planning Project approval and associated Roads and Maritime's statement of commitments, and provides detail on the status of compliance for each.

2.3 Compliance management system

2.3.1 Commitments, obligations, undertakings and requirements

Roads and Maritime has identified relevant commitments, obligations, undertakings and requirements (COURs) in the environmental assessment and approval documents for the Oxley Highway to Kempsey Pacific Highway Upgrade Project. The COURs are held in a database and assist Roads and Maritime to manage compliance and contractual risks.

2.3.2 Project-wide compliance system

The Oxley Highway to Kempsey Pacific Highway Upgrade Project is being constructed in three construction stages by three separate construction partners. Consequently, Roads and Maritime maintains a project-wide system to hold all COURs. Roads and Maritime's three construction partners use similar systems and have primary responsibility for complying with

COURs relevant to their construction stage and maintaining their compliance status. Roads and Maritime compiles their information into its project-wide system.

Reporting templates have been created for Environmental COURs from the Project approval and associated statement of commitments. The compliance status of these COURs is updated by the three construction partners and Roads and Maritime every six months and is linked to the internal audit under MCoA B24(d). Depending on each COUR's requirement, some were closed during the detailed design or pre-construction periods; others will remain open until the operation phase.

2.3.3 Stage 1 compliance management

On Stage 1, a web-based system (Team Binder) is used to ensure that Project requirements are fulfilled and implemented as required. The system allows for the easy tracking of compliance with hold points. It also allows compilation of registers related to training undertaken by staff, and a system of document management to ensure that all previous iterations and revised copies of documents are available to all staff. A program of review and revision for all plans is scheduled within the system.

In addition, a series of spreadsheet registers to record complaints, inductions, incidents and other related matters are also maintained.

2.3.4 Stages 2 compliance management

Roads and Maritime's construction partners on Stage 2 have implemented an ISO 14001 accredited Environmental Management System (EMS) that forms part of the integrated McConnell Dowell Management System (MMS). The MMS provides the framework for managers to implement specified corporate standards and practices in a consistent manner. It defines the application of work practices, processes, and systems for engineering, acquisition of materials, equipment and services, construction, and other services related to tendering and project execution.

The Stage 2 EMS contains:

- Hazard and Risk Identification.
- A Construction Environmental Management Plan (Environmental Management Sub-Plans and strategies) and associated approval requirements.
- Environmental Work Method Statements.
- Progressive Erosion and Sediment Control Plans.
- Sensitive Area Plans.
- Construction Execution Plans.
- System procedures and forms.

2.3.5 Stage 3 compliance management

On Stage 3, compliance with the COURs are tracked and managed using a series of compliance tables that are updated at frequent intervals. These tables list individual approval requirements, when a requirement needs to be completed, the person(s) responsible, whether the status is compliant or not, and a link to documentation or records used as supportive evidence.

3 Implementation and performance of environmental controls

The environmental assessment, subsequent environmental assessments and approved construction management documentation outlined a comprehensive suite of environmental controls and management practices to minimise the Project's impacts on the environment. Table 3-1 provides a summary of the key environmental controls implemented during this reporting period and their effectiveness.

Table 3-1 Key environmental controls and their ongoing performance

Environmental issue	Environmental controls	Performance of environmental controls
Land use and social	<ul style="list-style-type: none"> • Installation of new property boundary fencing • Maintenance and/or provision of alternative property access • Consultation with directly and indirectly affected landowners • Installation of new bus stops on Stage 2. 	<ul style="list-style-type: none"> • More than 13 kilometres of boundary fencing has been installed on the Project to date (about 2.5 kilometres on Stage 1, 5 kilometres on Stage 2 and 7.3 kilometres on Stage 3). Efforts have concentrated on areas of agricultural land where stock grazing activities about the corridor. • Access has been maintained to all affected properties on the Project. A number alternative accesses to residential / rural / commercial properties on Stage 2 and Stage 3 have been installed where the Project had impacted original formalised accesses. On Stage 1, modified access arrangements have been implemented for Cassegrain Winery and the Roads and Maritime's regional depot. Business accesses adjacent to Sancrox Road have been maintained for the entirety of the Project, with works being undertaken outside of normal hours (following approval) to minimise disturbances. • Extensive consultation with directly and indirectly affected landowners, local road users and other community groups, has continued during this reporting period across the Project. Consultation has focused on when specific impacts might be experienced, the implementation of alternative arrangements (eg detours and access arrangements) and duration of anticipated impacts. On Stage 1, routine monthly consultation with adjacent businesses provides an opportunity for the Project team to outline upcoming activities and for the businesses to advise of any key activities or events they have planned. • New bus stop on Stage 2 for the local residents at Kundabung has been installed. The new bus stop has been moved away from the existing highway where there is suitable parking for parents as well as adequate protection for the bus users. • There have been five property/business access related complaints during the reporting period.
Hydrology	<ul style="list-style-type: none"> • Installation waterway diversions and/or sacrificial pipes to maintain capacity during offline culvert works 	<ul style="list-style-type: none"> • Temporary waterway crossings have been installed extensively across the Project with consideration given to monthly average rainfall and likely storm events. Consideration of existing waterway

Environmental issue	Environmental controls	Performance of environmental controls
	<ul style="list-style-type: none"> • Temporary creek crossing designed to ensure flood impacts are avoided or minimised • Implementation of permanent flood mitigation measures eg raising property access levels, optimising capacity of cross drainage structures to minimise afflux • Installation of suitable scour protection at culvert inlets and outlets, and bridge abutments and piers • Placement of scour protection rock adjacent to temporary working platforms in the Hastings and Wilsons rivers. 	<p>characteristics is also an important factor with temporary pipes sized to accommodate normal flows and high-flow large aggregate causeways incorporated for moderate flood events. At a number of locations waterway diversions have also been installed to facilitate the offline construction of culvert structures that substantially reducing the need for in-water work. On Stage 2, a number of sacrificial extension pipes have also been installed on existing culverts. These sacrificial structures will be grouted following commissioning of adjacent new culvert structures and remain in-situ.</p> <ul style="list-style-type: none"> • The installation of permanent culverts has been a priority throughout the first half of 2015. Permanent scour protection has also been installed where possible. Where this has not been possible due to the construction schedule, temporary treatments have been provided by geotextile fabric lining, sediment fencing and gravel bags to stabilise exposed surfaces. Soft treatments such as jute mesh and seed, as well as salvaged lomandra have also been used for scour treatments. All permanent box and pipe drainage structures have been installed on Stage 1. • All temporary and permanent waterway crossings, associated stabilising treatments and diversions were regularly monitored during site inspections and have generally performed successfully. Any damage caused during rain events is repaired at the earliest opportunity with improvements to crossings and/or treatment measures implemented where possible. • Rainfall during the reporting period for four of the six months was below historical averages. January experiencing more than four times the historical average for the month. May was more than double the historical average. • Permanent flood mitigation measures have not been constructed during the reporting period. • Riverbed scour has not been observed within either the Hastings or Wilsons rivers over the reporting period.
Water quality	<ul style="list-style-type: none"> • Design and construction of clean water diversion drains prior to site grubbing and topsoil stripping 	<ul style="list-style-type: none"> • About 40 temporary/permanent construction basins were commissioned across the Project to date (18 on Stage 2 and 22 on Stage 3).

Environmental issue	Environmental controls	Performance of environmental controls
	<ul style="list-style-type: none"> • Construction of temporary and permanent sediment basins • Effective capture and reuse of water for construction activities • Water treatment and management • Implementation of best practice management for the storage and use of fuels and chemicals • Implementation of hydrocarbon capture and management techniques on temporary bridge construction platforms and barges within the Hastings and Wilsons rivers. These controls included the use of hydraulic hose sheathing, bunding of machinery on, or bunding of the entire barge decks and bunding of cranes and other equipment working on temporary platforms • An extensive system of custom made silt curtains on temporary bridge working platforms and other in-stream works in accordance with Roads and Maritime, EPA and DPI recommendations. Curtains are positioned in accordance with Progressive Erosion and Sediment Control Plans to ensure effective sediment management during a variety of in-stream works 	<ul style="list-style-type: none"> • One unplanned basin releases occurred on Stage 2 during the reporting period. The release followed a rain event that exceeded 100 millimetres where a low-flow pipe failed. The event was categorised as a category 1 incident (see Appendix C). No other unplanned basin releases occurred across the Project during the reporting period, outside of rainfall events that were greater than the event design capacity. In these circumstances the basins overflowed via incorporated spillways as designed. • Capture and treatment of site runoff continued to ensure water discharged from the Project meets acceptable EPL water quality limits. A substantial proportion of water collected in temporary and permanent water quality basins has been used for construction purposes and dust suppression. • On Stage 3, a number of farm dams were decommissioned to make way for the Project alignment. Water from these dams were pumped out and reused for construction purposes. • Clean water diversion drains were constructed across the Project prior to grubbing activities and monitored during regular site inspections. • Minor hydraulic spills from on-site plant and equipment were recorded across the Project. All spills were contained and cleaned up promptly, and details recorded in the incident report system. Further detail on all incidents of this nature during the reporting period is contained in Appendix C. • One category 1 incident occurred on Stage 3 during pile drilling due to a blockage in the drill head. This blockage caused the pile casing to overtop. To avoid the risk of future over-tops, an update to the Wilsons River Bridge Construction (Substructure) Environmental Work Method Statement was undertaken to incorporate the requirement for the water level in the pile casing to be monitored at all times. The incident was reported to the EPA and DPI (Fishing & Aquiculture) and management measures reviewed and discussed at the subsequent ERG meeting. • All large generators and pumps on Stage 3 are bunded with a minimum of 110 per cent capacity. Fuels and chemicals stored as per industry best practice across the Project.

Environmental issue	Environmental controls	Performance of environmental controls
Groundwater	<ul style="list-style-type: none"> Monitoring of groundwater levels and quality 	<ul style="list-style-type: none"> Monitoring of groundwater continued during the reporting period. Groundwater has not been intercepted during the reporting period.
Flora and fauna	<ul style="list-style-type: none"> Sensitive areas and vegetation to be protected with highly visible barriers prior to and during clearing operations Two-stage clearing procedures Nesting box replacement and habitat rehabilitation Installation of frog exclusion fencing and implementation of frog hygiene protocols In-situ topsoil stripping and direct placement. 	<ul style="list-style-type: none"> Ecologically sensitive areas were delineated and signage installed to inform construction personnel and the public of these sensitive areas. Physical barriers in the form of orange barrier fence (or similar) were installed prior to the commencement of vegetation clearing activities. Clearing for all stages of the Project was undertaken in accordance with the Roads and Maritime two-stage habitat clearing procedures. An ecologist must be on-site during all clearing activities to reduce mortality and injuries to individual animals and to facilitate fauna relocations and safe passage. There were a number of fauna relocations on Stage 2 and Stage 3 prior to and during the clearing operation. There was a total of three casualties were recorded during the reporting period: one on Stage 2 and 2 on Stage 3. Details of fauna relocations, injuries and mortalities are located in Appendix D. Six vegetation clearing related incidents occurred across the Project during the reporting period (one on Stage 1, three on Stage 2 and two on Stage 3). Two of these incidents related to minor clearing beyond the approved clearing area through either a breakdown in procedure and/or human error. The remaining incidents related to trimming of vegetation outside the clearing limits or clearing procedures not being implemented to the fullest extent required. Negligible damage occurred in these instances. Procedures across all stages of the Project were reviewed and amended to avoid the reoccurrence of further vegetation clearing related incidents. Further training of staff and contractors involved in clearing operations has also undertaken. 60 per cent of nest boxes (or about 430) for various species have been installed prior to and during clearing works across Stage 2 (about 150) and Stage 3 (about 280) of the Project to date. On Stage 2, 23 ground logs and nine habitat trees have also been placed outside the clearing limit within the Project corridor. Frog exclusion fencing, and vehicle and machinery wash down procedures have been implemented in Giant barred and Green-

Environmental issue	Environmental controls	Performance of environmental controls
		<p>thighed frog habitats during clearing works.</p> <ul style="list-style-type: none"> • Weed spraying was successfully carried out at various locations across the Project. • Topsoil stripping and stockpiling for reuse during rehabilitation has occurred extensively across the Project in accordance with the approved soil and water management plans. In places, this topsoil has already been applied to revegetation areas and treated with native seed hydromulch mixtures. • Aquatic fauna protection measures were implemented on Stage 2 for all water pumping within sensitive aquatic habitats.
Noise and vibration	<ul style="list-style-type: none"> • Standard construction hours • Assessment and consultation procedures for out of works work and potential high vibration generating activities • Monitoring of construction noise and vibration, and adaptation of construction practices. 	<ul style="list-style-type: none"> • All works were undertaken within standard construction hours or as approved out of hours works. • Out of hours works generally included concrete barrier placement, traffic switches, drainage and line marking on the Pacific Highway to minimise impacts on highway traffic. • Noise monitoring was typically undertaken on a monthly basis on all stages of the Project during the reporting period with the exception of Stage 2. On Stage 2, monitoring commenced on a quarterly basis, but changed to a monthly basis toward the end of the reporting period, following a minor update to the Construction Noise and Vibration Management Sub-Plan. Monitoring was missed during the first quarter of this reporting period whilst the quarterly monitoring requirements were being reviewed and before monthly monitoring was approved and implemented. • While monitoring indicates that noise management levels were exceeded at least once on all stages of Project, in the majority of cases these exceedances were considered attributable to noise unrelated to construction eg traffic on the Pacific Highway. Where construction noise was found to be the predominant noise source (eg bridge piling on Stage 3), measures including respite and further consultation with affected receivers were implemented. • There were no complaints relating to out of hours works on the Project. • Two vibration related complaints were received on Stage 3 during bridge construction works. Scheduled monitoring indicates that

Environmental issue	Environmental controls	Performance of environmental controls
		vibration levels were within acceptable human comfort and structural damage criteria detailed in the Stage 3 Construction Noise and Vibration Management Sub Plan. Notwithstanding this, at resident vibration monitoring was offered, however no further vibratory activities have been conducted in this area.
Visual amenity	<ul style="list-style-type: none"> • Early revegetation and implementation of landscaping • Introduction of landscape features • Implement urban design principles established in the Environmental Assessment and urban design and landscape plans. 	<ul style="list-style-type: none"> • On Stage 1, roadside batters and drainage lines have been revegetated as soon as possible to improve visual amenity. • About five hectares of permanent rehabilitation has been completed on Stage 2. This has included the hydromulch application of seed from native grasses, frangible shrubs and tall shrubs. Hydromulch application has been undertaken on areas such as cut faces, permanent basins and vegetated drains. • Revegetation in the form of topsoil and hydromulch application has also been completed on a number of batters across Stage 3. • Due to the proximity of the Project to the existing road network visual amenity impacts associated with clearing and earthworks will continue for sometime. Efforts continue across the Project to ensure the site is kept neat and tidy eg placing mulch and earth stockpiles between the new alignment and the existing road network and/or residents, removing surplus material no longer required for construction from site as soon as possible.
Traffic	<ul style="list-style-type: none"> • Traffic control plans, including safety zones, diversions, access control, maximum queue lengths during road occupancy • Community notification (advertisements, letter drops, road signage, radio announcements). 	<ul style="list-style-type: none"> • Traffic control plans have been prepared and are in place across the Project to minimise impacts from interactions between construction traffic and other road users. A number of changes to site access points have been made including the implementation of entry and exist slip lanes. Other measures include the placement of concrete barriers between work areas and the highway to separate construction activities and road users. This serves to improve the safety of both construction works and road users, and also facilitates higher construction speeds zone than would otherwise be permitted without barriers. • There were four complaints broadly categories as “Traffic Management” related during the reporting period. Due to much of the Project being constructed under traffic this figure is not unexpected. However, efforts by community communication teams aim to keep the community informed as thoroughly as possible and

Environmental issue	Environmental controls	Performance of environmental controls
		<p>minimise impacts through tools including, but not limited to, community notifications, traffic alerts, variable message signage, letterbox drops, face-to-face meetings, community displays, information sessions and telephone contact.</p>
Heritage	<ul style="list-style-type: none"> • Implementation of Heritage Management plan • Site monitoring • Environmental Review Group (ERG) meetings • Training and awareness program • Preconstruction identification and installation of temporary or permanent fencing • Vibration monitoring when working close to heritage sites. 	<ul style="list-style-type: none"> • Known heritage sites are delineated with protective fencing and signage, and are highlighted on sensitive area maps that form part of work package documentation. The presence of known heritage items are highlighted in Project inductions and include advice regarding the need to avoid entry unless authorised to do so. These inductions also outline the Roads and Maritime unexpected finds procedure. There were no unexpected heritage finds during this reporting period. • A cultural heritage training package has been developed and review completed by the relevant LALC during the reporting period. The training package will be rolled out during subsequent reporting periods. • The archival recording of the Barrys Creek Timber bridge was completed during the reporting period and the report provided to Port Macquarie Hastings Council and the Office of Environment and Heritage. • Vibration monitoring was undertaken adjacent to the heritage site referred to as OHK9 while piling during the reporting period. This monitoring determined the vibration generated during piling was within acceptable criteria for heritage items as detailed within the Stage 3 NVMSP.
Air quality	<ul style="list-style-type: none"> • Monitoring of weather conditions and adapting construction activities to prevailing conditions • Use of dust suppression measures including water carts, surface treatments, soil bonding polymers and ceasing work during high wind conditions • Use of tarpaulins and geotextile fabric on exposed areas • Early stabilisation of exposed surfaces including cover crop seeding 	<ul style="list-style-type: none"> • The Project teams monitor weather conditions on a regular basis through both the Bureau of Meteorology website and one of three Roads and Maritime site based weather stations. The Project teams are able to identify and respond to prevailing hot, dry and windy conditions through the deployment of water carts for dust suppression as required. In the event conditions become too adverse to allow the appropriate control of dust, construction works that exacerbate dust generation (ie heavy plant hauling material on unseal haul roads) can be suspended and efforts concentrated on minimising dust generation. • There were 10 dust complaints received during the reporting

Environmental issue	Environmental controls	Performance of environmental controls
	<ul style="list-style-type: none"> • Shaker grids and wash-down facilities at exits to public roads to prevent mud tracking onto public roads • Reduced speed limits for light vehicles during dry conditions in high dust areas • Highly trafficked areas such as compounds and site entry/exit points treated with a bitumen spray-seal or similar to reduce dust generation • Installation of additional dust deposition gauge monitoring sites. 	<p>period.</p> <ul style="list-style-type: none"> • A number of techniques are being implemented across the Project to minimise the potential for dust generation including, but not limited to, geotextile fabric lining unstable surface such as drainage lines and batters, hydromulch application on stockpiles if remaining unused for extended periods, application of proprietary products that bond fines together to prevent mobilisation from construction traffic, and reducing site speed limits on unseal surfaces. The Project teams have also spray sealing access roads and main site compounds, installing rumble grids at access points to the road network and using street sweepers to collect any material unintentionally tracked beyond the construction site. On Stage 3, during wet weather the Project team has also set up a vehicle wash bay to further minimise the potential for mud tracking. • There are 20 dust deposition gauges installed across the Project. While there have been individual monthly exceedances of the 4g/m²/month criteria for total insoluble solids, some have related to periods prior to the commencement of construction within that area on a specific stage. Across all 20 monitoring stations the annual rolling average remains below the 4g/m²/month criteria for total insoluble solids.
Geology and soils	<ul style="list-style-type: none"> • Retaining topsoil and ground cover vegetation wherever possible, for as long as possible • Preparation and implementation of Progressive Erosion and Sedimentation Control Plans • Quick stabilisation of disturbed areas • Review and advice on erosion and sediment controls by external soil conservationist • Management of acid sulfate soils. 	<ul style="list-style-type: none"> • Progressive erosion and sedimentation control plans (PESCP) have been prepared and implemented across all stages of the Project in the lead up to and following clearing and grubbing, topsoil stripping and earthwork activities. The requirements of the PESCP are communicated to site teams through toolbox training sessions and daily prestart meetings. The PESCP will continue to evolve as site conditions change. A soil conservationist undertakes regular reviews of this documentation. • Tailored erosion and sediment control training courses have been run for key personnel across all stages of the Project including foreman, engineers, leading hands, environmental advisors. • Weekly inspections by an external soil conservationist have been undertaken across all stages of the Project during high-risk clearing and grubbing, and topsoil stripping phases. These regular and frequent inspections will continue while bulk earthworks are in

Environmental issue	Environmental controls	Performance of environmental controls
		<p>progress and site changes are occurring rapidly.</p> <ul style="list-style-type: none"> • Weed free topsoil containing native seed has been stockpiled locally on site for reuse within the general area from which has been collected. Localised rehabilitation efforts using this material will occur as soon as practicable. • Areas within 15 metres of waterways were stump cut and soil left stable until construction of culverts commenced. • Acid sulfate soil discovered during bridge construction and drainage works on Stage 3 has been progressively tested and treated in accordance with the approved Soil and Water Management Sub Plan. • Progressive stabilisation of disturbed areas such as stockpiles and open drains undertaken. Methods employed include the application of geotextile fabric, jute mesh, sterile cover crop and proprietary soil binding products. • Rehabilitation has commenced in some areas on all stages of the Project to control erosion and reduce the potential for impacts during wet weather events.
Waste	<ul style="list-style-type: none"> • Waste minimisation principles adopted and reinforced with personnel during induction and other training • Segregation, classification and adaptive management of all waste streams • Reuse of material on-site wherever possible. 	<ul style="list-style-type: none"> • Waste segregation facilities have been set up at the main site compounds across the Project. The importance of segregating waste is communicated to all staff, construction personnel and contractors via the project inductions. • Topsoil and mulch derived during the clearing and site preparatory activities has been stored for reuse extensively across the Project. The early reuse of topsoil and mulch in landscaping and rehabilitation activities is a priority for Roads and Maritime and its construction partners and has commenced in some areas across the Project. • Construction steel is being stored when no longer required and will be transported for recycling as required and/or at the conclusion of the related stage of the Project.



Permanent sediment basin (St 2)



Piling pad installation Pipers Creek (St 2)



Stump cut area through unnamed drainage line (St 2)



Permanent basin under construction with baffle boards and low flow pipe (St 2)



Clean water catch drain with hydromulch (St 2)



Addition of mulch ameliorants for mixing with topsoil – urea, sulfate of iron and lime (St 2)



Topsoil application to final surface drainage infrastructure (St 1)



Silt curtains in place around temporary working platform works (St 3)

4 Environmental monitoring

Roads and Maritime has undertaken background dust, noise and water quality monitoring (surface and groundwater) in the lead up to construction of the Project. Since the commencement of construction, the respective construction partners have continued to monitor dust and noise. Roads and Maritime have retained responsibility for the monitoring of water quality and this will continue during construction and for a period of up to three years following completion of the Project. Detailed water quality monitoring and analysis of results are contained in stand-alone reports and will be provided separately to this construction compliance tracking report.

This section details key monitoring results and analysis of the findings for the reporting period.

4.1 Flora and fauna

A two-stage clearing procedure was implemented across the Project. The procedure included the delineation of clearing areas with coloured tape/exclusion fencing, clearing non-habitat trees, stag watching and spotlighting before clearing habitat trees, leaving all habitat trees for 48 hours before clearing, shaking habitat trees prior to felling to encourage animals to leave or show themselves, soft-dropping trees using grabs and chainsaws, inspecting felled tree hollows and limbs for animals, assisting animals that were injured, and relocating uninjured animals.

Ecologists were on site for all clearing activities to carry out pre-clearing surveys, monitor clearing, relocate animals and care for those injured. Appendix D contains a list of species, where available, that were relocated, injured, euthanased or killed during this period.

On Stage 1, ecologists supervised the clearing for the Service Road 3 fence lines and Fernbank Creek Road. An ecologist was also present for dewatering of the box culvert on Service Road 2.

During the dewatering, the following aquatic species were relocated:

- Longfinned Eel (*Anguilla reinhardtii*)
- Striped Gudgeon (*Gobiomorphus australis*)
- Firetail Gudgeon (*Hypseleotris galii*)
- Empire Gudgeon (*Hypseleotris compressa*).

All native species were relocated to other areas of the waterway outside the work area. There were no injuries or casualties during Stage 1 clearing.

On Stage 2, there were more than 30 species of animal relocated during pre-clearing and clearing surveys and inspections. There was one injury and one casualty recorded during the clearing process.

On Stage 3, there were 12 species of animal relocated during pre-clearing and clearing surveys and inspections. One Sugar Glider was euthanased as a result of clearing on this stage.

A total of 60 per cent of all nest boxes have been installed on the Project to date. This has included more than 150 on Stage 2 and more than 280 on Stage 3. The nest boxes include various sizes and features for a diversity of animals including, but not limited to, bats, gliders, possums, large and small owls, and various sizes of parrots. A number of these have been used to relocated individuals rescued during pre-clearing and clearing surveys. It should also

be noted that a number of habitat features including logs, rocks and similar features have also been relocated within the Project boundary during the clearing process. On Stage 2, this has included 23 ground logs and nine habitat trees placed outside the clearing limit within the Project boundary. These features supplement the extensive nest box installation program.

Further protocols were implemented in relation to access and/or clearing of vegetation in the vicinity of waterways or other sensitive areas. In particular, on Stage 2 and Stage 3, plant and personnel wash down procedures have been implemented to minimise the potential for transmission of chytrid fungus between frog habitats and phytophthora elsewhere.

A substantial proportion of vegetation clearing has been completed during this, and the previous reporting period. All clearing has been completed on Stage 1 (about 7 hectares), about 90 per cent (about 75 hectares) has been completed on Stage 2 and more than 80 per cent completed on Stage 3 (ie more than 100 hectares). Appendix D contains detail of vegetation clearing by community type for each stage of the Project where currently available. This information will be provided in greater detail in subsequent construction compliance tracking reports.



Longfinned Eel prior to relocation (St 1)



Striped Gudgeon prior to relocation (St 1)



Permanent fauna fence installation through the state forest (St 2)



Bunding of timber immediately after clearing to manage tannins (St 2)

4.2 Heritage

All non-Aboriginal and Aboriginal heritage sites across the Project to be retained have, or will be, protected with barrier fence and suitable signage where appropriate. Sensitive area plans, that form part of construction work packages for all construction areas, also include a visual reference to the location of these sites.

There were no impacts on non-Aboriginal or Aboriginal heritage sites attributable to any stage of the Project during the reporting period. Works continued on Stage 1 in close proximity to heritage sites known as the Sancrox ochre site and sandstone kerb stockpile. Roads and Maritime's Stage 1 construction partner through the installation of temporary fencing and signage have protected both sites.

Vibration monitoring was undertaken adjacent to the heritage site referred to as OHK9 by Roads and Maritime's Stage 3 construction partner during piling operations. Monitoring confirmed that levels remained below relevant thresholds for heritage items as detailed within the Stage 3 Construction Noise and Vibration Management Sub Plan.

There were no unexpected heritage finds during the reporting period.

During community consultation a resident informed Roads and Maritime of a possible location of a former coach station site at Kundabung. Roads and Maritime initiated its unexpected finds procedure and delayed the commencement of works in this area until a suitable assessment could be completed. Both the Department of Planning and the Environment and Office of Environment and Heritage were advised in writing, and an archaeological assessment and proposed research design submitted.

Test and salvage excavations at the potential heritage site (6 Ravenswood Road, Kundabung) were conducted during the reporting period, in consultation with the Office of Environment and Heritage, and the Department of Planning and Environment. The initial test excavations uncovered a small brick floor (approximately four metres squared), a drain, a possible brick manufacture site, three possible rubbish pits and at least two former fence lines. Given the small size of the brick floor, and absence of ancillary buildings, it is unlikely that the former hut functioned as a coach station, and was more likely used on a temporary or semi-permanent basis by workers of Ravenswood Estate.

Despite this, the site was considered to have local heritage significance, and salvage was conducted to ensure any heritage information regarding the history and occupation of the site was recovered prior to its disturbance. Artefacts recovered from the site are currently being analysed and recorded by the Project's archaeologist, after which time they will be transferred to the Macleay River Historical Society who have agreed to accept, store and look after any artefacts salvaged from the site.

A final salvage report is currently being prepared, and once finalised will be submitted to the Office of Environment and Heritage, and the Department of Planning & Environment.



Stockpile of sandstone kerb at Sancrox (St 1)



Sancrox ochre site protected by barrier fence (St 1)

4.3 Noise and vibration

Noise monitoring was undertaken on all stages of the Project in accordance with the respective construction noise and vibration management sub plans.

On Stage 1, noise monitoring was undertaken at two locations on a monthly basis between March 2015 and July 2015. Monitoring was not undertaken during January and February due to the absence of suitably trained field staff to operate the noise monitoring equipment and prevailing wet weather conditions. Construction activities in progress during the month were consistent with those during earlier months and therefore it has been considered that exceedances of the noise management level were unlikely. Out of hours noise monitoring was also undertaken on three occasions for evening, Saturday afternoon and Sunday work. There was one minor exceedance (less than 1.5 dB) of the noise management level identified from monitoring during standard hours. Further monitoring was subsequently undertaken and personnel reminded through a toolbox training session of their obligations to minimise noise impacts during construction.

Noise monitoring on Stage 2 changed from quarterly to monthly in June 2015. Monitoring was missed during the first quarter of this reporting period while the quarterly monitoring requirements were being reviewed and before monthly monitoring was approved and implemented. Since June, monitoring has been conducted every month. Five of the eight monitoring events during the reporting period recorded levels above those predicted in the approved construction noise and vibration management plan. However, on all occasions elevated noise levels were considered attributable to traffic on the Pacific Highway. There were no noise related complaints on Stage 2.

On Stage 3, noise monitoring was undertaken at 12 locations on a monthly basis between January and July 2015. While there were 25 exceedances of the calculated noise management levels, nearly all were considered to be attributable to noise from existing Pacific Highway traffic, or other localised activities unrelated to the Project (eg pets, farming equipment). In addition, noise monitoring was also undertaken on Stage 3 at the commencement of potentially high noise generating works such as piling. While noise levels during piling were found to be below the highly noise affected level, exceedances of relevant noise management levels as detailed within the Stage 3 Construction Noise and Vibration Management Sub Plan were experienced. In response, Roads and Maritime's Stage 3 construction partner implemented additional measures including respite periods and ongoing consultation with potentially affected receivers.

Vibration monitoring was undertaken on a number of occasions on Stage 2 and Stage 3 during blasting and other vibration inducing activities eg piling. In all instances vibration levels were below respective human comfort and structural damage criteria. There were two vibration related complaints experienced on Stage 3 during the reporting period.

Appendix D presents detailed noise and vibration monitoring data for all stages of construction.

4.4 Air quality

Background air quality monitoring commenced on the Project in March 2013. Monitoring at that time focused on the area around what would be the Stage 1 section of the Project. Similarly, Roads and Maritime's construction partners commenced background air quality monitoring for their respective stages prior to the commencement of construction on those stages. Monitoring on all stages has continued throughout construction.

On Stage 1, air quality is monitored at two locations. There were no exceedances of the $4\text{g}/\text{m}^2/\text{month}$ criteria during the reporting period.

On Stage 2, air quality is monitored at 11 locations. One location has been removed since the previous reporting period on the request of the landholder. While there were four monthly exceedances of the $4\text{g}/\text{m}^2/\text{month}$ criteria, two occurred prior to the commencement of construction in that area and one occurred at a site in excess of 400 metres from an active work area. The remaining exceedance occurred in an area adjacent to a local road with gravel shoulders. It is considered that this individual exceedance is largely attributable to traffic unrelated to the Project. For all monitoring locations, the annual rolling average remained below the $4\text{g}/\text{m}^2/\text{month}$ criteria.

On Stage 3, air quality is monitored at six locations. There was one monthly exceedance of the $4\text{g}/\text{m}^2/\text{month}$ criteria. At all monitoring locations, the annual rolling average remained below the $4\text{g}/\text{m}^2/\text{month}$ criteria.

Considerable effort is made to minimise the potential for dust emissions on the Project. Mitigation measures in place during the reporting period included:

- Frequent use of water carts during dry periods
- Minimising drop distances when tipping loads
- Covering loads
- Establishing and using designated haul road that have been stabilised for that purpose
- Sealing main site compounds and exit roads
- Installing shaker grids at exit points to the local road network
- Reduced speed limits and minimising the use of some machinery in high wind conditions
- Stabilising stockpiles and exposed areas with sterile cover crop and native seed species when inactive for long periods (ie greater than two weeks)
- Early progress of rehabilitation where possible.

Appendix D presents detailed air quality data for all stages of the Project.

4.5 Landscaping and revegetation

Due to the early stage of construction on the Project, opportunities to implement permanent landscaping and/or revegetation has generally been limited. However, due to the early commencement of Stage 1 and the anticipated conclusion of those works in late 2015, some

progress on permanent rehabilitation has occurred. Rehabilitation has been undertaken by the application of hydromulch over larger areas and hand-seeding smaller areas. Locations where rehabilitation activities have commenced include:

- Service relocation sites beyond the main alignment of the Project
- Service Road One cut and fill batters
- Northern portion of the northeast roundabout
- A number of permanent drains across the site
- The northern portion of the southeastern roundabout.

On Stage 2, permanent revegetation of about five hectares of disturbed lands has been completed. This has included the hydromulch application of seed from native grasses, frangible shrubs and tall shrubs on areas such as cut faces, permanent basins and vegetated drains.

As additional areas are completed, further landscaping and rehabilitation activities will commence in accordance with the urban design and landscape plans for the respective stages.



Placement of topsoil on Cut 1 batters – 5 February 2015 (St 1)



New growth on Cut 1 batters - Wednesday 8 April 2015 (St 1)



Revegetation on southeast roundabout drain - Monday 1 June 2015 (St 1)



Permanent revegetation of the Cut 5 batter (St 2)



Application of gypsum and lime to the sub-soil pre topsoil application (St 2)



Permanent treatment of an open vegetated channel. This includes sub soil treatment, scarifying the subsoil, topsoiling, application of jute mesh, hydromulch and bitumen emulsion application (St 2)

5 Community engagement

Roads and Maritime and its construction partners have developed and are implementing a community communication strategy (CCS) for each stage of the Oxley Highway to Kempsey Upgrade Project. The CCSs were approved by the Director-General prior to the commencement of each stage of construction. The strategies outline and promote a diversity of tools to proactively inform and interact with the community, regulatory authorities and interested stakeholders.

5.1 Complaint number and type

54 complaints were received during the reporting period. General themes included:

- Dust from construction works
- Worker behaviour generally associated with speeding construction vehicles and/or community interactions
- Construction noise and vibration
- Impacts on property access
- Traffic management including the location of bus stops
- Road design including changes to local road access and pavement type.

5.1.1 Dust

Ten complaints categorised as “dust” have been received across the Project between 22 January 2015 and 21 July 2015. All dust related complaints were from adjacent properties where dust either affected or was visible from those properties.

Complaints relating to dust emissions from site have been dealt with directly by construction personnel. The increased frequency of water cart use has been a direct response to drier conditions where either increased construction traffic or strong winds have results in dust emissions from site. While it is noted that complaints relating to dust were received during the reporting period, it should be noted that dust monitoring results from 20 locations across the Project remain below the annual rolling average of 4g/m²/month.

5.1.2 Worker behaviour

There were nine complaints regarding worker behaviour. All but one of these complaints related to the operation of construction vehicles on the local road network eg speeding, maneuvers performed. In all cases the complaints were investigated. Toolbox training sessions were implemented on the respective stages of the Project to reinforce expectations for worker behaviour when travelling on the public road network. The operation of construction vehicles on public roads will continue to be monitored and issues addressed should they arise.

5.1.3 Noise and vibration

Eight complaints broadly categorised as “noise and vibration” have been received across the Project between 22 January 2015 and 21 July 2015. Table 5-3 provides a breakdown of noise and vibration related complaints.

Table 5-1 Breakdown of noise and vibration complaints

Complaint type	Number of complaints
Noise from general construction eg trucks hauling material.	4
Noise during night-time periods (unrelated to Project).	2
Vibration from piling works.	2

Complaints relating to noise and vibration were investigated in all cases. All four noise from general construction related complaints, while unfortunate, were found to be from construction activities that were consistent with the descriptions and predicted noise levels documented in the approved construction noise and vibration management sub plans. The Project teams from all stages are implementing considerable resources to minimise the propagation of noise from construction activities including, but not limited to:

- Respite periods
- Intensive community consultation including one-on-one meetings
- Replacing reversing beepers with quacker alarms
- Site awareness training detailing noise mitigation measures
- Tool-box training and signage of permitted working hours.

Complaints relating to vibration from piling works were also investigated. Monitoring undertaken during subsequent piling works concluded that vibration levels were below human comfort and structural damage criteria detailed in the construction noise and vibration management sub plans. The complainants were accepting of the Project teams response.

5.1.4 Property access

Five complaints broadly categorised as “property access” have been received across the Project between 22 January 2015 and 21 July 2015. Table 5-2 provides a breakdown of property access related complaints.

Table 5-2 Breakdown of property access complaints

Complaint type	Number of complaints
Temporary road closure inhibited access to local business.	1
Resident access to property through construction corridor considered unsafe.	3
Gate left unlocked over weekend.	1

The loss of access to a local business due to a temporary road closure was the subject of a local newspaper article. Roads and Maritime had consulted extensively with the business affected prior to the closure and had erected signage to ensure patrons were provided with alternative access. Unfortunately, the signage provided did not conform to council requirements and were subsequently removed by the authority. The article was published following the removal of this signage. Since then, Roads and Maritime has installed conforming signage. Consultation with the business remains ongoing. Feedback from the business indicates that they are satisfied with the level of consultation and action to date.

Three complaints were received from a single complainant regarding private property access across the construction corridor and associate safety risks. Roads and Maritime’s Stage 3

construction partner recognised the perceived safety concerns and in consultation with the property owner agreed to place a spotter at the access while construction was in progress in the area. One of the complaints related to the spotter not being present. The complainant was informed that the spotter would only be in place during active construction works in the area. No works were in progress at the time of the complaint.

One complaint was made with regard to a shared private and construction access gate being left unlocked over a weekend. The complainant was concerned that his stock might be able to escape and access the Pacific Highway. While the gate was left unlocked to allow a weekend delivery, Roads and Maritime’s Stage 3 construction partner has accepted the landowners concerns and no longer shares this access. Alternative construction access arrangements have been implemented.

5.1.5 Traffic management

Four complaints broadly categorised as “traffic management” have been received across the Project between 22 January 2015 and 21 July 2015. Table 5-3 provides a breakdown of traffic management related complaints.

Table 5-3 Breakdown of traffic management complaints

Complaint type	Number of complaints
Location of school bus stops and proximity to construction traffic.	3
Location of safety barrier on local road.	1

Traffic management complaints in relation to bus stops on the Pacific Highway have been the subject of a thorough review and consultation. Roads and Maritime, Busways (the school bus service provider) and the Roads and Maritime’s Stage 2 construction partner have been working collaboratively to provide safe and accessible bus stop access. Complainants were generally concerned about the proximity of stops to construction activity and the risks associated with public and construction traffic interactions. Steps have been taken to relocate bus stops and provided dedicated parking areas for school pick-ups and set-downs. Investigations into how these stops may be improved to provide additional safety and comfort for users is continuing in consultation with Busways.

The remaining traffic management complaint related to the placement of star-picket barriers on the verge of a local road. In this instance, the barrier was placed on the road verge to delineate a culvert outlet and the associated drop. While narrowing the local road, the complainant was informed that the measure was in place for road safety purposes and would be removed when permanent treatments were installed.

5.1.6 Road design

Four complaints broadly categories as “road design” have been received across the Project between 22 January 2015 and 21 July 2015. Table 5-4 provides a breakdown of road design related complaints.

Table 5-4 Breakdown of road design complaints

Complaint type	Number of complaints
Left in left out traffic arrangements associated with A-class verses grade separation as part of M-class design.	3

Complaint type	Number of complaints
Concern regarding the type of pavement proposed and the potential for noise impacts.	1

Road design related complaints were addressed on a one-on-one basis with those expressing concerns. The residents concerned with the left in left out arrangements at Kemps Road were provided with an explanation of the Project staging ie A-Class initially with some left in left out movements to access the highway verses the M-Class stage with full grade separated access. The complainants were advised that Roads and Maritime were implementing the A-class option with a view of implementing the M-class option in the future. A timeframe for this has not currently been announced. However, Roads and Maritime is undertaking a broad review of access arrangements under Class A, to alleviate these concerns. A number of design modifications are currently being finalised, after which community consultation will be conducted on the proposal.

Concern regarding the type of pavement and the perceived potential for operation noise impacts remains the subject of an ongoing investigation. Roads and Maritime is currently assessing the need for low noise pavement in the area of concern and is in regular contact with the complainant about the progress. This issue remains open and will be the subject of further discussion in arriving at a final solution.

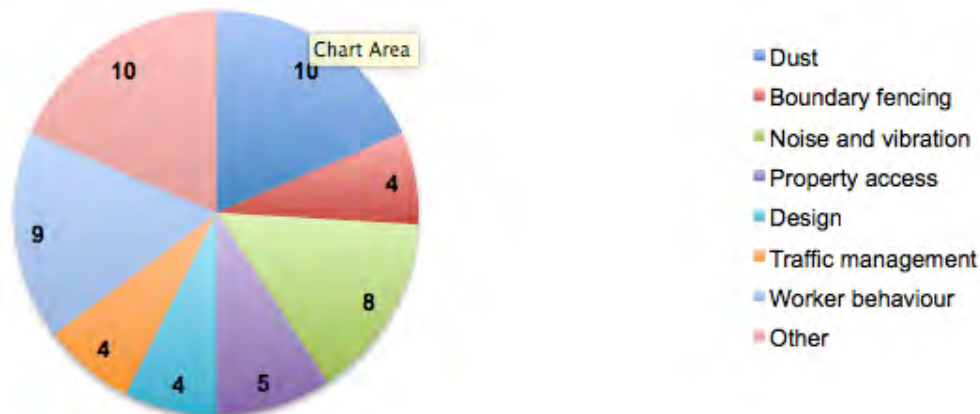
5.1.7 One off complaints

A number of one-off complaints were made during the reporting period. One-off complaints were managed and closed successfully generally by providing information to the resident/s, through one-on-one meetings, or a commitment to implement specific actions in the future.

5.1.8 Breakdown of complaints by type

Figure 5-1 shows the breakdown of complaints by type and number. Appendix B presents a summary of complaints during the reporting period and includes detail on the type of complaint, description, action taken and status.

Figure 5-1 Complaints by type and number



5.2 Complaint management

The community communication team maintains a register of all complaints received from key stakeholders and the public. Complaints are received directly during meetings, by email, letter or via the 1800 number. The team responds to complaints and where practical puts into place mitigation measures to address the issue and reduce the likelihood of future complaints.

The details contained within the community communication register include:

- Date and time of complaint
- Format (email, phone, person, letter)
- Name, association and contact details
- Nature of complaint
- Responding officer and date and details of response.

The community communication team has advised local residents of upcoming construction activities by sending letterbox drops, issuing community updates, emailing, displaying information on the Project website, media releases and by direct consultation. More than 180 meetings were held with property owners and/or relevant stakeholders during the reporting period. These meetings discussed general construction activity in the area.

5.3 Community communication initiatives

A number of community engagement initiatives consistent with the community communications strategy have been implemented during the reporting period. Some of these include:

- Five council liaison group meetings with Port Macquarie Hastings Council, Roads and Maritime and engineering staff from Stage 3

- Two community information sessions were held at Telegraph Point on 24 January 2015 and in Port Macquarie on 31 January 2015, respectively. The sessions were held to provide information the temporary river restrictions to be implemented on the Wilsons and Hastings rivers while the two new bridges are built. 13 people attended the event at Telegraph Point and 29 attended the event at Port Macquarie
- A staffed community information display was held on 28 May 2015 at the Settlement City shopping centre in Port Macquarie. Over 130 people spoke to the Project team during the day. Information was provided about the new alignment, bridges, access and construction activities.
- Roads and Maritime's Stage 2 construction partner opened a community display centre at the site main compound. This is open and staffed Monday to Friday, 9am to 5pm. At the centre community members can read a full Project overview, environmental management plans, urban design and landscape plans as well as view display material on environmental management and traffic staging plans
- Six community updates were issued during the reporting period. Information contained within the updates included upcoming construction activities on all stages of the Project and information about traffic changes. Community updates are distributed at least every three months updating the local community about construction activities and future planned work. Specific notifications on work activities are distributed more frequently informing local residents about construction activities that may affect them or their property, such as out of hours work, or increased haulage on local roads
- Since the start of blasting in May 2015 there have been weekly email notifications sent to the email database about blasting dates and times for the following week. The website and local media have also carried these dates.

Table 5-5 Summary of community communication between July 2014 and January 2015

Communication activity	Number
Advertisements in local papers	2
Presentations to interest groups (eg schools, Australian Trucking Association)	0
Council liaison group meetings	5
Aboriginal focus groups	0
Meetings with adjacent residents and affected businesses	181
Media releases and traffic alerts	18
Community site tours	0
Monthly construction updates	5
Community updates and brochures	6
Project fact sheets	4
Staffed displays / information sessions	3
Householder letters/notifications	36

6 Other compliance matters

6.1 Training and awareness

Training and awareness for management, field staff and contractors is integral to the successful delivery of the Oxley Highway to Kempsey Upgrade Project.

Prior to working on site, all personnel are required to attend a Project stage site-specific induction. Induction training is tailored specifically for each stage, but all share common themes and objectives. Induction training on each of the stages provided an overview of:

- Relevant details of the CEMP including purpose and objectives
- Key environmental issues on topics such as flora and fauna, noise and vibration, soil and water, waste, air quality and heritage
- Conditions of environmental licenses, permits and approvals
- Specific environmental management requirements and responsibilities
- Mitigation measures for the control of environmental issues (for example threatened species, EECs, frog hygiene protocols)
- Incident response and reporting requirements.

A substantial number of staff, construction personnel, contractors and special service providers were inducted during the reporting period. The total number of inductions for each stage on the Project to date exceeds:

- 600 on Stage 1
- 1500 on Stage 2
- 1900 on stage 3.

Each stage of the Project has also conducted individual training needs analysis and has tailored further training to meet the needs of the respective stage.

On Stage 1, further training has included:

- Environmental awareness training on topics outlined in Roads and Maritime's G36 specification. The specification outlines requirements, among others, for flora and fauna, waste, noise and vibration, systems
- Erosion and sediment control training. This involved attendance by site engineers and foreman, leading hands to a screening of the Roads and Maritime DVD Erosion and Sediment Control Principles examples from road construction
- Project team toolbox training sessions covering various broad and specific issues such as management of waste on-site, ENM removal on-site.

On Stage 2, further training has included:

- Environmental protection instructions have been rolled out throughout the Project and include de-watering, mud tracking, air quality and environmental planning
- Environmental work method statement (EWMS) training. EWMS covered during this training have included clearing and grubbing, sediment basin design, construction and maintenance, sediment basin operation and dewatering, topsoil stripping and stockpiling, temporary waterway crossings, working near waterways, managing phytophthora, piling and blasting

- Weekly toolbox training sessions on various topics including, but not limited to, approved construction hours, corrective actions from environmental incidents, mud tracking, air quality, de-watering, and clearing protocols.

On Stage 3, further training has included:

- EWMS training on clearing, grubbing and mulching, use of triple strike, sediment basin construction, clear water diversion construction, dewatering, and survey / site inspections
- CEMP roles and responsibilities training. This training provided an overview of individual roles and responsibilities for Lead Lease staff.
- Erosion and sediment control training that included correct installation of ERSED controls, correct maintenance of ERSED controls and how to choose the most appropriate control.

6.2 Internal and Environmental Representative inspections

Internal inspections are undertaken by the environmental teams on all stages of the Project. These routine inspections, typically weekly, pick up on minor environmental management improvements such as maintenance of clearing boundary delineation, sediment control maintenance and installation of controls in accordance with progressive erosion and sedimentation control plans.

The Environmental Representative and Roads and Maritime staff undertake environmental inspections generally on a fortnightly basis. These inspections typically cover active work sites where risk to the environment is highest. The total number of Environmental Representative and Roads and Maritime inspections conducted on each stage of the Project for the reporting period was:

- 11 on Stage 1
- 12 on Stage 2
- 12 on Stage 3.

Feedback from the Environmental Representative has been specific for each stage, but has generally related to improvements on clearing and mulch stockpile management, and erosion and sediment control installation and maintenance.

On Stage 1, positive feedback was provided on the revegetation on stabilised areas across the site and management of test concrete within skip bins.

On Stage 2, positive feedback has been provided in relation to the rigor of bunding applied to sheared timber and mulch immediately following clearing activities. Other positive comments have included the use of an IBC (intermediate bulk carrier) pod for both aquatic fauna protection and a dissipater structure during pump around activities.

On Stage 3, positive feedback was provided on a number of occasions regarding the timely and effective installation or erosion and sediment controls following vegetation clearing and generally high standard housekeeping at bridge construction sites.

6.3 Audits

There were seven audits conducted on the Project during the reporting period.

Stage 1 audits included:

- A Principal environmental management audit.

The Principal audit identified two corrective actions. Table 6-1 lists the corrective actions identified and the Project teams response.

Table 6-1 Stage 1 audit corrective actions and response

No.	Corrective actions	Project team response
1	The Contractor's Environmental Management Plan (CEMP) does not include a site-specific training programme as required under G36 specification clause 4.5.	A schedule/program table was added to CEMP and approved by the Environmental Representative. Environmental Awareness training was also provided. The changes were approved by the Project Environmental Representative.
2	The CEMP has not been updated to reflect the change in personnel or roles with the departure of the former ESR in March 2015. The CEMP requires update to reflect the split in responsibilities between the soil conservationist/Q&E Manager fulfilling the ESR role. Formal approval from Roads and Maritime should also be sought for the changes in roles and resourcing of the ESR role.	The CEMP has been updated to reflect new personnel on the Project. The changes were approved by the Project Environmental Representative and Roads and Maritime.

Stage 2 audits included:

- A Principal environmental management audit
- An internal CEMP audit
- An internal audit of the construction noise and vibration management plan.

Table 6-2 Stage 2 audit corrective actions and response

No.	Corrective actions	Project team response
1	There is no evidence of written notification within one (1) hour of incidents to Roads and Maritime and to the Environmental Representative.	The environmental team received a toolbox training session on the reporting requirements, along with other aspects, of the Roads and Maritime Incident Classification Guidelines.

Stage 3 audits included:

- An internal Lead Lease audit
- A Principal environmental management audit
- An Environmental Representative environmental audit.

Table 6-3 Stage 3 audit corrective actions and response

No.	Corrective actions	Project team response
1	The Contractor's Environmental Management Plan (CEMP) does not include a site-specific training programme as required under G36 clause 4.5.	CEMP updated to include a site-specific training programme.
2	The CEMP does not include a contact number for the site engineer, who is nominated as a 24-hour contact for the Environmental Protection Agency.	CEMP updated with phone number for site engineer.
3	Monthly Construction Consultation Reports as required under G36 clause 4.8 and monthly Construction Environmental Reports as required under G36 clause 4.11 have not been submitted to the Principal.	This oversight has now been addressed with monthly reports being provided from October to present.
4	A Community Complaints and Enquiry register has not been maintained and as such there is no evidence of issues being closed out within required timeframes.	A community complaints and enquiry register has been developed and is maintained regularly.
5	A Pre-construction Compliance Report as required under G36 clause 4.13 has not been prepared and submitted to the Principal.	As construction is beyond this stage of works a Pre-construction Compliance Report has not been prepared. The Principal prepared this report.
6	Copies of the required licences, approvals and permits are not included with the CEMP as required under G36 clause 6.3.	CEMP updated to include the required licences, approvals and permits.
7	The CEMP does not include details on the management of spill prevention bunded areas as required by G36 clause 6.12.1.	CEMP updated to include details on the management of spill prevention bunded areas.
8	A contaminated land management plan addressing the sites and aspects identified in G36 clause 6.15 has not been prepared.	A contaminated land management plan prepared.
9	A Waste Management Register has not been maintained as required under G36 clause 6.16.2.	A waste management register developed and is maintained.

6.4 Environmental Protection Licence performance

Roads and Maritime's construction partners have obtained an implement the requirements of an Environmental Protection Licence (EPL) for each stage of the Project. Licence details include:

- Stage 1 EPL number 20419 issued on 10 April 2014. There was one amendment to the licence during the reporting period. This amendment was for an extension of Stockpile 2b. The annual return was provided in accordance with the licence conditions.
- Stage 2 EPL number 20487 issued on 10 November 2014. There were four amendments to the licence during the reporting period. The amendments were for scheduled premises boundary adjustments for offsite stockpile locations and Out of Hours conditions to align with the Department of Planning and Environment's Minister's conditions of approval.

- Stage 3 EPL number 20482 issued on 19 September 2014. There were three amendments to the licence submitted during the reporting period. The amendments related to a scheduled premises boundary adjustment and changes to Out of Hours conditions to align with the Department of Planning and Environment's Minister's conditions of approval.

On Stage 1, there were two non-compliances with the licence during the reporting period. The non-compliances were in relation to Condition O5.4 that requires the control of suspended solids through appropriate erosion and sediment controls. Specific non-compliances included:

- A subsoil drain did not functioning as designed and released sediment laden water into a clean water diversion drain (refer to Incident 6 in Appendix C)
- A perimeter sediment control (type 3 filter fence) failed short of design requirements (refer to Incident 7 in Appendix C)

On Stage 2, there were two non-compliances with the EPL during the reporting period. Specific non-compliance included:

- Failure of a water quality basin low flow pipe during rainfall event that resulted in the release sediment laden water from site (refer to Incident 11 in Appendix C)
- The release of tannin affected water from the scheduled premises (refer to Incident 12 in Appendix C).

There were no reported non-compliances on Stage 3 during the reporting period.

6.5 Incidents

Roads and Maritime, and its contractors, take the view that any environmental related unplanned events, whether they impact the environment or not, are reported and recorded as incidents. This type of approach allows for the analysis of trends and encourages a culture within the workforce for continual improvement. This approach is well accepted within the Workplace Health and Safety industry as a tool to recognise unsafe practices and put in place appropriate controls before significant incidents occur.

A total of 42 environmental unplanned events categorised as environmental incidents have occurred on the Project between 22 January 2015 and 21 July 2015. 36 incidents were of a minor nature, with the remaining six classified as category 1 incidents within the Roads and Maritime environmental incident reporting and classification procedure. The procedure states that:

“An environmental incident...need not necessarily be an incident that comprises a breach of legislation. Nonetheless, it is important to capture this information to improve RMS's environmental practices and contractor performance.

- *Category 1 : Generally breaches of environmental legislation, such as pollution of waters, non-compliance with EPL / approval conditions, and unauthorised.*
- *Category 2: Generally less environmental serious with no or minimal offsite environmental impact. eg Minor non-compliances with CEMP, small spills.”*

A break down of incidents by stage is provided below.

Table 6-4 Stage 1 incidents by type

Incident type	Category	Number
Hydraulic fuel or fuel spillage.	2	Five
Vegetation clearing without following appropriate procedure	2	One
Erosion and sediment control incident involving the failure of a sediment fence short of its design requirements.	1	One
Incident involving the release of sediment laden water into a clean water drain.	2	One

All incidents involving hydraulic oil / fuel spillages were contained to the construction site. Spill containment equipment was deployed and contaminated material collected and securely stored on site prior to offsite disposal at a suitably licensed facility. It is important to note that hydraulic oil / fuel spillages are symptomatic of infrastructure construction projects of this magnitude. Every effort is made through regular plant and equipment servicing and daily pre-start inspections to minimise the risk of occurrence.

Where disturbance occurred beyond the approved clearing limits, corrective actions included:

- A detailed review of approval documents and prior to future clearing works
- Ensuring that survey verify clearing limit boundaries and that flagging remains in place to delineate limit of works
- Toolbox training sessions to reiterate that no works is to be undertaken unless the limit of clearing is clearly marked.

The incident involving the subsoil drain was controlled through the installation of various controls to prevent sediment laden water leaving site. Remedial works were undertaken on the structure to ensure that it would subsequently operate in accordance with the design.

The incident with the filter fence was rectified by the installation of additional controls upslope of the filter fence.

Table 6-5 Stage 2 incidents by type

Incident type	Category	Number
Release of sediment laden water from site following failure of low-flow pipe on water quality basin.	1	One
Pollution incident involving tannin leachate discharge from site.	1	One
Hydraulic oil spillage.	2	Eight
Damage to native vegetation.	2	Two
Non-conformance with approved plans (EWMS / PESCP).	2	Four
Works outside of approved boundary.	2	One

Specific management responses for the two category 1 incidents were identified and implemented. These responses included both engineering solutions and procedural changes. In both instances, changes to the design of associated infrastructure have been made, and

will be implemented for all future structures of this nature. For example, all future low-flow pipes on water quality basins will include joints contained within the basin formation and have additional support in the form of rock and/or sand bags where they discharge.

While both category 1 incidents were considered to present no material harm to the environment, as a key stakeholder, Roads and Maritime took the opportunity to notify the EPA.

As indicated previously, hydraulic oil / fuel spillages are symptomatic of infrastructure construction projects of this magnitude. Spills were contained to the construction site and cleaned up immediately. It should be noted that across the entire Project there has been a comprehensive plant and equipment inspection and maintenance program that minimises the frequency of these incidents.

For the remaining category 2 incidents, efforts have focused on site wide refresher training and as necessary crew specific training of relevant procedures, work methods, and roles and responsibilities.

Table 6-6 Stage 3 incidents by type

Incident type	Category	Number
Hydraulic oil spillage.	2	Ten
Vegetation clearing beyond clearing limit.	1	One
Vegetation clearing not in accordance with approved procedure	2	One
Non-compliance with work procedure (eg EWMS)	2	Two
On-site water quality impact (turbidity)	1	Two

All, but two, incidents on Stage 3 were considered to be of a minor nature and appropriately categorised as category 2 incidents. The category 1 incidents related to vegetation clearing and a dirty water release.

Six incidents, including the two category 1 incidents, while differing in nature can all generally be attributable to systems failures (eg procedures not being fully and/or correctly implemented), insufficient planning, or poor supervision. In all instances a review of work methods has been undertaken, with procedural changes and/or remedial training for relevant personnel completed. In some instance, information deemed to be applicable to all construction personnel is circulated and discussed during site wide weekly toolbox training sessions. While both category 1 incidents were not reportable in the context of the EPL, Roads and Maritime’s Stage 3 construction partner has liaised closely with regulators and has kept them informed of issues that have arisen and the response taken in both instances by the Project team.

As indicated previously for stages 1 and 2, despite the relatively high number of hydraulic oil/fuel spillages during the reporting period, they are considered symptomatic of infrastructure construction projects of this magnitude. Spills were contained to the construction site and cleaned up immediately. It should be noted that across the entire Project there has been a comprehensive plant and equipment inspection and maintenance program that minimises the frequency of these incidents.

Appendix C presents details of incidents and actions taken to minimise the likelihood reoccurrences.

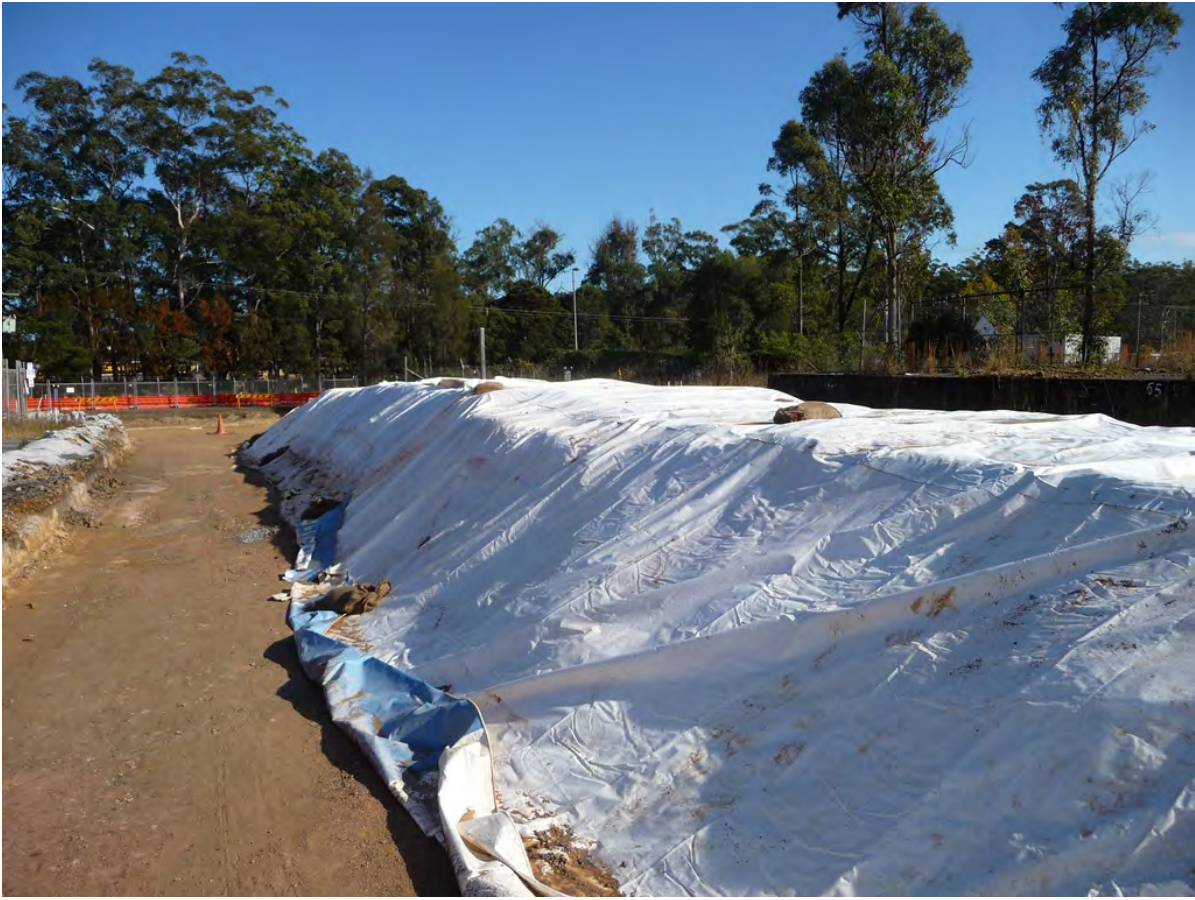
7 Environmental initiatives, best practices and highlights

To promote environmental best practices, environmental innovations that reduce environmental impacts are encouraged and tabled for discussion in many forums: daily pre-start talks, toolbox training sessions, weekly construction team meetings, environmental team meetings, management team meetings, regulatory inspections and internal and external audits.

The following examples were implemented and demonstrate best practice environmental initiatives to advance positive environmental outcomes on the Oxley Highway to Kempsey Upgrade Project. In addition, a number of highlights were experienced during the reporting period and these also have been presented.

Recycled content reused for coverage of stockpiles

A local supplier of purpose built traps was sourced to create stockpile covers on Stage 1 of the Project. The local supplier was chosen due its close proximity to the Project and the use of recycled promotional signage in the product. The purpose built tarps protect stockpiles and maintain the quality of the product for engineering purposes, and also reduce the generation of dust and sediment laden runoff.



Aquatic fauna protection / dissipater structure

Roads and Maritime's Stage 2 construction partner is using recycled IBC (intermediate bulk carrier) pods for aquatic fauna protection and energy dissipation during the pumping water from major waterways. The pods have had small incisions (less than five millimetres) in the structure to ensure that:

- Aquatic fauna is not harmed during pumping activities from waterways
- The discharge of water into the waterway does not cause scouring.

This has been used extensively during waterway pump around activities to facilitate set ups of piling pads and temporary waterway crossings.

The process has been endorsed by DPI (Fisheries).



Temporary batter chutes

Temporary batter chutes have been built using two cores of a geotextile fabric roll, with plastic and geotextile fabric wrapped around them to form a chute. The batter chute is light and easily moved.

The construction team has used this method when completing permanent batter treatments to avoid the need to dig semi-permanent chutes that require remediation following paving.



Terms and acronyms

Term	Meaning
CEMP	Construction environmental management plan
Director General	Director General of the NSW Department of Planning and Environment (or delegate)
P&E	The Department of Planning and the Environment (formerly P&I)
P&I	The Department of Planning and Infrastructure (now P&E)
DPI (Fishing and Aquaculture)	The Department of Primary Industry (Fishing and Aquaculture)
EA	Environmental Assessment
EMS	Environmental management system
EPA	Environmental Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
ER	Environmental Representative
K2K	Kundabung to Kempsey stage of the Oxley Highway to Kempsey project
MCoA	The Department of Planning and Infrastructure Ministers Condition of Approval
Minister, the	Minister for Planning and Environment (formerly “Minister for Planning and Infrastructure”)
OH2Ku	Oxley Highway to Kundabung stage of the Oxley Highway to Kempsey project
NOW	The NSW Office of Water
OEH	Office of Environment and Heritage
Project, the	Oxley Highway to Kempsey Pacific Highway Upgrade
Roads and Maritime	Roads and Maritime Services
SoC	Revised statement of commitments (March 2011)
Stage 1	Sancrox Traffic Arrangement works
Stage 2	Kundabung to Kempsey stage of the Oxley Highway to Kempsey project
Stage 3	Oxley Highway to Kundabung stage of the Oxley Highway to Kempsey project

Appendix A

Compliance tables

Table 1 - Minister's conditions of approval

CoA no.	Requirement	Stage	Status / Reference
	Part A – Administrative conditions		
	Terms of Approval		
A1	<p>The Proponent shall carry out the project generally in accordance with the:</p> <p>(a) Major Projects Application 07_0090;</p> <p>(b) <i>Upgrading the Pacific Highway – Oxley Highway to Kempsey – Environmental Assessment (volumes 1, 2, and 3)</i>, prepared by GHD Pty Ltd for the NSW Roads and Traffic Authority and dated September 2010;</p> <p>(c) <i>Upgrading the Pacific Highway – Oxley Highway to Kempsey – Environmental Assessment Submissions Report</i>, prepared by the NSW Roads and Traffic Authority and dated March 2011, including the revised Statement of Commitments contained therein;</p> <p>(d) <i>Oxley Highway to Kempsey – Pacific Highway Upgrade Ecological Review of Fauna Crossings in the Ballengarra State Forrest</i>, Roads and Maritime Services, dated October 2011;</p> <p>(e) The Roads and Maritime Services modification request and letter dated 25 October 2012 (07_0090 MOD1);</p> <p>(f) The Roads and Maritime Services modification requests and letters dated 17 April 2013 and 9 September 2013; the document titled <i>Pacific Highway Upgrade – Oxley Highway to Kempsey: Aboriginal Archaeological Assessment and Artefact Salvage Methodology and Cultural Heritage Assessment Report</i>, prepared by Kelleher Nightingale Consulting Pty Ltd, dated September 2012; the document titled <i>Oxley Highway to Kempsey - Pacific Highway Upgrade OHK85 Test Excavation - Preliminary Results</i>, prepared by Kelleher Nightingale Consulting Pty Ltd, dated 2013; and the document titled <i>Pacific Highway Upgrade – Oxley Highway to Kempsey – Non-Indigenous Heritage Impact Assessment Report</i>, prepared by Peter Kuskie and Christopher Carter (South East Archaeology Pty Limited), dated December 2007 (07_0090 MOD2); and</p> <p>(g) The conditions of this approval.</p>	Construction and operation	<p>Roads and Maritime has identified relevant commitments, obligations, undertakings and requirements (COURs) in the environmental assessment and approval documentation for the Oxley Highway to Kempsey upgrade project. A COURs database has been developed; the database will assist Roads and Maritime to manage compliance and contractual risk.</p> <p>Further confirmation will be provided through this, and future compliance tracking reports, and independent audit program developed in response to condition B24(d).</p> <p>Compliance with the condition is ongoing throughout all stages of the project.</p>
A2	<p>In the event of an inconsistency between:</p> <p>(a) the conditions of this approval and any document listed from condition A1(a) to A1(f) inclusive, the conditions of this approval shall prevail to the extent of the inconsistency; and</p> <p>(b) any document listed from condition A1(a) to A1(f) inclusive, and any other document listed from condition A1(a) to A1(f) inclusive, the most recent document shall prevail to the extent of the inconsistency.</p>	Construction and operation	Compliance with the condition is ongoing throughout all stages of the project.
A3	<p>The Proponent shall comply with any reasonable requirement(s) of the Director General arising from the Department's assessment of:</p> <p>(a) any reports, plans or correspondence that are submitted in accordance with this</p>	Construction and operation	Compliance with the condition is ongoing throughout all stages of the project.

CoA no.	Requirement	Stage	Status / Reference
	approval; and (b) the implementation of any actions or measures contained within these reports, plans or correspondence.		
A4	Subject to confidentiality, the Proponent shall make all documents required under this approval available for public inspection on request.	Construction and operation	A project website has been established and is accessible through the Roads and Maritime corporate website. The website is updated at regular intervals and contains information, as a minimum, required by MCoA B25. Any documentation unable to be made available through the project website and not subject to restrictions imposed by confidentiality, will be made available upon request at a nominated project site office or Roads and Maritime regional office.
	Limits of Approval		
A5	This approval shall lapse ten years after the date on which it is granted, unless construction works the subject of this project approval are physically commenced on or before that date.	Construction and operation	Construction of the project commenced on 22 July 2014.
	Statutory Requirements		
A6	The Proponent shall ensure that all necessary licenses, permits and approvals required for the development of the project are obtained and maintained as required throughout the life of the project. No condition of this approval removes the obligation for the Proponent to obtain, renew or comply with such necessary licenses, permits or approvals except as provided under section 75U of the Act. This shall include relevant certification requirements in accordance with section 109R of the Act.	Construction and operation	Roads and Maritime, or its construction partners, will obtain all necessary licenses and approvals relevant to the project. Where appropriate, these licenses will be displayed on the project website and/or nominated project site office. Compliance with the condition is ongoing throughout all stages of the Project.
	Staging		
A7	The Proponent may elect to construct and/ or operate the project in stages. Where staging is proposed, the Proponent shall submit a Staging Report to the Director General prior to the commencement of the first proposed stage. The Staging Report shall provide details of: (a) how the project 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 project. Where staging of the project is proposed, these conditions of approval are only required to be complied with at the relevant time and to the extent that they are relevant to the specific stage(s). The Proponent shall ensure that an updated Staging Report (or advice that no changes to staging are proposed) is submitted to the Director General prior to the commencement of each stage, identifying any changes to the proposed staging or applicable conditions. The Proponent shall ensure that all plans, sub-plans and other management documents required by the conditions of this approval and relevant to each stage (as identified in the	Pre-construction for each stage	Roads and Maritime prepared an initial Staging Report and provided it to the P&I for approval on 8 February 2013. Following minor revisions to address P&I comments, the plan was approved on 14 March 2013. Subsequent to this approval, Roads and Maritime made further updates to Appendix A of the Staging Report to ensure compliance with MCoA B20 and B28 across and between the stages, and to include the requirements of MCoA E1. The revised plan was sent to P&I on 5 November 2013 and subsequently approved by the department on 24 January 2014. On 21 May 2014 Roads and Maritime wrote to P&E advising of the anticipated schedule for the commencement of construction on Stage 1 of the project and that no changes to the Staging Plan were proposed. On 9 September 2014 Roads and Maritime wrote to the P&E advising of the anticipated schedule for the commencement of

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	Staging Report) are submitted to the Director General no later than one month prior to the commencement of the relevant stages, unless an alternative timeframe is agreed to by the Director General.		<p>construction on Stage 2 of the project and that no changes to the Staging Plan were proposed.</p> <p>On 31 July 2014 Roads and Maritime wrote to the P&E advising of the anticipated schedule for the commencement of construction on Stage 3 of the project and that no changes to the Staging Plan were proposed.</p>
	Part B – Prior to construction		
	Biodiversity		
	<i>Mitigation Measures – Fauna and Waterway Crossings</i>		
B1	The Proponent shall design (and implement) the fauna and waterway crossings identified in Table 6-2 of Appendix B of the document listed under condition A1(d), at the locations and in accordance with the minimum design principles identified in Table 6-2, unless otherwise agreed by the Director-General.		<p>Detailed design of fauna and waterway crossings has been completed for Stage 2. Roads and Maritime wrote to the P&I on 26 July 2013 advising that there were changes to the final design of some fauna crossing locations and dimensions compared to that presented in Table 6-2 of Appendix B of the document listed under condition A1(d). A report prepared in consultation with DPI (Fishing and Aquaculture) and EPA outlining those changes, among other things, was provided at the same time and approval for those changes sought. The P&I approved the changes in correspondence provided to Roads and Maritime on 25 September 2013.</p> <p>Detailed design of fauna and waterway crossings has also been completed for Stage 3. Roads and Maritime wrote to the P&E on 9 December 2014 advising that there were changes to the final design of some fauna crossing locations and dimensions compared to that presented in Table 6-2 of Appendix B of the document listed under condition A1(d). A report prepared in consultation with DPI (Fishing and Aquaculture) and EPA outlining those changes, among other things, was provided at the same time and approval for those changes sought. P&E approved the changes in correspondence provided to Roads and Maritime on 2 February 2015.</p>
B2	Investigations into the design of fauna and waterway crossings identified in Table 6-2 of Appendix B of the document listed under condition A1(d) during detailed design shall be undertaken with the input of a suitably qualified and experienced ecologist and in consultation with the OEH and DPI (Fishing and Aquaculture).		See response provide to condition B1.
B3	The Proponent shall prepare a report on the final design of fauna and/or waterway crossings identified in Table 6-2 of Appendix B of the document listed under condition A1(d), where the location of the crossing has changed and/or the crossing does not meet the minimum design principles identified in Table 6-2. The report shall be submitted to the Director General prior		See response provide to condition B1.

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	<p>to the commencement of construction of the relevant crossing, and shall demonstrate how the new location and/ or design would result in acceptable biodiversity outcomes. The report shall clearly identify how the fauna and/or waterway crossing will work in conjunction with complementary fauna exclusion fencing measures to be implemented for the project. The report shall be accompanied by evidence of consultation with the OEH and DPI (Fishing and Aquaculture) in relation to the suitability of any changes to the location and/or crossing design.</p>		
B4	<p>The Proponent shall investigate the provision of widened medians (with the aim of retaining existing vegetation in a widened median where feasible and reasonable) as an alternative to the provision of glider poles and rope bridges to facilitate the movement of gliders across the project at the following locations:</p> <p>(a) Cairncross 1 – between station 10000 to 11600;</p> <p>(b) Ballengarra 1b - between station 23200 to 24100; and</p> <p>(c) Maria River 1b - between station 33760 to 34380.</p> <p>The investigation shall be undertaken by a suitably qualified and experienced ecologist and in consultation with the OEH and DPI (Forests). The Proponent shall prepare a report on the median widening investigation, including the location and final design of the glider crossing measures and consequential impacts on other ecologically significant elements potentially affected by the widening. The report shall be submitted for the approval of the Director General no later than six months prior to the commencement of work that would result in the disturbance of native vegetation in the median widening investigation areas, or within such period otherwise agreed by the Director General. Work within the median investigation areas shall not commence until written approval has been received from the Director General.</p>		<p>Roads and Maritime prepared an Oxley Highway to Kempsey Widened Median Assessment and provided it to P&I for approval on 19 September 2013. The department reviewed the assessment and indicated that they had no objections to the conclusions drawn by the assessment, but noted that further matters needed to be addressed to fully satisfy conditions B4 and B5.</p> <p>Roads and Maritime subsequently prepared an Oxley Highway to Kempsey Widened Median Assessment Supplementary Report and provided it to P&I for approval on 11 February 2014.</p> <p>Following a review, the department advised that the original and supplementary assessments satisfied both conditions B4 and B5 with respect to Stage 2 of the project. However, noted that the two reports satisfied only condition B4 with respect to Stage 3 of the Project.</p> <p>The department indicated that a further supplementary report for Stage 3 would be required to satisfy the outstanding requirements outlined in earlier correspondence. Roads and Maritime and its construction partners prepared a further supplementary report to address the outstanding requirements and provided it to P&E on 15 September 2014. P&E subsequently approved the supplementary report on 8 January 2015.</p>
B5	<p>As part of the investigation into widened medians under condition B4, the Proponent shall investigate and report on the provision of widened medians at Barrys Creek (station 23967) as an alternative fauna crossing design for Koalas and Quolls.</p>		<p>See comments provide in response to condition B4.</p>
B6	<p>The Proponent shall, in consultation with the OEH and DPI (Fishing and Aquaculture), ensure that all waterway crossings are designed and constructed consistent with the principles of the <i>Guidelines for Controlled Activities Watercourse Crossings</i> (Department of Water and Energy, February 2008), <i>Policy and Guidelines for Fish Friendly Waterway Crossings</i> (NSW Fisheries, February 2004) and <i>Policy and Guidelines for Design and Construction of Bridges, Roads, Causeways, Culverts and Similar Structures</i> (NSW Fisheries 1999). Where multiple cell culverts are proposed for creek crossings, at least one cell shall be provided for fish passage, with an invert or bed level that mimics creek flows.</p>		<p>Waterway crossings have been designed in accordance with the requirements of this condition. See further detailed provided in response to conditions B1.</p>

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<i>Mitigation Measures – Nest Boxes</i>			
B7	<p>Prior to the commencement of construction work that would result in the disturbance of native vegetation (or as otherwise agreed by the Director General), the Proponent shall, in consultation with the OEH, prepare and submit for the approval of the Director General a Nest Box Plan to provide replacement hollows for displaced fauna. The Plan shall detail the number and type of nest boxes to be installed which must be justified based on the number and type of hollows removed (based on detailed pre-construction surveys), the density of hollows in the area to be cleared and adjacent forest, and the availability of adjacent food resources. The Plan shall also provide details of maintenance protocols for the nest boxes installed including responsibilities, timing and duration.</p>		Roads and Maritime prepared a Nest Box Plan to address the requirements of this condition and submitted to the P&I for approval on 30 July 2013. P&I subsequently approved the plan on 14 October 2013.
<i>Biodiversity Offsets</i>			
B8	<p>The Proponent shall, in consultation with the OEH and DPI (Fishing and Aquaculture), develop a Biodiversity Offset Strategy that identifies the available options for offsetting the biodiversity impacts of the project in perpetuity, with consideration to the Principles for the use of biodiversity offsets in NSW (Office of Environment and Heritage website http://www.environment.nsw.gov.au/biocertification/offsets.htm dated 17 June 2011). Unless otherwise agreed to by the OEH and DPI (Fishing and Aquaculture), offsets shall be provided on a like-for-like basis and at a minimum ratio of 4:1 for areas of high conservation value (including EEC, salt marsh and poorly conserved vegetation communities identified as being more than 75% cleared in the catchment management area) and 2:1 for the remainder of native vegetation areas (including mangroves, seagrass, and non-EEC riparian vegetation). The Strategy shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> (a) the aims and objectives of the biodiversity offset strategy; (b) confirmation of the vegetation type/ habitat (in hectares) to be cleared and their condition, and the size of offsets required (in hectares); (c) details of the type of available offset measures that have been identified to compensate for the loss of threatened species and vulnerable and endangered ecological communities and/ or their habitats, and native vegetation (including mangroves, seagrasses, salt marsh and riparian vegetation). The measures shall achieve a neutral or net beneficial outcome for all the biodiversity values likely to be impacted directly or indirectly during both the construction and operation of the project; (d) the decision-making framework that would be used to select the final suite of offset measures to achieve the aims and objectives of the Strategy, including the ranking of offset measures; (e) a process for addressing and incorporating offset measures arising from changes in biodiversity impacts (where these changes are generally consistent with the biodiversity impacts identified for the project in the documents listed under condition A1), including: <ul style="list-style-type: none"> (i) changes to the footprint due to detailed design; (ii) changes to predicted impacts as a result of changes to mitigation measures; 		Roads and Maritime have developed a Biodiversity Offset Strategy to address the requirements of this condition in consultation with OEH and DPI (Fishing and Aquaculture). The report was provided to the P&I for approval on 31 October 2013. The P&I subsequently approved the strategy on 27 January 2014.

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	<p>(iii) the identification of additional species/ habitat through pre-clearance surveys and construction; and</p> <p>(iv) additional impacts associated with the establishment of ancillary facilities; and</p> <p>(f) options for the securing and management of biodiversity offsets in perpetuity.</p> <p>The Biodiversity Offset Strategy shall be submitted to the Director General for approval no later than 6 weeks prior to the commencement of construction that would result in the disturbance of native vegetation, unless otherwise agreed by the Director General.</p> <p>The Proponent may elect to satisfy the requirements of this condition by identifying a suitable offset strategy which addresses impacts from multiple Pacific Highway Upgrade projects within the North Coast Bio-region. Any such strategy, including an agreement made with the OEH, must be made in consultation with the Department and approved by the Director General within a timeframe agreed to by the Director General.</p>		
B9	<p>Within two years of the date of approval of the Biodiversity Offset Strategy, unless otherwise agreed by the Director General, the Proponent shall prepare and submit a Biodiversity Offset Package for the approval of the Director General. The Package shall be developed in consultation with the OEH and DPI (Fishing and Aquaculture), and shall include, but not necessarily be limited to:</p> <p>(a) details of the final suite of the biodiversity offset measures to be implemented for the project demonstrating how it achieves the requirements of the Biodiversity Offset Strategy (including specified offset ratios);</p> <p>(b) the final selected means of securing the biodiversity values of the Package in perpetuity, including ongoing management, maintenance and monitoring requirements; and</p> <p>(c) timing and responsibilities for the implementation of the provisions of the Package over time.</p> <p>The requirements of the Package shall be implemented by the responsible parties according to the timeframes set out in the Package, unless otherwise agreed by the Director General.</p>	Construction	<p>Roads and Maritime have engaged a suitably qualified and experienced ecological consultant to identify and assess requisite lands to fulfill the requirements of the approved Biodiversity Offset Strategy.</p> <p>The final offset package will be submitted to the P&E on or before 27 January 2016, or as otherwise agreed.</p>
	<i>Ecological monitoring</i>		
B10	<p>The Proponent shall develop an Ecological Monitoring Program to monitor the effectiveness of the biodiversity mitigation measures implemented as part of the project. The program shall be developed by a suitably qualified and experienced ecologist in consultation with the OEH and DPI (Fishing and Aquaculture) and shall include but not necessarily be limited to:</p> <p>(a) an adaptive monitoring program to assess the effectiveness of the mitigation measures identified in conditions B1, B4, B7 and B31(b) and allow amendment to the measures if necessary. The monitoring program shall nominate performance parameters and criteria against which effectiveness will be measured and include operational road kill surveys to assess the effectiveness of fauna crossings and exclusion fencing implemented as part of the project;</p> <p>(b) mechanisms for developing additional monitoring protocols to assess the effectiveness</p>		<p>Roads and Maritime have developed an Ecological Monitoring Program to address the requirements of this condition in consultation with OEH and DPI (Fishing and Aquaculture). The report was provided to the P&I for approval on 4 December 2013. The P&I subsequently approved the program on 29 January 2014.</p> <p>Roads and Maritime and its construction partners continue to fulfill all requirements of the EMP as necessary for this stage of the project. Any subsequent requirements will be implemented throughout the remainder of construction and operation as stipulated.</p>

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	<p>of any additional mitigation measures implemented to address additional impacts in the case of design amendments or unexpected threatened species finds during construction (where these additional impacts are generally consistent with the biodiversity impacts identified for the project in the documents listed under condition A1);</p> <p>(c) monitoring shall be undertaken during construction (for construction-related impacts) and from opening of the project to traffic (for operation/ ongoing impacts) until such time as the effectiveness of mitigation measures can be demonstrated to have been achieved over a minimum of three successive monitoring periods (i.e 6 years) after opening of the project to traffic, unless otherwise agreed by the Director General. The monitoring period may be reduced with the agreement of the Director General in consultation with the OEH and DPI (Fishing and Aquaculture), depending on the outcomes of the monitoring;</p> <p>(d) provision for the assessment of the data to identify changes to habitat usage and whether this can be directly attributed to the project;</p> <p>(e) details of contingency measures that would be implemented in the event of changes to habitat usage patterns directly attributable to the construction or operation of the project; and</p> <p>(f) provision for annual reporting of monitoring results to the Director General and the OEH and DPI (Fishing and Aquaculture), or as otherwise agreed by those agencies.</p> <p>The Program shall be submitted to the Director General for approval no later than 6 weeks prior to the commencement of construction that would result in the disturbance of native vegetation (unless otherwise agreed by the Director General).</p>		
	Hydrology and Flooding		
B11	<p>The Proponent shall ensure, where feasible and reasonable, that the project is designed to not exceed the afflux and other flooding criteria within the vicinity of the project as identified or predicted in the documents listed under condition A1. New or duplicated drainage structures shall be designed to minimise changes to afflux and flooding to waterways that traverse the project alignment to the greatest extent practicable.</p>		<p>Roads and Maritime and its construction partners have completed the detailed design for all stages of the project, that where feasible and reasonable, and in consultation with adjacent landowners, satisfies the requirements of this condition.</p>
B12	<p>The Proponent shall develop a Hydrological Mitigation Report for properties in the Hastings River and Wilson River floodplain areas where flood impacts are predicted to increase as a result of the project. The Report shall be based on detailed floor level survey and associated assessment of potentially flood affected properties in those areas. The Report shall:</p> <p>(a) identify properties in those areas likely to have an increased flooding impact and detail the predicted increased flooding impact;</p> <p>(b) identify mitigation measures to be implemented where increased flooding is predicted to adversely affect access, property or infrastructure;</p> <p>(c) 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 project and cause localised soil erosion and/or pasture damage;</p> <p>(d) be developed in consultation with the relevant council, NSW State Emergency Service</p>		<p>Roads and Maritime and its construction partners have developed and finalised a Hydrological Mitigation Report (November 2014) to satisfy the requirements of this condition in consultation with Port Macquarie – Hastings Council, NSW State Emergency Services and directly affected landowners.</p> <p>The report concluded that there would be negligible change to the existing flood regime and therefore mitigation measures have not been proposed.</p>

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	<p>and directly-affected property owners; and</p> <p>(e) identify operational and maintenance responsibilities for items (a) to (c) inclusive.</p> <p>The Proponent shall not commence construction of the project on or within those areas likely to alter flood conditions until such time as works identified in the hydrological mitigation report have been completed, unless otherwise agreed by the Director General.</p>		
B13	<p>Based on the mitigation measures identified in condition B12, the Proponent shall prepare a final schedule of feasible and reasonable flood mitigation measures proposed at each directly-affected property in consultation with the property owner. The schedule shall be provided to the relevant property owner(s) prior to the implementation/ construction of the mitigation works, unless otherwise agreed by the Director General. A copy of each schedule of flood mitigation measures shall be provided to the Department and the relevant council prior to the implementation/ construction of the mitigation measures on the property.</p>		<p>The Hydrological Mitigation Report concluded that there would be negligible change to the existing flood regime and therefore mitigation measures have not been proposed.</p>
B14	<p>In the event that the Proponent and the relevant property owner cannot agree on feasible and reasonable flood mitigation measures to be applied to a property within one month of the first consultation on the measures (as required under condition B13), the Proponent shall employ a suitably qualified and experienced independent hydrological engineer, who has been approved by the Director General, for the purposes of this condition prior to the commencement of construction in the Hastings River and Wilson River floodplain areas affected by increased afflux from the project to advise and assist affected property owners in negotiating feasible and reasonable mitigation measures.</p>		<p>The Hydrological Mitigation Report concluded that there would be negligible change to the existing flood regime and therefore mitigation measures have not been proposed. On this basis, the need to establish agreements with property owners was not required.</p>
B15	<p>The Proponent shall provide assistance to the relevant council and/ or NSW State Emergency Service, to prepare any new or necessary update(s) to the relevant plans and documents in relation to flooding, to reflect changes in flooding levels, flows and characteristics as a result of the project.</p>		<p>The Hydrological Mitigation Report concluded that there would be negligible change to the existing flood regime and therefore mitigation measures have not been proposed. On this basis, the need to prepare and/or update flood management documentation was not required.</p>
	Sedimentation, Erosion and Water		
B16	<p>Prior to the commencement of construction, unless otherwise agreed by the Director General, the Proponent shall in consultation with the OEH and NOW, undertake groundwater modeling on the concept design for the project, subject to the modelling being revised should the detailed design have a significantly different impact on groundwater than the concept design. The modeling shall be undertaken by a suitably qualified and experienced groundwater expert and assess the construction and operational impacts of the proposal on the groundwater resources, groundwater quality, groundwater hydrology and groundwater dependent ecosystems and provide details of contingency and management measures in the groundwater management strategy required under condition B31(vii).</p>		<p>Roads and Maritime have developed a Water Quality Monitoring Program that includes relevant information and analysis to address the requirements of this condition. The program was developed in consultation with OEH and NOW. The report was provided to the P&I for approval on 11 February 2014. The P&I subsequently approved the program on 5 March 2014.</p> <p>In the event any future changes to the detailed design are predicted to have a significantly different impact on groundwater than that modelled for the concept design, further modelling would be undertaken in accordance with the requirements of this condition. Where necessary, and to ensure the potential for impacts are adequately monitored, the Water Quality Monitoring Program would be updated accordingly.</p>

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B17	<p>The Proponent shall prepare and implement a Water Quality Monitoring Program to monitor the impacts of the project on surface and groundwater quality and resources and wetlands, during construction and operation. The Program shall be developed in consultation with the OEH, DPI (Fishing and Aquaculture) and NOW and shall include but not necessarily be limited to:</p> <ul style="list-style-type: none"> a. identification of surface and groundwater quality monitoring locations (including watercourses, waterbodies and SEPP14 wetlands) which are representative of the potential extent of impacts from the project; b. the results of the groundwater modelling undertaken under condition B16; c. identification of works and activities during construction and operation of the project, including emergencies and spill events, that have the potential to impact on surface water quality of potentially affected waterways, including the risks to oyster farming in the Hastings River; d. development and presentation of parameters and standards against which any changes to water quality will be assessed, having regard to the <i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000</i> (Australian and New Zealand Environment Conservation Council, 2000); e. representative background monitoring of surface and groundwater quality parameters for a minimum of twelve months (considering seasonality) prior to the commencement of construction, to establish baseline water conditions, unless otherwise agreed by the Director General; f. a minimum monitoring period of three years following the completion of construction or until the affected waterways and/ or groundwater resources are certified by an independent expert as being rehabilitated to an acceptable condition. The monitoring shall also confirm the establishment of operational water control measures (such as sedimentation basins and vegetation swales); g. contingency and ameliorative measures in the event that adverse impacts to water quality are identified; and h. reporting of the monitoring results to the Department, OEH and NOW. <p>The Program shall be submitted to the Director General for approval six (6) months prior to the commencement of construction of the project, or as otherwise agreed by the Director General. A copy of the Program shall be submitted to the OEH, DPI (Fishing and Aquaculture) and NOW prior to its implementation.</p>		<p>Roads and Maritime have developed a Water Quality Monitoring Program in consultation with OEH and NOW to address the requirements of this condition. The report was provided to the P&I for approval on 11 February 2014. The P&I subsequently approved the program on 5 March 2014.</p> <p>Pre-construction surface and groundwater quality monitoring reports in accordance with the approved Water Quality Monitoring Program were prepared and provided to P&E, OEH and NOW during June 2015. Subsequent construction monitoring reports will be prepared for six monthly intervals and provided to P&E, OEH and NOW for all stages during construction of the project.</p> <p>The requirements of this condition are ongoing for all stages throughout construction and up to three years following completion of the project.</p>
	Heritage impacts		
B18	<p>Prior to the commencement of pre-construction and construction in Aboriginal sites OHK46/A, OHK47/A, OHK54/A, OHK90/A, OHK91/A and OHK219/A, the Proponent shall undertake the relevant salvage mitigation measures outlined in section 19.4.1 of Volume 1 of the EA for these sites.</p> <p>The results of the salvage program shall be provided to the Department, the OEH and</p>		<p>Roads and Maritime completed salvage works required by this condition in February 2013. Following a modification to the project approval on 15 November 2013, that among other things, allowed for the salvage of additional heritage sites, Roads and Maritime sought an extension to the provision of a report detailing the results of the salvage program required by this condition. The P&I</p>

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	Aboriginal stakeholders within six months of the completion of the salvage program, unless otherwise agreed by the Director General.		approved the extension request on 30 January 2014 with a requirement that the report be provided by 31 December 2014. The report was subsequently provided to the department, OEH and Aboriginal stakeholders on 18 December 2014. P&E subsequently wrote to Roads and Maritime on 9 June 2015 advising that the report satisfactorily fulfilled the requirements of Condition B18A and B18C.
B18A	<p>Prior to the commencement of pre-construction and construction activities affecting the Pipers Creek PAD site, the Proponent shall:</p> <p>(a) undertake archaeological investigations at the Pipers Creek PAD site generally consistent with section 6 of the September 2012 Kelleher Nightingale report referenced in condition A1(f), or a methodology prepared in consultation with OEH and approved by the Director General; and</p> <p>(b) report on the results of the investigations, including recommendations (such as for salvage), in consultation with OEH and to the satisfaction of the Director General. The report shall include but not necessarily be limited to:</p> <p>(i) consideration of measures to minimise disturbance to archaeology, where significant archaeological deposits are found to be present;</p> <p>(i) where impacts cannot be avoided, recommendations for any further investigations for significant archaeological deposits; and</p> <p>(ii) management and mitigation measures to ensure there are no additional impacts due to pre-construction and construction activities; and</p> <p>(c) undertake any salvage works recommended by the results of the archaeological investigations, in accordance with the report required under condition B18A(b).</p>		See further detail provided in response to condition B18 with respect to items (a) and (b) of this condition. Salvage under item (c) is not required.
B18B	Prior to the commencement of pre-construction and construction activities affecting site OHK85, the Proponent shall undertake any salvage works recommended by the results of the archaeological investigations described in the 2013 Kelleher Nightingale document referenced in condition A1(f), in accordance with the relevant salvage mitigation measures outlined in section 19.4.1 of Volume 1 of the EA.		Salvage works have been completed in accordance with the requirements of this condition. The outcomes of the salvage have been documented in the report prepared in response to Condition B18.
B18C	Within 12 months of completing any salvage work in accordance with conditions B18A and/or B18B, or at such time otherwise agreed by the Director General, the Proponent shall submit a report containing the findings of the salvage works, prepared in consultation with OEH and to the satisfaction of the Director General.		Noted. See detailed status in response to Condition B18.
B19	Prior to the commencement of pre-construction and construction that affects the farm complex identified as OHK11 in Table 20-1 of Volume 1 of the EA, the Proponent shall prepare an archaeological assessment, which includes a research design and methodology to guide any proposed archaeological investigation, in accordance with the relevant Heritage Council of NSW guidelines. The archaeological assessment shall be prepared in consultation with the Office of Environment and Heritage (Heritage Branch) and submitted for the approval		Investigations in accordance with the requirements of this condition were completed on 29 May 2014. The outcomes of the investigation are summarised in the final excavation report provided to P&E and OEH on 15 September 2014. P&E subsequently wrote to Roads and Maritime advising that they had reviewed the report and were providing no further comment.

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	<p>of the Director General prior to work commencing on site OHK11, unless otherwise agreed to by the Director General. The Excavation Director for the archaeological program shall meet the requirements of the Heritage Council of NSW's Excavation Director Criteria (Heritage Council of NSW website http://www.heritage.nsw.gov.au/docs/excavationdirectors.pdf dated July 2011).</p> <p>Any further archaeological work recommended on this site by the assessment shall be undertaken by the Proponent in consultation with the Office of Environment and Heritage (Heritage Branch). A final report on the excavation shall be submitted to the Director General and the Heritage Council of NSW within six months of the completion of the archaeological fieldwork, unless otherwise agreed to by the Director General.</p>		
	Urban Design and Landscaping		
B20	<p>The Proponent shall prepare and implement an Urban Design and Landscape Plan for the project. The Plan shall be prepared in consultation with the relevant council and shall present an integrated urban design for the project. The Plan shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> (a) principal goal of achieving the urban design objectives outlined in Table 17-4 of Volume 1 of the EA; (b) location of existing vegetation and proposed landscaping (including use of indigenous and endemic species where possible) and design features; (c) graphics such as sections, perspective views and sketches for key elements of the project (including, but not limited to built elements such as retaining walls, cuttings, embankments, bridges, and noise barriers); (d) a description of locations along the project corridor directly or indirectly impacted by the construction of the project (e.g. temporary ancillary facilities, access tracks, watercourse crossings, 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. Details of species to be replanted/ revegetated shall be provided, including their appropriateness to the area and considering existing vegetation and habitat for threatened species; (e) an assessment of the visual screening affects of existing vegetation and the proposed landscaping. Where residences and businesses have been identified as likely to experience high visual impact as a result of the project and high residual impacts are likely to remain, the Proponent shall in consultation with affected receptors, identify opportunities for providing at receptor landscaping to further screen views of the project. Where agreed to with the landowner, these measures shall be implemented during the construction of the project; (f) strategies for progressive landscaping of other environmental controls such as erosion and sedimentation controls, drainage and noise mitigation; (g) location and design treatments for any associated footpaths and cyclist elements, and other features such as seating, lighting (in accordance with AS 4282-1997 Control of the Obtrusive Effect of Outdoor Lighting), fencing, and signs; (h) evidence of consultation with the relevant council and community on the proposed urban 		<p>Roads and Maritime and its construction partners have completed an Urban Design and Landscape Plan for each stage of the project in consultation with council, relevant stakeholders and the community.</p> <p>On 21 May 2014 Roads and Maritime wrote to P&E seeking approval for the Stage 1 Sancrox Traffic Arrangement works Urban Design and Landscape Plan. The plan was subsequently approved on 10 November 2014.</p> <p>On 29 April 2014 Roads and Maritime submitted a request for a six month extension for submission of the Stage 2 plan to the Director General for approval. The request was approved on 20 June 2014 and requires the plan to be submitted for approval on or before 1 December 2014. P&I also advised that in the absence of submission, progress on development of the plan must be provided to the P&I by 1 September 2014. An update to the department was subsequently provided on 28 August 2014. The final plan was provided to P&E on 27 November 2014. Following minor revisions in response to further comments, the plan was subsequently approved on 18 February 2015.</p> <p>On 28 July 2014 Roads and Maritime submitted a request for an extension for submission of the Stage 3 plan to the Director General for approval. The request was approved on 28 August 2014 and requires the plan to be submitted for approval on or before 1 December 2014. P&I also advised that in the absences of submission, progress on development of the plan must be provided to the P&I by 1 September 2014. An update to the department was subsequently provided on 16 October 2014 and a further request for an extension on submission of the plan was submitted on 27 November 2014. The extension request was approved on 21 February 2015 and required submission of the final plan by 1 June 2015. The final plan was subsequently</p>

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	<p>design and landscape measures prior to its finalisation; and</p> <p>(i) monitoring and maintenance procedures for the built elements, rehabilitated vegetation and landscaping (including weed control) including performance indicators, responsibilities, timing and duration and contingencies where rehabilitation of vegetation and landscaping measures fail.</p> <p>The Plan shall be submitted for the approval of the Director General prior to the commencement of permanent built works and/ or landscaping, unless otherwise agreed by the Director General. The Plan may be submitted in stages to suit the staged construction program of the project.</p>		provided to P&E on 1 June 2015 for approval. Further comments were received by P&E on 19 June 2015 and the project team is currently working on addressing those outstanding issues. The plan will be submitted for final approval in the coming months.
	Traffic and Access		
B21	The Proponent shall ensure that the project is designed in consultation with DPI (Forests) to ensure that access of a standard that is at least equivalent to that currently existing and which meets relevant road safety standards is maintained within state forests to enable continued forestry operations, fire management and recreation during construction and operation unless otherwise agreed with DPI (Forests).		Noted. Consultation is ongoing in accordance with requirements of this condition. Design of accesses into Forestry Corporation reserves has been finalised and is currently the subject of a final review by the Forestry Corporation.
B22	The Proponent shall ensure that the project is designed to incorporate appropriate signage for townships along the existing highway that are bypassed by the project, in consultation with the relevant council and community. The signage policy shall be consistent with the Roads and Maritime Service's standard signposting policy and provide information on the range of services available within the towns including advice that the route through the towns may be taken as an alternative to the highway.		Noted. Consultation is ongoing in accordance with requirements of this condition, and forms part of a wider consultation strategy for the whole Pacific Highway upgrade program.
	Property and Landuse		
B23	<p>The Proponent shall ensure that the project is designed to minimise land take impacts to surrounding properties (including agricultural properties) as far as feasible and reasonable, in consultation with the affected landowners. Where the viability of existing agricultural operations are identified to be highly affected by the land requirements of the project, the Proponent shall as part of detailed design employ a suitably qualified and experienced independent agricultural specialist (that is approved by the Director General for the purpose of this condition), to assist in the following (where agreed to by the relevant landowner):</p> <p>(a) identifying alternative farming opportunities for the relevant properties including purchase of other residual land to enable existing/new agricultural activities to continue; and/ or</p> <p>(b) negotiating appropriate compensation and/or arrangements for the purchase of the property under the <i>Land Acquisition (Just Terms Compensation) Act 1991</i>.</p>		The design of the project has been optimised to minimise land take and best serve adjacent business and private land use practices. The viability of agricultural operations would not be substantially affected by the project.
	Compliance tracking		
B24	The Proponent shall develop and implement a Compliance Tracking Program to track compliance with the requirements of this approval. The Program shall be submitted to the Director General for approval prior to the commencement of construction and relate to both the construction and operational phases of the project, and include, but not necessarily be limited to:	Pre-construction and construction	Roads and Maritime has developed a Compliance Tracking Program to address the requirements of this condition. The program was submitted to the P&I for approval on 12 April 2013. P&I subsequently approved the plan, subject to two additional conditions, on 22 July 2013.

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	<p>(a) provisions for the notification of the Director General of the commencement of works prior to the commencement of construction and prior to the commencement of operation of the project (including prior to each stage, where works are being staged);</p> <p>(b) provisions for periodic review of project compliance with the requirements of this approval and the documents listed under condition A1, including the Statement of Commitments;</p> <p>(c) provisions for periodic reporting of compliance status against the requirements of this approval and the documents listed under condition A1, including the Statement of Commitments, to the Director General including at least one month prior to the commencement of construction and operation of the project and at other intervals during the construction and operation, as identified in the Program;</p> <p>(d) a program for independent environmental auditing in accordance with ISO 19011:2003 - Guidelines for Quality and/ or Environmental Management Systems Auditing;</p> <p>(e) mechanisms for reporting and recording incidents and actions taken in response to those incidents;</p> <p>(f) provisions for reporting environmental incidents to the Director General during construction and operation; and</p> <p>(g) procedures for rectifying any non-compliance identified during environmental auditing, review of compliance or incident management.</p>		<p>Roads and Maritime provided pre-construction compliance tracking reports for each stage of construction in the lead up to the commencement of each stage. These reports were provided on:</p> <ul style="list-style-type: none"> • Stage 1 – 21 May 2014. • Stage 2 – 12 September 2014. • Stage 3 – 31 July 2014 <p>P&E were notified on 25 August 2014 that construction on the project commenced on 22 July 2014.</p> <p>The first construction compliance tracking report for the period 22 July 2014 to 21 January 2015 was provided to P&E on 24 March 2015. There have been no comments from P&E to date.</p> <p>This construction compliance tracking report outlines the status of compliance in accordance with the approved compliance tracking program developed in response to this condition. This report covers the second construction compliance tracking period between 22 January 2015 and 21 July 2015.</p>
	Community Information and Involvement		
	<i>Provision of Electronic Information</i>		
B25	<p>Prior to the commencement of construction, 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 project. 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 project;</p> <p>(b) a copy of the documents referred to under condition A1 of this approval, and any documentation supporting modifications to this approval that may be granted from time to time;</p> <p>(c) a copy of this approval and any future modification to this approval;</p> <p>(d) a copy of each relevant environmental approval, licence or permit required and obtained in relation to the project;</p> <p>(e) a copy of each current strategy, plan, program or other document required under this approval; and</p> <p>(f) the outcomes of compliance tracking in accordance with the requirements of condition B24.</p>	Pre-construction and construction	A project website has been established and is accessible through the Roads and Maritime corporate website. The website is updated at regular intervals and will contain all information, as a minimum, required by this condition.
	<i>Complaints and Enquiries Procedure</i>		

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B26	<p>Prior to the commencement of construction, the Proponent shall ensure that the following are available for community complaints and enquiries during the construction period:</p> <p>(a) a telephone number on which complaints and enquiries about construction and operation activities may be registered;</p> <p>(b) a postal address to which written complaints and enquiries may be sent; and</p> <p>(c) an email address to which electronic complaints and enquiries may be transmitted.</p> <p>The telephone number, the postal address and the email address shall be published in a newspaper circulating in the local area prior to the commencement of construction and prior to the commencement of project operation. The above details shall also be provided on the website (or dedicated pages) required by this approval.</p>		<p>Roads and Maritime and its construction partners have developed a Community Communications Strategy for each stage of the project that among other things, address the requirements of this condition. Further detail on the status of these strategies is provided in response to MCoA B28.</p> <p>Advertisements were placed local newspapers and sent to registered stakeholders in July and October 2014 advising the community of the anticipated commencement of the various stages of construction and also how to establish contact with Roads and Maritime and its construction partners via telephone, post and email. This information is also supplied with all community notifications and published on the project website.</p>
B27	<p>The Proponent shall prepare and implement a Construction Complaints Management System consistent with AS 4269 Complaints Handling prior to the commencement of construction activities and must maintain the System for the duration of construction activities.</p> <p>Information on all complaints received, including the means by which they were addressed and whether resolution was reached and whether mediation was required or used, shall be maintained by the Proponent and included in a complaints register. The information contained within the System shall be made available to the Director General on request.</p>		<p>Roads and Maritime and its construction partners have developed a Community Communications Strategy for each stage of the project that among other things, address the requirements of this condition. Further detail on the status of these strategies is provided in response to MCoA B28.</p>
<i>Community Involvement</i>			
B28	<p>The Proponent shall prepare and implement a Community Communication Strategy for the project. This Strategy shall be designed to provide mechanisms to facilitate communication between the Proponent, the Contractor, the Environmental Representative, the relevant council and the local community (broader and local stakeholders) on the construction and environmental management of the project. The Strategy shall include, but not necessarily 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 stakeholders on the progress of the project and matters associated with environmental management;</p> <p>(c) procedures and mechanisms through which stakeholders can discuss or provide feedback to the Proponent and/ or Environmental Representative in relation to the environmental management and delivery of the project;</p> <p>(d) procedures and mechanisms through which the Proponent can respond to enquires or feedback from stakeholders in relation to the environmental management and delivery of the project; and</p> <p>(e) procedures and mechanisms that would be implemented to resolve issues/ disputes that may arise between parties on the matters relating to environmental management and the delivery of the project. This may include the use of an appropriately qualified and experienced independent mediator.</p>		<p>Roads and Maritime and its construction partners have developed a Community Communications Strategy for each stage of the Project that among other things, address the requirements of this condition.</p> <p>The Stage 1 Construction Community Liaison Management Plan prepared to address the requirements of this condition was submitted to P&E for approval on 19 May 2014. The plan was subsequently approved by the P&E on 10 June 2014.</p> <p>The Stage 2 Community Communications Strategy was submitted to P&E for approval on 9 September 2014. The plan was subsequently approved by the P&E on 4 November 2014.</p> <p>The Stage 3 Community Communications Strategy was submitted to P&E for approval on 31 July 2014. The plan was subsequently approved by the P&E on 13 October 2014.</p>

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	The Proponent shall maintain and implement the Strategy throughout construction of the project. The Strategy shall be approved by the Director General prior to the commencement of construction, or as otherwise agreed by the Director General.		
	Environmental Management		
	<i>Environmental Representative</i>		
B29	<p>Prior to the commencement of construction of the project, or as otherwise agreed by the Director General, the Proponent shall nominate for the approval of the Director General a suitably qualified and experienced Environmental Representative(s) that is independent of the design (including preparation of documentation referred to in condition A1), and construction personnel. The Proponent shall employ the Environmental Representative(s) for the duration of construction, or as otherwise agreed by the Director General. The Environment Representative(s) shall:</p> <ul style="list-style-type: none"> (a) be the principal point of advice in relation to the environmental performance of the project; (b) be consulted in responding to the community concerning the environmental performance of the project where the resolution of points of conflict between the Proponent and the community is required; (c) monitor the implementation of environmental management plans and monitoring programs required under this approval; (d) monitor the outcome of environmental management plans and advise the Proponent upon the achievement of project environmental outcomes; (e) 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 project; (f) ensure that environmental auditing is undertaken in accordance with the requirements of condition B24 and the project's Environmental Management System(s); (g) 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 required under condition B30; and (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. 	Pre-construction and construction	<p>Roads and Maritime sought approval for Mr Ben Luffman (GHD) as the Environmental Representative and Mr Maurice Pignatelli (GHD) as the alternative Environmental Representative on 17 May 2013. The P&I approved the nominations on 18 June 2013.</p> <p>Compliance with the condition is ongoing throughout all stages of the project.</p>
	<i>Construction Environmental Management Plan</i>		
B30	The Proponent shall prepare and (following approval) implement a Construction Environmental Management Plan for the project. The Plan shall outline the environmental management practices and procedures that are to be followed during construction, and shall be prepared in consultation with the relevant agencies and in accordance with the Guideline for the Preparation of Environmental Management Plans (Department of Infrastructure,		A Construction Environmental Management Plan (CEMP), including relevant sub-plans, was prepared for each stage of the project in consultation with OEH and DPI (Fishing and Aquaculture) to address the relevant requirements of this condition.

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	<p>Planning and Natural Resources, 2004). The Plan shall include, but not necessarily be limited to:</p> <p>(a) a description of activities to be undertaken during construction of the project or stages of construction, as relevant;</p> <p>(b) statutory and other obligations that the Proponent is required to fulfil during construction including approvals, consultations and agreements required from agencies and key legislation and policies. Evidence of consultation with relevant agencies shall be included identifying how issues raised by these agencies have been addressed in the Plan;</p> <p>(c) a description of the roles and responsibilities for relevant employees involved in the construction of the project including relevant training and induction provisions for ensuring that employees, including contractors and sub-contractors are aware of their environmental and compliance obligations under these conditions of approval;</p> <p>(d) identification of ancillary facility site locations, including an assessment against the location criteria outlined in condition C28;</p> <p>(e) an environmental risk analysis to identify the key environmental performance issues associated with the construction phase and details of how environmental performance would be monitored and managed to meet acceptable outcomes including what actions will be taken to address identified potential adverse environmental impacts (including any impacts arising from the staging of the construction of the project and/ or concurrent construction works with adjacent Pacific Highway Upgrade projects, as relevant). In particular, the following environmental performance issues shall be addressed in the Plan:</p> <p>(i) measures to monitor and manage dust emissions including dust from stockpiles, blasting, traffic on unsealed public roads and materials tracking from construction sites onto public roads;</p> <p>(ii) measures to minimise hydrology impacts, including measures to stabilise bed and bank structures as required,</p> <p>(iii) measures to monitor and manage impacts associated with the construction and operation of ancillary facilities,</p> <p>(iv) measures for the handling, treatment and management of contaminated materials,</p> <p>(v) measures to monitor and manage waste generated during construction including but not necessarily limited to: general procedures for waste classification, handling, reuse, and disposal; use of secondary waste material in construction wherever feasible and reasonable; procedures for dealing with green waste including timber and mulch from clearing activities; and measures for reducing demand on water resources (including the potential for reuse of treated water from sediment control basins);</p> <p>(vi) measures to monitor and manage spoil, fill and materials stockpile sites including details of how spoil, fill or material would be handled, stockpiled, reused and disposed and a stockpile management protocol detailing locational criteria that would guide the placement of stockpiles and management measures that would be implemented to avoid/ minimize amenity impacts to surrounding residents and environmental risks (including to surrounding water courses). Stockpile sites that affect heritage, threatened species, populations or endangered ecological</p>		<p>Roads and Maritime wrote to P&E on 3 April and 21 May 2014 seeking approval for the Stage 1 CEMP a number of sub plans. The CEMP and sub plans required by MCoA B31(a) to (e) were approved on 7 July 2014.</p> <p>Roads and Maritime wrote to P&E on 9 and 12 September 2014 seeking approval for the Stage 2 CEMP a number of sub plans. The CEMP and sub plans required by MCoA B31(a) to (e) were approved on 4 November 2014. Three minor changes to the Stage 2 CEMP have been endorsed by the environmental representative during this reporting period. Changes include:</p> <ul style="list-style-type: none"> • Change to contact details. • Requirements for construction noise monitoring. • Update to address unexpected threatened species find. <p>Roads and Maritime wrote to P&E on 30 July and 29 August 2014 seeking approval for the Stage 3 CEMP a number of sub plans. The CEMP and sub plans required by MCoA B31(a) to (e) were approved on 13 October 2014. Two minor changes to the Stage 3 CEMP have been endorsed by the environmental representative during this reporting period. Changes include:</p> <ul style="list-style-type: none"> • Mitigation measures in relation to refueling large plant over waterways. • Minor change to ASSTA requirements.

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	<p>communities require the approval of the Director General, in consultation with the OEH;</p> <ul style="list-style-type: none"> (vii) measures to monitor and manage hazard and risks including emergency management; and (viii) the issues identified in condition B31; <p>(f) details of community involvement and complaints handling procedures during construction, consistent with the requirements of conditions B25 to B28;</p> <p>(g) details of compliance and incident management consistent with the requirements of condition B24; and</p> <p>(h) procedures for the periodic review and update of the Construction Environmental Management Plan and sub-plans required under condition B31, as necessary (including where minor changes can be approved by the Environmental Representative).</p> <p>The Plan shall be submitted for the approval of the Director General no later than one month prior to the commencement of construction, or within such period otherwise agreed by the Director General. Construction works shall not commence until written approval has been received from the Director General.</p>		
B31	As part of the Construction Environment Management Plan for the project required under condition B30, the Proponent shall prepare and implement the following sub plan(s):		
	<p>(a) a Construction Traffic Management Sub-plan, prepared in accordance with the Roads and Maritime Service's QA Specification G10 – Control of Traffic and Traffic Control at Work Sites Manual (2003) to manage disruptions to traffic movements as a result of construction traffic associated with the project. The sub-plan shall be developed in consultation with the relevant council and shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> (i) identification of construction traffic routes and quantification of construction traffic volumes (including heavy vehicle/ spoil haulage) on these routes; (ii) details of vehicle movements for construction sites and site compounds including parking, dedicated vehicle turning areas, and ingress and egress points; (iii) details of potential impacts to traffic on the existing highway and associated local roads, including intersection level of service and potential disruptions to pedestrians, public transport, parking, cyclists and property access; (iv) details of temporary and interim traffic arrangements to address potential impacts; (v) a response procedure for dealing with traffic incidents; and (vi) mechanism for the monitoring, review and amendment of this sub-plan; 		<p>A Construction Traffic Management Plan (TMP) to address the requirements of this condition was prepared for each stage of the Project.</p> <p>Roads and Maritime wrote to P&E on 21 May 2014 seeking approval for the Stage 1 TMP. The TMP required by this condition was approved on 7 July 2014.</p> <p>Roads and Maritime wrote to P&E on 9 September 2014 seeking approval for the Stage 2 TMP. The TMP required by this condition was approved on 4 November 2014.</p> <p>Roads and Maritime wrote to P&E on 29 August 2014 seeking approval for the Stage 3 TMP. The TMP required by this condition was approved on 13 October 2014.</p>
	<p>(b) a Construction Flora and Fauna Management Sub-plan to detail how construction impacts on ecology will be minimised and managed. The sub-plan shall be developed in consultation with the OEH and DPI (Fishing and Aquaculture) and shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> (i) details of pre-construction surveys undertaken to verify the construction boundaries/footprint of the project based on detailed design and to confirm the vegetation to be cleared as part of the project (including tree hollows, threatened 		<p>A Construction Flora and Fauna Management Plan (FFMP) to address the requirements of this condition was prepared in consultation with OEH and DPI (Fishing and Aquaculture) for each stage of the Project.</p> <p>Roads and Maritime wrote to P&E on 21 May 2014 seeking approval for the Stage 1 FFMP. The FFMP required by this condition was approved on 7 July 2014.</p>

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	<p>flora and fauna species, mangroves, seagrass and riparian vegetation). The surveys shall be undertaken by a suitably qualified and experienced ecologist and include targeted surveys during suitable conditions for Koalas, Green-thighed Frog, Giant Barred Frog and microbats within and in the vicinity of the project corridor;</p> <p>(ii) updated sensitive area/ vegetation maps based on B31(b)(i) above and previous survey work;</p> <p>(iii) details of general work practices and mitigation measures to be implemented during construction to minimise impacts on native fauna and native vegetation (particularly threatened species and EECs) not proposed to be cleared as part of the project, including, but not necessarily limited to: fencing of sensitive areas, a protocol for the removal and relocation of fauna during clearing, presence of a suitably qualified and experienced ecologist to oversee clearing activities and facilitate fauna rescues and re-location, clearing timing with consideration to breeding periods, measures for maintaining existing habitat features (such as bush rock and tree branches etc), seed harvesting and appropriate topsoil management, construction worker education, weed management (including controls to prevent the introduction or spread of <i>Phytophthora cinnamomi</i>), erosion and sediment control and progressive re-vegetation;</p> <p>(iv) specific procedures to deal with EEC/ threatened species anticipated to be encountered within the project corridor including re-location, translocation and/or management and protection measures;</p> <p>(v) a management strategy for the Green-thighed Frog and Giant Barred Frog in the case that the pre-construction surveys identify the presence of these species or its habitats in the project corridor or its vicinity. The strategy shall include details of the measures to avoid, minimise and mitigate impacts to these species;</p> <p>(vi) a Microbat management strategy in the case that the pre-construction surveys (undertaken at least 12 months in advance of disturbance to potential roosting structures, or as agreed by the Director General) identify the presence of or evidence of microbat roosting in the project corridor or its vicinity. The strategy shall detail measures to avoid, minimise and mitigate impacts to microbats and identified roost sites, including short and long term management measures;</p> <p>(vii) an aquatic vegetation management strategy for mangroves and seagrass. The strategy shall:</p> <ol style="list-style-type: none"> i. identify the potential for the translocation of mangroves and/ or seagrass impacted by the project; ii. if translocation is feasible, include details of a translocation plan consistent with Policy and Guidelines for Fish Habitat Conservation and Management (NSW Fisheries 1999) including details of ongoing maintenance such as responsibilities, timing and duration; iii. identify a process for incorporating appropriate compensatory habitat for mangroves and/ or seagrass impacted by the project in the Biodiversity Offset 		<p>Roads and Maritime wrote to P&E on 12 September 2014 seeking approval for the Stage 2 FFMP. The FFMP required by this condition was approved on 4 November 2014.</p> <p>Roads and Maritime wrote to P&E on 30 July 2014 seeking approval for the Stage 3 FFMP. The FFMP required by this condition was approved on 13 October 2014.</p>

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	<p>Strategy referred to in condition B8 of this approval, should the information obtained during the investigation find that translocation is not feasible or where the monitoring undertaken finds that translocation measures have not been successful (as identified through performance criteria); and</p> <p>iv. include detail of mitigation measures to be implemented during construction to avoid and minimise impacts to areas identified to contain these species, including impacts from the use and storage of construction plant, equipment, materials and entry by personnel;</p> <p>(viii) a procedure for dealing with unexpected EEC/ threatened species identified during construction including cessation of work and notification of the OEH, determination of appropriate mitigation measures in consultation with the OEH (including relevant re-location measures) and update of ecological monitoring and/ or biodiversity offset requirements consistent with conditions B8 and B10; and</p> <p>(ix) mechanism for the monitoring, review and amendment of this sub-plan;</p>		
	<p>(c) a Construction Noise and Vibration Management Sub-plan to detail how construction noise and vibration impacts will be minimised and managed. The sub-plan shall be developed in consultation with the EPA and include, but not necessarily be limited to:</p> <p>(i) identification of nearest sensitive receptors and relevant construction noise and vibration goals applicable to the project;</p> <p>(ii) identification of key noise and/or vibration generating construction activities (based on representative construction scenarios, including at ancillary facilities) that have the potential to impact on surrounding sensitive receivers including expected noise/ vibration levels;</p> <p>(iii) identification of feasible and reasonable measures proposed to be implemented to minimize construction noise and vibration impacts (including construction traffic noise impacts);</p> <p>(iv) procedures for dealing with out-of-hour works in accordance with condition C4, including procedures for notifying the Director General concerning complaints received in relation to the extended hours approved under condition C4(d);</p> <p>(v) procedures and mitigation measures to ensure relevant vibration and blasting criteria are achieved, including a suitable blast program, applicable buffer distances for vibration intensive works, use of low-vibration generating equipment/ vibration dampeners or alternative construction methodology, and pre- and post- construction dilapidation surveys of sensitive structures where blasting and/ or vibration is likely to result in damage to buildings and structures (including surveys being undertaken immediately following a monitored exceedance of the criteria);</p> <p>(vi) procedures for notifying sensitive receivers of construction activities that are likely to affect their noise and vibration amenity, as well as procedures for dealing with and responding to noise complaints; and</p> <p>(vii) a program for construction noise and vibration monitoring clearly indicating monitoring frequency, location, how the results of this monitoring would be recorded</p>		<p>A Construction Noise and Vibration Management Plan (NVMP) to address the requirements of this condition was prepared in consultation with EPA for each stage of the Project.</p> <p>Roads and Maritime wrote to P&E on 21 May 2014 seeking approval for the Stage 1 NVMP. The NVMP required by this condition was approved on 7 July 2014. Roads and Maritime have since submitted a revision to the Stage 1 CNVMP in relation to the Out of Hours Work Procedure. The submission was made on 9 July 2015 and an approval remains outstanding.</p> <p>Roads and Maritime wrote to P&E on 12 September 2014 seeking approval for the Stage 2 NVMP. The NVMP required by this condition was approved on 4 November 2014.</p> <p>Roads and Maritime wrote to P&E on 29 August 2014 seeking approval for the Stage 3 NVMP. The NVMP required by this condition was approved on 13 October 2014.</p>

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	and, procedures to be followed where significant exceedences of relevant noise and vibration goals are detected;		
	<p>(d) a Construction Soil and Water Quality Management Sub-plan to manage surface and groundwater impacts during construction of the project. The sub-plan shall be developed in consultation with the OEH, DPI (Fishing and Aquaculture) and NOW and include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> (i) identification of potential sources of erosion and sedimentation, and water pollution (including those resulting from maintenance activities); (ii) details of how construction activities would be managed and mitigated to minimise erosion and sedimentation consistent with condition C17; (iii) where construction activities have the potential to impact on waterways or wetlands (through direct disturbance such as construction of waterway crossings or works in close proximity to waterways or wetlands), site specific mitigation measures to be implemented to minimise water quality, riparian and stream hydrology impacts as far as practicable, including measures to stabilise bed and/ or bank structures where feasible and reasonable, and to rehabilitate affected riparian vegetation to existing or better condition. The timing of rehabilitation of the waterways shall be identified in the sub-plan; (iv) a contingency plan, consistent with the Acid Sulfate Soils Manual, to deal with the unexpected discovery of actual or potential acid sulfate soils, including procedures for the investigation, handling, treatment and management of such soils and water seepage; (v) a tannin leachate management protocol to manage the stockpiling of mulch and use of cleared vegetation and mulch filters for erosion and sediment control; (vi) construction water quality monitoring requirements consistent with condition B16; and (vii) a groundwater management strategy, including (but not necessarily limited to): <ul style="list-style-type: none"> i. description and identification of groundwater resources (including depths of the water table and water quality) potentially affected by the project based on baseline groundwater monitoring undertaken in accordance with condition B16; ii. identification of surrounding licensed bores, dams or other water supplies and groundwater dependant ecosystems and potential groundwater risks associated with the construction of the project on these groundwater users and ecosystems; iii. measures to manage identified impacts on water table, flow regimes and quality and to groundwater users and ecosystems; iv. groundwater inflow control, handling, treatment and disposal methods; and v. a detailed monitoring plan to identify monitoring methods, locations, frequency, duration and analysis requirements; and 		<p>A Construction Soil and Water Management Plan (SWMP) to address the requirements of this condition was prepared in consultation with OEH, DPI (Fishing and Aquaculture) and NOW for each stage of the Project.</p> <p>Roads and Maritime wrote to P&E on 21 May 2014 seeking approval for the Stage 1 SWMP. The SWMP required by this condition was approved on 7 July 2014.</p> <p>Roads and Maritime wrote to P&E on 9 September 2014 seeking approval for the Stage 2 SWMP. The SWMP required by this condition was approved on 4 November 2014.</p> <p>Roads and Maritime wrote to P&E on 30 July 2014 seeking approval for the Stage 3 SWMP. The SWMP required by this condition was approved on 13 October 2014.</p>

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	<p>(e) a Construction Heritage Management Sub-plan to detail how construction impacts on Aboriginal and non-Aboriginal heritage will be minimised and managed. The sub-plan shall be developed in consultation with the OEH and registered Aboriginal stakeholders (for Aboriginal heritage), and include, but not necessarily be limited to:</p> <p>(i) In relation to Aboriginal Heritage:</p> <ul style="list-style-type: none"> i. details of management measures to be carried out in relation to recorded sites and potential Aboriginal deposits (including further archaeological investigations, salvage measures and/ or measures to protect unaffected sites during construction works in the vicinity); ii. procedures for dealing with previously unidentified Aboriginal objects (excluding human remains) including cessation of works in the vicinity, assessment of the significance of the item(s) and determination of appropriate mitigation measures including when works can re-commence by a suitably qualified archaeologist in consultation with the Department, OEH and registered Aboriginal stakeholders and assessment of the consistency of any new Aboriginal heritage impacts against the approved impacts of the project, and registering of the new site in the OEH's Aboriginal Heritage Information Management System (AHIMS) register; iii. procedures for dealing with human remains, including cessation of works in the vicinity and notification of the Department, NSW Police Force, OEH and registered Aboriginal stakeholders and not recommencing any works in the area unless authorised by the Department and/ or the NSW Police Force); and iv. Aboriginal cultural heritage induction processes for construction personnel (including procedures for keeping records of inductions) and procedures for ongoing Aboriginal consultation and involvement; and <p>(ii) In relation to non-Aboriginal Heritage:</p> <ul style="list-style-type: none"> i. details of management measures to be carried out in relation to recorded sites (including further heritage investigations, archival recordings and/ or measures to protect unaffected sites during construction works in the vicinity), consistent with the Mitigation and Management Strategies listed in Section 9 of the Non-Indigenous Heritage Impact Assessment prepared by South East Archaeology Pty Limited (dated December 2007); ii. procedures for dealing with previously unidentified non-Aboriginal objects, (including cessation of works in the vicinity, assessment of the significance of the item(s) and determination of appropriate mitigation measures including when works can re-commence by a suitably qualified and experienced archaeologist in consultation with the Department and Office of Environment and Heritage (Heritage Branch) and assessment of the consistency of any new non-Aboriginal heritage impacts against the approved impacts of the project; and iii. non-Aboriginal heritage induction processes for construction personnel (including procedures for keeping records of inductions). 		<p>A Construction Heritage Management Plan (HMP) to address the requirements of this condition was prepared in consultation with OEH, DPI (Fishing and Aquaculture) and NOW for each stage of the Project.</p> <p>Roads and Maritime wrote to P&E on 21 May 2014 seeking approval for the Stage 1 HMP. The HMP required by this condition was approved on 7 July 2014.</p> <p>Roads and Maritime wrote to P&E on 9 September 2014 seeking approval for the Stage 2 HMP. The HMP required by this condition was approved on 4 November 2014.</p> <p>Roads and Maritime wrote to P&E on 30 July 2014 seeking approval for the Stage 3 HMP. The HMP required by this condition was approved on 13 October 2014.</p>

CoA no.	Requirement	Stage	Status / Reference
	Part C – During Construction		
	Biodiversity		
C1	The Proponent shall employ feasible and reasonable measures to minimise the clearing of native vegetation during the construction of the project.		The requirements of this condition have been incorporated into the CEMPs and associated FFMP for each stage of the project. See discussion provided for MCoA B30 and MCoA B31(b).
	Air Quality Impacts		
C2	The Proponent shall employ feasible and reasonable measures (including cessation of relevant works, as appropriate) to ensure that the project is constructed in a manner that minimises dust generation, including wind-blown dust, traffic-generated dust, dust from stockpiles and material tracking from construction and ancillary facility sites onto public roads.		The requirements of this condition have been incorporated into a Construction Air Quality Management Sub-plan (AQMP) prepared as part of the CEMP for each stage of the project. See discussion provided for MCoA B30.
	Noise and Vibration Impacts		
	<i>Construction Hours</i>		
C3	The Proponent shall only undertake construction activities associated with the project during the following standard construction hours: (a) 7:00am to 6:00pm Mondays to Fridays, inclusive; and (b) 8:00am to 1:00pm Saturdays; and (c) at no time on Sundays or public holidays.		The requirements of this condition have been incorporated into the NVMP for each stage of the Project. See discussion provided for MCoA B31(c).
C4	Works outside of the standard construction hours identified in condition C3 may be undertaken in the following circumstances: (a) works that generate noise that is: (i) no more than 5 dB(A) above rating background level at any residence; or (ii) 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 land uses; or (b) for delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or (c) where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm; or (d) construction works undertaken through sparsely populated areas (being those areas in which sensitive receptors are located greater than 200 metres away from the project boundary). In this case construction is permissible during the following hours: 6.00am to 6.00pm Monday to Friday and 7.00am to 4.00pm Saturdays and at no time on Sundays or public holidays. These works hours may be reviewed and/ or revoked by the Director General in consultation with the EPA in the case of excessive or unresolved noise		The requirements of this condition have been incorporated into the NVMP for each stage of the project. See discussion provided for MCoA B31(c). Compliance with the requirements of this condition continues across all stages of the project.

CoA no.	Requirement	Stage	Status / Reference
	complaints; or (e) with the approval of the Director General in accordance with condition C5.		
C5	<p>Construction activities (Out of Hours work) may be allowed to occur outside the construction hours specified in condition C3 with the prior written approval of the Director General. Requests for Out of Hours approval will be considered for construction activities which cannot be undertaken during the construction hours specified in condition C3 for technical or other justifiable reasons and will be considered on a case by case or activity-specific basis. Request for Out of Hours work must be accompanied by:</p> <p>(a) details of the nature and need for activities to be conducted during the varied construction hours;</p> <p>(b) written evidence to the EPA and the Director General that activities undertaken during the varied construction hours are justified, appropriate consultation with potentially affected receivers and notification of the relevant Council has been undertaken, issues raised have been addressed, and all feasible and reasonable mitigation measures have been put in place; and</p> <p>(c) evidence of consultation with the EPA on the proposed variation in standard construction hours.</p> <p>Despite the above, Out of Hours work may also occur in accordance with an approved Construction Environment Management Plan or Construction Noise and Vibration Management Sub-plan for this project, where that plan provides a process for considering the above on a case by case or activity specific basis by the Proponent, including factors (a) to (c) above.</p>		<p>The requirements of this condition have been incorporated into the NVMP for each stage of the Project. See discussion provided for MCoA B31(c).</p> <p>There have been no out of hours approval requests during the reporting period.</p>
C6	<p>Blasting associated with the project shall only be undertaken during the following hours:</p> <p>(a) 9:00am to 5:00pm, Mondays to Fridays, inclusive;</p> <p>(b) 9:00am to 1:00pm on Saturdays; and</p> <p>(c) at no time on Sundays or public holidays.</p> <p>This condition does not apply in the event of a direction from the NSW Police Force or other relevant authority for safety or emergency reasons to avoid loss of life, property loss and/or to prevent environmental harm.</p>		<p>The requirements of this condition have been incorporated into the NVMP for each stage of the project. See discussion provided for MCoA B31(c).</p> <p>Compliance with the requirements of this condition continues across all stages of the project.</p>
<i>Construction Noise and Vibration Goals</i>			
C7	The Proponent shall implement feasible and reasonable noise mitigation measures with the aim of achieving the construction noise management levels detailed in the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009) during construction activities. Any activities that could exceed the construction noise management levels shall be identified and managed in accordance with the Construction Noise and Vibration Management Sub-plan required under condition B31.		The requirements of this condition have been incorporated into the NVMP for each stage of the project. See discussion provided for MCoA B31(c).
C8	The Proponent shall implement all feasible and reasonable mitigation measures with the aim of achieving the following construction vibration goals:		The requirements of this condition have been incorporated into the NVMP for each stage of the project. See discussion provided for

CoA no.	Requirement	Stage	Status / Reference											
	<p>(a) for structural damage, the vibration limits set out in the German Standard DIN 4150-3: Structural Vibration - effects of vibration on structures; and</p> <p>(b) for human exposure, the acceptable vibration values set out in the Environmental Noise Management Assessing Vibration: A Technical Guideline (Department of Environment and Conservation, 2006).</p>		MCoA B31(c).											
C9	<p>The Proponent shall ensure that airblast overpressure generated by blasting associated with the project does not exceed the criteria specified in Table 1 when measured at the most affected residence or other sensitive receiver.</p> <p>Table 1 – Airblast overpressure criteria</p> <table border="1"> <thead> <tr> <th>Airblast overpressure (dB(Lin Peak))</th> <th>Allowable exceedance</th> </tr> </thead> <tbody> <tr> <td>115</td> <td>5% of total number of blasts over a 12 month period</td> </tr> <tr> <td>120</td> <td>0%</td> </tr> </tbody> </table>	Airblast overpressure (dB(Lin Peak))	Allowable exceedance	115	5% of total number of blasts over a 12 month period	120	0%		<p>The requirements of this condition have been incorporated into the NVMP for each stage of the project. See discussion provided for MCoA B31(c).</p> <p>Compliance with the requirements of this condition continues across all stages of the project.</p> <p>Note, Roads and Maritime's Stage 3 construction partner have sought and received an approval from P&E to increase blasting limits. Monitoring to ensure compliance with the new limits is in progress at the two closest residents for all blasts.</p> <p>Roads and Maritime's Stage 2 construction partner, while not having sought a change to the blasting limits, is also conducting monitoring at the closest residential receiver (approximately 1.5 kilometres from blasting activities).</p>					
Airblast overpressure (dB(Lin Peak))	Allowable exceedance													
115	5% of total number of blasts over a 12 month period													
120	0%													
C10	<p>The Proponent shall ensure that ground vibration generated by blasting associated with the project does not exceed the criteria specified in Table 2 when measured at the most affected residence or other sensitive receiver.</p> <p>Table 2 – Peak particle velocity criteria</p> <table border="1"> <thead> <tr> <th>Receiver</th> <th>Peak particle velocity (mm/s)</th> <th>Allowable exceedance</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Residence on privately owned land</td> <td>5</td> <td>5% of total number of blasts over a 12 month period</td> </tr> <tr> <td>10</td> <td>0%</td> </tr> <tr> <td>Non-Aboriginal Heritage item</td> <td>3</td> <td>0%</td> </tr> </tbody> </table>	Receiver	Peak particle velocity (mm/s)	Allowable exceedance	Residence on privately owned land	5	5% of total number of blasts over a 12 month period	10	0%	Non-Aboriginal Heritage item	3	0%		<p>The requirements of this condition have been incorporated into the NVMP for each stage of the project. See discussion provided for MCoA B31(c).</p> <p>Compliance with the requirements of this condition continues across all stages of the project. See additional comments provided for C9.</p>
Receiver	Peak particle velocity (mm/s)	Allowable exceedance												
Residence on privately owned land	5	5% of total number of blasts over a 12 month period												
	10	0%												
Non-Aboriginal Heritage item	3	0%												
C11	<p>To ensure that the criteria specified in conditions C9 and C10 are satisfied at the most affected residence or other sensitive receiver, blasting trials shall be undertaken prior to the commencement of the project's blasting program, with results from the trial blasts used to determine site specific blast design to satisfy the relevant criteria.</p>		<p>The requirements of this condition have been incorporated into the NVMP for each stage of the Project. See discussion provided for MCoA B31(c).</p> <p>Trial blasts were undertaken on both Stage 2 and Stage 3 prior to commencing the routine blasting programs.</p>											
C12	<p>The blasting criteria identified in conditions C9 and/or C10 may be exceeded where the Proponent has a written agreement with the EPA and the relevant landowner to exceed the</p>		<p>The requirements of this condition have been incorporated into the NVMP for each stage of the Project. See discussion provided for</p>											

CoA no.	Requirement	Stage	Status / Reference
	<p>criteria identified in conditions C9 and/ or C10 and the Director General has approved the exceedance. In obtaining the Director General approval for any such exceedance the Proponent shall submit to the Director General:</p> <ul style="list-style-type: none"> (a) details of the proposed blasting program and justification for the proposed increase to blasting criteria including alternatives considered (where relevant); (b) an assessment of the environmental impacts of the increased blast limits on the surrounding environment and most affected residences or other sensitive receivers including, but not limited to noise, vibration and air quality and any risk to surrounding utilities, services or other structures; (c) details of the blast management, mitigation and monitoring procedures to be implemented; and (d) details of consultation undertaken (including clear identification of proposed blast limits and potential property impacts) and agreement reached with the relevant landowners and EPA (including a copy of the agreement in relation to increased blasting limits). <p>Unless otherwise agreed by the Director-General, the following exclusions apply to the application of this condition:</p> <ul style="list-style-type: none"> (a) any agreements reached may be terminated by the landowner at any time should concerns about the increased blasting limits be unresolved; (b) the blasting limit agreed to under any agreement can at no time exceed a maximum Peak Particle Velocity vibration level of 25 mm/s or maximum Airblast Overpressure level of 125 dBL; and (c) these provisions under condition C12 (to increase applicable blast criteria in agreement with the relevant landowners) do not apply where the property is a non-Aboriginal heritage item. 		<p>MCoA B31(c).</p> <p>Compliance with the requirements of this condition continues across all stages of the project.</p> <p>Roads and Maritime's Stage 3 construction partner has sought and obtained one agreement from a nearby resident during the reporting period.</p>
<i>Operational Noise Mitigation Review</i>			
C13	<p>Unless otherwise agreed by the Director General, within six months of commencing construction, the Proponent shall, in consultation with the EPA, prepare and submit for the approval of the Director General, a review of the operational noise mitigation measures proposed to be implemented for the project. The review shall:</p> <ul style="list-style-type: none"> (a) confirm the operational noise predictions of the project based on detailed design. This operational noise assessment shall be based on an appropriately calibrated noise model (which has incorporated additional noise monitoring, where necessary for calibration purposes). The assessment shall specifically include verification of noise levels at the Mingaletta Road rest areas, based on additional noise monitoring undertaken at this location; (b) review the suitability of the operational noise mitigation measures identified in the documents listed under condition A1 to achieve the criteria outlined in the Environmental Criteria for Road Traffic Noise (Environment Protection Authority, 1999), based on the operational noise performance of the project predicted under (a) above; and (c) where necessary, investigate additional feasible and reasonable noise mitigation 	Construction	<p>Roads and Maritime prepared an operational noise management report to address the requirements of this condition for Stage 2 and submitted it to P&I for approval on 5 November 2013. The Director General subsequently approved the plan on 29 January 2014.</p> <p>As detailed in the Staging Report, within six months of the commencement of Stage 3, or as otherwise agreed with P&E, Roads and Maritime was to prepare and submit a report that reviews operational noise mitigation for Stage 1 and Stage 3 of the project. On 1 May 2015 Roads and Maritime sought approval to extend the submission of this report to 30 June 2015. The extension request was approved by Director General on 16 June 2015 and required submission of the report on or before 30 June 2015. Roads and Maritime subsequently submitted the report for approval on 22 June 2015. An approval by P&E remains</p>

CoA no.	Requirement	Stage	Status / Reference
	measures to achieve the criteria outlined in the Environmental Criteria for Road Traffic Noise (Environment Protection Authority, 1999).		outstanding following further comments from the department on 7 July 2015.
	Heritage		
C14	This approval does not allow the Proponent to destroy, modify or otherwise physically affect any human remains as part of the project.		Noted. Compliance with the condition is ongoing throughout all stages of the project.
C14A	The proponent shall not destroy, modify or otherwise physically affect any heritage items outside the approved project footprint, except where this has been approved by the Director General in accordance with condition C28 of this project approval.		Noted. Compliance with the condition is ongoing throughout all stages of the project. There have been no requests by Roads and Maritime during the reporting period.
C15	The Proponent shall not destroy, modify or otherwise physically affect the Maria River bridge (OHK14), unless otherwise agreed by the Director General.		Noted. Compliance with the condition is ongoing throughout Stage 2 of the project. There have been no requests by Roads and Maritime during the reporting period.
C16	The measures to protect Aboriginal or historic heritage sites near or adjacent to the project during construction shall be detailed in the Heritage Management Sub-plan required under condition B31.		The requirements of this condition have been incorporated into the HMP for each stage of the project. See discussion provided for MCoA B31(e).
	Sedimentation, Erosion and Water		
C17	Soil and water management measures consistent with <i>Managing Urban Stormwater - Soils and Construction Vols 1 and 2, 4th Edition</i> (Landcom, 2004) and <i>Managing Urban Stormwater Soils And Construction Vols 2A and 2D Main Road Construction</i> (Department of Environment and Climate Change, 2008) shall be employed during the construction of the project for erosion and sediment control.		The requirements of this condition have been incorporated into the SWMPs for each stage of the project. See discussion provided for MCoA B31(d).
C18	Where available, and of appropriate chemical and biological quality, the Proponent shall use stormwater, recycled water or other water sources in preference to potable water for construction activities, including concrete mixing and dust control.		The requirements of this condition have been incorporated into the SWMPs for each stage of the project. See discussion provided for MCoA B31(d).
	Property and Landuse		
	<i>Property Impacts</i>		
C19	The Proponent shall construct the project in a manner that minimises impacts to private properties and other public or private structures (such as dams, fences, utilities, services etc) along the project corridor. In the event that construction of the project results in direct or indirect damage to such property or structure, the Proponent shall arrange and fund repair of the damage to a standard comparable to that in existence prior to the damage occurring,		Noted. Compliance with the condition is ongoing throughout all stages of the project.

CoA no.	Requirement	Stage	Status / Reference
	unless otherwise agreed by the relevant property or utility owner.		
C20	The Proponent shall ensure that access to property is maintained during construction unless otherwise agreed with the property owner in advance and that access physically affected by the project is reinstated to at least an equivalent standard, in consultation with the property owner.		The requirements of this condition have been incorporated into the TMPs for each stage of the project. See discussion provided for MCoA B31(a).
C21	The Proponent shall, in consultation with relevant property owners, construct the project in a manner that minimises intrusion and disruption to agricultural operations/ activities in surrounding properties (e.g. stock access, access to farm dams etc), unless otherwise agreed by the relevant property owner.		Noted. Compliance with the condition is ongoing throughout all stages of the project.
<i>Forestry Impacts</i>			
C22	Where the project traverses the Cairncross, Ballengarra and Maria River state forests, the Proponent shall, in consultation with DPI (Forests), ensure that construction activities do not unduly disrupt existing forestry activities, access for fire fighting and recreation activities during construction, unless otherwise agreed by DPI (Forests).		Noted. Compliance with the condition where relevant is ongoing throughout Stage 2 and Stage 3 of the project.
<i>Traffic Impacts</i>			
C23	The roads likely to be used by the project's heavy construction vehicles shall be identified in the Traffic Management Sub-plan required under condition B31(a). Road dilapidation reports shall be prepared for local roads likely to be used by the project's construction traffic, and a copy of the report(s) shall be provided to the relevant council, prior to use by the project's heavy construction vehicles. Any damage resulting from the use of the identified local roads by the project's heavy construction vehicles, aside from that resulting from normal wear and tear, shall be repaired at the cost of the Proponent, unless otherwise agreed by the relevant council.		The requirements of this condition have been incorporated into the TMP for all stages of the Project. See discussion provided for MCoA B31(a). Road dilapidation reports were not required within the Stage 1 scope of works. All traffic movements for Stage 1 are on roads that will be upgraded throughout the course of the project by either the Stage 1 or Stage 3 contractor. Dilapidation assessments of local roads used by the Stage 2 and Stage 3 contractors have been undertaken prior to the commencement of construction with extensive involvement from Kempsey and Port Macquarie Hastings councils, respectively. The reports been finalised and issued. Agreements to repair damage due to construction traffic have been documented in regular meeting minutes and will be formalised in the final dilapidation reports.
<i>Waste Management</i>			
C24	The Proponent shall not cause, permit or allow waste generated outside the site to be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence under the Protection of the Environment Operations Act 1997, if such a licence is required in relation to that waste.		The requirements of this condition have been incorporated into a Construction Waste and Energy Management Sub-plan prepared as part of the CEMP for each stage of the project. See discussion provided for MCoA B30.
C25	The Proponent shall maximise the reuse and/or recycling of waste materials generated on site as far as practicable, to minimise the need for treatment or disposal of those materials off		The requirements of this condition have been incorporated into a Construction Waste and Energy Management Sub-plan prepared as part of the CEMP for each stage of the project. See discussion

CoA no.	Requirement	Stage	Status / Reference
	site.		provided for MCoA B30.
C26	The Proponent shall ensure that liquid and/or non-liquid waste generated on the site is assessed and classified in accordance with <i>Waste Classification Guidelines</i> (Department of Environment and Climate Change, 2008) and where removed from the site is directed to a waste management facility lawfully permitted to accept the materials.		The requirements of this condition have been incorporated into a Construction Waste and Energy Management Sub-plan prepared as part of the CEMP for each stage of the project. See discussion provided for MCoA B30.
Hazards and Risks			
C27	The Proponent shall store and handle dangerous goods, as defined by the Australian Dangerous Goods Code, strictly in accordance with: <ul style="list-style-type: none"> (a) 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 <i>Environment Protection Manual for Authorised Officers: Bunding and Spill Management</i>, 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. 		The requirements of this condition have been incorporated into a Construction Waste and Energy Management Sub-plan prepared as part of the CEMP for each stage of the project. See discussion provided for MCoA B30.
Ancillary Facilities			
C28	Unless otherwise approved by the Director General in accordance with this condition, the sites for ancillary facilities (except stockpiles) associated with the construction of the project shall: <ul style="list-style-type: none"> (a) be located more than 50 metres from a waterway; (b) have ready access to the road network or direct access to the construction corridor; (c) be located in areas of low ecological significance and require minimal clearing of native vegetation (not beyond that already required by the project); (d) be located on relatively level land; (e) be separated from the nearest residences by at least 200 metres (or at least 300 metres for a temporary batching plant); (f) not unreasonably affect the land use of adjacent properties; (g) be above the 20 ARI flood level unless a contingency plan to manage flooding is prepared and implemented; (h) provide sufficient area for the storage of raw materials to minimise, to the greatest extent practical, the number of deliveries required outside standard construction hours; and (i) be located in areas of low heritage conservation significance (including identified Aboriginal cultural value) and not impact on heritage sites beyond those already impacted by the project. <p>Ancillary sites identified that do not meet the above criteria shall be assessed against this criteria to demonstrate how any impacts can be mitigated and managed to acceptable</p>		The requirements of this condition have been incorporated into the CEMPs prepared for each stage of construction. See discussion provided for MCoA B30. There have been no requests for approval been sought during this reporting period?

CoA no.	Requirement	Stage	Status / Reference
	standards (including demonstrating consistency with project impacts identified in the documents listed under condition A1, to the satisfaction of the Director General. Such assessment(s) can be submitted separately or as part of the Construction Environmental Management Plan required under condition B30.		
C28A	The proponent may request to establish and operate an ancillary facility prior to commencement of construction under condition C28. Where establishment and operation of an ancillary facility prior to commencement of construction is proposed, the proponent shall demonstrate that establishment and operation of that ancillary facility prior to commencement of construction complies with all relevant conditions of approval, to the satisfaction of the Director General.		Noted. Roads and Maritime wrote to P&E on 23 May 2014 seeking approval to establish and operate an ancillary facility at chainage 7000 (Stage 3) subject to the requirements of this condition. Following revisions to the initial environmental review, P&E approved operation of the facility on 15 October 2014.
C29	The Director General's approval is not required for minor ancillary facilities (e.g. lunch sheds, office sheds, and portable toilet facilities) that do not comply with the criteria set out in condition C28 of this approval and which: <ul style="list-style-type: none"> (a) are located within an active construction zone within the approved project footprint; and (b) have been assessed by the Environmental Representative to have: <ul style="list-style-type: none"> (i) minimal amenity impacts to surrounding residences, with consideration to matters such as noise and vibration impacts, traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and (ii) minimal environmental impact in respect to waste management, and no impacts on flora and fauna, soil and water, and heritage beyond those approved for the project; and (c) have environmental and amenity impacts that can be managed through the implementation of environmental measures detailed in a Construction Environment Management Plan for the project. 		Noted. Compliance with the condition is ongoing throughout all stages of the project. One facility (Stage 2) deemed to have minimal environmental impact was endorsed by the Environmental Representative during the reporting period.
	Part D – Prior to operation		
	Operational Environmental Management System		
D1	Prior to the commencement of operation, the Proponent shall incorporate the project into its existing environmental management systems.	Construction Operation	Ongoing operational requirements, subject to this approval, will be incorporated into the Roads and Maritime operational management system.

CoA no.	Requirement	Stage	Status / Reference
	Part E – During operation		
	Operational Noise		
E1	<p>Within 12 months of the commencement of operation of the project, or as otherwise agreed by the Director General, the Proponent shall undertake operational noise monitoring to compare actual noise performance of the project against noise performance predicted in the review of noise mitigation measures required by condition C13, and prepare an Operational Noise Report to document this monitoring. The Report shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> (a) noise monitoring to assess compliance with the operational noise levels predicted in the review of operational noise mitigation measures required under condition C13 and documents specified under condition A1 of this approval; (b) a review of the operational noise levels in terms of criteria and noise goals established in the Environmental Criteria for Road Traffic Noise (Environment Protection Authority, 1999); (c) methodology, location and frequency of noise monitoring undertaken, including monitoring sites at which project noise levels are ascertained, with specific reference to locations indicative of impacts on sensitive receivers; (d) details of any complaints and enquiries received in relation to operational noise generated by the project between the date of commencement of operation and the date the report was prepared; (e) any required recalibrations of the noise model taking into consideration factors such as actual traffic numbers and proportions; (f) an assessment of the performance and effectiveness of applied noise mitigation measures together with a review and if necessary, reassessment of all feasible and reasonable mitigation measures; and (g) identification of additional feasible and reasonable measures to those identified in the review of noise mitigation measures required by condition C13, that would be implemented with the objective of meeting the criteria outlined in the Environmental Criteria for Road Traffic Noise (Environment Protection Authority, 1999), when these measures would be implemented and how their effectiveness would be measured and reported to the Director General and the EPA. <p>The Proponent shall provide the Director General 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 Director General.</p>	Operation	<p>Noted.</p> <p>As detailed in the Staging Report, within 12 months of the commencement of operation of each stage of the project, or as otherwise agreed, Roads and Maritime will undertake operational noise monitoring, and prepare and submit a report addressing the requirements of this condition. Due to the geographical relationship between Stage 1 and Stage 3, one operational noise report would be prepared to cover both stages. The report would be prepared and submitted within 60 days of completion of the operation noise monitoring as prescribed by this condition.</p>

Table 2 - Revised statement of commitments (March 2011)

CoA no.	Requirement	Stage	Status / Reference
Environmental Management			
EM1	The head contractor for the Proposal will have an environmental management system.	Construction	Ferrovial Agroman (Australia) Pty Ltd were appointed the Roads and Maritime construction partner for Stage 1 McConnell Dowell & OHL Joint Venture were appointed the Roads and Maritime construction partner for Stage 2. Lend Lease Engineering Pty Limited were appointed the Roads and Maritime construction partner for Stage 3 All of Roads and Maritime construction partners for the project have an environmental management system in place that fulfills the requirements of ISO 14001.
EM2	Suitable qualified and experienced personnel will develop and implement project-specific environmental management plans and procedures. The environmental management plans and procedures will incorporate management measures identified in the environmental assessment.	Construction	A CEMP and associated sub-plans were developed to address the requirements of this commitment for each stage of the project. See further detail in Table 1 / MCoA B30.
EM3	A construction resource plan will be developed to ensure there are adequate resources to undertake the proposed works according to programme.	Pre-construction	Roads and Maritime has developed an overarching resource plan for the Pacific Highway and one specifically for the Oxley Highway to Kempsey upgrade project. Specific measures and/or considerations that form part of these plans, and others developed by Roads and Maritime's construction partners that would otherwise be included in a project specific construction resource plan, have been incorporated into various other construction related documentation including: construction programs, earthworks plans, quality management system and plans, and the CEMPs.
EM4	The head contractor will implement a construction environmental management plan.	Construction	A CEMP and associated sub-plans have been developed for each stage of the project for implementation to address the requirements of this condition. See further detail in Table 1 / MCoA B30.
Community consultation			
CC1	The community will be provided with regular project updates, given prior notice of project activities and provided contact details for enquiries. Where required, affected individuals or groups will be consulted directly and provided with targeted notifications (eg watercourse users and noise affected residences).	Construction	Roads and Maritime and its construction partners for each stage have developed community communications strategies to outline, among other things, how the requirements of this commitment will be addressed. See further detail in Table 1 / MCoA B26. Six community updates were published during the reporting period and included information about works anticipated during the

CoA no.	Requirement	Stage	Status / Reference
			reporting period, changed conditions for motorists, road closures, out of hours works, blasting schedule and the location of community displays. Further community updates will be issued during subsequent compliance tracking reporting periods.
CC2	The community will be able to make complaints using the project's 24-hour toll free complaints number or the project web page. The number will be publicised and the project-specific web page will include directions on how to register a complaint. All complaints will be acknowledged within a specified timeframe, recorded and tracked until resolved.	Construction	Refer above to CC1. A toll free 24-hour complaint number has been publicised on the project webpage.
CC3	A community consultation plan will be implemented.	Construction	Refer above to CC1.
CC4	Consultation will take place between the RTA and Forests NSW and all other necessary agencies to agree management principles for Crown land.	Construction	Noted. There is no known crown land adjacent to the project. If circumstances were to change, the requirements of this commitment would be met by Roads and Maritime.
Land use and property			
LP1	All property acquisitions will be negotiated in accordance with the RTA Land Acquisitions, Policy Statement and compensation will be assessed under the provisions of the <i>Land Acquisition (Just Terms Compensation) Act 1991</i> .	Pre-construction	All property acquisitions associated with the project have been undertaken in accordance with the requirements of this condition.
LP2	Where alternative access arrangements are not feasible or practical and a property is left with no access to a public road, negotiations will be undertaken with the relevant property owners for the acquisition of the property in accordance with the provisions of the <i>Land Acquisition (Just Terms Compensation) Act 1991</i> .	Pre-construction and Construction	Noted. Compliance with the condition is ongoing throughout all stages of the project.
LP3	Forests NSW will have access to areas of state forest land identified for acquisition to remove any harvestable timber within the footprint of the Proposal.	Pre-construction and Construction	Noted. Compliance with the condition is ongoing throughout Stage 2 and Stage 3 of the project. Harvestable timber was set aside during the clearing operation and has since been provided to Forest NSW.
LP4	Where a licensed bore, dam or other property water supply is adversely affected the RTA will investigate an alternative source of water or negotiate compensation with the property owner.	Pre-construction and Construction	A number of private bores and one spring fed dam may be affected during construction of Stage 2 and Stage 3 of the project. Monitoring and/or mitigation of any impacts at these locations has been, or will be, conducted in accordance with the approved Water Quality Monitoring Program. Compliance with the condition is ongoing throughout Stage 2 and Stage 3.
Socio-economic			
SE1	On-going consultation with potentially affected community and businesses will occur prior to and during construction to address concerns and issues and to identify any adaptive	Pre-construction	Roads and Maritime and its construction partners for the project have developed community communications strategies to outline,

CoA no.	Requirement	Stage	Status / Reference
	management requirements where feasible and reasonable.	and Construction	among other things, how the requirements of this commitment will be addressed. Further detail is provided in Table 1 / MCoA B26.
SE2	Adequate signage will be implemented during construction and operation to ensure businesses and their patrons are aware of new access routes and/or potential disruptions.	Pre-construction / Construction / Operation	Roads and Maritime and its construction partners have developed traffic management sub-plan with a process to ensure the requirements of this condition are fulfilled. Further detail is provided in Table 1 / MCoA B26.
SE3	Occupation and use of compounds and work sites will minimise disturbance to adjacent residents by managing, and minimising where possible: the movement of vehicles, particularly outside of standard working hours; providing temporary noise attenuation (eg, shielding) if practicable; and providing screening to minimise visual intrusion.	Construction	CEMPs that incorporate a construction traffic management sub-plans have been prepared for each stage of the project to address the relevant requirements of this commitment. Further detail is provided in Table 1 / B31(a).
SE4	Traffic management procedures to minimise disruption.	Construction	See comment above for SE3.
SE5	Adopt a construction environmental management plan to minimise amenity impact.	Construction	The CEMPs and Urban Design and Landscape Management Plans developed for each stage of the project contain a number of measures to minimise amenity impacts during construction. Further detail is provided in Table 1 / B20 and B30.
SE6	Management of acid sulfate soils to minimise impacts on priority oyster aquaculture areas.	Construction	The requirements of this condition have been incorporated into the SWMP for Stage 3 of the project. Further detail is provided in Table 1 / B31(d).
Surface and groundwater			
SGW1	Bunded areas will be used for storage of oils, chemicals, toxic substances and combustible liquids, and for potentially hazardous and contaminating activities (eg washing construction vehicles, plant and equipment, handling and pouring hazardous materials and liquids etc).	Construction	CEMPs and associated sub-plan (eg SWMP) for each stage of the project have been prepared in consultation with the EPA, DPI (Fishing and Aquaculture) and NOW to address the requirements of this commitment. Further detail is provided in Table 1 / MCoA B31(d).
SGW 2	Spills will be contained immediately and will be stored in bunded areas until disposal. Spills will be disposed of at a facility that is licensed to receive the waste, or may be disposed of after appropriate treatment.	Construction	Roads and Maritime's Environmental Incident Classification and Reporting Procedure has been adopted by all the construction partners on the project and will be implemented to address the requirements of this commitment.
SGW 3	Water quality will be monitored upstream and downstream of the Proposal site during construction to determine the effectiveness of mitigation strategies. The monitoring program will be developed in consultation with DECCW.	Construction	Roads and Maritime have developed a Water Quality Monitoring Program in consultation with OEH and NOW to address the requirements of this commitment. The program was provided to the P&I for approval on 11 February 2014. The P&I subsequently approved the program on 5 March 2014. The WQMP has been implemented throughout the reporting period and results reported separately in a construction water quality monitoring report for the

CoA no.	Requirement	Stage	Status / Reference
			reporting period.
SGW 4	Specific work method statements for in-stream works will be developed and implemented in consultation with relevant government agencies.	Construction	See comment above for SGW1.
SGW 5	Sediment and erosion control measures will be implemented during the construction and the post construction rehabilitation process.	Construction	See comment above for SGW1.
SGW 6	The potential for changes in the groundwater table will be further investigated before any major earthworks (defined as a cut or fill with a depth or height exceeding five metres) are undertaken. Where a potential for change is identified, the significance of the change and any resultant impacts will be determined. Where necessary, measures to manage the changes will be designed and implemented.	Pre-construction	Roads and Maritime have developed a Water Quality Monitoring Program in consultation with OEH and NOW to document and address the requirements of this commitment. The report was provided to the P&I for approval on 11 February 2014. The P&I subsequently approved the program on 5 March 2014.
SGW 7	Areas of potential acid sulfate soils and actual acid sulfate soils will be confirmed and managed in accordance with standard environmental management measures.	Construction	See comment above for SGW1. The SWMPs for each stage of the project contain a Construction Acid Sulfate Management Sub-Plan that outlines how the requirements of this commitment will be addressed.
SGW 8	Design to be sensitive to stream morphology, reduce scour and minimise impacts to vegetation.	Pre-construction and Construction	SWMPs for each stage of the project have been prepared in consultation with the EPA, DPI (Fishing and Aquaculture) and NOW to address the requirements of this commitment. Further detail is provided in Table 1 / MCoA B31(d).
SGW 9	The detailed design of minor waterway crossing structures will be refined during detailed design to maximise hydraulic performance.	Pre-construction and Construction	Roads and Maritime and its construction partners have completed the detailed design for the project. The design incorporates the requirements of this commitment.
SGW 10	Measures to mitigate potential impacts on local geomorphology will be investigated during detailed design.	Pre-construction and Construction	Roads and Maritime and its construction partners have completed the detailed design for the project. The design incorporates the requirements of this commitment.
SGW 11	A water management plan will be developed to ensure water resources are used in the most efficient manner with a focus on achieving water savings and targeting water recycling and re-use.	Construction	See comment above for SGW1.
Flora and fauna			
F1	Detailed design will minimise the area of native vegetation and habitat to be cleared wherever reasonable and feasible.		Roads and Maritime and its construction partners have completed the detailed design for the project and have taken into consideration the requirements of this commitment. Minimising the extent of native vegetation clearing has remained a focus throughout this detailed design process. Any further refinements adopted during construction of the Project would also consider this commitment.

CoA no.	Requirement	Stage	Status / Reference
F2	The limits of clearing and other native vegetation disturbance will be clearly marked on relevant work plans and on site with temporary fencing installed prior to clearing.		The CEMP and associated FFMPs prepared for each stage of the project outline how the requirements of this commitment have been addressed.
F3	Rehabilitation and revegetation will be undertaken in stages and as early as practicable to restore and enhance habitat opportunities.		The FFMP and SWMP prepared for each stage of the project in consultation with the EPA, and DPI (Fishing and Aquaculture) outline how the requirements of this commitment have been addressed.
F4	Habitat features and resources for native fauna (such as hollow-bearing trees, hollow logs, nest boxes and bush rocks) impacted by the Proposal will be relocated where feasible and reasonable. Such relocation will be undertaken in a manner to limit damage to existing vegetation and will not occur in high condition remnant vegetation.		The FFMP prepared for each stage of the project in consultation with the EPA, and DPI (Fishing and Aquaculture) outline how the requirements of this commitment have been addressed.
F5	Native and locally indigenous plants will be used in the landscaping and disturbed areas will be progressively revegetated.		The FFMP and Urban Design and Landscape Plan (UDLP) prepared for each stage of the project in consultation with the EPA outline how the requirements of this commitment have been addressed. Further detail is provided in Table 1 / MCoA B20, MCoA B31.
F6	Watercourse crossings will be designed to facilitate fish passage where appropriate and in consultation with relevant government agencies.		Waterway crossings associated with the project have been design with reference to the NSW Department of Primary Industries, <i>Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings</i> , 2003 and in consultation with the DP&I (Fishing and Aquaculture) to fulfill the requirements of this commitment.
F7	Water quality control measures will be installed as early as possible in the construction program and will be designed / selected to meet identified receiving water objectives.		SWMPs have been prepared for each stage of the project in consultation with the EPA, DPI (Fishing and Aquaculture) and NOW to address the requirements of this commitment. In addition, EPLs issued for the project require a number of temporary and/or permanent water quality control basins to be installed prior to broad-scale clearing and earthworks. This has occurred extensively across the project.
F8	A weed management strategy would be developed as part of the construction environmental management plan.		FFMPs that include Weed Management Strategies have been prepared for each stage of the project to address the requirements of this commitment.
F9	Threatened plants in proximity to the Proposal that are to be retained will be identified by pre construction surveys and protected during construction through exclusion fencing and education of construction workers through the site induction process.		FFMPs have been prepared in consultation with OEH for each stage of the project to address the requirements of this commitment.
F10	The feasibility of relocating individuals of threatened species to suitable habitat will be investigated.		FFMPs prepared in consultation with OEH for each stage of the project include a consideration of the feasibility of relocating individuals of threatened species to address the requirements of

CoA no.	Requirement	Stage	Status / Reference
			<p>this commitment.</p> <p>One threatened plant species (<i>Maundia triglochinosides</i>) will be directly impacted by the project. The species occurs at four locations within the project corridor and will be directly impacted at two of these locations. Due to the species requisite habitat requirements and the relatively small impact attributable to the project, relocation of individual plants is not proposed. Rather, further direct impacts attributable to the project will be avoided by the implementation of mitigation measures that define clearing limits and protect water quality in adjacent waterways.</p>
F11	Consideration would be given to constructing artificial frog ponds if appropriate.		CFFMPs prepared for Stage 2 and Stage 3 of the project detail the location of four artificial frog ponds to be constructed to address the requirements of this commitment. There will be two ponds in each stage.
F12	A suitably qualified ecologist will undertake pre-clearance surveys. Searches will include nests and large hollow-bearing trees and target habitats of hollow-dwelling species, koalas and frogs. Fauna species found in pre-clearance surveys will be relocated to suitable habitat as close as possible to the area in which they were found.		FFMPs prepared for the project in consultation with the EPA outline how the requirements of this commitment will be addressed. Pre-clearing surveys have occurred extensively during this reporting period.
F13	Where feasible and reasonable, removal of frog habitat along drainage lines will not be undertaken during periods of wet weather.		Roads and Maritime and its construction partners have prepared FFMPs for each stage of the project to address the requirements of this commitment.
F14	The construction contractor will maintain contact details for local DECCW officers, WIRES and/or other relevant local wildlife carer groups.		Contact details for local OEH officers, WIRES and/or other relevant local carer groups have been included in the FFMPs prepared for each stage of the project. The plans will be updated as required by the mechanisms outlined in Section 9 of the respective CEMPs.
F15	Surveys will be undertaken for threatened bat species by a suitably qualified ecologist to identify any roosting bats prior to the demolition of the existing highway bridges. Any bats will be moved and relocated following consultation with DECCW.		Roads and Maritime has developed a micro-bat strategy in consultation with OEH to address the requirements of this commitment. The micro-bat strategy forms an important comment of the FFMPs prepared for each stage of the Project. See further detail at Table 1 / MCoA B31(b)(vi) This activity was completed across the project in September 2014.
F16	Development of a nest box strategy will be undertaken.		Roads and Maritime prepared a Nest Box Plan to address the requirements of this commitment and submitted it to the P&I for approval on 30 July 2013. P&I subsequently approved the plan on 14 October 2013. The nest box strategy has been incorporated into the FFMPs prepared for each stage of the project.
F17	Culverts and bridges identified in the Environmental Assessment as having a potential role in fauna crossing will be designed to facilitate fauna movements where feasible and		Detailed design of fauna and waterway crossings has been completed for the project.

CoA no.	Requirement	Stage	Status / Reference
	reasonable.		<p>Roads and Maritime wrote to the P&I on 26 July 2013 regarding Stage 2 advising that there were changes to the final design of some fauna crossing locations and dimensions compared to that presented in Table 6-2 of Appendix B of the document listed under MCoA A1(d). A report prepared in consultation with DPI (Fishing and Aquaculture) and EPA outlining those changes, among other things, was provided at the same time and approval for those changes sought. The P&I approved the changes in correspondence provided to Roads and Maritime on 25 September 2013.</p> <p>Detailed design of fauna and waterway crossings has also been completed for Stage 3. Roads and Maritime wrote to the P&E on 9 December 2014 advising that there were changes to the final design of some fauna crossing locations and dimensions compared to that presented in Table 6-2 of Appendix B of the document listed under condition A1(d). A report prepared in consultation with DPI (Fishing and Aquaculture) and EPA outlining those changes, among other things, was provided at the same time and approval for those changes sought. P&E approved the changes in correspondence provided to Roads and Maritime on 2 February 2015.</p>
F18	The feasibility of widening the median will be further investigated in consultation with DECCW during the detailed design.		<p>Roads and Maritime prepared an Oxley Highway to Kempsey Widened Median Assessment and provided it to P&I for approval on 19 September 2013. The department reviewed the assessment and indicated that they had no objections to the conclusions drawn by the assessment, but noted that further matters needed to be addressed to fully satisfy conditions B4 and B5.</p> <p>Roads and Maritime subsequently prepared an Oxley Highway to Kempsey Widened Median Assessment Supplementary Report and provided it to P&I for approval on 11 February 2014.</p> <p>Following a review, the department advised that the original and supplementary assessments satisfied both conditions B4 and B5 with respect to Stage 3 of the Project. However, noted that the two reports satisfied only condition B4 with respect to Stage 3 of the Project.</p> <p>The department indicated that a further supplementary report for Stage 3 would be required to satisfy the outstanding requirements outlined in earlier correspondence. Roads and Maritime and its construction partners prepared a further supplementary report to address the outstanding requirements and provided it to P&E on 15 September 2014. P&E subsequently approved the supplementary report on 8 January 2015.</p>

CoA no.	Requirement	Stage	Status / Reference
F19	Fauna exclusion fencing (eg floppy-top fencing) will be erected along the Proposal at appropriate locations to direct fauna movement towards fauna crossing structures.		Detailed design has been completed for the project and includes the provision of about 50 kilometres of fauna exclusion fencing (eg floppy top fencing, frog fencing) consistent with the requirements of this commitment.
F20	An agreement will be developed in negotiation with Department of Planning and in consultation with DECCW for habitat offsets.		Roads and Maritime have developed a Biodiversity Offset Strategy to address the requirements of this commitment in consultation with OEH and DPI (Fishing and Aquaculture). The report was provided to the P&I for approval on 31 October 2013. The P&I subsequently approved the strategy on 27 January 2014.
F21	A monitoring program will be developed to allow the effectiveness of mitigation and offset measures to be assessed and allow for their modification if necessary. The program will be for a minimum of 12 months after construction completion.		Roads and Maritime have developed an Ecological Monitoring Program to address the requirements of this commitment in consultation with OEH and DPI (Fishing and Aquaculture). The report was provided to the P&I for approval on 4 December 2013. The P&I subsequently approved the program on 29 January 2014.
Noise and vibration – construction noise			
CN1	All feasible and reasonable mitigation and management measures to minimise construction noise and vibration at sensitive receivers will be investigated. Noise and vibration will be monitored to measure against predicted levels. Where required, feasible and reasonable mitigation measures will be implemented.	Construction	NVMPs prepared for the project in consultation with the EPA address the relevant requirements of this commitment. Further detail is provided in Table 1 / B31(c).
CN2	All reasonable attempts will be made to contact sensitive receivers that will be affected by blasting at least 48 hours prior. Blasting will normally be limited to between 9am and 5pm Monday to Friday and between 9am and 1pm Saturday. No blasting will take place outside these hours without approval from Department of Planning and following consultation with and/or notification of local residents and DECCW.	Construction	See comment above for CN1.
CN3	Construction will normally be limited to the following hours: <ul style="list-style-type: none"> Between 6am and 6pm Monday to Friday. Between 7am and 4pm Saturday. There would be no works outside these hours, or on Sundays or public holidays, except: <ol style="list-style-type: none"> For works that do not cause construction noise to be audible at any sensitive receivers. For the delivery of materials required outside these hours by the Police or other authorities for safety reasons. Where work is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm. For any other work as agreed through negotiations between the RTA and potentially affected sensitive receivers. Any such agreement must be recorded in writing and a copy kept on site for the duration of the works. Where the work is identified in the construction noise and vibration management plan 	Construction	See comment above for CN1.

CoA no.	Requirement	Stage	Status / Reference
	and approved as part of the construction environmental management plan. (f) As otherwise agreed by the DECCW. Local residents and the DECCW will be informed of the timing and duration of work approved under items (d) and (e) at least 48 hours before that work commences. Hours of work will be addressed in the construction noise and vibration management plan, which will be finalised in consultation with the Department of Planning and the DECCW.		
	Noise and vibration – operational noise		
ON1	Where required, reasonable and feasible noise and vibration management measures will be further developed and implemented during detailed design in consultation with relevant property owners.		Roads and Maritime prepared an operational noise management report to address the requirements of this commitment for Stage 2 and submitted it to P&I for approval on 5 November 2013. The Director General subsequently approved the plan on 29 January 2014. As detailed in the Staging Report, within six months of the commencement of Stage 3, or as otherwise agreed with P&E, Roads and Maritime was to prepare and submit a report that reviews operational noise mitigation for Stage 1 and Stage 3 of the project. On 1 May 2015 Roads and Maritime sought approval to extend the submission of this report to 30 June 2015. The extension request was approved by Director General on 16 June 2015 and required submission of the report on or before 30 June 2015. Roads and Maritime subsequently submitted the report for approval on 22 June 2015. An approval by P&E remains outstanding following further comments from the department on 7 July 2015.
ON2	Operational noise will be monitored within one year after construction is finished. If monitoring indicates a clear trend that traffic noise levels exceed those predicted, all further feasible and reasonable measure will be investigated. Any additional mitigation measures will be developed in consultation with a suitably qualified and experienced acoustic specialist and the affected property owner.		Noted. Further detail is provided in Table 1 / E1.
	Visual amenity and design		
VAD1	A detailed urban and landscape design plan would be developed during the detailed design phase. The detailed design and implementation of built elements (such as new carriageways, bridges and roadside furniture) and landscapes, and the mitigation of residual impacts will be undertaken in accordance with the visual and design objectives and principles of the Proposal.		Urban design and landscape plans have been developed for each stage of the project and approved by P&E. These plans address this and other visual amenity and design commitments. Further detail on each plan is provided in Table 1 / MCoA 20.
VAD2	Built elements will be robust, long-lasting, replaceable and easy to maintain materials and designs.		See comment above for VAD1.
VAD3	The schedule of species to be used in the landscaping treatments will include self-sustaining native and locally indigenous plants that will be selected in consultation with a qualified		See comment above for VAD1.

CoA no.	Requirement	Stage	Status / Reference
	landscape officer.		
VAD4	Disturbed areas will be progressively revegetated with consideration to related controls such as erosion and sedimentation controls, drainage and future road user safety requirements.		See comment above for VAD1.
VAD5	Design criteria will be applied during detailed design to reduce any potential adverse visual impacts to the existing landscape character and visual amenity.		See comment above for VAD1.
VAD6	Landscaped or rehabilitated areas will be monitored and maintained for a minimum of two years after opening.		An Ecological Monitoring Program in response to MCoA B10 has been prepared to address the requirements of this commitment. Also see comment above for VAD1.
	Traffic and transport		
T1	Pre-construction dilapidation reports will be prepared for all non-arterial roads likely to be used by construction traffic. Copies of the reports will be provided to the relevant roads authority.	Pre-construction	The requirements of this commitment have been incorporated into the TMP for all stages of the Project. See discussion provided for MCoA B31(a). Road dilapidation reports were not required within the Stage 1 scope of works. All traffic movements for Stage 1 are on roads that will be upgraded throughout the course of the project by either the Stage 1 or Stage 3 contractor. Dilapidation assessments of local roads used by the Stage 2 and Stage 3 contractors have been undertaken prior to the commencement of construction with extensive involvement from Kempsey and Port Macquarie Hastings councils, respectively. The reports been finalised and issued. Agreements to repair damage due to construction traffic have been documented in regular meeting minutes and will be formalised in the final dilapidation reports.
T2	Post-construction dilapidation reports will be prepared for the roads assessed in T1 above. Copies of the reports will be provided to the relevant roads authority. Any damage resulting from construction, (not normal wear and tear), will be repaired or an alternative arrangement for road damage will be agreed with the relevant roads authority.	Operation	Traffic management plans have been developed for each stage of the project to address the requirements of this commitment. Further detail is provided in Table 1 / B31(a).
T3	Construction vehicle movements, work programs and traffic control measures will be planned to avoid or minimise impacts on traffic through the implementation of all feasible and reasonable design, and mitigation and management measures.	Construction	Traffic management plans have been developed for each stage of the project to address the requirements of this commitment. Further detail is provided in Table 1 / B31(a).
T4	The centre spans of the bridges over the Hastings River and the Wilson River will be no lower in height than the existing bridges to ensure navigational clearance is maintained.	Pre-construction	Detailed design for Stage 3 of the project addressed the requirements of this commitment.
T5	Consultation with those residents whose access will be affected during construction will be undertaken.	Construction	Roads and Maritime and its construction partner for the project have developed community communications strategies and traffic management plans to outline, among other things, how the requirements of this commitment will be addressed.

CoA no.	Requirement	Stage	Status / Reference
			Further detail is provided in Table 1 / MCoA B26, MCoA B31(a).
T6	Signposting and crossing points will be provided for cyclists at the on and off ramps at interchanges offering a safer cycling and pedestrian environment.	Operation	Detailed design for the project has been completed and includes features that address the requirements of this commitment.
T7	Provision will be made to maintain access for the existing bus operation.	Construction and Operation	Detailed design for the project has been completed and includes features that address the requirements of this commitment.
Aboriginal heritage			
AH1	An Aboriginal heritage management plan will be developed to document procedures, management measures and protocols to minimise impacts.	Pre-construction	Construction heritage management sub-plans have been prepared for each stage of the project in consultation with OEH and registered Aboriginal stakeholders to address the relevant requirements of this commitment. Further detail is provided in Table 1 / B31(e).
AH2	Items and areas of archaeological significance not directly affected will be protected during construction.	Construction	See comment above for AH1.
AH3	Protocols will be established and implemented should any previously unidentified Aboriginal objects or human skeletal remains be encountered during construction works on the project. All works in the vicinity of the find will cease until Police and Aboriginal heritage specialist advice is obtained and the DECCW.	Construction	See comment above for AH1.
AH4	Any Aboriginal heritage items directly affected will be managed in consultation with Aboriginal stakeholders and the DECCW.	Construction	See comment above for AH1.
AH5	All construction personnel will receive Aboriginal heritage awareness training on their obligations for protection of Aboriginal cultural materials, including information on site locations, conservation management requirements and legal obligations in regard to Aboriginal cultural materials.	Construction	See comment above for AH1.
AH6	The RTA will comply with the NSW Government's Aboriginal Participation in Construction Guidelines.	Construction	Noted.
AH7	The RTA will consult with the Birpai Local Aboriginal Land Council regarding management of any potential adverse impacts on the identified sensitive site in accordance with the aboriginal heritage management plan.	Pre-construction and construction	Consultation with Birpai Local Aboriginal Land Council is ongoing with an agreement on appropriate management measures to protect sensitive sites reached. Further liaison is in progress to finalise the design measures agreed and make arrangements for representation to be available during implementation of the measures.
Air quality			
AQ1	Feasible and reasonable mitigation measures will be adopted to minimise windblown, traffic-generated or equipment-generated dust and emissions.	Construction	The requirements of this commitment have been incorporated into the construction air quality management sub-plans prepared for each stage of the project.

CoA no.	Requirement	Stage	Status / Reference
			Further detail is provided in Table 1 / MCoA B30.
AQ2	Dust generating activities will stop where visible dust is being emitted outside the construction corridor and when dust suppression methods are ineffective.	Construction	See comment above for AQ1.
Greenhouse gases and energy			
G1	Energy efficient work practices will be adopted to limit energy use. Where reasonable and feasible, equipment and management measures will be adopted to minimise energy use and greenhouse gas production. Minimise vegetation clearance where possible.	Construction	The requirements of this commitment have been incorporated into construction waste and energy management sub-plans prepared for each stage of the project and form part of the respective CEMPs. Further detail is provided in Table 1 / MCoA B30.
G2	A lighting scheme will be developed during detailed design. The aim of the design will be to minimise the use of lighting.	Pre-construction	Noted. Lighting was considered during detailed design, with the aim of minimising the use of lighting, where possible.
Non-Aboriginal heritage			
NH1	The detailed design will minimise impacts to the identified non-Aboriginal heritage items where feasible and reasonable.	Pre-construction and Construction	Noted. In addition, HMPs have been prepared for each stage of the project in consultation with OEH and registered Aboriginal stakeholders to address the relevant requirements of this commitment. Further detail is provided in Table 1 / B31(e).
NH2	A non-Aboriginal heritage management plan will be developed.	Pre-construction	See comment above for NH1.
NH3	Staff will receive training with respect to identifying items of non-Aboriginal heritage during construction and the correct methods of communication on the worksite.	Construction	See comment above for NH1.
NH4	If any material of potential archaeological significance is unearthed, work will cease until specialist heritage advice has been obtained. Should any material of potential archaeological significance be unearthed, the Heritage Branch would be notified.	Construction	See comment above for NH1.
Waste minimisation and management			
WMM1	The 'waste hierarchy' (avoid/reuse/recycle/ resource recovery/disposal) will be maximised during construction; incorporated into work programs, purchase strategies and site inductions; and will be assessed quarterly to identify opportunities for improvement. Recycled materials will be used where feasible.	Construction	The requirements of this commitment have been incorporated into construction waste and energy management sub-plans prepared for each stage of the project and form part of the respective CEMPs. Further detail is provided in Table 1 / MCoA B30.
WMM2	Staff to be trained in waste reduction.	Construction	See comment above for WMM1.
WMM3	A waste register to be developed during construction.	Construction	See comment above for WMM1.

CoA no.	Requirement	Stage	Status / Reference
WMM4	Any waste material that is unable to be re-used, reprocessed or recycled will be disposed at a facility approved to receive that type of waste. Waste will be disposed at a facility licensed to accept that classification of waste.	Construction	See comment above for WMM1.
Contamination			
C1	Areas of potential contamination identified during preconstruction and construction activities will be further investigated and appropriately managed.	Pre-construction and Construction	<p>The Environmental Assessment identified five areas of potential for contamination within the project. Further investigations have been undertaken to identify potential sources of contaminated soils. For Stage 1 and Stage 3, this includes Expressway Spares within the Sancrox Traffic Arrangement, Birdon Marine at Hastings River, and potential areas of opportunistic dumping of asbestos. In April 2013, Roads and Maritime finalised a targeted contamination report for areas within the Sancrox Traffic Arrangement works considered to present a contamination risk.</p> <p>The outcomes of this report, among other things, have been incorporated in the SWMPs prepared for Stage 1 and Stage 3. These SWMPs have been developed in consultation with the EPA, DPI (Fishing and Aquaculture) and NOW, and address contamination matters as they related to each specific stage.</p> <p>During the reporting period further asbestos dumping sites have been uncovered on Stage 3. The unexpected finds procedure contained within the SWMP was implemented in these cases.</p> <p>No specific sites either known to be contaminated or with the potential to be contaminated were identified in Stage 2 prior to construction. However, since then, a pit toilet and old rubbish dump have been uncovered. The unexpected finds procedure contained within the SWMP was implemented in these cases.</p> <p>Further detail on the approved SWMPs are provided in Table 1 / MCoA B31(d).</p>
Geology and soils			
GS1	Erosion and sedimentation management and control measures will be designed and installed with the advice of a soil conservationist. Controls will be inspected regularly, maintained and managed to maximize their effectiveness.	Construction	<p>SWMPs have been prepared for each stage of the project in consultation with the EPA, DPI (Fishing and Aquaculture) and NOW to address this commitment.</p> <p>Further detail is provided in Table 1 / MCoA B31(d).</p>
GS2	Acid Sulphate Soil Management Plan will be developed to outline strategies that will be implemented to manage potential impacts of development works that are likely to disturb acid sulfate soils.	Construction	<p>See comment above for GS1.</p> <p>The SWMPs contain construction acid sulfate management sub-plans that outline how the requirements of this commitment will be addressed.</p>
GS3	Geotechnical investigations will be undertaken as part of the detailed design phase to	Pre-	Completed and incorporated into the project during development

CoA no.	Requirement	Stage	Status / Reference
	confirm preliminary geotechnical investigative works.	construction	of the detailed design.
GS4	Geomorphologic investigations will be undertaken during the detailed design phase to determine bank and riverbed stability.	Pre-construction	Completed and incorporated into the project during development of the detailed design.
GS5	A spoil management strategy will be identifying opportunities for re-using the material onsite and locations outside the Proposal for re-use or disposal. Re-use onsite will be the priority.	Construction	Spoil management strategies were prepared as part of the detailed design phase and will be implemented as part of the SWMP for the respective stages.
GS6	Detailed design of cut slopes and embankments will be undertaken to ensure there will be minimal long term adverse impacts to banks.	Pre-construction	Completed and incorporated into the project during development of the detailed design.
	Utility services		
US1	Utilities and services potentially affected by construction will be identified and requirements for their diversion, protection and / or support identified. Alterations to services will be determined in negotiation with the service providers and will ensure that disruption to services resulting from the project are limited and advised to customers.	Pre-construction and Construction	Completed and incorporated into the project during development of the detailed design.

Appendix B

Complaints

Complaints

No.	Receipt	Entity	Category	Description of issue	Response	Action taken	Status
Stage 1 – Sancrox Traffic arrangement works							
1	6/02/2015	Port News local newspaper	Property access	A newspaper article in the Port News alleged access to the adjacent Abundance Nursery off Sancrox Road had been prevented.	17/2/2015	Roads and Maritime consulted with businesses in the area prior to the proposed road closure and signage was provided to Abundance Nursery to mitigate any access issues. Council subsequently removed the signs as they did not comply with their requirements. After which time the news article was published indicating that access to Abundance Nursery had been prevented. Additional consultation has been undertaken, and signs that conform with council requirements have now been installed. Feedback from Abundance Nursery indicates they are satisfied with the level of consultation and action to date.	Closed
2	23/04/2015	Motorist	Motor vehicle damage	Car windscreen broken by debris from truck accessing the Volcanic Resources owned land. This property has been receiving Excavated Natural Material (ENM) and Virgin Excavated Natural Material (VENM) from the Stage 1 (Sancrox site). It is understood the incident occurred on 20 April 2015.	23/04/2015	Investigation revealed that Stage 1 contractor was not running trucks on this day. Incident considered to be associated with activities unrelated to the project.	Closed
3	2/06/2015	Motorist	Worker behaviour	Road user complaint about the behaviour of workers on Sancrox Road. Did not want to receive feedback, or for any particular action to be taken, but wanted to 'express his concern'.	2/06/2015	The community officer discussed the issue with construction personnel involved to ensure that the interactions with community members were appropriately aligned with company values and expectations.	Closed
4	16/07/2015	Motorist	Worker behaviour	Road user complaint regards trucks driving in an aggressive manner on the Oxley Highway overpass.	21/07/2015	Specific truck and driver could not be identified. However, the entire team received a follow up toolbox training session in relation to safe driver conduct.	Closed
Stage 2 – Kundabung to Kempsey							
5	02/02/2015	Busways	Traffic management	Busways advised that they had received an email from concerned parents about the safety of their children waiting on the side of the highway prior to and following pick-ups and drop-offs. An area historically used by parents for parking was now being utilised by construction light vehicles.	11/02/2015	A meeting with the Traffic Manager, Community Relations Officer and Busways on site was held to discuss concerns and issues. Open and ongoing consultation with Busways is continuing. Each bus stop within the project is being evaluated and improvements	Open

No.	Receipt	Entity	Category	Description of issue	Response	Action taken	Status
						proposed/implemented.	
6	16/03/2015	Resident	Traffic management	Resident visited community display center to advise that traffic control signage had blocked a school bus attempting to stop at a school pick up area. Parents had to follow the bus to a stop further north to allow children to access the bus. Concern was also raised about construction light vehicles using Upper Smiths Creek Road for u-turns.	16/03/2015	Consultation with Busways has continued to determine where the signage could be placed to allow room for the buses to stop safely. Resident advised that Vehicle Management Plan (VMP) had been changed so that the workforce and staff would no longer use Upper Smiths Creek for u-turns. Staff and contractors were advised of the VMP changes. Complainant advised that a further call-back to update them on project's response was not required.	Closed.
7	19/03/2015	Resident	Dust	Resident expressed concern about dust from the project reaching his residence. It was noted that on the day of the complaint it had been particularly bad and it was affecting his ability to clean his jet ski.	19/03/2015	Additional water carts dispatched to suppress dust emissions. Resident advised that they were happy with the response.	Closed
8	20/03/2015	Resident	Dust	Follow up complaint from previous day (see complaint number 7) indicating that dust emissions were affecting his residence again and seemed to coincide with the hot and windy conditions.	20/03/2015	Activity found to be creating dust emission suspended (rock grinding). Environmental improvement report issued to ensure actions, including cessation of work and additional water carts for pre-grind watering, were taken to prevent reoccurrence..	Closed
9	31/03/2015	Resident	Community consultation	Resident angry at pumping activities that had commenced at his property without notice. He also raised concern about fencing that had not occurred despite previous agreements. Expressed concern that his good nature was being taken advantage of.	31/03/2015	Management agreed to meet resident on site to discuss and address residents concerns. Pump was removed and permanent fencing installed the same day.	Closed.
10	08/04/2015	Resident	Damage to Property	Resident concerned that runoff from the project caused a dam on his property to be clay affected (ie high turbidity) and requested representation from the project to visit the property.	10/04/2015	Management visited the resident's property on 10 April 2015. Environment team tested the water quality and flocked the basin on 15 April 2015. Water observed to be turbid when inspected on 17 April 2015. Project team provided further commitment to review the condition of the water during the week commencing 20 April 2015. Dam flocked again on 22 nd April to remove turbidity from dam.	Closed
11	14/04/2015	Resident	Design	Resident expressed concern about the left-in left-out final design at Kempes Road. Resident	14/04/2015	Community team explained the differences between the A-class and M-class stages of the project and contact details taken. The overpass	Closed

No.	Receipt	Entity	Category	Description of issue	Response	Action taken	Status
				indicated that they had been told there would be an overpass at this location. Further, they expressed the view that it would dangerous to left turn out and perform a u-turn on the highway to travel north.		is to be constructed as part of Class M. Complainant referred to Roads and Maritime representatives and a community feedback form provided. Written feedback form from resident remains outstanding. Roads and Maritime is undertaking a broad review of access arrangements under Class A, to alleviate these concerns. A number of design modifications are currently being finalised, after which community consultation will be conducted on the proposal.	
12	15/04/2015	Resident	Dust	Resident complained about dust emissions from the project affecting his property again (refer complaints 7 and 8).	22/04/15	Water cart dispatched to suppress dust emissions associated with material hauling and grinding activities. Amendments to clearing and grubbing environmental work method statement were made on 22 April 2015 to address emissions from site. Site personnel received a toolbox training session at the same time on the changed requirements.	Closed
13	18/05/2015	Resident	Traffic management	Complainant expressed concern that the introduction of star pickets along Mingaletta Road following clearing activities had changed the width of the road.	18/05/2015	A leading hand and community relations officer met with resident on site to discuss position of star pickets. Star pickets removed at the time, but resident advised that they would be repositioned in consultation with the Traffic Manager. Complainant advised that they were required to delineate the edge of the culvert/pipe drain under Mingaletta Road for safety reasons prior to finalising the works. Resident indicated that they couldn't understand the need for star pickets. Resident also advised that once site conditions dried out a crew and small machine would be dispatched to tidy up Mingaletta Road. Resident appeared happy with the resolution and response time.	Closed
14	16/06/2015	Motorist	Mud tracking	Truck driver unhappy with condition of highway between Port Macquarie and Kempsey, in particular the section near Bloodwood Ridge.	16/06/2015	Complainant did not want to leave details, but was informed at the time a sucker truck would be dispatched to undertake clean up activities. Complainant indicated that he didn't want highway traffic to be stopped to undertake the clean up operation and suggested the project should have wheel washes to prevent material getting on the highway in the first instance. Complainant's concerns raised with site team	Closed

No.	Receipt	Entity	Category	Description of issue	Response	Action taken	Status
						responsible for area in question at site meeting later that day. Water carts located at gates to wash vehicles and street sweeper sent to gates on regular basis.	
15	03/07/2015	Resident	Design	Complaint about changes to Kemp Road (resident 1).	03/07/2015	Resident informed of Roads and Maritime Stage 2 construction partner's role in a construct only project and advised that their concerns and contact details would be provided to relevant Roads and Maritime Services management team. Roads and Maritime is undertaking a broad review of access arrangements under Class A, to alleviate these concerns. A number of design modifications are currently being finalised, after which community consultation will be conducted on the proposal.	Open
16	03/07/2015	Resident	Design	Complaint about changes to Kemp Road (resident 2).	03/07/2015	Resident informed of Roads and Maritime Stage 2 construction partner's role in a construct only project and advised that their concerns and contact details would be provided to relevant Roads and Maritime Services management team. Roads and Maritime is undertaking a broad review of access arrangements under Class A, to alleviate these concerns. A number of design modifications are currently being finalised, after which community consultation will be conducted on the proposal.	Open
17	06/07/2015	Resident	Dust	Resident concerned about the amount of dust emissions affecting his property, road noise (particularly at night) since clearing operations had been undertaken and an asbestos related matter.	06/07/2015	Resident advised that dust emission were likely from crushing activities in progress in recent months. Resident advised that crushing operations sub-contractor were issued with an improvement notice to address the issue. Noise monitoring offered but declined by resident. This resident is not eligible for architectural treatment for operational noise. A Roads and Maritime representative will contact this resident to explain the operational noise modeling results. Operational noise will be reviewed as part of the Operational Noise Report prepared once construction is complete. The asbestos issue is unrelated to the project as it is located on a Roads and Maritime owned property, acquired as part of the Kempsey	Closed

No.	Receipt	Entity	Category	Description of issue	Response	Action taken	Status
						Bypass project. This has been reported to the relevant division of Roads and Maritime.	
18	16/07/2015	Resident	Traffic management	Strong concern over the safety of a temporary bus stop at Kundabung (ie located within an area used by construction vehicles) when it is believed a suitable alternative is located nearby.	20/07/15	Bus stop has been moved from Kundabung Road to Smiths Creek Road to avoid interaction with construction vehicles. The temporary bus stop also provides car parking for parents waiting for the school bus. Changes made to the set up in consultation with Busways and Roads and Maritime. Busways and Roads and Maritime responded to resident. Note resident that complained lives closer to Raveswood Road and was petitioning for relocation closer to his house.	Closed
19	20/07/2015	Resident	Lighting	Resident upset about night-time security light at the site compound that affects his property. Indicated that the issue has been on and off for a period of about six months.	20/07/15	Advised that existing system had clearly been failing and that issue would be resolved. Lighting since disconnected.	Closed
Stage 3 – Oxley Highway to Kundabung							
20	23/1/15	Resident	Boundary fencing	After the installation of a new boundary fence a resident on Pacific Highway complained that a creek crossing installed as part of the fence was allowing debris to run off the site onto his property. He was also concerned that the creek crossing was trapping debris that will damage the fence and enable his cattle to escape.	2/2/15	Environment representatives from Roads and Maritime and their Stage 3 construction partner investigated the complaint (issue arose following 200mm rain within two days). Roads and Maritime's Stage 3 construction partner agreed to monitor the section of fence and clear any accumulating debris from subsequent events.	Closed
21	31/1/15	Resident	Design	Residents of Glen Ewan Road attended a community information session in Port Macquarie and expressed concern at potential operational noise from the new highway if the pavement is concrete.		Roads and Maritime is currently reassessing the requirement to provide low noise pavement at this location. Roads and Maritime is in regular contact with these residents to provide an update on the progress of this assessment.	Open
22	5/2/15	Resident	Boundary fencing	A resident on Glen Ewan Road objected to location of a new fence post installed by Roads and Maritime's Stage 3 construction partner. The post was installed on the resident's side of the existing boundary fence. The resident believed that the existing fence was on the boundary.	23/2/15	Roads and Maritime's Stage 3 construction partner survey verified that the new post was installed on the boundary and that the old post was not on the boundary. Despite this, Roads and Maritime assessed the situation and directed their Stage 3 construction partner to remove the new post and attach the new fence wires to the existing strainer post.	Closed
23	5/2/15	Resident	Worker behavior	Resident on Glen Ewan Road complained via email about the speed of trucks on Glen Ewan Road.	5/2/15	Trucks movements in this locality are regularly monitored and managed by traffic controllers. Truck speed limits of 25 kilometres per hour are	Closed

No.	Receipt	Entity	Category	Description of issue	Response	Action taken	Status
						consistently achieved.	
24	5/2/15	Resident	Dust	Resident on Glen Ewan Road complained via email about dust being generated by the work near his property.	6/2/15	Monthly dust monitoring data from this locality was reviewed. The review indicated that maximum dust deposition rates have not been exceeded. The complainant was advised of the outcome of this review and informed of the mitigation measure routinely implemented across the project to minimise dust emissions.	Closed
25	13/2/15	Resident	Vegetation clearing	Resident on the Pacific Highway (north end) emailed concerns about the amount of clearing required for the new driveway being built on their property.	16/2/15	Clearing work was immediately stopped and the design of the new driveway amended to minimise clearing on the property.	Closed
26	27/2/15	Resident	Damage to property	Resident on the Pacific Highway (south end) complained that water being pumped from a basin under construction was flowing to his paddock.	27/2/15	The pumping was stopped until an alternative location for the water was found.	Closed
27	27/2/15	Resident	Dust	Resident on Glen Ewan Road complained in person about dust. It was a reiteration of the complaint received via email (see complaint number 24).	27/2/15	The resident was informed of the dust mitigation measures routinely implemented across the project. A visual inspection was also conducted of the property with little evidence of dust found.	Closed
28	27/2/15	Resident	Worker behaviour	Resident on Glen Ewan Road complained in person about the speed of trucks on Glen Ewan Road. It was a reiteration of the complaint received via email (see complaint number 23).	27/2/15	Trucks movements in this locality are regularly monitored and managed by traffic controllers. Truck speed limits of 25 kilometres per hour are consistently achieved. This was relayed to the resident who acknowledged they appeared to be going slower since the issue was first raised.	Closed
29	3/3/15	Resident	Noise	A resident of Pacific Highway complained about noise. She said she could not sleep because of the noise at all hours of the night and day.	3/3/15	A representative from Roads and Maritime's Stage 3 construction partner explained to the resident that approved hours for construction are 7am to 6pm and permission is sought for work outside those hours. The resident, who lives adjacent to the highway, acknowledged that the noise might not be construction related, but rather from trucks using the highway.	Closed
30	3/3/15	Resident	Worker behaviour	Complaint via telephone regarding a truck travelling too fast near Telegraph Point Public School. The caller did not provide any details about the truck.	3/3/15	All truck drivers received a tool boxed training session about speed limits on local roads. Roads and Maritime's Stage 3 construction partner installed additional signage in the area advising construction vehicles to slow down.	Closed
31	30/3/15	Resident	Boundary	Resident of Hastings River Drive visited the	30/3/15	Representatives from Roads and Maritime and	Closed

No.	Receipt	Entity	Category	Description of issue	Response	Action taken	Status
			fencing	community display centre to complain that fencing work that should have been completed was not done.		their Stage 3 construction partner met with resident on site and agreed on temporary access arrangements for the Easter break. Fencing to be complete as soon as clearing can be arranged. Resident was satisfied with proposed mitigation.	
32	30/3/15	Resident	Dust	Resident of Glen Ewan Road visited the community display centre to return an Out of Hours Feedback form. The resident objected to all Out of Hours Work due to the amount of dust. Resident said they would change their response if a house cleaner was provided.	30/3/15	Resident was advised of mitigation measures currently in place for dust and the monitoring that regularly occurs. Roads and Maritime's Stage 3 construction partner now completes regular inspections of the property with little evidence of excessive dust.	Closed
33	1/4/15	Resident	Dust	Resident of Telegraph Point complained about dust from truck and dogs with uncovered trailers.	1/4/15	A representative of Roads and Maritime's Stage 3 construction partner explained that empty trailers don't require a cover and the project trucks aren't currently hauling past his property.	Closed
34	15/4/15	Resident	Property Access	Resident of Pacific Highway whose driveway crosses the construction area complained that his access through the construction area was not safe.	15/4/15	Roads and Maritime's Stage 3 construction partner installed 'Stop' signs on construction site to stop all construction vehicles before crossing the driveway. In addition, a spotter is now in place on the driveway while machinery travels across the driveway.	Closed
35	15/4/15	Resident	Dust	Resident of Pacific Highway complained about dust from hauling activities.	15/4/15	A large water cart was located in the area.	Closed
36	16/4/15	Resident	Dust	Resident of Glen Ewan Road complained about dust.	16/4/15	Roads and Maritime's Stage 3 construction partner increased the water cart circulation in the area.	Closed
37	21/4/15	Resident	Noise	Resident of Glen Ewan Road complained about noise from haul trucks. The resident works night shift and is therefore trying to sleep during the day.	21/4/15	Roads and Maritime's Stage 3 construction partner continues to work with the resident to investigate appropriate noise attenuation measures including possible alternate day employment, sound dampening curtains and high quality ear plugs. The resident understands he has unique circumstances and is working cooperatively with Roads and Maritime's Stage 3 construction partner to find a solution.	Open
38	23/4/15	Resident	Boundary fencing	A resident from Haydon's Wharf Road complained that existing fencing had been removed before	23/4/15	Temporary fencing was installed until permanent fencing could be installed.	Closed

No.	Receipt	Entity	Category	Description of issue	Response	Action taken	Status
				new fence was installed.			
39	23/4/15	Resident	Vibration	Resident of Pacific Highway complained of feeling "violent shaking" from construction activity.	23/4/15	Environment and Community Representatives from Roads and Maritime's Stage 3 construction partner visited the property to assess the level of vibration. None could be felt. Roads and Maritime's Stage 3 construction partner agreed to return with a vibration monitor during next vibratory event. (see complaint number 43)	Closed
40	24/4/15	Resident	Property access	Resident on Pacific Highway whose access crossed through the construction site complained that the spotter was not located on the driveway.	24/4/15	A representative from Roads and Maritime's Stage 3 construction partner explained that there was no work in the area on the day and therefore the spotter would not be on the driveway.	Closed
41	24/4/15	Motorist	Motor vehicle damage	A motorist traveling on the Pacific Highway reported a tree branch striking their vehicle while driving past an area where tree felling was in progress.	24/4/15	The Construction Manager of Roads and Maritime's Stage 3 construction partner interviewed the motorist. A statement was taken from the motorist. No claim for damage was submitted. Roads and Maritime's Stage 3 construction partner reviewed its work methods as a result of the report.	Closed
42	28/4/15	Resident	Property access	A resident of Glen Ewan Road complained that a site access gate was left unlocked over the weekend. He is concerned that his cows can walk through the gate and onto the construction site.	28/4/15	Roads and Maritime's Stage 3 construction partner advised that the gate was left unlocked for a delivery, but that it had been closed and secured. Since the complaint the gate has been locked and is no longer used by construction crews.	Closed
43	28/4/15	Resident	Vibration	Resident of Pacific Highway complained about vibration from activities near the river. The resident expressed concern that the vibration might be damaging building foundations. (Note: continuation from complaint number 39)	28/4/15	A representative from Roads and Maritime's Stage 3 construction partner explained that a small level of vibration would not cause any structural damage and organised for vibration monitoring to be carried out during the next vibratory activity. Vibratory activity finished in this area before monitoring could be conducted.	Closed
44	6/5/15	Resident	Flooding	Resident of Wyndell Close complained of excess water across his yard after heavy rain.	6/5/15	Roads and Maritime's Stage 3 construction partner inspected the area and found that service relocation work had blocked a nearby drain. The drain was cleared and the resident advised.	Closed

No.	Receipt	Entity	Category	Description of issue	Response	Action taken	Status
45	13/5/15	Resident	Worker behaviour	A resident of Telegraph Point complained about the speed of trucks travelling past his property. He said it was a small local road.	13/5/15	Drivers were reminded of local road speed limits and advised that residents were monitoring their speed.	Closed
46	5/6/15	Resident	Worker behaviour	Motorist on Pacific Highway complained about a truck driver, who appeared to be associated with the project, turning dangerously from Glen Ewan Road.	5/6/15	The details of the truck, including ID number, were forwarded to appropriate Roads and Maritime's Stage 3 construction partner staff who investigated the issue with the driver.	Closed
47	15/6/15	Resident	Noise	A resident of Glen Ewan Road complained about construction noise during the day. The resident is a night-shift worker, attempting to sleep during the day (see complaint number 37).	15/6/15	Project staff met with the resident and identified a number of issues that are contributing to the resident's inability to sleep. A number of options were presented to the resident, including assistance to find alternative day-time employment.	Open
48	19/6/15	Resident	Worker behaviour	A resident of Telegraph Point complained about the behaviour of a driver of a low loader on Cooperabung Drive.	19/6/15	Not enough information was provided to determine that the truck was associated with the project. The complainant acknowledged that it may not be a project vehicle.	Closed
49	23/6/15	Resident	Impact of Construction on house sale	A resident of Wyndell Close complained that the on-going construction activity and tree clearing of Wyndell Close was preventing the sale of his property.	23/6/15	Project staff met with the resident who has recently suffered a serious medical issue. While there is sympathy for the resident, the project team has undertaken all work on Wyndell Close as per approved plans and in consultation with the resident. Roads and Maritime's Stage 3 construction partner continues to work with the resident to reduce the impact of construction activity on his property.	Open
50	25/6/15	Resident	Noise	A resident of Limeburners Creek (east side of Wilson River, near Hacks Ferry) complained of hearing construction noise at night and requested noise treatment.	25/6/15	Resident was advised that no construction activity was being undertaken at night in the area. Resident requested at-house noise treatment for operational noise. Investigations by Roads and Maritime have found that these residents are well outside the area of operational noise impact attributable to the project. A Roads and Maritime representative has met with one of these two residents to explain the operational noise modeling results and why their property is not eligible for treatment, and is in the process of arranging a meeting with the second resident.	Closed
51	26/6/15	Resident	Noise	A resident of Hacks Ferry (on the eastern side of	26/6/15	Resident was advised that construction activity	Closed

No.	Receipt	Entity	Category	Description of issue	Response	Action taken	Status
				the Wilson River) complained about construction noise. Asked about noise treatments.		during the day was to be expected. The resident lives three kilometres from the construction site and therefore unlikely to be eligible for operational noise treatment. Investigations by Roads and Maritime have found that these residents are well outside the area of operational noise impact attributable to the project. A Roads and Maritime representative has met with one of these two residents to explain the operational noise modeling results and why their property is not eligible for treatment, and is in the process of arranging a meeting with the second resident.	
52	26/6/15	Resident	Noise	A resident of Glen Ewan Road complained about noise of the piling rig.	26/6/15	The complaint was received after the piling operation was completed. Residents were consulted both in writing and face to face prior to piling starting again in the area. The residents acknowledged that the operation was required and that it was a noisy operation.	Closed
53	21/7/15	Resident	Worker Behavior	A resident of Cooperabung Drive complained about speed of trucks on Cooperabung Drive. He said he was concerned for the safety of his daughter. No specific details of a truck were provided.	21/7/15	All drivers were reminded to take care when using Cooperabung Drive. Resident was advised that the intersection of Cooperabung Drive and Pacific Highway is being upgraded to enable trucks to turn right. This will reduce the number of trucks using Cooperabung Drive.	Closed
54	21/7/15	Business	Property access	A business on Haydons Wharf Road complained that a light vehicle was parked near their driveway, making access difficult.	21/7/15	The light vehicle was removed immediately.	Closed

Appendix C

Incidents

Stage 1 environmental incidents

No.	Activity in progress	Incident description	Damage caused	Contributing factor(s)	Action taken
1	Earthwork fill operations for the western widening and batter preparation	Clearing was observed outside of the clearing limits during a site inspection with Roads and Maritime.	Two small casuarinas were removed, and the ground surface disturbed outside of the Stage 1 clearing limit (but within the wider OH2K clearing limit).	Boundary delineation flagging was absent adjacent to the disturbance.	<p>Survey was notified to attend site and determine the project boundary. The felled vegetation was removed from the area outside of the approved clearing limit. The disturbed area within the limit of works was finished to final levels and treated with topsoil and seed mixture. Future controls included:</p> <ul style="list-style-type: none"> • Prior to clearing, ensure survey has set out limit of clearing and that flagging remains in place to delineate limit of works. • Toolbox training sessions to reiterate that no works is to be undertaken unless the limit of clearing is clearly marked.
2	Top coat of the western widening and batter slope preparation	Delay in reporting small fuel spill on the western widening.	Spill estimated to less than 10 litres and contained to immediate work site.	None identified.	<ul style="list-style-type: none"> • Area affected by the spill was excavated. Contaminated material was transported and stored at the site compound in a covered skip bin prior to offsite disposal at suitably licensed facility. • Plant operators were reminded of incident reporting requirements.
3	Material haulage	Hydrocarbon spill occurred as a result of a wheel and axle sliding off truck.	Spill estimated at less than 10 litres and contained to immediate work site.	The truck was travelling north towards the cut when the wheel and axle became dislodged from the truck. A small amount of hydrocarbon spilt over a 20 metre area for the period it took for the truck to stop.	<ul style="list-style-type: none"> • A spill kit was dispatched to the area of spill and absorbent materials applied. • The hydrocarbon on the tyre and axle was cleaned using spill kit absorbent products. • Area affected by the spill was excavated. Contaminated material was transported and stored at the site compound in a covered skip bin prior to offsite disposal at suitably licensed facility. • Spill kits were re-stocked.
4	Placement and rolling of fill material adjacent to	A trench roller tipped over, falling onto its side -	Spill estimated at less than five litres and contained to	Operation of plant too close to a	<ul style="list-style-type: none"> • A spill kit was dispatched to the area of

No.	Activity in progress	Incident description	Damage caused	Contributing factor(s)	Action taken
	the eastern abutment	releasing hydrocarbons on the fill embankment of the eastern abutment.	immediate work site.	batter face – causing the roller to tip.	<p>spill and absorbent materials applied.</p> <ul style="list-style-type: none"> The hydrocarbon on the rollers surface was cleaned using spill kit absorbent products. Area affected by the spill was excavated. Contaminated material was transported and stored at the site compound in a covered skip bin prior to offsite disposal at suitably licensed facility. Spill kits were re-stocked. Operator made aware of limitations of the roller to prevent future incident.
5	Excavator operation to clear path around the temporarily stored pit	A previously excavated oil water separator pit was knocked over by an excavator, with the contents spilling in stockpile area.	About 150 litres of liquid and about half a cubic metre of sediment spilt within the immediate work site.	Pit was not emptied prior to being excavated/stored in the stockpile area.	<ul style="list-style-type: none"> The pit was repositioned and stood upright to prevent further escape of material. The area of the spill was excavated under the supervision of the Site Environmental Representative. Excavated soil was taken to a plastic lined bund and covered prior to classification and off-site licensed disposal. In the event further contaminated items are uncovered, they would be removed from work areas and securely stored prior to offsite removal.
6	Excavation of subsoil drain on Sancrox Road that had filled with water following rain event	A subsoil drain below Sancrox Road was discharging sediment laden water into a clean water drain.	Discharge of waters from site without implementation of appropriate erosion and sediment controls.	Excavation had filled with water to a level where pressure on the drain caused sediment laden water to be released. The drain had been installed to design.	Sand bags were implemented to dam water and prevent sediment laden water leaving site. Concurrently the pipe was extended, such that sufficient head was created to prevent water from leaving the pipe. Where sediment laden water was leaching from the trench, sandbag check dams and sediment fence were placed downslope to provide treatment.
7	No activities being undertaken - site shut down due to rainfall from previous afternoon.	A sediment fence control at the bottom of the batter on the north-western roundabout was overtopped - releasing water off-site.	Discharge of waters from site without appropriate erosion and sediment controls and therefore not in accordance with approval and environment protection	14 millimetres of rainfall received to 6.30am on the 30 April 2015. Work progress within the area changed the ground conditions such that the downslope sediment fence was	<p>A series of controls were installed immediately after identifying the incident to reduce the load on the sediment fence. This included:</p> <ul style="list-style-type: none"> Installing an earth bund to hold water

No.	Activity in progress	Incident description	Damage caused	Contributing factor(s)	Action taken
			licence requirements.	overloaded.	<p>on the formation to the south of the roundabout.</p> <ul style="list-style-type: none"> A sump in the south west portion of the roundabout was cut. A perimeter bund on the northern extent of the fill installed. <p>A revised ESCP was developed for the location. The PESCP details erosion control measures and Type 2 and Type 3 sediment controls that fit the constrained nature of the location (constraints include the limited available footprint for type 1 controls, the road design and restrictions from topography and underground services).</p>
8	Rolling of the formation	A hydraulic hose ruptured on a pad foot roller during rolling activities. The roller was stopped as soon as the incident was identified. The spill occurred within a boxed out section of Sancrox Service Road Three.	Approximately 20 litres of hydraulic oil spilt and contained to immediate work site.	None identified.	<ul style="list-style-type: none"> The roller was stopped upon identifying the spill. Absorbent pads from a nearby spill kit were applied to the location to absorb the spill. Area affected by the spill was excavated. Contaminated material was transported and stored at the site compound in a covered skip bin prior to offsite disposal at suitably licensed facility. Regular plant maintenance and inspections will reduce the likelihood of equipment failure. Spill kits restocked.

Stage 2 environmental incidents

No.	Activity in progress	Incident description	Damage caused	Contributing factor(s)	Action taken
9	Excavation	Hydraulic oil spill.	Three litres of hydraulic oil released onto ground.	Bucket on excavator was not properly removed causing hose to burst.	<ul style="list-style-type: none"> Spill was contained on site. Contaminated material collected and disposed of off-site at a suitably licensed facility.

No.	Activity in progress	Incident description	Damage caused	Contributing factor(s)	Action taken
10	Loading and hauling cleared vegetation	Hydraulic oil spill.	Approximately one litre of hydraulic oil released onto ground	Hydraulic hose hit while loading of felled timber caused it too burst.	<ul style="list-style-type: none"> Spill was contained on site. Contaminated material collected and disposed of off-site at a suitably licensed facility.
11	Sediment basin construction	Low flow pipe in permanent basin failed during large rain event causing the release of basin contents.	Release of roughly 300 cubic metres of sediment laden water prior to treatment.	<ul style="list-style-type: none"> Poor construction techniques. Discharge occurred during and following a rainfall event exceeding 165 millimetres. Basin spillway functioned through rainfall event and is still in place. 	<ul style="list-style-type: none"> Site / engineering team to investigate methods of compaction around low flow pipes especially sides of pipe to prevent pipe deformation. Pipe joints to be located in middle of fill to increase protection. Low flow pipe outlets to be supported - sand bags or rock.
12	Clearing and grubbing	A tannin sump over topped and tannin-laden water left site. The mulch stockpile sump was installed and maintained in accordance with the Roads and Maritime's Tannin Management Direction. Sump was emptied on the 25/03/2015 - immediately after access made possible following 165 millimetre rainfall event. Due to the amount of rainfall, the sump then filled again and over topped.	Less than 1000 litres of tannin laden water entered clean water diversion and left site.	<ul style="list-style-type: none"> Large rainfall event. Lack of follow up inspection. 	<ul style="list-style-type: none"> Following identification of the issue, drainage line was banded off. Tannin sump was then de-watered into nearby holding pond. Bund around sump was increased. Sump emptied again on 27/03/2015. Mulch pushed up into higher stockpile to reduce footprint and increase distance from drainage line. Site Environmental Checklist updated to include Tannin Management. Additional stockpiles investigated at site compound.
13	De-watering of drainage line	De-watering of a drainage line without appropriate Inlet protection on the pump. Water quality monitoring had taken place prior to pumping. De-watering permit had been issued.	N/A	<ul style="list-style-type: none"> Insufficient supervision. Poor performance. 	<ul style="list-style-type: none"> Pump was immediately stopped. Culvert works continued for the remainder of the day and whole culvert line was re-lined with geotextile fabric. Crew received follow up toolbox training session on requirement of the De-watering Environmental Work Method Statement. ERSED plan was updated to include de-watering notes.
14	Trimming vegetation	Trimming of vegetation	Damage to native	<ul style="list-style-type: none"> Insufficient supervision 	<ul style="list-style-type: none"> Works were stopped immediately and

No.	Activity in progress	Incident description	Damage caused	Contributing factor(s)	Action taken
		without approval.	vegetation.	<ul style="list-style-type: none"> Poor performance 	<p>Roads and Maritime and Environmental Representative notified.</p> <ul style="list-style-type: none"> Incident details outlined at site wide toolbox on 29/04/2015. Subcontractor issued with formal warning. Crew follow up toolbox training session on requirement of the Clearing and Grubbing Environmental Work Method Statement. Site wide toolbox training session on the use of existing local / state forest roads and works outside of the approved project boundary.
15	Vegetation clearing	A juvenile casuarina was damaged during slewing of a harvester. This incident was not reported immediately.	Damage to juvenile casuarina sp	<ul style="list-style-type: none"> Operating in close proximity to work area boundary. 	<ul style="list-style-type: none"> Sub-contractor received follow up toolbox training session on the Clearing and Grubbing Environmental Work Method Statement. Site wide toolbox training session included details about the need to report incidents immediately. Environmental improvement report raised against sub-contractor in response to the delay in reporting.
16	Stockpiling	Trucks found to be hauling across an area that was outside of approved stockpile limits.	Nil	<ul style="list-style-type: none"> Insufficient boundary controls. Poor planning. 	<ul style="list-style-type: none"> Area fenced off to prevent further incursion. Heritage specialist consulted to ensure site had been part of previous heritage assessments. This was confirmed to be the case. Area rehabilitated prior to impending rainfall event.
17	Dewatering	Dewatering drainage line not in accordance with dewatering procedure.	Nil	<ul style="list-style-type: none"> Insufficient supervision. Not following approved dewatering permit. 	<ul style="list-style-type: none"> A site wide environmental alert was issued to ensure that all environmental systems are followed. Details of incident raised at next site wide toolbox training session. In the short term (three months) the environmental team to ensure stricter

No.	Activity in progress	Incident description	Damage caused	Contributing factor(s)	Action taken
					supervision of dewatering activities.
18	Plant maintenance	Concrete pump hydraulic line was overfilled causing approximately five litres of hydraulic oil to spill onto the ground.	Localised ground contamination.	<ul style="list-style-type: none"> Overfilling of hydraulic oil tanks 	<ul style="list-style-type: none"> Contaminated material collected and disposed of off-site at a suitably licensed facility. Crew received toolbox training session on the refuelling requirements as stated in the Soil and Water Management Plan.
19	Clearing and grubbing	Hose on excavator's shears attachment burst causing hydraulic oil to spill onto the ground	Localised ground contamination.	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> The machine was repositioned so as to prevent any more oil from leaking and then shut down. Spill was contained to site using booms and absorbent material. Contaminated material collected and disposed of off-site at a suitably licensed facility. The machine was banded while awaiting service.
20	Earthworks	Hydraulic line was broken on truck resulting in approximately 60 litres of oil being spilled	Localised ground contamination.	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> The driver quickly put a bucket beneath the leak to contain the majority of the oil. The driver and the leading hand contained the spill using absorbent materials from a spill kit. Contaminated material collected and disposed of off-site at a suitably licensed facility.
21	Earthworks	Hose burst on smooth drum roller causing approximately five litres of hydraulic oil to leak onto ground	Localised ground contamination.	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> The driver contained the spill using absorbent material from the spill kit. Contaminated material collected and disposed of offsite at a suitably licensed facility.
22	Piling	Approved procedure that required geotextile fabric to be placed between piling rig and spin-off bins was not followed. The bin also had small holes in it.	Nil - Small amount of fines fell onto rock platform	<ul style="list-style-type: none"> Poor planning. Not following approved plan. Equipment not fit for purpose. 	<ul style="list-style-type: none"> Approved lifting slings have been sourced so the bin can be moved by the crane. Holes in the bin have been patched. Environmental Advisor to carry out inspections more frequently and attend

No.	Activity in progress	Incident description	Damage caused	Contributing factor(s)	Action taken
					the pre-start at this location.
23	Piling	Low-flow pipe not installing correctly in Stumpy Creek piling pad in accordance with the approved ERSED plan and EWMS	Nil	<ul style="list-style-type: none"> Not following approved plan. Wrong version of plan in field. 	<ul style="list-style-type: none"> Works were stopped immediately. Rock was removed from above pipe, rock underneath pipe was removed and pipe installed so as to be 'fish friendly'. Foreman notified of issues with current set out and approved plan issued to site team. Development and implementation of Construction Execution Plans (CEP's) for high risk activities as opposed to just generic plans for construction. Foreman and supervisors involved with planning of CEP's to ensure that everyone has the up to date plans.
24	Earthworks	Padfoot roller was compacting inside of sediment basin and hose burst causing hydraulic oil spill	Localised ground contamination.	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> The operator and nearby labourers contained the spill using absorbent material from the spill kit. Contaminated material collected and disposed of off-site at a suitably licensed facility.
25	Earthworks	Oil filter was knocked off backhoe causing approximately two litres of oil to spill onto Barrys Creek temporary rock crossing	Nil	<ul style="list-style-type: none"> Machine not fit for purpose 	<ul style="list-style-type: none"> The operator exited the machine and informed the foreman. A number of personnel contained the spill using absorbent material. The contaminated rock was removed from the crossing and placed in nearby contaminated waste bin prior to disposal at a licensed waste facility.
26	Clearing and Grubbing	Clearing without an ecology pre-clearing survey or approved clearing permit.	Nil – clearing within approved clearing limits.	<ul style="list-style-type: none"> Sub-contractor continued clearing operations without approval of the Roads and Maritime's Stage 2 construction partner. 	<ul style="list-style-type: none"> Clearing crew stood down immediately and for remainder of working day. Project ecologist attended site and inspected cleared vegetation and confirmed no fauna injuries. Sub-contractor removed from site and will not complete anymore clearing on the project.

Stage 3 environmental incidents

No.	Activity in progress	Incident description	Damage caused	Contributing factor(s)	Action taken
27	Vegetation clearing	Clearing had taken place outside of the approved design footprint.	Two areas totaling 108 square metres at chainage 17780 adjacent to the north bound carriageway and an area of 13 square metres at chainage 18745 adjacent to the south bound carriageway were cleared without approval. The vegetation comprised 108 square metres of Moist Slopes Forest and 13 square metres of Moist Floodplain Forest was cleared.	<ul style="list-style-type: none"> Several design changes led to multiple clearing set-outs. Clearing limit delineation incorrectly installed. 	<ul style="list-style-type: none"> Calculation of areas over-cleared in square metres. Investigation to determine if any other areas on the project had been over-cleared. No additional areas had been over-cleared. Future clearing delineation to be installed only once following approval to clear.
28	Vegetation clearing	A single non-habitat tree was felled prior to a final daily pre-clearing inspection and approval of a pre-clearing permit.	One non-habitat tree was felled.	<ul style="list-style-type: none"> Ineffective supervision of clearing contractor. Poor communication. 	<ul style="list-style-type: none"> Clearing subcontractors now required to sign relevant pre-clearing permit prior to undertaking any future clearing. Subcontractor personnel retrained in the Project Clearing and Grubbing Environmental Work Method Statement. Workshop undertaken with relevant project personnel to clarify procedural responsibilities.
29	Installation of sheet piling at the Wilson River	A hydraulic hose on a piling rig ruptured causing hydraulic fluid to spill within hydrocarbon controls in the Wilson River.	Approximately 0.5 litres of hydraulic fluid spilled within the hydrocarbon controls in the Wilson River.	Defect in hydraulic hose.	<ul style="list-style-type: none"> Continued high level supervision of sheet piling operation including regular reviews into the adequacy of environmental controls. Ongoing regular inspections and maintenance of plant and equipment to ensure they remain in appropriate working order.
30	Delivery of rock via truck and dog	Hydraulic hose pulled off oil tank on Truck and Dog delivering material at Fill 5B, chainage 4900.	Approximately 80 litres of hydraulic oil spilt onto the fill.	The incident occurred as a result of a rock dislodging the hydraulic hose from the tank. No mechanical faults were identified.	Increased care taken to ensure trafficked areas of fill are free from rocks and clods of soil.
31	Removal of pipe-jacking casings from nearby work	Excavator tracked within a drainage line at culvert	Standing water became turbid and overflowed	<ul style="list-style-type: none"> Ineffective supervision. 	<ul style="list-style-type: none"> Work stopped immediately and the operator, foreman and superintendent

No.	Activity in progress	Incident description	Damage caused	Contributing factor(s)	Action taken
	area	C22.18 outlet (Chainage 22180).	downstream (less than 1000 litres).	<ul style="list-style-type: none"> Ineffective planning. The pool of water that was tracked through was constructed out of concrete during the pipe installation and was stable. No water was flowing through the drainage line at the time of the incident. 	<p>made aware of the severity of the issue. All impacted water was captured and pumped back onto the site.</p> <ul style="list-style-type: none"> Toolbox training session run for all northern work areas by project soil conservations specialist.
32	Construction of Wilson River Cofferd Dam	Non-conforming quarried rock delivered to site at the Wilson River Cofferd Dam (chainage 16500). The rock contained fines that were inconsistent with the approved EWMS.	Approximately 280 tonnes of rock was placed onto the coffer dam structure.	Acceptance of non-conforming materials by project personnel during rock placement associated with the Wilson River Cofferd Dam construction.	<ul style="list-style-type: none"> Rock delivered to the coffer dam will be inspected prior to placement. Non-conforming rock will be rejected from the works. No deliveries of rock to the coffer dam will be undertaken when there is the potential for excessive tracking from Hacks Ferry Road. Personnel to received follow up toolbox training session on the requirements of the activity specific EWMS.
33	Operation of crane prior to piling	Hydraulic fluid release from perforated hydraulic hose on piling equipment located at the Hastings River southern bank construction platform.	Approximately 0.5 litres	Defect (hole) in hydraulic hose.	<ul style="list-style-type: none"> Equipment immediately shut down and spillage contained with absorbent material from spill kit. Used spill kit material transported to the project workshop prior to collection by a licensed contractor. Ongoing regular inspection and service of plant and equipment.
34	'Start up' of piling equipment.	Hydraulic fluid release from perforated hydraulic hose on piling equipment located at the Hastings River southern bank construction platform.	Approximately 20 litres released.	Defect (hole) in hydraulic hose.	<ul style="list-style-type: none"> Equipment immediately shut down and spillage contained with absorbent material from spill kit. Used spill kit material transported to the project workshop prior to collection by a licensed contractor. Ongoing regular inspection and service of plant and equipment.
35	Movement of spoil material during a piling operation	Hydraulic fluid spilt when a hose burst on a bobcat - At OH2Ku flood relief bridge referred to as 'SB05', north	Approximately one litre of hydraulic fluid was spilt.	Weak section of hydraulic hose burst.	<ul style="list-style-type: none"> Equipment immediately shut down and spillage contained with absorbent material from spill kit. Used spill kit material transported to

No.	Activity in progress	Incident description	Damage caused	Contributing factor(s)	Action taken
		of the Hastings River.			<ul style="list-style-type: none"> the project workshop prior to collection by a licensed contractor. Ongoing regular inspection and service of plant and equipment.
36	Sheet Piling	Hydraulic fluid spilt from a hole in a hydraulic hose on piling equipment. Incident occurred within the Wilson River at Section 2 of the Wilson River Coffey Dam, immediately north of Dalhenty Island.	Approximately 0.5 litres released.	Defect (hole) in hydraulic hose.	<ul style="list-style-type: none"> Equipment immediately shut down and spillage contained with absorbent material from spill kit. Used spill kit material transported to the project workshop prior to collection by a licensed contractor. Ongoing regular inspection and service of plant and equipment.
37	Headwall construction	Water pumped from culvert excavation (C18.26 outlet) to drainage line without a discharge permit. Water contained within project boundary.	Estimated 100-200 litres of water.	<ul style="list-style-type: none"> Ineffective supervision. Ineffective Planning. 	<ul style="list-style-type: none"> Investigation into incident and subsequent meeting with subcontractor and foreman involved. Dewatering EWMS refresher inductions for relevant construction personnel.
38	Pipe jacking (hydraulic ram)	Hydraulic oil leak into work area at C18.74 outlet.	Leak of less than one litre of oil.	Defect in seal.	<ul style="list-style-type: none"> Follow up machinery maintenance. Ensure bund around work area remains in place to contain spills if they occur.
39	Bridging of material in low lying area	Offsite ground water entering project through controls into Barrys Creek.	Quantity unknown as the water was slowly leaching through bund.	Unidentified subsurface drains in area.	Team received toolbox training session on requirements around waterways and erosion sediment control measures. PESCP updated on-site with project Soil Conservationist.
40	Sheet Piling	Hydraulic fluid spilt from a hole in a hydraulic hose on piling equipment. Incident occurred within the Hastings River, within sheet piles, hydrocarbon boom and silt curtain, immediately north of the southern bank of the river.	Approximately 15 litres of hydraulic fluid was spilt.	Defect in hydraulic hose.	<ul style="list-style-type: none"> Equipment immediately shut down and spillage contained with absorbent material from spill kit. Used spill kit material transported to the project workshop prior to collection by a licensed contractor. Ongoing regular inspection and service of plant and equipment.
41	Piling for river bridge piers.	Hydraulic fluid spilt from a hole in a hydraulic hose on piling equipment. Incident	Approximately five litres of hydraulic fluid was spilt.	Defect in hydraulic hose and the presence of sheathing. The presence of sheathing on hydraulic hoses	<ul style="list-style-type: none"> Ongoing regular inspection and service of plant and equipment. Notification of the subject spill and

No.	Activity in progress	Incident description	Damage caused	Contributing factor(s)	Action taken
		occurred at Pier 10 of the Wilson River Bridge (SB09), immediately south of the northern bank of the Wilson River.		provides protection from hydraulic fluid under pressure, but also makes hoses more difficult to inspect and has the potential to increase the quantity of spilt material.	previous marine spills associated with the project provided to the project Environmental Review Group highlighting the positives and negatives of the use of sheathing on hydraulic hoses in accordance with the respective project environmental work method statements.
42	Light vehicle exiting compound	A jerry can in the back of a vehicle tipped as the vehicle rounded the corner. The jerry can spilt diesel on the driveway.	Approximately 30 litres of diesel was spilt.	Unstable storage of fuel on light vehicle.	All project staff reminded of how to manage jerry cans when travelling through the daily bulletin (Monday 18 July 2015).

Appendix D

Monitoring

Flora and fauna

Fauna relocations, injuries and mortalities by species

No. of species	Species / common name	Number	Status
	Stage 1 – Sancrox		
1	Longfinned Eel (<i>Anguilla reinhardtii</i>)	1	Relocated
2	Striped Gudgeon (<i>Gobiomorphus australis</i>)	15	Relocated
3	Firetail Gudgeon (<i>Hypseleotris galii</i>)	5	Relocated
4	Empire Gudgeon (<i>Hypseleotris compressa</i>)	3	Relocated
	Stage 2 – K2K		
1	Delicate Skink (<i>Lampropholis delicata</i>)	~ 50	Relocated
2	Pink-toughed Skink (<i>Cyclodomorphus gerrardii</i>)	1	Relocated
3	Bar-sided Forest-skink (<i>Eulamprus tenuis</i>)	17	Relocated
4	Eastern Crevice Skink (<i>Egernia mcphreei</i>)	4	Relocated
5	Red-tailed Calyptotis (<i>Calyptotis ruficauda</i>)	21	Relocated
6	Southern Leaf-tailed Gecko (<i>Phyllurus cornutus</i>)	12	Relocated
7	Eastern Bearded Dragon (<i>Pogona barbata</i>)	1	Relocated
8	Eastern Water Dragon (<i>Physignathus lesueurii</i>)	3	Relocated
9	Green Tree Snake (<i>Dendrelaphis punctulata</i>)	1	Relocated
10	Diamond Python (<i>Morelia spilota spilota</i>)	5	Relocated
11	Marsh Snake (<i>Hemiaspis signata</i>)	2	Relocated
12	Blackish Blind Snake (<i>Ramphotyphlops nigrescens</i>)	11	Relocated
13	Eastern Small-eyed Snake (<i>Rhinoplocephalus nigrescens</i>)	2	Relocated
14	Stripped Marsh Frog (<i>Limnodynastes peroni</i>)	57	Relocated
15	Red-backed Toadlet (<i>Pseudophryne coriacea</i>)	27	Relocated
16	Eastern Dwarf Tree Frog (<i>Litoria fallax</i>)	232	Relocated
17	Peron's tree frog (<i>Litoria peronii</i>)	13	Relocated
18	Graceful Tree Frog (<i>Litoria gracilentata</i>)	10	Relocated
19	Rocket Frog (<i>Litoria nasuta</i>)	27	Relocated
20	Green-thighed Frog (<i>Litoria brevipalmata</i>) – majority were juveniles or metamorphs	57	Relocated
21	Tusked Frog (<i>Adelotus brevis</i>)	1	Relocated
22	Great Barred Frog (<i>Mixophyes fasciolatus</i>)	16	Relocated
23	Common Froglet (<i>Crinia signifera</i>)	2	Relocated
24	Giant Barred Frog (<i>Mixophyes iteratus</i>) - Smiths Creek and Pipers Creek only	5	Relocated
25	Green Tree Frog (<i>Litoria carulea</i>)	2	Relocated
26	Peron's tree frog (<i>Litoria peronii</i>)	11	Relocated
27	Eastern Blue Tongue Lizard (<i>Tiliqua scincinoides</i>)	2	Relocated
28	Sugar Glider (<i>Petaurus brevipes</i>)	9	Relocated

No. of species	Species / common name	Number	Status
29	Brown Antechinus (<i>Antechinus stuartii</i>)	4	Relocated
30	Little Forest Bat (<i>Vespadelus vulturnus</i>)	1	Relocated
31	Koala (<i>Phascolarctos cinereus</i>)	1	Self relocation
32	Feather-tailed Glider (<i>Acrobates pygmaeus</i>)	4	Relocated
	Feather-tailed Glider (<i>Acrobates pygmaeus</i>)	1	Mortality
Stage 3 – OH2Ku			
1	Blackish Blind Snake	1	Relocated
	Blackish Blind Snake	1	Mortality
2	Common Brushtail Possum	1	Escaped Capture
3	Common Ringtail Possum	1	Escaped Capture
4	<i>Eulampris tenuis</i>	1	Relocated
	<i>Eulampris tennis</i>	1	Relocated
5	Green tree snake	2	Relocated
6	<i>Litoria dentata</i>	3	Relocated
7	<i>Litoria fallax</i>	1	Relocated
8	<i>Litoria Gracilentia</i>	1	Relocated
9	<i>Litoria peronei</i>	1	Relocated
10	<i>Litoria tyleri</i>	1	Relocated
11	Pink Tongue Skink	1	Relocated
12	Sugar Glider	1	Euthanized

Vegetation clearing by vegetation type

Vegetation type	Total for period (hectares)	Total to date (hectares)	Remaining (hectares)
Stage 1 – Sancrox			
Moist Slopes Forest	0	6.53	0.00
Moist Gully Forest	0	0.04	0.00
Riparian Forest	0	0.71	0.00
Total	7.02	7.3	0.0
Stage 2 – K2K			
All vegetation (including exotic)			
Total	40	75	10.8
Stage 3 – OH2Ku			
Paperbark Swamp Forest	4.379	6.967	2.555
Moist Floodplain Forest	10.524	19.191	1.974
Dry Ridgetop Forest	9.526	21.165	4.635
Moist Slopes Forest	21.097	28.682	4.451
Moist Gully Forest	10.323	13.307	3.675
Moist Floodplain closed Forest	1.896	1.896	0.866
Riparian Forest	0.533	0.533	0.536
Swamp Mahogany Forest	8.371	8.371	1.968
Swamp Oak Forest	0.306	0.306	0.804
Fresh Wetland	2.701	2.701	1.117
Total	69.656	103.120	22.580

Air quality

Stage 1 air quality monitoring (dust)

Site reference number	Location	Deployed	Retrieved	Total insoluble matter g/m ² /month)	Comments (where applicable)
Sancrox D1	Cassegrain Winery access road	8/01/15	9/02/15	0.5	
		9/02/15	11/03/15	0.6	
		11/03/15	9/04/15	1.1	
		9/04/15	11/05/15	1.1	
		11/05/15	10/06/15	1.2	
		10/06/15	9/07/15	1.5	
		Annual rolling average			1.4
Sancrox D2	Roads and Maritime depot south east of Sancrox Road and Pacific Highway	8/01/15	9/02/15	0.8	
		9/02/15	11/03/15	0.7	
		11/03/15	9/04/15	1.5	
		9/04/15	11/05/15	0.8	
		11/05/15	10/06/15	0.5	
		10/06/15	9/07/15	0.5	
		Annual rolling average			0.9

Stage 2 air quality monitoring (dust)

Site reference number	Location	Deployed	Retrieved	Total insoluble matter g/m ² /month	Comments (where applicable)
K2K 01	Mingaletta Road West	19/12/15	22/01/15	0.4	
		22/01/15	20/02/15	Removed due to approval and subsequent use of spoil site 12.	
		20/02/15	20/03/15	1.3	
		20/03/15	20/04/15	0.9	
		20/04/15	22/05/15	0.6	
		22/05/15	22/06/15	0.4	
		22/06/15	21/07/15	1.2	
		Annual rolling average			0.8
K2K 02	Mingaletta Road East	19/12/15	22/01/15	1.0	
		22/01/15	20/02/15	1.0	
		20/02/15	20/03/15	1.2	
		20/03/15	20/04/15	0.3	
		20/04/15	22/05/15	2.3	
		22/05/15	22/06/15	2.1	
		22/06/15	21/07/15	0.6	
		Annual rolling average			1.2
K2K 03	35 Old Pacific Highway	19/12/15	22/01/15	4.1	
		22/01/15	20/02/15	1.3	
		20/02/15	20/03/15	1.4	
		20/03/15	20/04/15	0.8	
		20/04/15	22/05/15	1.3	
		22/05/15	22/06/15	0.6	
		22/06/15	21/07/15	0.8	
		Annual rolling average			1.5
K2K 04	183 Old Pacific Highway	19/12/15	22/01/15	0.4	
		22/01/15	20/02/15	0.9	

Site reference number	Location	Deployed	Retrieved	Total insoluble matter g/m ² /month)	Comments (where applicable)
		20/02/15	20/03/15	1.4	
		20/03/15	20/04/15	0.4	
		20/04/15	22/05/15	1.0	
		22/05/15	22/06/15	0.8	
		22/06/15	21/07/15	0.8	
		Annual rolling average			0.8
K2K 05	8 Wharf Road	19/12/15	22/01/15	1.9	
		22/01/15	20/02/15	1.4	
		20/02/15	20/03/15	1.9	
		20/03/15	20/04/15	2.6	
		20/04/15	22/05/15	2.8	
		22/05/15	22/06/15	1.4	
		22/06/15	21/07/15	0.9	
		Annual rolling average			1.8
K2K 06	Tipping Property	19/12/15	22/01/15	0.4	
		22/01/15	20/02/15	0.9	
		20/02/15	20/03/15	2.1	
		20/03/15	20/04/15	2.8	
		20/04/15	22/05/15	3.1	
		22/05/15	22/06/15	3.5	
		22/06/15	21/07/15	6.3	Elevated levels due to proximity to Kundabung Rd. The shoulders of Kundabung Rd are deteriorating causing elevated dust levels from general traffic.
		Annual rolling average			2.7
K2K 07	180 Rodeo Drive	19/12/15	22/01/15	0.7	
		22/01/15	20/02/15	0.3	
		20/02/15	20/03/15	0.8	

Site reference number	Location	Deployed	Retrieved	Total insoluble matter g/m ² /month	Comments (where applicable)
		20/03/15	20/04/15	1.2	
		20/04/15	22/05/15	1.0	
		22/05/15	22/06/15	0.4	
		22/06/15	21/07/15	0.6	
		Annual rolling average		0.7	
K2K 08	100 Ravenswood Road	19/12/15	22/01/15	0.5	
		22/01/15	20/02/15	0.3	
		20/02/15	20/03/15	1.2	
		20/03/15	20/04/15	0.8	
		20/04/15	22/05/15	0.7	
		22/05/15	22/06/15	0.4	
		22/06/15	21/07/15	0.8	
		Annual rolling average		0.7	
K2K 09	1359 Pacific Highway	19/12/15	22/01/15	0.8	
		22/01/15	20/02/15	0.6	
		20/02/15	20/03/15	1.0	
		20/03/15	20/04/15	1.6	
		20/04/15	22/05/15	1.2	
		22/05/15	22/06/15	0.3	
		22/06/15	21/07/15	1.1	
		Annual rolling average		0.9	
K2K 10	722 Pacific Highway	19/12/15	22/01/15	1.5	
		22/01/15	20/02/15	Removed by landholder.	
		20/02/15	20/03/15		
		20/03/15	20/04/15		
		20/04/15	22/05/15		
		22/05/15	22/06/15		

Site reference number	Location	Deployed	Retrieved	Total insoluble matter g/m ² /month	Comments (where applicable)
		22/06/15	21/07/15		
		Annual rolling average		1.5	
K2K 11	38 Kemps Road	19/12/15	22/01/15	1.3	
		22/01/15	20/02/15	2.2	
		20/02/15	20/03/15	6.2	Construction had not commenced in area.
		20/03/15	20/04/15	1.6	
		20/04/15	22/05/15	4.4	Construction had not commenced in area.
		22/05/15	22/06/15	1.6	
		22/06/15	21/07/15	8.0	Clearing commenced. Results show high levels due to monitoring location (ie some distance from the project and exposed to sources of dust considered unrelated to the project). Monitor to be relocated following August monitoring period.
		Annual rolling average		3.6	
K2K 12	74 Kemps Road	19/12/15	22/01/15	1.6	
		22/01/15	20/02/15	1.2	
		20/02/15	20/03/15	3	
		20/03/15	20/04/15	2.4	
		20/04/15	22/05/15	1.8	
		22/05/15	22/06/15	0.4	
		22/06/15	21/07/15	0.8	
		Annual rolling average		1.6	

Stage 3 air quality monitoring (dust)

Site reference number	Location	Deployed	Retrieved	Total insoluble matter g/m ² /month)	Comments (where applicable)
DML1	Pacific Highway – Chainage 1700 south bound carriageway	09/01/2015	06/02/2015	0.7	Full
		06/02/2015	11/03/2015	1.2	Leaves
		11/03/2015	13/04/2015	0.8	
		13/04/2015	11/05/2015	0.7	
		11/05/2015	11/06/2015	0.4	
		11/06/2015	13/07/2015	0.5	
		Annual rolling average			0.7
DML2	Hastings River – Chainage 5500 south bound carriageway	09/01/2015	06/02/2015	5.8	Full, insects, fine dust
		06/02/2015	11/03/2015		Broken funnel neck inside, possibly tampered with.
		11/03/2015	13/04/2015		Not placed due to tamper last reporting period
		13/04/2015	11/05/2015	1	
		11/05/2015	11/06/2015	1.6	
		11/06/2015	13/07/2015	0.8	
		Annual rolling average			2.3
DML3	Floodplain – Chainage 11400 south bound carriageway at Bill Hill Road (Gauge to be relocated following clearing of the corridor if required)	09/01/2015	06/02/2015	0.8	Full, algae
		06/02/2015	11/03/2015	2.3	Leaves
		11/03/2015	13/04/2015	0.8	
		13/04/2015	11/05/2015	0.9	
		11/05/2015	11/06/2015	1.1	
		11/06/2015	13/07/2015	0.7	
		Annual rolling average			1.1
DML4	Private property Chainage 18000 north bound	09/01/2015	06/02/2015	1.8	Full
		06/02/2015	11/03/2015	2.3	Leaves
		11/03/2015	13/04/2015	2.6	
		13/04/2015	11/05/2015	3.9	

Site reference number	Location	Deployed	Retrieved	Total insoluble matter g/m ² /month)	Comments (where applicable)
		11/05/2015	11/06/2015	43.2	Very dark, sediment, possible owl pellet
		11/06/2015	13/07/2015	9.4	Very cloudy, some vegetation, dark ash
		Annual rolling average		2.7	
DML5	State Forest Chainage 21000 south bound	09/01/2015	06/02/2015	0.7	Broken funnel neck in bottle, low volume
			11/03/2015	0.4	Leaves, fairly empty
		11/03/2015	13/04/2015	1	Full
		13/04/2015	11/05/2015		Bottle Broken in transit
		11/05/2015	11/06/2015	1.2	
		11/06/2015	13/07/2015	1.9	
		Annual rolling average		1	
DML2B	Hastings River – Chainage 5500 south bound carriageway, approximately 150m east of DML2		11/06/2015	0.2	
		11/06/2015	13/07/2015	3.6	Cloudy, some vegetation, green ash.
		Annual rolling average		1.9	

Noise and vibration monitoring

Stage 1 noise monitoring

January 2015

Monitoring was not undertaken during January due the absence of suitably trained field staff to operate the noise monitoring equipment and prevailing wet weather conditions. Less construction activity was undertaken during the first two weeks of the month given the large amount of construction staff on leave. Construction activities in progress during the month were consistent with those during earlier months and therefore it has been considered that exceedances of the noise management level were unlikely.

February 2015

Monitoring was not undertaken during February. Construction activities in progress during the month were consistent with those during earlier months and therefore it has been considered that exceedances of the noise management level were unlikely.

March 2015

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _A eq(15 min))	Observations
1	7/3/2015	17:16 - 15 minutes	Fernbank Creek Road (Receptor R06) Closest sensitive receptor property boundary (east)	49dB	44.5 dB	Culvert installation works outside of normal construction hours. Highway noise occasionally audible. Cicadas in trees, dominant intermittent noise source. Highway noise occasionally audible. Construction infrequently audible.
2	7/3/2015	16:28 - 15 minutes	Sancrox Road (Receptor R01) Closest sensitive receptor property boundary (west)	49dB	44.6 dB	Culvert installation works outside of normal construction hours. Wind in vegetation and adjacent fauna dominant noise source during monitoring. Pacific Highway and plant installing culvert intermittently audible.
3	9/3/2015	12:06 - 15 minutes	North 13	59dB	50.5 dB	Works included rolling of formation, batter trimming with excavator, water cart pumping and truck movements. Construction activity and highway traffic audible and both were the dominant noise sources.
4	9/3/2015	10:15 - 15 minutes	South 12	59dB	56.1 dB	Bulldozer pushing fill, roller compacting fill, truck movements and truck loading with an excavator. Cicadas are the primary audible background noise source. Construction noise was also dominant background noise source.

April 2015

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _{A eq(15 min)})	Observations
1	28/04/2015	8:46am 15 minutes	South 12	59dB	46.3dB	Nearby works included bridge fixing works. Water cart passed on formation and small digger nearby was completing ERSED works.
2	28/04/2015	11:08am 15 minutes	North 13	59dB	51.7dB	Nearby works included multi tyre rolling, truck and dogs, light vehicle, water cart and grader movements.

May 2015

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _{A eq(15 min)})	Observations
1	21/05/2015	12:23pm 15 minutes	South 12	59dB	53.4dB	Nearby works included grading of verge materials, loading of trucks on HF Hands and water cart movements.
2	21/05/2015	11:37am 15 minutes	North 13	59dB	49.8dB	Nearby works included grading, two excavators loading trucks on SSR3 just to the south of the north-eastern roundabout.

June 2015

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _{A eq(15 min)})	Observations
1	24/06/2015	10:58am 15 minutes	South 12	59	53.7	Nearby works included pumping of pooled water to water cart, truck movements – placing and rolling verge, works within HF Hands shed (regular thumping). Thumping was at one second intervals from the HF Hands shed for the entire period of the monitoring.
2	24/06/2015	11:44am 15 minutes	North 13	59	53.4	Works included pad foot roller at north-western roundabout, water cart movements, light vehicle movements and digger at Fernbank Creek Road box culvert. Stockpile removal works to the north. Highway trucks audible, northern works audible. Reverse beepers audible, adjacent birds are the

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _A eq(15 min))	Observations
						cause of the peaks.
3	24/06/2015	18:00pm 15 minutes	R02 -234 Bushland Drive Sancrox	49	50.5	Works on the north-western roundabout and northern portion of SSR1. Works ceased prior to the end of monitoring. Highway traffic audible on a regular basis, duck quack reverse alarms audible, frogs in nearby stream audible. Minor exceedance in criteria – team received toolbox training session and further monitoring at property façade (or thirty metres from façade) recommended. No complaint was received regarding the works.

July 2015

Monitoring was undertaken outside of the reporting period (on Tuesday 28 July 2015) so will be reported in the next six monthly compliance report.

Stage 2 noise monitoring

June 2015

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _A eq(15 min))	Observations
1	June 2015	08:30am – 15mins	NCA 04 - 486	32 - 51	61.3	Drainage works in progress. Elevated noise levels attributable to road traffic noise on the Pacific Highway.
2	June 2015	09:40am – 15mins	NCA07 - 438	48 - 62	63	Bulk earthworks in progress. Elevated noise levels attributable to road traffic noise on the Pacific Highway.
3	June 2015	09:57am – 15mins	NCA09 - 396	45 - 57	55.6	Bulk earthworks in progress.
4	June 2015	10:36am – 15mins	NCA10 - 383	42 - 57	59.2	Bulk earthworks in progress. Elevated noise levels attributable to road traffic noise on the Pacific Highway.

July 2015

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _A eq(15 min))	Observations
1	July 2015	11:55am – 15mins	NCA10 - 383	42 - 57	49.6	Bulk earthworks in progress.
2	July 2015	02:30pm – 15mins	NCA07 - 438	48 - 62	64.3	Bulk earthworks and piling in progress Elevated noise levels attributable to road traffic noise on the Pacific Highway.
3	July 2015	12:20pm – 15mins	NCA09 - 409	45 - 57	56.3	Earthworks at Smiths Creek in progress.
4	July 2015	03:30pm – 15mins	NCA 04 - 1012	43 - 57	68	Earthworks (Moxies hauling) in progress. Elevated noise levels attributable to road traffic noise on the Pacific Highway.
5	July 2015	09:25am – 15mins	NCA 01 - 492	40-62	46.3	Dozer, Moxies and bogies operating within Mockingbird Quarry. Monitoring undertaken in preparation for planned Out of Hours works.

August 2015

Event No.	Date	Time / duration	Location	Calculated noise management level	Result ($L_{A\ eq(15\ min)}$)	Observations
1	July 2015	07:32am – 15mins	NCA 03 - 1015	41-60	58.1	Earthworks in progress.
2	July 2015	08:00am – 15mins	NCA 08 - 695	43-63	54.2	Earthworks in progress at Fowlers stockpile.
3	July 2015	03:34pm – 15mins	NCA 10 - 688	42-57	55.1	Earthworks in progress.

Stage 3 noise monitoring

February 2015

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _A eq(15 min))	Observations
1	05/02/2015	11:55 am 15 minutes	404 Cooperabung Drive, Cooperabung	61	56.8	Sources of noise heard at the noise monitoring location included traffic on local road and Pacific Highway. Faint construction noise was heard at noise monitoring location.
2	05/02/2015	11:20 am 15 minutes	Cooperabung Close, Cooperabung	59	53.7	The sources of noise included: traffic on the Pacific Highway, insects and birds. No construction noise was heard at noise monitoring location. The dominant noise source was traffic on the Pacific Highway.
3	05/02/2015	11:35 am 15 minutes	Corner Cooperabung Drive and Wyndell Close, Cooperabung	53	47.8	The sources of noise included: traffic on the Pacific Highway (especially trucks) and local roads. Faint construction noise was heard at noise monitoring location. The dominant noise source was traffic on the Pacific Highway.
4	05/02/2015	15 minutes	8 Haydons Wharf Road, Cooperabung	57	70.1	Construction noise was heard at the noise monitoring location in the form of mulcher, tree cutters, tree grabber and water cart. However, these activities were not the primary source of noise. Road traffic noise on the Pacific Highway was the predominant noise source.
5	05/02/2015	3:48 pm 15 minutes	540 Hacks Ferry Road, Hacks Ferry	37	53.7	Construction noise was heard at the noise monitoring location in the form of excavators, truck and dogs hauling and hammering in of pegs. Construction was considered the predominant noise source.
6	04/02/2015	12:15 pm 15 minutes	Rollands, Plains Road, Telegraph Point	58	52.1	Sources of noise heard at the monitoring location were: local traffic, traffic on the Pacific Highway, birds and insects. No construction noise was heard at the noise monitoring location. The main noise source was local traffic.
7	05/02/2015	4:12 pm 15 minutes	52 Moorside Drive, Telegraph Point	57	53.3	Sources of noise heard from the noise monitoring location included: birds, insects, and local traffic. No construction noise was heard at the noise monitoring location. The dominant noise source was the traffic on the Pacific Highway and birds.

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _A eq(15 min))	Observations
8	05/02/2015	4:36 pm 15 minutes	Bill Hill Rd, The Hatch	43	40.3	No construction noise was heard at the noise monitoring location. The sources of noise heard at the noise monitoring location included a rooster crowing, insects and the wind.
9	04/02/2015	10:50 am 15 minutes	79 Glen Ewan Road, Pembroke	43	46.9	Sources of noise that were heard at the noise monitoring location included: water from the Hastings River, insects, birds and traffic from the Pacific Highway. Construction work consisted of the construction of a wick drain pad. Faint construction noise could be heard from the noise monitoring locations. Sources unrelated to the project were considered to be the predominant contributors to elevated noise levels.
10	04/02/2015	10:30 am 15 minutes	11 Glen Ewan Road, Pembroke	56	49.3	Construction noise was audible in the form of reverse beepers, UHF radio, truck and dogs hauling and the drilling rig.
11	02/02/2015	4:35 pm 15 minutes	26 Bushland Drive, Sancrox	51	49.2	Construction noise could not be heard from the noise monitoring location. The main sources of noise that could be heard from the noise monitoring location included: birds, the wind, traffic on the Pacific Highway, insects (mainly crickets) and local traffic. Traffic was the dominant noise source.
12	02/02/2015	4:09 pm 15 minutes	764 Fernbank Creek Road, Fernbank Creek	59	49.8	No Lend Lease construction noise heard at noise monitoring location. The sources of noise included: birds, traffic from the Pacific Highway, and Stage 1 construction noise. The dominant noise source was Stage 1 construction.

March 2015

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _A eq(15 min))	Observations
1	11/03/2015	10:06 am 15 minutes	404 Cooperabung Drive Cooperabung	61	55	Background noise sources were traffic on local roads, birds, insects, and a truck. Construction noise could be heard in the form of the service truck on local roads. The dominant noise source was construction, insects and birds.

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _A eq(15 min))	Observations
2	11/03/2015	10:43 am 15 minutes	Cooperabung Close, Cooperabung	59	50.6	Background noise sources were traffic on the Pacific Highway and local roads, birds, insects, planes and a dog barking. Construction noise could be heard. The dominant noise source was construction and traffic.
3	11/03/2015	9:46 am 15 minutes	Cnr Cooperabung Drive and Wyndell Close, Cooperabung	53	50.4	Background noise included dogs barking, insects and traffic on local roads. Construction noise consisted of truck and dogs hauling, machinery moving and reverses beeping. The dominant noise source was construction.
4	11/03/2015	11:07 am 15 minutes	8 Haydons Wharf Road, Cooperabung	57	58.9	Noise sources included: birds, insects and traffic on the Pacific Highway. Construction activities included: scrapes running and truck and dogs hauling. Reversing beepers were also heard. The dominant noise sources included construction and the traffic on the Pacific Highway.
5	11/03/2015	8:47 am 15 minutes	540 Hacks Ferry Road, Hacks Ferry	37	48.1	Sources of noise included: birds, insects, traffic on the local roads that peaked at 60-65 dBA and horns beeping. Construction noise was heard at noise monitoring location in the form of the crane at Wilson river and reversing beepers. The dominant noise source was the birds and insects.
6	11/03/2015	9:23am 15 minutes	Rollands, Plains Road, Telegraph Point	58	48.6	Background noise sources included: birds, insects traffic on both local and the Pacific highway. No construction noise was heard. The dominant noise source was the traffic.
7	11/03/2015	11:32 am 15 minutes	52 Moorside Drive, Telegraph Point	57	42.1	Background noise consisted of: birds, insects, traffic on local roads and dogs barking. No construction noise was heard at the noise monitoring location. The dominant noise source was the birds and insects.
8	11/03/2015	11:53am 15 minutes	Bill Hill Road, The Hatch	43	48.1	Background noise sources included: wind in trees, birds, insects, faint noise from the Pacific Highway traffic and a garbage truck passing. There was no construction noise heard. The dominant noise source was the wind in trees and the insects.

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _A eq(15 min))	Observations
9	12/03/2015	11:00am 15 minutes	79 Glen Ewan Road, Pembroke	43	54.4	Background noise consisted of: birds, insects, boats on Hastings River, residents mowing and dogs barking. No construction noise was heard at the noise monitoring location. The dominant noise source was the resident mowing.
10	11/03/2015	10:29 am 15 minutes	11 Glen Ewan Road, Pembroke	56	51.6	Background noise sources included: traffic on the Pacific Highway, birds, insects and local traffic. Construction noise was heard in the form of light vehicles using local roads for site access. The dominant noise source was the traffic on the Pacific Highway.
11	12/03/2015	9:46am 15 minutes	26 Bushland Drive, Sancrox	51	44.8	Stage 1 construction noise could be heard from the noise monitoring location. The main sources of noise that could be heard from the noise monitoring location included: birds, insects, traffic on the Pacific/Oxley Highway traffic and local traffic. Traffic and birds were the dominant noise source.
12	12/03/2015	9:22 am 15 minutes	764 Fernbank Creek Road, Fernbank Creek	59	56.6	Background noise sources included: birds, insects, a plane and traffic on the Pacific Highway. Stage 1 construction noise could be heard at the noise monitoring location. Construction and birds were the dominant noise source.

April 2015

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _A eq(15 min))	Observations
1	24/04/2015	10:42 am 15 minutes	404 Cooperabung Drive Cooperabung	61	57.8	Sources of noise heard at the noise monitoring location included: traffic on local road, birds, roadside slashing conducted by the council and Pacific Highway traffic. No construction noise was heard at the noise monitoring location.
2	24/04/2015	11:06 am 15 minutes	Cooperabung Close, Cooperabung	59	50.6	The sources of noise included: traffic on the Pacific Highway, trucks and birds. No construction noise was heard at noise monitoring location. The dominant noise source was traffic on the Pacific

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _{A eq} (15 min))	Observations
						Highway, especially the trucks.
3	29/04/2015	10:22 am 15 minutes	Corner Cooperabung Drive and Wyndell Close, Cooperabung	53	51.1	Noise sources heard at the monitoring location included: traffic on the Pacific Highway (especially trucks) and local roads. No construction noise was heard at noise monitoring location. The dominant noise source was traffic on the local roads.
4	13/04/2015	9:32 am 15 minutes	8 Haydons Wharf Road, Cooperabung	57	54.3	Noise sources heard at the monitoring location included: resident grinding, the traffic on the Pacific Highway and local traffic. Construction noise was heard at the noise monitoring location. However this was rarely heard over the noise produced from the Pacific Highway traffic.
5	24/04/2015	9:33 am 15 minutes	540 Hacks Ferry Road, Hacks Ferry	37	51.1	Noise sources heard at the monitoring location included: birds, residents talking and local traffic. Construction noise was heard at the noise monitoring location in the form of reverse beepers, machinery running including an 110T crane. While the noise level is higher than the noise management level it is still compliant with the noise management plan. Dominant noise was not construction related.
6	24/04/2015	10:02 am 15 minutes	Rollands, Plains Road, Telegraph Point	58	47.0	Sources of noise heard at the monitoring location included: local traffic, traffic on the Pacific Highway, birds and residents mowing. No construction noise was heard at the noise monitoring location. The main noise source was the Pacific Highway traffic.
7	24/04/2015	11:32 am 15 minutes	52 Moorside Drive, Telegraph Point	57	53.9	Sources of noise heard from the noise monitoring location included: birds, Pacific Highway and local traffic. No construction noise was heard at the noise monitoring location. The dominant noise source was the birds.
8	13/04/2015	10:02 am 15 minutes	Bill Hill Road, The Hatch	43	48.1	The sources of noise heard at the noise monitoring location included: birds, traffic on the Pacific Highway, a garbage truck passing by and the wind. Construction noise was heard at the noise monitoring location in the form of reverse beepers and machinery. The dominant noise sources consisted of the birds and the construction noise. While the noise level is higher than the noise management level it is still compliant with the noise

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _{A eq(15 min)})	Observations
						management plan.
9	24/04/2015	8:41 am 15 minutes	79 Glen Ewan Road, Pembrooke	43	59.1	Sources of noise that were heard at the noise monitoring location included: birds, traffic from the Pacific Highway, dog barking (within 5m of logger) and resident calling to the dog. Construction noise heard included: machinery movement, and faint reverse beepers. Dominant noise source was the dog barking.
10	24/04/2015	9:02 am 15 minutes	11 Glen Ewan Road, Pembrooke	56	60.3	Construction noise was audible in the form of reverse beepers, UHF radio and truck and dogs hauling. Other noise sources included: local and the Pacific Highway traffic, birds and a passing plane. Dominant noise source was the truck and dogs. While the noise level was higher than the noise management level, it is still lower than the max level of 62dBA stated in the noise management plan.
11	24/04/2015	7:45 am 15 minutes	26 Bushland Drive, Sancrox	51	52	Construction noise could not be heard from the noise monitoring location. The main sources of noise that could be heard from the noise monitoring location included: birds, traffic on the Pacific/Oxley Highway traffic and local traffic. Traffic was the dominant noise source.
12	24/04/2015	8:10 am 15 minutes	764 Fernbank Creek Road, Fernbank Creek	59	56.5	No Lend Lease construction noise heard at noise monitoring location. The sources of noise included: a plane flying overhead, traffic from the Pacific Highway, local traffic, and Stage 1 construction noise. The dominant noise source was Stage 1 construction.

May 2015

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _{A eq(15 min)})	Observations
1	28/05/2015	9:15 am 15 minutes	404 Cooperabung Drive Cooperabung	61	42.1	Sources of noise heard at the noise monitoring location included: Pacific Highway Traffic, and birds. Construction noise was audible as trucks and light vehicles entering the northern compound. Construction was the dominant noise source.

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _A eq(15 min))	Observations
2	28/05/2015	9:41 am 15 minutes	Cooperabung Close, Cooperabung	59	55.8	Sources of noise heard at the noise monitoring location included: traffic on the Pacific Highway, and birds. Construction noise was heard at noise monitoring location, consisting of a tree felling machinery. Construction was the dominant noise source.
3	28/05/2015	8:54 am 15 minutes	Cnr Cooperabung Drive and Wyndell Close, Cooperabung	53	57.3	Sources of noise heard at the noise monitoring location included: traffic on the Pacific Highway and local roads. No construction noise was heard at noise monitoring location. However one franna and one light vehicle did pass the monitoring location. The dominant noise source was traffic on the local roads.
4	28/05/2015	10:02 am 15 minutes	8 Haydons Wharf Road, Cooperabung	57	55.4	Sources of noise heard at the noise monitoring location included: resident grinding, local and Pacific Highway traffic, and birds. Construction noise was heard at the noise monitoring location, consisting of one grader, reversing beepers and one excavator. However this was rarely heard over the noise produced from the Pacific Highway traffic.
5	28/05/2015	8:04 am 15 minutes	540 Hacks Ferry Road, Hacks Ferry	37	41.3	Noise sources heard at the monitoring location included: birds, insects and faint traffic from Pacific Highway. Construction noise was heard at the noise monitoring location in the form of faint reverse beepers, and truck and dogs hauling. While the noise level is higher than noise management level it is still compliant with the noise management plan. Dominant noise was the birds and construction.
6	28/05/2015	8:33 am 15 minutes	Rollands, Plains Road, Telegraph Point	58	52	Sources of noise heard at the noise monitoring location included: local traffic, traffic on the Pacific Highway, and birds. No construction noise was heard at the noise monitoring location. However one truck and dog and one concrete agitator did pass noise monitoring location. The main noise source was the Pacific Highway traffic.
7	28/05/2015	10:28 am 15 minutes	52 Moorside Drive, Telegraph Point	57	41.5	Sources of noise heard from the noise monitoring location included: birds, Pacific Highway traffic, residents grinding and mowing and a plane flying overhead. No construction noise was heard at the noise monitoring location. The dominant noise

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _A eq(15 min))	Observations
						source was the birds.
8	28/05/2015	12:51 am 15 minutes	Bill Hill Road, The Hatch	43	39.2	The sources of noise heard at the noise monitoring location included: birds and insects. Construction activities consisted of earthworks, with excavators, light vehicles and scrapers running. However, construction noise was not audible at the noise monitoring location. The dominant noise sources consisted of the birds.
9	27/05/2015	9:50 am 15 minutes	79 Glen Ewan Road, Pembroke	43	61.3	Sources of noise that were heard at the noise monitoring location included: birds, traffic from the Pacific Highway, dog barking, residents talking to neighbour and residents mowing. Construction noise was not audible at noise monitoring location. The dominant noise source was the residents.
10	27/05/2015	9:26 am 15 minutes	11 Glen Ewan Road, Pembroke	56	57.9	Construction noise was audible in the form of light vehicles and truck and dogs hauling. Noise sources included: the Pacific Highway traffic, birds and a passing truck into Birdon. Dominant noise source was the Pacific highway traffic.
11	27/05/2015	9:01 am 15 minutes	26 Bushland Drive, Sancrox	51	47.7	Construction noise could not be heard from the noise monitoring location. The main sources of noise that could be heard from the noise monitoring location included: birds, traffic on the Pacific/Oxley Highway traffic, residents, a plane flying overhead and local traffic. Traffic was the dominant noise source.
12	27/05/2015	8:37 am 15 minutes	764 Fernbank Creek Road, Fernbank Creek	59	50.5	No Lend Lease construction noise heard at noise monitoring location. The sources of noise included: birds, traffic from the Pacific Highway, local traffic, and Stage 1 construction noise. The dominant noise source was Stage 1 construction.

June 2015

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _A eq(15 min))	Observations
1	22/06/2015	2:15 pm	849 Cooperabung Drive	61	48.2	Sources of noise heard at the noise monitoring

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _A eq(15 min))	Observations
		15 minutes	Cooperabung			location included: Pacific Highway and local Traffic, and birds. Construction noise was audible as moxies, compactor, reverse beepers and light vehicles entering the northern compound. Construction was the dominant noise source followed by Pacific Highway traffic.
2	22/06/2015	2:40 pm 15 minutes	Cooperabung Close, Cooperabung	59	57.9	Sources of noise heard at the noise monitoring location included: traffic on the Pacific Highway, dogs barking and birds. Construction noise was heard at noise monitoring location, consisting of an excavator loading moxies. Construction and Pacific Highway traffic were the dominant noise sources.
3	22/06/2015	1:55 pm 15 minutes	Corner Cooperabung Drive and Wyndell Close, Cooperabung	53	51.7	Sources of noise heard at the noise monitoring location included: traffic on the Pacific Highway and local roads and birds. Construction noise was heard at noise monitoring location as reverse beeper, machines tracking and hammering. The dominant noise source was traffic on the Pacific Highway and construction.
4	22/6/2015	3:00 pm 15 minutes	8 Haydons Wharf Road, Cooperabung	57	67.7	Sources of noise heard at the noise monitoring location included: resident grinding, local and Pacific Highway traffic, delivery trucks to residents address and birds. Construction noise was heard at the noise monitoring location, consisting of one reversing beepers, dozer, moxies and one excavator. Construction was the dominant noise source with the dozer peaking at 70 dBA.
5	22/06/2015	10:06 am 15 minutes	540 Hacks Ferry Road, Hacks Ferry	37	38.3	Sources of noise heard at the noise monitoring location included: birds, and faint traffic from Pacific Highway. Construction noise was not heard at the noise monitoring location. The dominant noise source was the birds.
6	22/06/2015	12:44 pm 15 minutes	Rollands, Plains Road, Telegraph Point	58	54.9	Sources of noise heard at the monitoring location were: local traffic, traffic on the Pacific Highway, and birds. No construction noise was heard at the noise monitoring location. The main noise source was the Pacific Highway traffic.
7	22/06/2015	3:26 pm 15 minutes	52 Moorside Drive, Telegraph Point	57	46.6	Sources of noise heard from the noise monitoring location included: birds, Pacific Highway traffic, residents on motor bikes, sirens and the wind in the

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _A eq(15 min))	Observations
						ness. Faint construction noise was heard at the noise monitoring location as engines and machine tracking. The dominant noise source was the birds and construction.
8	22/06/15	3:48 pm 15 minutes	Bill Hill Road, The Hatch	43	34.7	The sources of noise heard at the noise monitoring location included: birds, rooster crowing, wind in trees and faint traffic from the Pacific Highway. Construction noise was audible at the noise monitoring location in the form of machinery moving. The dominant noise sources consisted of the birds, including the rooster.
9	22/06/2015	9:30 am 15 minutes	79 Glen Ewan Road, Pembroke	43	45.1	Sources of noise that were heard at the noise monitoring location included: birds, local traffic, cows, and the sound of the river ebbing and flowing against the bank. Construction noise was audible at noise monitoring location as faint excavator and machinery movement and reverse beepers. The dominant noise sources were the river and birds.
10	22/06/2015	9:05 am 15 minutes	11 Glen Ewan Road, Pembroke	56	58.8	Construction noise was audible in the form of light vehicles, excavators, reverse beepers hammering and truck and dogs hauling. Noise sources included: the Pacific Highway traffic, birds. Dominant noise source was construction. However, levels were heavily influenced by Pacific Highway traffic.
11	22/06/2015	8:41 am 15 minutes	26 Bushland Drive, Sancrox	51	52.3	Construction noise could not be heard from the noise monitoring location. The main sources of noise that could be heard from the noise monitoring location included: birds, traffic on the Pacific/Oxley Highway traffic, and local traffic. Traffic was the dominant noise source.
12	22/06/2015	8:18 am 15 minutes	764 Fernbank Creek Road, Fernbank Creek	59	57.4	No Lend Lease construction noise heard at noise monitoring location. The sources of noise included: birds, traffic from the Pacific Highway, local traffic, and Stage 1 construction noise. The dominant noise source was the traffic on Pacific Highway followed by Stage 1 construction.

July 2015

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _A eq(15 min))	Observations
1	15/07/2015	10:34 am 15 minutes	849 Cooperabung Drive Cooperabung	61	47.8	Sources of noise heard at the noise monitoring location included: Pacific Highway and birds. Construction noise was audible as machinery entering the northern compound and a water cart. Birds were the dominant noise source.
2	15/07/2015	11:02 am 15 minutes	Cooperabung Close, Cooperabung	59	52.7	Sources of noise heard at the noise monitoring location included: traffic on the Pacific Highway, and birds. Construction noise was heard at noise monitoring location, consisting of excavators, water carts and reversing beepers. Construction and Pacific Highway traffic were the dominant noise sources.
3	15/07/2015	10:14 am 15 minutes	Corner Cooperabung Drive and Wyndell Close, Cooperabung	53	58.6	Sources of noise heard at the noise monitoring location included: traffic on the Pacific Highway and local roads, and birds. Construction noise was heard at noise monitoring location as a street sweeper and light vehicle. The dominant noise source was traffic.
4	15/07/2015	11:27 am 15 minutes	8 Haydons Wharf Road, Cooperabung	57	62.5	Sources of noise heard at the noise monitoring location included: Pacific Highway traffic and birds. Construction noise was heard at the noise monitoring location, consisting of reversing beepers, dozer, scrapers and one excavator. Construction was the dominant noise source.
5	14/07/2015	11:51 am 15 minutes	540 Hacks Ferry Road, Hacks Ferry	37	47.1	Noise sources heard at the monitoring location included: birds, wind in trees, and traffic. Construction noise was not heard at the noise monitoring location. The dominant noise source was the traffic and the wind.
6	15/07/2015	9:50 am 15 minutes	Rollands, Plains Road, Telegraph Point	58	52.1	Sources of noise heard at the noise monitoring location included: local traffic, traffic on the Pacific Highway, and birds. No construction noise was heard at the noise monitoring location. However trucks did pass the noise monitoring location. The main noise source was the traffic.
7	15/07/2015	11:52 am 15 minutes	52 Moorside Drive, Telegraph Point	57	46.5	Sources of noise heard from the noise monitoring location included: birds, Pacific Highway traffic, and

Event No.	Date	Time / duration	Location	Calculated noise management level	Result (L _A eq(15 min))	Observations
						a plane overhead. No construction noise was heard at the noise monitoring location. The dominant noise source was the birds and planes.
8	15/07/2015	12:17 am 15 minutes	Bill Hill Road, The Hatch	43	40	The sources of noise heard at the noise monitoring location included: birds, and a truck going to the tea tree farm. Construction noises were audible at the noise monitoring location in the form of machinery moving and reverse beepers. The dominant noise source was construction.
9	14/07/2015	11:14 am 15 minutes	79 Glen Ewan Road, Pembroke	43	54.7	Sources of noise that were heard at the noise monitoring location included: local and Pacific Highway traffic, wind in the trees, and the sound of the river ebbing and flowing against the bank. Construction noise was not audible at noise monitoring location. The dominant noise sources were the river and wind.
10	14/07/2015	10:47 am 15 minutes	11 Glen Ewan Road, Pembroke	56	63.3	Construction noise was audible in the form of truck and dogs hauling and case piling. Noise sources included: birds. Dominant noise source was construction.
11	14/07/2015	10:20 am 15 minutes	26 Bushland Drive, Sancrox	51	50	No construction noise could be heard from the noise monitoring location. The main sources of noise that could be heard from the noise monitoring location included: birds, traffic on the Pacific/Oxley Highway and on local roads, a plane and the wind in the trees. Traffic and the plane were the dominant noise source.
12	14/07/2015	9:55 am 15 minutes	764 Fernbank Creek Road, Fernbank Creek	59	52	Construction noise was heard at the noise monitoring location in the form of reverse beepers and machinery running. Background noise consisted on trucks and traffic on the Pacific Highway and birds. Construction was the dominant noise source.

Stage 1 vibration monitoring

Vibration monitoring on Stage 1 was not undertaken during the reporting period due to the distance of vibration inducing activities from relevant sensitive structures.

Stage 2 vibration monitoring

Vibration monitoring was undertaken on seven occasions on Stage 2 during the reporting period in response to blasting activities. Vibration monitoring in relation to other forms of vibration inducing activities (eg piling, vibratory rolling) was not undertaken due to the distance from relevant sensitive receivers.

Event No.	Date	Location	Distance to receiver	Activity	Vibration PPV (mm/s)			Overpressure (dB (l))	
					Licence limit	Trigger level	Results	Licence limit	Result
1	13/05/2015	NCA01 - 492	1.2km	Cut 20 blast	5	0.1	Nil trigger	115	Nil trigger
2	20/05/2015	NCA01 - 492	1.2km	Cut 20 blast	5	0.1	Nil trigger	115	Nil trigger
3	3/06/2015	NCA01 - 492	1.2km	Cut 20 blast	5	0.1	Nil trigger	115	Nil trigger
4	17/06/2015	NCA01 - 492	1.2km	Cut 20 blast	5	0.1	1.46	115	Nil trigger
5	8/07/2015	NCA01 - 493	1.2km	Cut 20 blast	5	0.1	0.8	115	Nil trigger
6	15/07/2015	NCA08 - 384	0.8km	Cut 3 blast	5	0.1	Nil trigger	115	Nil trigger
7	22/07/2015	NCA08 - 384	0.8km	Cut 3 blast	5	0.1	Nil trigger	115	Nil trigger

Stage 3 vibration monitoring

Vibration monitoring was undertaken on a number of occasions during the reporting period on Stage 3 for high-risk activities such as pile driving and blasting. The following tables represent measurements taken against human comfort and structural damage criteria.

Event No.	Date	Location	Activity in progress	Criteria		Result (m/s ²)		
				x and y axis	z axis	X	Y	Z
1	6/03/2015	Receiver 259	Sheet piling for pier platform, adjacent to the southern bank of the Wilson River.	0.42	0.60	0.000956667	0.00152	0.000363333

Event No.	Date	Location	Activity in progress	Criteria		Result (m/s ²)		
				x and y axis	z axis	X	Y	Z
2	24/06/2015	Receiver 82	Pile driving at the new Hastings River Bridge on southern side of Hastings River.	0.42	0.60	0.00105667	0.000297	0.000289
3	25/06/2015	Receiver 83	Pile driving at the new Hastings River Bridge on southern side of Hastings River.	0.42	0.60	0.00148667	0.0019367	0.00065333
4	21/07/2015	Receiver 82	Pile driving at the new Hastings River Bridge on southern side of Hastings River.	0.42	0.60	0.00093333	0.0010367	0.000297

Event No.	Date	Location	Recorded vibration (mm/s)	Frequency (Hz)	Guideline value (mm/s)	Comments
1	6/03/2015	Receiver 259 (including OHK9)	4.74	43	3 to 8	Monitoring undertaken during sheet piling for pier platform, adjacent to the southern bank of the Wilson River.
2	24/06/2015	Receiver 82	3.29	13	5 to 15	Monitoring undertaken during pile driving at the new Hastings River Bridge on southern side of Hastings River.
3	25/06/2015	Receiver 83	6.47	17	5 to 15	Monitoring undertaken during pile driving at the new Hastings River Bridge on southern side of Hastings River.
4	21/07/2015	Receiver 82	3.64	30	5 to 15	Monitoring undertaken during pile driving at the new Hastings River Bridge on southern side of Hastings River.

Event No.	Date	Location	Distance to receiver	Activity	Vibration PPV (mm/s)			Overpressure (dB (l))	
					Licence limit	Trigger level	Results	Licence limit	Result
1	28/05/2015	157 Yarrabee Rd – Rec 378	170m	B1 - Cut 19B	25	0.1	2.73	130	124.4
2	04/06/2015	157 Yarrabee Rd – Rec 378	170m	B2 - Cut 19B	25	0.1	1.20	130	108.0
3	16/06/2015	157 Yarrabee Rd – Rec 378	170m	B3 - Cut 19B	25	0.1	3.50	130	118.5
		49 Yarrabee Rd – Rec 380	730m		5	0.1	No Trigger	115	No Trigger
4	18/06/2015	49 Yarrabee Rd – Rec 380	750m	B1 - Cut 23	5	0.1	No Trigger	115	No Trigger
5	30/06/2015	157 Yarrabee Rd – Rec 378	170m	B4 - Cut 19B	25	0.1	2.30	130	117.9
		49 Yarrabee Rd – Rec 380	730m		5	0.1	No Trigger	115	No Trigger
6	02/07/2015	157 Yarrabee Rd – Rec 378	170m	B5 - Cut 19B	25	0.1	2.50	130	123.1
		49 Yarrabee Rd – Rec 380	730m		5	0.1	No Trigger	115	No Trigger
7	14/07/2015	157 Yarrabee Rd – Rec 378	170m	B6 - Cut 19B	25	0.1	2.90	130	103.5
		49 Yarrabee Rd – Rec 380	730m		5	0.1	No Trigger	115	No Trigger
8	20/07/2015	157 Yarrabee Rd – Rec 378	170m	B7 - Cut 19B	25	0.1	1.60	130	118.7
		49 Yarrabee Rd – Rec 380	730m		5	0.1	No Trigger	115	No Trigger
