Transport
Roads & Maritime
Services

Oxley Highway to Kempsey Upgrade Project

Construction compliance tracking report - 22 July 2016 to 21 January 2017

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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 about 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. This stage of the project opened to traffic on 30 November 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)
- 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 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 Stage 2 and Stage 3 of project during the reporting period. Some of the key activities included:

- Operation of major site compounds including batch plants for mainline paving activities. A number of minor satellite ancillary facilities either continue to operate or have been decommissioned across the project
- Extensive restoration and landscaping activities across the project
- Substantial progress on remaining earthworks on Stage 2 and Stage 3 with cut and fill operations nearing completion
- Completion of mainline paving in some areas that have allowed for the implementation of traffic switches. Works have since progressed in a number of areas on the second carriageway
- Maintenance of environmental controls including clean water diversions, temporary and permanent water quality control basins, sediment fencing and in-line check structures
- Substantial progress on culverts and bridges on Stage 2 and Stage 3 construction. This has included the completion of bridge crossings of the Pacific Highway, Hastings River and Wilsons River. Outstanding aspect are largely confined to deck paving and road furniture
- Installation of boundary fencing, fauna fencing and other fauna features.

Approvals

There were 12 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).
- Environment Protection Licence 20419 for Stage 1 works (held by Ferrovial Agroman (Australia) Pty Ltd).
- Environment Protection Licence 20487 for Stage 2 works (held by McConnell Dowell Constructors (Australia) Pty Ltd).
- Environment Protection Licence 20482 for Stage 3 works (held by Lendlease 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).

- Resource Recovery Exemption under Part 9, Clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014 - The Oxley Highway to Kundabung raw mulch exemption April 2016 (held by Lendlease Engineering Pty Ltd)
- Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 - The Oxley Highway to Kempsey raw mulch order April 2016 (held by Lendlease Engineering Pty Ltd).

Implementation and performance of environmental controls

Construction activities were undertaken commensurate with the implementation of environmental management measures and procedures documented in the 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 continued implementation of project boundary fencing, alternative access arrangements and extensive landowner consultation. There was one complaint relating to access during the reporting period. The complaint related to the width of access to a service road. The complaint was resolved by subsequent alterations to the service road.

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, where necessary. The loss of hollows attributable to vegetation clearing across the project is being offset by the installation of nest boxes and other salvaged habitat features (eg rocks, logs) 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). The remaining nest boxes will be installed closer to opening of the project when final numbers have been confirmed.

Erosion and sediment controls, including temporary and permanent water quality control basins, continue to be modified commensurate with construction (eg temporary basins removed where no longer required). Final treatments to permanent water quality basins has been a focus during this reporting period. Various other in-train erosion and sediment control measures continue to be installed and maintained in accordance with the “Blue Book”.

Managing the propagation of airborne dust particulates has been a high priority during this reporting period commensurate with the below average rainfall and dry conditions. The exposure of large areas of unconsolidated soils had reduced substantially since the previous reporting period with extensive areas of paving, landscaping and rehabilitation completed. Where necessary, the implantation 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, applying soil binding polymers and adapting construction activities has continued. There were seven dust related complaints during the reporting period. Dust monitored across the project indicates that dust levels remained below the annual rolling average criteria of 4g/m^2/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.

Landscaping and rehabilitation efforts have been a focus during the reporting period. A number of traffic switches took place and areas that are now constrained by access have been treated extensively with top soils, tube stock, hydromulch and mulch. Landscape maintenance activities continue in these areas.

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 experience on Stage 2 and Stage 3 of the project. However, in all instances the exceedances were attributable to events of activities unrelated to the project eg bushfire, farming. At times, additional measures (eg increase use of water carts) were implemented when site or weather conditions necessitate. Dust deposition rates remain below the annual rolling average criteria of 4g/m^2/month.

Construction noise monitoring was undertaken on Stage 2 and Stage 3 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 continued during construction. The results of this monitoring and an associated discussion will be provided in a separate water quality report.

Community engagement

Forty-five complaints were received during the reporting period. The main broad categories related to traffic management, dust, worker behaviour and property damage – motor vehicle damage. 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, but one, complaints were closed out during the reporting period.

Roads and Maritime has engaged the community and stakeholders in a number of ways during the reporting period. There have been 89 face to face meetings held, about seven householder letters/notification distributed and the project website updated. There have also been two public displays during the reporting period.

Other matters

Roads and Maritime's construction partners on Stage 2 and Stage 3 carried out a diversity of general induction and subject-specific training during the reporting period. In excess of 7000 general inductions have been carried out across the entire project to date covering environmental awareness, safety and quality matters. Other specific training has included, but not limited to, reviewing the requirements of the construction environmental management plan, erosion and sediment control plans, environmental work method statements, working near waterways, paving and sealing, basin dewatering, refueling and waste management.

Inspections by the Environmental Representative generally occur fortnightly and resulted in minor improvement suggestions on topics such as erosion and sediment controls around culverts and stockpiles, clean and dirty water separation, spill

preparedness through hydrocarbon booms, maintenance of clearing flagging, appropriate storage of chemicals, and mud-tracking. While some issues and deficiencies were identified during the inspections, positive feedback was also received on good site planning, landscaping and restoration efforts, management of curing compound runoff on bridges, removal of instream working platforms, controls installed to replace temporary basins and the performance of environmental controls during heavy rainfall events.

There were 14 incidents on the project during the reporting period. Three were categorised as category 1 incidents in accordance with the Roads and Maritime environmental incident reporting and classification procedure. Category 1 incidents related to an incomplete environmental approval, work outside a clearing boundary and waste disposal. 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 civil works, further training of staff and contractors, and amendments to procedures and system requirements. The remaining incidents were considered to be of a minor nature and contained to 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:

- Receipt of community grant funding for the Birpai Local Aboriginal Land Council. Birpai to provide support and services for Aboriginal people in the Port Macquarie area
- Provision of surplus construction material to an adjacent landowner for reuse
- LendLease and Port Macquarie Council community day to implement local park improvements.

Contents

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 about 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. This stage of the project was opened to traffic on 30 November 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 toward the middle of 2017
- 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 in the early part of 2018.

1.2 Project approval

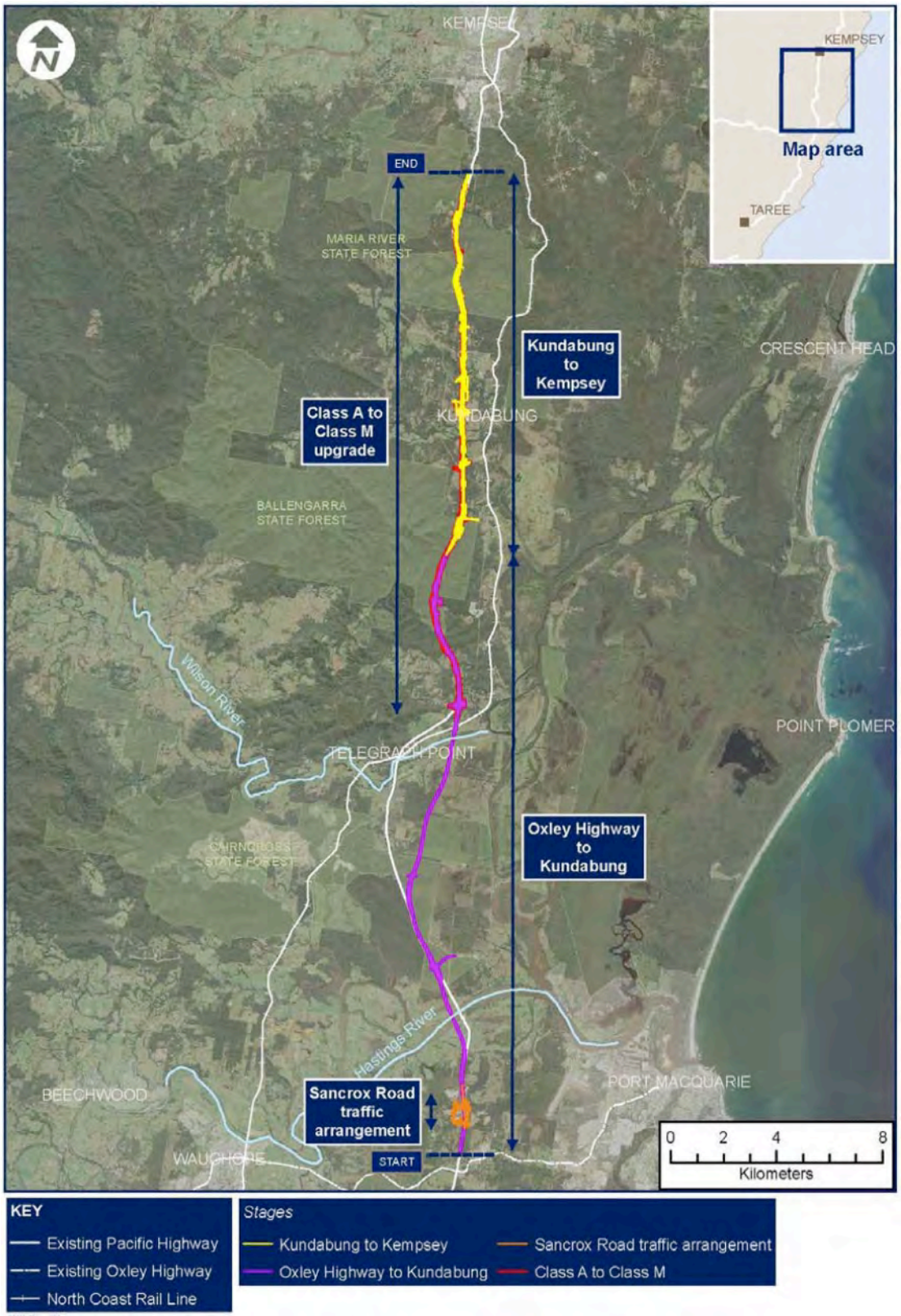
On 8 December 2006, the project was declared by the then Minister for Planning to be a project to which Part 3A of the *Environmental Planning and Assessment Act 1979 applies*. An environmental assessment was prepared and placed on public exhibition for 30 days between September and October 2010. Following 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 I 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 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 July 2016 and 21 January 2017, construction activities were undertaken on Stage 2 and Stage 3 of the project. Table 1-2 outlines the key construction activities either in progress or completed during the reporting period.

Table 1-2 Key construction activities during the reporting period

Activity	Detail of progress
Stage 1 – Sancrox (opened to traffic on 30 November 2016)	
An application to surrender the Environment Protection Licence for Stage 1 was made on 15 June 2016. There has been no work on that stage since that time.	
Stage 2 – K2K	
Environmental controls	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: • Temporary water quality basins - A further four temporary basins were decommissioned in accordance the approval process outlined in EPL Condition P1.5. A total of two temporary basins remain adjacent to the project alignment, with a further three temporary basins at the main site compound and two at stockpile sites • Permanent water quality basins – the majority of the 17 basins as per the design have been completed, awaiting conformance reports. One additional basin southwest of Pipers Creek has been added as part of a design change • Clean water diversion drains for separation of clean and dirty water • Sacrificial pipes in clean water flow lines • Sediment fencing, mulch bunds, rock check dams and silt traps • Clearing limit temporary fencing • Sensitive area fencing and signage for environmentally sensitive areas • Temporary and permanent revegetation • Scour protection at Pipers Creek, Stumpy Creek, Maria River and Smiths Creek.
Fauna mitigation	Installation of both permanent and temporary fauna fencing has continued through this reporting period. The main focus has been on the areas of high ecological significance ie Forest NSW areas and in the vicinity of culverts, waterways and bridges. Further temporary and permanent Giant Barred Frog and Green-thighed Frog exclusion fencing has also been installed adjacent to the creeks and Maria River. Construction of the frog ponds was completed and the construction of fauna culverts and associated fauna furniture continued. Fauna pole installation was completed.
Compounds	The main site compound off Kundabung Road and a number of other satellite compounds continued to operate during the reporting period. The northern site compound was relocated to

Activity	Detail of progress
	allow for construction to progress. The concrete batch plant located at the main compound continued operation during this period.
Vegetation clearing	About seven hectares of vegetation was cleared in a number of areas during this period. Clearing was generally associated with culvert extensions, the construction of the northbound alignment and the construction of service roads and minor access tracks.
Earthworks	Earthwork cut and fill operations continued during the reporting period with about 70,000 cubic metres of material processed. A total of about 115,000 square metres of topsoil was placed on disturbed areas.
Structures	Bridge works continued at: • Pipers Creek • Smiths Creek • Maria River • Stumpy Creek. Works at these sites include the installation of piling and concrete works (headstocks and piers), bridge beams, decks and parapets. The installation of box culverts continued at various locations across the project. Sacrificial pipes / waterway diversions were installed at a number of locations to facilitate the offline installation of permanent drainage infrastructure. Grouting of sacrificial pipes with slurry is continuing.
Paving	Paving continued predominantly in the northern section, with about 40,000 cubic metres placed.
Rehabilitation	About 23 hectares of native vegetation rehabilitation was undertaken during the reporting period. This has included the hydromulch application of seed from: • Native grasses • Frangible shrubs • Tall shrubs. This has been applied to areas such as cut faces, permanent basins, vegetated drains and stockpile reuse sites. Landscaping efforts commenced, with about 7500 native tube stock planted to the end of the reporting period.
Stage 3 – OH2Ku	
Environmental Controls	Various environmental controls were installed and maintained at key locations along the corridor in preparation for, or subject to, construction works during the reporting period. These controls included: • Water quality basins • Clean water diversion drains • Temporary waterway crossings • Sediment fencing, mulch berms, bunding around stockpiles with pump-out capabilities, and geotextile fabric lined drains

Activity	Detail of progress
	• Clearing limit fencing • Sensitive area fencing and signage • Silt curtains and hydrocarbon booms at bridge construction sites. Various temporary environmental controls were also decommissioned during the reporting period as permanent works were completed and disturbed areas stabilised. These included decommissioning of temporary sediment basins, removal of hydrocarbon booms and silt curtains from the Hastings and Wilson rivers and replacement of temporary fencing with permanent boundary, and fauna fencing.
Fauna mitigation	Construction continues on dedicated and combined fauna/waterway culverts in consultation with EPA biodiversity representatives, the project ecologist, Roads and Maritime and Lendlease personnel. The installation of fauna fencing continues.
Compounds	The main site compound north of the Hastings River and a number of satellite compounds continue to operate. A concrete batch plant at the main site compound has also continued operation and produced concrete for paving during the reporting period. Several satellite compounds have been partially decommissioned during the reporting period including the facilities at Glen Ewan Road and Hacks Ferry Road. Compound facilities at Haydon's Wharf Road have been fully decommissioned during the reporting period.
Earthworks	Cut to fill operations across the project have been substantially completed.
Paving	Substantial mainline paving has been completed during the reporting period. This allowed several important traffic switches and the progression of work on the existing Pacific Highway. This has include included a key area between the Oxley Highway and Fernbank Creek.
Rehabilitation	Permanent rehabilitation works have continued throughout the reporting period with hydromulch application, tube stock and tree planting on areas where earthworks have been completed. This has included rehabilitation around the Wilsons River, including Dalhunty Island.
Structures	A new bridge over the Wilsons River neared completion during the reporting period. The first stage of a number of other bridge structures across Stage 3 have also been completed. This has included substantial completion of several bridges within the Hastings and Wilson River Floodplains.

View east of main alignment through Stage 1 traffic arrangement works (St 3)

View north along main alignment beyond Stage 1 traffic arrangement works (St 3)

View north along alignment toward Fernbank Creek and Hastings River (St 3)

View of Hastings River crossing looking south along alignment (St 3)

View of Blackmans Point Interchange looking west (St 3)

View of Wilsons River flood plan bridge looking west (St 3)

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

View of Barrys Creek at Mingaletta Road looking east (St 2)

View of rest areas at Kundabung (St 2)

View of main compound and Kundabung interchange looking south (St 2)

View south along alignment from Stumpy Creek (St 2)

View north toward tie-in to Kempsey bypass (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	Environment Protection Licence 20419 Scheduled activities: • Crushing, grinding or separating • Land-based extractive activity	Environment Protection Authority - NSW	Ferrovial Agroman (Australia) Pty Ltd	10 April 2014 (note, an application to surrender the licence was made on 15 June 2016. An approval to surrender the licence was issued on 30 November 2016)
2	Environment Protection Licence 20487 Scheduled activities: • Crushing, grinding or separating • Land-based extractive activity • Road construction	Environment 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 2016
2	Surface Water Permit 30PE002489	NSW Office of Water	McConnell Dowell Constructors (Australia) Pty Ltd	27 April 2016
2	Surface Water Permit 30PE002490	NSW Office of Water	McConnell Dowell Constructors (Australia) Pty Ltd	27 April 2016
2	Surface Water Permit 30PE002491	NSW Office of Water	McConnell Dowell Constructors (Australia) Pty Ltd	27 April 2016

Stage	Approval	Authority	Holder	Date of issue
2	Review of Environmental Factors – Mockingbird Quarry Rehabilitation	National Parks and Wildlife Service	McConnell Dowell Constructors (Australia) Pty Ltd	1 July 2015
3	Environment Protection Licence 20482 Scheduled activities: • Crushing, grinding or separating • Land-based extractive activity • Road construction	Environment Protection Authority - NSW	Lendlease Engineering Pty Limited	19 September 2014
3	Resource Recovery Exemption under Part 9, Clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014. The Oxley Highway to Kundabung raw mulch exemption April 2016	Environment Protection Authority - NSW	Lendlease Engineering Pty Limited	April 2016
3	Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014. The Oxley Highway to Kempsey raw mulch order April 2016	Environment Protection Authority - NSW	Lendlease Engineering Pty Limited	April 2016

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	• Installation of new property boundary fencing • Maintenance and/or provision of alternative property access • Consultation with directly and indirectly affected landowners	• More than 65 kilometres of boundary fencing (including stock proof and fauna fence) has been installed on the project to date (about 2.5 kilometres on Stage 1, 23 kilometres on Stage 2 and 41.4 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 and maintained where the project had impacted original formalised accesses. As part of Stage 1, modified access arrangements were implemented for Cassegrain Winery. These alternative arrangements will remain in place until Stage 3 of the project is completed. Permanent access arrangements are in place for the Roads and Maritime's regional depot. Business accesses adjacent to Sancrox Road have also been maintained and are available via the Sancrox Traffic Arrangement works which opened to traffic during the previous reporting period (30 November 2015). On Stage 2, modified access arrangements have been implemented for a number of local road intersections, including Carlyle Road, Ravenswood Road, Rodeo Drive and Old Coast Road. The southbound carriageway between Smiths Creek and Ravenswood Road (north) opened to traffic in October 2016, and the remainder of the southbound alignment to the Kempsey by-pass tie-in was opened to two-way traffic in December 2016. • 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, traffic switches and access arrangements) and duration of anticipated impacts. • On Stage 2, there have been access related complaints during the reporting period.
Hydrology	• Installation waterway diversions and/or sacrificial pipes to maintain capacity during	• Temporary waterway crossings have been installed extensively across the project with consideration given to monthly average

Environmental issue	Environmental controls	Performance of environmental controls
	offline culvert works • 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 • Removal of temporary works within the Wilsons River to comparable pre-existing river bed levels to reinstate natural hydrological functioning.	rainfall and likely storm events. Consideration of existing waterway 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. Grouting of these sacrificial structures commenced once the adjacent new culvert structures were completed. • The commissioning of permanent culverts has continued to be a priority throughout the reporting period. 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 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 six of the seven months was below historical averages (ie July, September, October, November, December and January. • Permanent flood mitigation measures (eg flood plain culverts / bridge) progressed during the reporting period with a number largely completed. • Riverbed scour attributable to the project has not been observed within either the Hastings or Wilsons rivers over the reporting period.
Water quality	• Design and construction of clean water diversion drains prior to site grubbing and topsoil stripping	• About 40 temporary/permanent construction basins are operating across the project to date (19 on Stage 2 and 18 on Stage 3). • Capture and treatment of site runoff continued to ensure water

Environmental issue	Environmental controls	Performance of environmental controls
	• 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 • 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.	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. • 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. • Sheet pile removal operations were completed successfully on the Wilson and Hastings Rivers during the reporting period. The use of a double full-depth silt curtain barrier was implemented successfully to contain sediment within the barrier during the extraction process.
Groundwater	• Monitoring of groundwater levels and quality	• Monitoring of groundwater continued during the reporting period. Groundwater has not been intercepted during the reporting period.
Flora and fauna	• Sensitive areas and vegetation to be protected with highly visible barriers prior to and during clearing operations • Two-stage clearing procedures • Nesting box replacement • Terrestrial and aquatic habitat rehabilitation • Installation of frog exclusion fencing and implementation of frog hygiene protocols • In-situ topsoil stripping and direct placement.	• 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 either installed prior to the commencement of vegetation clearing or maintained during the reporting period. • Clearing on the project was undertaken in accordance with the Roads and Maritime two-stage habitat clearing procedures. This requires an ecologist to be on-site prior to 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 were no causalities recorded across the project during the reporting period. Details of fauna relocations are provided in Appendix D. • There was one impact on vegetation related incidents on the project during the reporting period. • 60 per cent of nest boxes (or about 430) for various species have

Environmental issue	Environmental controls	Performance of environmental controls
		been installed prior to and during clearing works across Stage 2 (about 150) and Stage 3 (about 280) of the project to date. • Frog exclusion fencing, and vehicle and machinery wash down procedures have been implemented in Giant barred and Green-thighed frog habitats during clearing works. • Weed spraying was successfully carried out at various locations across the project. • Permanent rehabilitation work has continued along with monitoring on Stage 2 and Stage 3 throughout the reporting period. Work has included the application of hydromulch and tube stock planting on areas where earthworks have been completed. • Aquatic fauna protection measures were implemented on Stage 2 for all water pumping within sensitive aquatic habitats. • Aquatic rehabilitation has been completed in the Wilsons River on Stage 3 of the project.
Noise and vibration	• 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.	• All work was undertaken within standard construction hours or as approved out of hours works. • Out of hours work generally included concrete barrier placement, finishing minor road work, rock crushing, traffic switches, drainage and pothole patching, concrete saw cutting and line marking on the Pacific Highway to minimise impacts on highway traffic. • Noise monitoring was typically undertaken on a monthly basis on Stage 2 and Stage 3 of the project during the reporting period. • While monitoring indicates that noise management levels were exceeded at least once on Stage 2 and Stage 3 of project, in the majority of cases these exceedances were considered attributable to noise unrelated to construction eg traffic on the Pacific Highway. • There were no complaints relating to out of hours works on the project. • Three vibration related complaints were received on the project during the reporting period. Monitoring undertaken in response to the complaint indicates that vibration levels were within human comfort and structural damage criteria detailed in the Stage 2 and Stage 3 construction noise and vibration management sub plans.

Environmental issue	Environmental controls	Performance of environmental controls
Visual amenity	• 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.	• On Stage 1, final landscaping was completed during a previous reporting period and maintenance ongoing as necessary. • About 23 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 and permanent landscape mounds 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 some time. 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	• Traffic control plans, including safety zones, diversions, access control, maximum queue lengths during road occupancy • Community notification (advertisements, letter drops, road signage, radio announcements).	• 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 since the commencement of construction including the implementation of entry and exit 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 speed zones than would otherwise be permitted without barriers. • There were 16 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 minimise impacts through tools including, but not limited to, community notifications, traffic alerts, variable message signage, letterbox drops, face-to-face meetings, community displays,

Environmental issue	Environmental controls	Performance of environmental controls
		information sessions and telephone contact.
Heritage	• 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.	• 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 was developed and review completed by the relevant LALC. The training package was subsequently presented in a site wide toolbox talk on Stage 2 with a local Elder in attendance.
Air quality	• 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 • 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.	• The project teams monitor weather conditions on a regular basis through both the Bureau of Meteorology website and 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 seven dust complaints received during the reporting period. • 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 sealed access roads and main site compounds, installed rumble grids at access points to the road network and are using street sweepers to collect any material unintentionally tracked beyond the construction site. On Stage 3,

Environmental issue	Environmental controls	Performance of environmental controls
		during wet weather the project team also set up vehicle wash bays to further minimise the potential for mud tracking. • There are 19 dust deposition gauges installed across the project. While there have been individual monthly exceedances of the 4g/m^2/month criteria for total insoluble solids, all appear to have been unrelated to construction within that area (eg bushfire, adjacent landowner activities). Across all 19 monitoring stations the annual rolling average remains below the 4g/m^2/month criteria for total insoluble solids.
Geology and soils	• 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.	• Progressive erosion and sedimentation control plans (PESCP) were prepared and implemented across Stage 2 and Stage 3 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 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 Stage 2 and Stage 3 of the project including foreman, engineers, leading hands, environmental advisors. • Weekly inspections by an external soil conservationist have been reduced to an on-call basis on Stage 2 and Stage 3 of the project since the completion of high-risk clearing and grubbing, topsoil stripping and bulk earthwork activities. However, regular inspections will be ongoing while bulk earthworks continue and the site is subject to change. • Weed free topsoil containing native seed has been stockpile locally on site for reuse within the general area from which has been collected. Localised rehabilitation efforts using this material continued where earthworks and/or paving activities have been completed. • Areas within 15 metres of waterways were stump cut and soil left stable until construction of culverts commenced. • Potential acid sulfate soil discovered during bridge construction and drainage works on Stage 3 has been progressively tested and

Environmental issue	Environmental controls	Performance of environmental controls
		treated in accordance with the approved Soil and Water Management Sub Plan. • Progressive stabilisation of disturbed areas such as stockpiles and open drains has been undertaken. Methods employed include the application of geotextile fabric, jute mesh, sterile cover crop and proprietary soil binding products. • Rehabilitation efforts have continued across the project to control erosion and reduce the potential for impacts during wet weather events.
Waste	• 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.	• Waste segregation facilities have been set up at the main site and in some instances satellite 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 continued across the project where earthworks or paving has been completed. • 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.

Sheet pile removal on Hastings River (St 3)

Clean water diversion at Fernbank Creek tributary during culvert construction (St 3)

Rehabilitation of decommissioned water quality basin and adjacent earthworks formation (St 3)

Controls in place during Smiths Creek northbound bridge demolition (St 2)

Erosion and sediment controls in place during construction of culvert C24-70 (St 2)

Topsoil application and landscaping on deep cut (St 2)

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 on Stage 2 of the project. There was no clearing on Stage 3 during the reporting period. 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, gently 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 during this period.

On Stage 2, there were 17 species of animal relocated during pre-clearing and clearing surveys and inspections.

On Stage 3, there was one species of animal relocated over the reporting period. A large female Giant Barred Frog was identified during a night survey of Cooperabung Creek. The Giant Barred Frog Management Strategy was implemented at the time. This included tagging the individual and releasing upstream of the works.

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. These features supplement the extensive nest box installation program.

A substantial proportion of vegetation clearing has been completed during this, and the previous reporting period. All clearing was previously completed on Stage 1 (about 7 hectares), about 98 per cent (about 85 hectares) has been completed on Stage 2 and more than 95 per cent completed on Stage 3 (ie about 121 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.

Maria River weed management (St 2)

Microbat pre-clearing survey August 2016 (St 2)

Retro-fitting fauna fence (St 2)

Fauna fencing (St 3)

4.2 Heritage

All non-Aboriginal and Aboriginal heritage sites across the project to be retained been 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.

There were no unexpected heritage finds during the reporting period.

4.3 Noise and vibration

Noise monitoring was undertaken on Stage 2 and Stage 3 of the project in accordance with the respective construction noise and vibration management sub plans.

Noise monitoring was undertaken on a monthly basis at a number of locations on Stage 2. One monitoring event during the reporting period recorded levels above those predicted in the approved construction noise and vibration management plan. In this instance, the elevated noise level was considered attributable to traffic on the Pacific Highway unrelated to the project. There was one noise related complaint on Stage 2. This was in relation to road traffic noise following a traffic switch onto the new Pacific Highway southbound carriageway.

On Stage 3, noise monitoring was undertaken at 12 locations on a monthly basis between August 2016 and October 2016. Monitoring continued for the remainder of the reporting period, however on a more selective basis. On 20 October 2016, the Project Environmental Representative approved a minor variation to the Stage 3 Construction Noise and Vibration Management Sub Plan to allow noise monitoring on a monthly basis at selected sensitive receivers (eg in areas where noise intensive construction activities are performed in proximity to sensitive receivers) and in response to community complaints. While there were 22 exceedances of the calculated noise management levels, these were considered largely attributable to road traffic noise on existing Pacific Highway, or other activities unrelated to the project (eg animals/pets, farming equipment).

Vibration monitoring was undertaken in response to complaints on Stage 2 and Stage 3. In all instances, vibration levels were below respective human comfort and structural damage criteria. There were a total of three complaints across the project during the reporting period (two on Stage 2 and one on Stage 3).

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 Stage 2 and Stage 3 has continued throughout construction.

On Stage 2, air quality monitoring continued at 14 locations. There was one monthly exceedance of the 4g/m^2/month criteria during the reporting period. The result was attributable to bushfires during November 2016. For all monitoring locations, the annual rolling average remained below the 4g/ m^2/month criteria.

On Stage 3, air quality was monitored at seven locations. There were two monthly exceedance of the 4g/m^2/month criteria. Observations at the time indicate that the samples had been contaminated with material unrelated to the project (ie fertiliser application on an adjacent farm). At all monitoring locations, the annual rolling average remained below the 4g/m^2/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
- Applying soil binding polymers to exposed earthwork areas during extended periods of inactivity eg Christmas shutdown
- Landscaping and vegetation rehabilitation where possible.

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

4.5 Landscaping and revegetation

Permanent landscaping and restoration efforts have progressed across the project.

On Stage 1, landscaping was completed prior to opening to traffic in November 2015. Efforts since then have focused on maintenance and repairs where necessary.

On Stage 2, about 53 hectares of permanent landscaping of disturbed land has been completed to date. This has included the hydromulch application of seed from native grasses, frangible shrubs and tall shrubs on areas such as cut and fill faces, permanent basins, stockpile re-use sites and vegetated drains. Landscaping commenced in August 2016 with about 7500 tube stock planted to date.

On Stage 3, permanent landscaping and revegetation work continued throughout the reporting period with the application of hydromulch on completed and top-soiled sections of the project. A number of areas have also been treated with tube stock planting including on several road interchanges, around completed road carriageways and on Dalhunty Island within the Wilson River.

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.

Aquatic and riparian restoration (including stock exclusion) on Dalhunty Island (St 3)

Landscaping at Blackmans Point Interchange (St 3)

Mockingbird quarry rehabilitation August 2016 (St 2)

Mockingbird quarry rehabilitation January 2017 (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

Forty-five complaints were received during the reporting period. General themes of complaints received on three or more occasions included:

- Traffic management
- Dust from construction work
- Worker behaviour associated construction vehicles
- Motor vehicles damage
- Construction noise and vibration
- Design.

5.1.1 Traffic management

Sixteen complaints broadly categorised as “traffic management” have been received across the project between 22 July 2016 and 21 January 2017. Table 5-1 provides a breakdown of traffic management related complaints.

Table 5-1 Breakdown of traffic management complaints

Complaint type	Number of complaints
Construction vehicles parking in public areas used by other road users and/or affecting visibility	2
Heavy vehicles on local roads	1
Heavy vehicles trafficking onto verge outside property	2
Visibility when entering Pacific Highway from local road due to placement of construction materials (ie box culvert segments)	7
Absence of deceleration lane and signage into local road (Ravenswood Road)	4

Traffic management complaints were investigated and addressed on a case-by-case basis. Where construction vehicles or plant were found to be using public areas for parking or other movements not authorised by traffic management plans, vehicles or plant were removed immediately. Where necessary, changes to traffic management plans were also made to reduce the likelihood of reoccurrences. In all instances, construction personnel were informed of issues raised by complainants, expectations for construction traffic and changes to traffic management plans through toolbox training sessions and pre-start meetings.

The highest number of traffic management related complaints (ie seven) related to the temporary placement of box culvert segments prior to installation affecting driver visibility. In this instance, the material was relocated the following day and the issue was resolved.

The remaining complaints were in relation to signposting for a local road and the absence of a deceleration and turning lane. Appropriate advisory signage was provided the following day. The complainant concerned about the absence of a turning lane was informed that while at the time there was insufficient space for a deceleration lane following the traffic switch, that a temporary one would be provided. This was completed within four weeks of the traffic switch.

5.1.2 Dust

Seven complaints categorised as “dust” have been received across the project between 22 July 2016 and 21 January 2017. 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 resulted in dust emissions from site. In other instances, the use of street sweepers to remove dirt and debris accumulating on local roads has assisted with reducing nuisance dust emissions.

While complaints relating to dust were received during the reporting period, it should be noted that dust monitoring results from 21 locations across the project remain below the annual rolling average of 4g/m^2/month.

It is also expected that dust complaints will reduce further as progress on landscaping, rehabilitation and paving continues.

5.1.3 Worker behaviour

There were six complaints regarding worker behaviour. All of these complaints related to the operation of construction vehicles on the local road network eg vehicles speeding or 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. In some instances, additional construction signage was also erected (ie construction vehicle speed limits, “stop”, “give way” or “no turn” signage). The operation of construction vehicles on public roads will continue to be monitored and issues addressed should they arise.

5.1.4 Damage to property

Four complaints broadly categories as “damage to property” have been received across the project between 22 July 2016 and 21 January 2017.

In all instance, complaints were in relation to motor vehicle damage through use of the public road network ie construction debris on road damaging vehicles. The following actions were implemented:

- Complainants were provided with claim for damage forms and informed of the process for making a claim
- Damage was repaired with agreement of the complainant.

5.1.5 Noise and vibration

Three complaints broadly categorised as “noise and vibration” have been received across the project between 22 July 2016 and 21 January 2017. All related to perceived vibration at residential dwellings from construction work and were investigated at the time.

Subsequent monitoring indicated that vibration levels were well within human comfort and structural damage criteria. Complainants were informed of the outcome of monitoring.

5.1.6 Design

Three complaints broadly categories as “design” have been received across the project between 22 July 2016 and 21 January 2017. Table 5-2 provides a breakdown of design related complaints.

Table 5-2 Breakdown of design complaints

Complaint type	Number of complaints
Location of permanent bus bay	1
Location of truck stopping bays	2

Road design related complaints were addressed with complainants on a one-on-one basis.

The complaint relating to the location of a permanent bus bay was resolved through a meeting between Busways, the Roads and Maritime construction partner and complainant. A number of alternative locations for the bus bay were considered. However, Busways design limitations prevented the use of any identified alternatives.

Complainants concerned about the night-time use of truck stopping bays were informed that the bays were intended for emergency use only. Roads and Maritime have since erected signage to inform heavy vehicle drivers of this and will monitor the ongoing use of the bays.

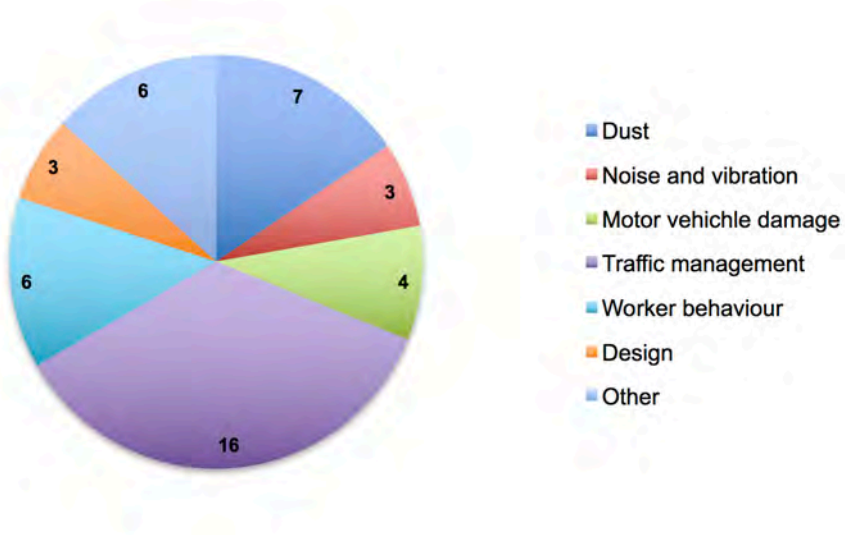
5.1.7 One off complaints

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 and four with Kempsey Shire Council

- A joint community information session was held at Wauchope Show on 12-14 August 2016 to provide information about the project's progress to the general public. About 334 people spoke to staff who answered questions and provide information.
- Roads and Maritime's construction partners continue to operate a community display centre at the site main compounds. These are open and staffed Monday to Friday, 9am to 5pm. At the centres 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
- 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 May 2015 there have been weekly email notifications during periods of blasting activity 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 5-3 Summary of community communication between 22 July 2016 and January 2017

Communication activity	Number
Advertisements in local papers	1
Presentations to interest groups (eg schools, Australian Trucking Association)	1
Council liaison group meetings	5
Aboriginal focus groups	0
Meetings with adjacent residents and affected businesses	89
Media releases and traffic alerts	12
Community site tours	0
Monthly construction updates	6
Community updates and brochures	4
Project fact sheets	1
Staffed displays / information sessions	2
Householder letters/notifications	7

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 on Stage 2 and Stage 3 during the reporting period. The total number of inductions for each stage on the project to date exceeds:

- 870 on Stage 1
- 2570 on Stage 2
- 3595 on stage 3.

Stage 2 and Stage 3 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 2, further training has included:

- Environmental work method statement (EWMS) training. EWMS covered during this training have included clearing and grubbing, demolition, working near waterways, temporary waterway crossings, paving and sealing, and water blasting and surface treatment of existing bridges
- Weekly toolbox training sessions on various topics including, but not limited to, out of hours work requirements, environmental incident reporting, dust generation and air quality, mud tracking on roads, basin dewatering requirements, refueling, and off-site disposal of material in accordance with section 143 requirements.

On Stage 3, further training has included:

- Environmental work method statement training on clearing and grubbing, instream works within the Wilson River and instream works within Cooperabung Creek and Barrys Creek
- Weekly toolbox training sessions on various topics including preparing for wet weather, environmental inspections, refueling and storage, and handling of hazardous materials.

6.2 Internal and Environmental Representative inspections

Internal inspections are undertaken by the environmental teams on Stage 2 and Stage 3 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 2
- 10 on Stage 3.

Feedback from the Environmental Representative has been specific for each stage, but has generally related to erosion and sediment controls around culverts and stockpiles, clean and dirty water separation, spill preparedness through hydrocarbon booms, maintenance of clearing flagging, appropriate storage of chemicals, and mud-tracking.

On Stage 2, positive feedback was provided in relation to revegetation, landscaping, site performance following large rain events, completion of frog ponds and the general management of erosion and sediment controls, in particular controls installed to replace temporary basins, where these have been backfilled.

On Stage 3, positive feedback was provided on a number of occasions regarding the performance of environmental controls following heavy rainfall, management of curing runoff from bridge decks, landscaping, the removal of in stream working platforms and generally high standard of environmental controls at bridge construction sites.

6.3 Audits

There were three audits conducted on the project during the reporting period.

There were no audits on Stage 1 during the reporting period.

The Stage 2 audit included:

- A Principal environmental management audit.

This audit focused on implementation of the CEMP, compliance with reporting requirements to Roads and Maritime and external parties, and compliance with Roads and Maritime specifications G36, G38 and aspects of R176, R178 and R179. Environmental management of the works was noted as generally being undertaken in a competent manner and one example of notable practice was found related to the prompt management of illegally dumped asbestos material (dumped by a member of the public onto the project site).

One Corrective Action Request (CAR) and five Observations of Concern (OoC) were raised during the audit. Table 6-1 details the CAR and project teams response. Table 6-2 details the observations or concern and the project teams response

Table 6-1 Stage 2 audit corrective actions and response

No.	Corrective action request	Project team response
1	Sediment basins do not have sediment storage zone markers contrary to the requirement of clause 4.1 of G38 and EPL Condition O5.7.	All individual sediment basins are to be surveyed to determine the 30 per cent storage zone levels. Once complete, the markers will be installed and the correct storage levels identified on the markers.

Table 6-2 Stage 2 audit observations of concern and response

No.	Observations of concern	Project team response
1	Fuel and spill management at culvert 3010 requires improvement.	The construction activities and equipment used at culvert C30.10 (and similar culvert locations) were assessed to ensure the appropriate fuel and spill management controls were in place.
2	A request for release of the R176 Hold Point associated with seed collection has not been made.	Seed collection for the project was conducted prior to commencement. An RFI will be issued to Roads and Maritime to close this out.
3	Field data sheets on nest box installation are not being provided to Roads and Maritime.	Field data for Stage 1 (south) will be provided to Roads and Maritime as per G36 Cl 6.10.5 (d)iii.
4	Record of resolution of issues found with fauna fencing during joint contractor and Roads and Maritime inspection prior to traffic switch could not be found.	Records of joint contractor and Roads and Maritime fauna fence inspections prior to sections opening to traffic will be kept, with actions and close out details recorded.
5	Soil conservationist is not providing reports on results of fortnightly inspections thus requirement to provide these reports to Roads and Maritime is not being met.	Regular inspections will continue to be conducted by the soil conservationist, dependent on the construction activities and erosion and sediment control risk profile. However, these inspections may not be every fortnight. A copy of each inspection report will be issued to Roads and Maritime.

Stage 3 audits included:

- A Principal environmental management audit
- An internal CEMP audit.

Table 6-3 Stage 3 audit corrective actions and response

No.	Corrective actions	Project team response
1	A hazardous materials shed was inspected. The shed was found to store a number of chemicals, one of which (Caltex Torque fluid) did not have a MSDS present.	The current MSDS has been downloaded and is now readily available on-site.

No.	Corrective actions	Project team response
2	The CEMP was updated by the project team following an internal audit in January 2016. The revised CEMP was issued to Roads and Maritime and the ER for approval (as minor amendments) on 21/7/2016. To date, no approval has been granted.	The Environmental Representative approved the minor amendments on 14 October 2016.
3	The CEMP requires all EWMSs to be approved by the ER. EWMSs prepared in the early stages of the project were clearly approved by way of the signature page. Evidence for ER approval of the EWMSs prepared more recently was not found (eg EWMS 17 and 21). It was noted by the auditee that a risk-based approach has been adopted recently whereby the ER contributes to the EWMSs through the ERG or otherwise. However, there is no documented approval of the final EWMS by the ER.	The current project adopted approach to EWMS development and approval has now been approved by the ER as a component of the above CEMP revision (refer to above corrective action and respective Project response). Refer below extract from current ER approved CEMP **4.1.3 Environmental work method statements** Environmental work method statements (EWMS) are prepared to manage and control relevant activities that have the potential to negatively impact on the environment. EWMS will be prepared prior to the commencement of relevant construction activities on site and will incorporate relevant mitigation measures and controls from management sub plans. They also identify key procedures to be used concurrently with the EWMS. EWMS are specifically designed to communicate requirements, actions, processes and controls to construction personnel using plans, diagrams and simply written instructions. EWMS will be prepared progressively in the lead up to and throughout construction in consultation with relevant members from the Project team including the Environmental Representative. EWMS for activities identified as having high environmental risk will undergo a period of consultation with stakeholders and authorities prior to approval. Upcoming/future EWMS will be discussed during regular ERG meetings. The ERG will determine which EWMS are high risk and require consultation and those that do not. EWMS for activities likely to be considered high risk include: • Working platforms in or adjacent to waterways • Temporary waterway crossings • Site compound establishment. • Batch plant establishment and operation. • Clearing and grubbing. • Piling. • Blasting. • Others as required. All construction personnel and sub-contractors undertaking a task governed by an EWMS must participate in training on the EWMS, and acknowledge that they have read and understood their obligations prior to commencing work. Regular monitoring, inspections and auditing against compliance with the EWMS will be undertaken by environmental personnel to ensure that all controls are being followed and that any non-conformances are recorded and corrective actions implemented. A register of EWMSs will be maintained for the OH2Ku Project.

6.4 Environment Protection Licence performance

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

- Stage 1 EPL number 20419 issued on 10 April 2014. An application to surrender the licence was made on 15 June 2016. Approval to surrender the licence was granted on 30 November 2016
- Stage 2 EPL number 20487 issued on 10 November 2014. There were no amendment to the licence during the reporting period
- Stage 3 EPL number 20482 issued on 19 September 2014. There were no amendments to the licence during the reporting period.

There were no non-compliances with the Stage 1 licence during the reporting period.

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

- Temporary basin TB29.55 (north of Kundabung interchange, southbound carriageway) was not returned to design capacity within 5 days of a rainfall event that caused run-off to occur on or from the premises. The basin was flocculated three times over a period of 5 days to reduce the turbidity to below criteria. Minor rain events on 8 August (0.2mm) and 11 August (1.8mm) caused runoff into the basin and resuspended the sediment in the basin. The last rainfall did not exceed the 5-day design rainfall criteria when considering rainfall received on 4 August (89.4mm) and 5 August (6.6mm). The water quality in the basin was inspected at 10:00am on 11 August, returning a reading of 85NTU. There was no significant visual improvement of the water quality by 5:00pm that day. The basin capacity was reinstated by 1:00pm on 12 August, once the turbidity had reduced to below 50NTU
- Disposal of about 600 cubic metres of reclaimed asphalt pavement occurred at a private property without a signed and completed Section 143 Notice. Discussions with the landowner revealed that the intended use of the reclaimed asphalt pavement was for road maintenance of unsealed roads on the property, in accordance with the EPA Order and Exemption. A S143 Notice was completed and signed by the landowner to use the 600 cubic metres for road maintenance of unsealed roads on the property. The landowner was advised that the 'reasonable period of time' for the application of the reclaimed asphalt pavement, as specified in the Exemption, was not to exceed 3-4 months.

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 14 environmental unplanned events categorised as environmental incidents have occurred on the project between 22 July 2016 and 21 January 2017. Eleven incidents were of a minor nature, with the remaining three 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 breakdown of incidents by stage is provided below.

There were no incidents on Stage 1 as this stage opened to traffic on 30 November 2015.

Table 6-4 Stage 2 incidents by type

Incident type	Category	Number
Placement of fill material beyond approved clearing limit when adding material to approved stockpile	1	One
Construction work without appropriate approvals in place	1	One
Offsite material disposal	1	One
Non-complying basin operation	2	One
Hydraulic oil or diesel spillage	2	Three
Grout release into drainage line	2	One
Work beyond nominated clearing limits	2	Two

Specific management responses for the three category 1 incidents were identified and implemented.

Where material was placed beyond the approved clearing limit (although within the project boundary), arrangements were made to stop material placement while the boundary was re-surveyed, pegged, flagging tape reinstated and additional sensitive area signage erected. Working within approved clearing limits was also the subject of training during subsequent pre-start meetings. While no vegetation was technically cleared or trees removed, the additional area of impact was added to the overall vegetation clearing totals.

In the instance where work was performed in the absence of an appropriate environmental approval, the assessment and approval was subsequently completed. Personnel were reminded of the need to implement and complete relevant design change procedures prior to carrying out physical works.

The remaining category 1 incident related to the off-site transportation of waste under an EPA Order and Exemption in the absence of a signed Section 143 certificate. No further waste was transported to the site and the relevant documentation was subsequently finalised with the property owner. The project team also developed an additional permit procedure to prevent a reoccurrence.

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.

The two incidents involving work beyond approved clearing limits was generally addressed by stopping work, surveying and re-establishing clearing delineation. In one instance, material associated with a burning mulch stockpile was pulled back into the approved work area once the fire was extinguished.

The remaining incident, involving a grout spillage during backfill of a sacrificial culvert, was addressed by containment of the spill. All material remained on site. While an appropriate procedure was in place, further measures were included in response to these types of works in the vicinity of sensitive areas.

Table 6-5 Stage 3 incidents by type

Incident type	Category	Number
Concrete spillage onto highway	2	One
Vegetation fire (grass)	2	One
Pavement curing compound release to site	2	Two

All incidents on Stage 3 were considered to be of a minor nature and appropriately categorised as category 2 incidents.

Where concrete was spilt from a tipper truck on to the Pacific Highway, suitable equipment, including a backhoe and street sweeper, were deployed to contain and clean up the spill. Investigations determined that a locking mechanism on the tipper tailgate had failed. All trucks on-site were subsequently inspected, and where fatigue identified, were taken out of service until fixed. The manufacture was also notified of the failure to determine whether there was a common manufacturing defect.

In the instance where a grass fire occurred during oxy cutting, the circumstance that lead to the fire igniting and spreading were investigated. It was found that the cutting site was too close to flammable vegetation and that a faulty fire extinguisher prevented the fire from being contained initially after ignition. Work procedures were amended to increase safe working distances to flammable material and where this was not possible a water cart would be placed at the activity until completed.

The remaining two category 2 incidents were related to curing compound run-off during rainfall events (note that runoff was captured by in-line erosion and sediment controls and contained to site). In both instances insufficient drying time was provided prior to the arrival of light rain events. Changes to procedures were introduced and included pre-paving inspections by construction team members, environmental staff and Roads and Maritime representatives to ensure appropriate safeguards are in place prior to paving. Supervisors and crews also received toolbox training in relation to the importance of weather forecast review and ERSED controls.

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.

Excess construction materials, reusable material and mulch provided to adjacent landowners and organisations

Excess topsoil, mulch (pasteurised garden organics), reclaimed asphalt pavement, recovered aggregate and unsuitable material was diverted away from landfill or material reuse sites by providing it to adjacent landowners who were able to reuse the materials on their properties for landscaping, soil improvement, gravel road resurfacing and flood mound construction purposes. Reusable materials, including pipe culverts and used guard rail sections, were provided to local residents, council, community groups and organisations

Big Impacts For Local Communities

When our people work with local communities it leaves more than infrastructure behind.

Grant Fletcher, Lendlease Environmental Manager for Oxley Highway to Kundabung Pacific Highway upgrade, received community grant funding for the Birpai Local Aboriginal Land Council. Birpai provides support and services for Aboriginal people in the Port Macquarie area.

Grant said, “We became involved as part of heritage plans with the Oxley upgrade, and found ourselves surrounded by their programs.

“The funding will be invested into the afterschool youth group. The kids learn traditional Aboriginal culture, get help with schoolwork, and play sports or do craft activities – it’s a safe environment for them to have fun.

“A lot of the children are from disadvantaged backgrounds, and being able to come to the youth group at no cost to the family has a really positive impact on the community.”

Lendlease teams up with Port Macquarie-Hastings Council for Community Day

On 15 September 2016, around 40 Lendlease employees assisted Port Macquarie Hastings Council to deliver its plans to transform a local park into an interactive nature play space, taking it one step closer to providing a wonderful family asset that can be enjoyed by generations to come.

The work included installing a new deck for the dance wall; framing for the concrete cycling paths; mulching, landscaping and edging gardens; and painting.

Lendlease's Managing Director, Engineering, Craig Laslett said the Oxley Highway to Kundabung Pacific Highway upgrade team were looking forward to putting their skills to use for a local community organisation.

"Community Day offers employees a chance to apply their skills where they are most needed and give back to the communities that support us," Mr Laslett said.

"Our employees, who can usually be found building roads, bridges and tunnels on Engineering projects, will be armed with hand tools and shovels to give Port Macquarie's Oxide Park a new lease on life."

"This is a wonderful example of how a large organisation is giving back to a community in which they operate, and Council is thrilled to be working with Lendlease on such an important community project," said Port Macquarie Hastings Council Director Tricia Bulic.

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)	The Department of Primary Industry (Fishing)
EA	Environmental Assessment
EMS	Environmental management system
EPA	Environmental Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
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	The Proponent shall carry out the project generally in accordance with the: (a) Major Projects Application 07_0090; (b) *Upgrading the Pacific Highway – Oxley Highway to Kempsey – Environmental Assessment (volumes 1, 2, and 3)*, prepared by GHD Pty Ltd for the NSW Roads and Traffic Authority and dated September 2010; (c) *Upgrading the Pacific Highway – Oxley Highway to Kempsey – Environmental Assessment Submissions Report*, prepared by the NSW Roads and Traffic Authority and dated March 2011, including the revised Statement of Commitments contained therein; (d) *Oxley Highway to Kempsey – Pacific Highway Upgrade Ecological Review of Fauna Crossings in the Ballengarra State Forrest*, Roads and Maritime Services, dated October 2011; (e) The Roads and Maritime Services modification request and letter dated 25 October 2012 (07_0090 MOD1); (f) The Roads and Maritime Services modification requests and letters dated 17 April 2013 and 9 September 2013; the document titled *Pacific Highway Upgrade – Oxley Highway to Kempsey: Aboriginal Archaeological Assessment and Artefact Salvage Methodology and Cultural Heritage Assessment Report*, prepared by Kelleher Nightingale Consulting Pty Ltd, dated September 2012; the document titled *Oxley Highway to Kempsey - Pacific Highway Upgrade OHK85 Test Excavation - Preliminary Results*, prepared by Kelleher Nightingale Consulting Pty Ltd, dated 2013; and the document titled *Pacific Highway Upgrade — Oxley Highway to Kempsey — Non-Indigenous Heritage Impact Assessment Report*, prepared by Peter Kuskie and Christopher Carter (South East Archaeology Pty Limited), dated December 2007 (07_0090 MOD2); and (g) The conditions of this approval.	Construction and operation	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 development; the database will assist Roads and Maritime to manage compliance and contractual risk. Further confirmation will be provided through this, and future compliance tracking reports, and independent audit program developed in response to condition B24(d). Compliance with the condition is ongoing throughout all stages of the project.
A2	In the event of an inconsistency between: (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 (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.	Construction and operation	Compliance with the condition is ongoing throughout all stages of the project.
A3	The Proponent shall comply with any reasonable requirement(s) of the Director General arising from the Department's assessment of: (a) any reports, plans or correspondence that are submitted in accordance with this	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

CoA no.	Requirement	Stage	Status / Reference
	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.		construction on Stage 2 of the project and that no changes to the Staging Plan were proposed. 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.
	Part B – Prior to construction		
	Biodiversity		
	Mitigation Measures – Fauna and Waterway Crossings		
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.		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. 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.
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.

CoA no.	Requirement	Stage	Status / Reference
	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.		
B4	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: (a) Cairncross 1 – between station 10000 to 11600; (b) Ballengarra 1b - between station 23200 to 24100; and (c) Maria River 1b - between station 33760 to 34380. 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.		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. 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. 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. 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.
B5	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.		See comments provide in response to condition B4.
B6	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 *Guidelines for Controlled Activities Watercourse Crossings* (Department of Water and Energy, February 2008), *Policy and Guidelines for Fish Friendly Waterway Crossings* (NSW Fisheries, February 2004) and *Policy and Guidelines for Design and Construction of Bridges, Roads, Causeways, Culverts and Similar Structures* (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.		Waterway crossings have been designed in accordance with the requirements of this condition. See further detailed provided in response to conditions B1.

CoA no.	Requirement	Stage	Status / Reference
	Mitigation Measures – Nest Boxes		
B7	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.		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.
	Biodiversity Offsets		
B8	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: (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: (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. In a letter dated 9 June 2016, Roads and Maritime submitted an updated Biodiversity Offset Strategy for approval to change the like-for-like requirement, and allow the utilisation of the Collombatti- Clybucca floodplain. The DP&E approved the updated strategy on 4 July 2016.

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	(iii) the identification of additional species/ habitat through pre-clearance surveys and construction; and (iv) additional impacts associated with the establishment of ancillary facilities; and (f) options for the securing and management of biodiversity offsets in perpetuity. 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. 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.		
B9	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: (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); (b) the final selected means of securing the biodiversity values of the Package in perpetuity, including ongoing management, maintenance and monitoring requirements; and (c) timing and responsibilities for the implementation of the provisions of the Package over time. 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.	Construction	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. The final offset package was to be submitted to the P&E on or before 27 January 2016, or as otherwise agreed. In a letter dated 2 February 2016, Roads and Maritime requested an extension for the submission of the Biodiversity Offset Package to allow Roads and Maritime to explore the option to utilise the Clybucca floodplain as a biodiversity offset. DP&E approved an extension until 27 January 2017 on 17 February 2016. In the letter, DP&E requested that an update on the preparation of the package be provided by 31 August 2016. This was provided in a letter dated 19 August 2016. On 30 January 2017, the Department of Planning and the Environment approved an additional extension until 28 April 2017.
	Ecological monitoring		
B10	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: (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;		Roads and Maritime have developed an Ecological Monitoring Program to address the requirements of this condition in consultation with OEH and DPI (Fishing). 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. On 22 April 2016 Roads and Maritime submitted an updated Ecological Monitoring Program for approval. An approval for the update Ecological Monitoring Program was issued on 6 December 2016 subject to provision of a final version of the report, which was provided on 8 December 2016. It should be noted that the Department of Environment and Energy also approved the

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	(b) mechanisms for developing additional monitoring protocols to assess the effectiveness 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); (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; (d) provision for the assessment of the data to identify changes to habitat usage and whether this can be directly attributed to the project; (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 (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. 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).		updated plan on 15 November 2016. The first annual ecological monitoring report was submitted to the DP&E, EPA and DPI (Fishing and Aquaculture) on 4 November 2015. This monitoring report covered the ecological monitoring conducted in the first year of construction (22 July 2014 to 21 July 2015), and, for completeness, during baseline surveys. Reports will continue to be prepared and submitted at yearly intervals. The second monitoring report (for the period 22 July 2015 to 21 July 2016) was provided to DP&E, OEH and DPI (Fishing) on 13 February 2017. Roads and Maritime and its construction partners continue to fulfill all requirements of the EMP as necessary for each stage of the project. Any subsequent requirements will be implemented throughout the remainder of construction and operation as stipulated.
	Hydrology and Flooding		
B11	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.		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.
B12	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: (a) identify properties in those areas likely to have an increased flooding impact and detail the predicted increased flooding impact; (b) identify mitigation measures to be implemented where increased flooding is predicted to adversely affect access, property or infrastructure; (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;		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. The report concluded that there would be negligible change to the existing flood regime and therefore mitigation measures have not been proposed.

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	(d) be developed in consultation with the relevant council, NSW State Emergency Service and directly-affected property owners; and (e) identify operational and maintenance responsibilities for items (a) to (c) inclusive. 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.		
B13	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.		The Hydrological Mitigation Report concluded that there would be negligible change to the existing flood regime and therefore mitigation measures have not been proposed.
B14	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.		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.
B15	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.		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.
	Sedimentation, Erosion and Water		
B16	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).		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. 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.

B17	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: 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 *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000* (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. 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.		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. 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. Construction water quality monitoring reports have since been provided to P&E, DPI, EPA and NOW on: • 20 August 2015 (first construction report) • 16 December 2015 (second construction report) • 2 June 2016 (third construction report) • 16 November 2016 (forth construction report). The fifth six-monthly construction water quality monitoring report is currently under development and will be provided to P&E, DPI, EPA and NOW in the coming months. 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. The requirements of this condition are ongoing for all stages throughout construction and up to three years following completion of the project.
	Heritage impacts		
B18	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. The results of the salvage program shall be provided to the Department, the OEH and Aboriginal stakeholders within six months of the completion of the salvage program, unless		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 approved the extension request on 30 January 2014 with a

	otherwise agreed by the Director General.		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	Prior to the commencement of pre-construction and construction activities affecting the Pipers Creek PAD site, the Proponent shall: (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 (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: (i) consideration of measures to minimise disturbance to archaeology, where significant archaeological deposits are found to be present; (i) where impacts cannot be avoided, recommendations for any further investigations for significant archaeological deposits; and (ii) management and mitigation measures to ensure there are no additional impacts due to pre-construction and construction activities; and (c) undertake any salvage works recommended by the results of the archaeological investigations, in accordance with the report required under condition B18A(b).		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 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		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.

	July 2011). 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.		
	Urban Design and Landscaping		
B20	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: (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 design and landscape measures prior to its finalisation; and (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. 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		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. 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. 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 required 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. 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 required 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 provided to P&E on 1 June 2015 for approval. Further comments were received by P&E on 19 June 2015. On 25 August 2015 a further revision to the final plan was provided to P&E and additional advice on 21 September 2015. The final plan along with the subsequent advice provided in September 2015 was reviewed by P&E and an approval provided 9 October 2015. The approval

	the Director General. The Plan may be submitted in stages to suit the staged construction program of the project.		letter required Roads and Maritime to provide a complete UDLP, which addressed formatting errors and missing pages. This was provided to DP&E on 2 February 2016.
	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. Design of accesses into Forestry Corporation reserves have been finalised in consultation with 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. Signage has already been installed in the vicinity of a number of towns by-passed by the Pacific Highway and will be where necessary on this project.
	Property and Landuse		
B23	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): (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 (b) negotiating appropriate compensation and/or arrangements for the purchase of the property under the *Land Acquisition (Just Terms Compensation) Act 1991*.		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: (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); (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; (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	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. 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: • Stage 1 – 21 May 2014 • Stage 2 – 12 September 2014 • Stage 3 – 31 July 2014. P&E were notified on 25 August 2014 that construction on the

	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; (d) a program for independent environmental auditing in accordance with ISO 19011:2003 - Guidelines for Quality and/ or Environmental Management Systems Auditing; (e) mechanisms for reporting and recording incidents and actions taken in response to those incidents; (f) provisions for reporting environmental incidents to the Director General during construction and operation; and (g) procedures for rectifying any non-compliance identified during environmental auditing, review of compliance or incident management.		project commenced on 22 July 2014. 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 fifth construction compliance tracking period between 22 July 2016 and 21 January 2017. Previous construction compliance tracking reports in response to the requirements of this condition were provided to the DPE on: • Compliance period 1 – 24 March 2015 • Compliance period 2 – 17 September 2015 • Compliance period 3 – 11 March 2016 • Compliance period 4 – 2 September 2016. Roads and Maritime also informed P&E in writing on 2 November 2015 of the anticipated opening of Stage 1 of the project and provided a pre-operational compliance report in accordance with the condition at the same time. P&E wrote to Roads and Maritime on 18 November 2015 and advised they had no further comments on the matters. Stage 1 opened to traffic on 30 November 2015.
	Community Information and Involvement		
	Provision of Electronic Information		
B25	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: (a) information on the current implementation status of the project; (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; (c) a copy of this approval and any future modification to this approval; (d) a copy of each relevant environmental approval, licence or permit required and obtained in relation to the project; (e) a copy of each current strategy, plan, program or other document required under this approval; and (f) the outcomes of compliance tracking in accordance with the requirements of condition B24.	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.
	Complaints and Enquiries Procedure		
B26	Prior to the commencement of construction, the Proponent shall ensure that the following are available for community complaints and enquiries during the construction period: (a) a telephone number on which complaints and enquiries about construction and operation		Roads and Maritime and its construction partners 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

	activities may be registered; (b) a postal address to which written complaints and enquiries may be sent; and (c) an email address to which electronic complaints and enquiries may be transmitted. 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.		provided in response to MCoA B28. 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.
B27	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. 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.		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.
	Community Involvement		
B28	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: (a) identification of stakeholders to be consulted as part of the Strategy, including affected and adjoining landowners; (b) procedures and mechanisms for the regular distribution of information to stakeholders on the progress of the project and matters associated with environmental management; (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; (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 (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. 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.		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. 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. 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. 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.

	Environmental Management		
	Environmental Representative		
B29	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 Environment 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: (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	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. Compliance with the condition is ongoing throughout all stages of the project.
	Construction Environmental Management Plan		
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, Planning and Natural Resources, 2004). The Plan shall include, but not necessarily be limited to: (a) a description of activities to be undertaken during construction of the project or stages of construction, as relevant; (b) statutory and other obligations that the Proponent is required to fulfil during construction including approvals, consultations and agreements required from agencies and key		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. 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. 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.

	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; (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; (d) identification of ancillary facility site locations, including an assessment against the location criteria outlined in condition C28; (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: (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; (ii) measures to minimise **hydrology** impacts, including measures to stabilise bed and bank structures as required, (iii) measures to monitor and manage impacts associated with the construction and operation of **ancillary facilities**, (iv) measures for the handling, treatment and management of **contaminated materials**, (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); (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 communities require the approval of the Director General, in consultation with the OEH; (vii) measures to monitor and manage **hazard and risks** including emergency management; and (viii) the issues identified in condition B31; (f) details of community involvement and complaints handling procedures during construction, consistent with the requirements of conditions B25 to B28; (g) details of compliance and incident management consistent with the requirements of condition B24; and		The CEMP and sub plans required by MCoA B31(a) to (e) were approved on 4 November 2014. A number of minor changes to the Stage 2 CEMP, identified as part of an audit, were endorsed by the environmental representative on 11 April 2016. 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. Following an audit, minor updates were made to the Stage 3 CEMP in September 2016. These updates were endorsed by the Environmental Representative on 13 October 2016 in accordance with Section 1.7 of the CEMP.

	(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). 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.		
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):		
	(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: (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;		A Construction Traffic Management Plan (TMP) to address the requirements of this condition was prepared for each stage of the Project. 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. 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. 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.
	(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: (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 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; (ii) updated sensitive area/ vegetation maps based on B31(b)(i) above and previous survey work; (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		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. 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. 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. 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. A minor update to the Stage 3 FFMP was submitted to the Department of the Environment on 16 November 2017. Subject to the outcome of the Department's review, the update will then be endorsed under these conditions

	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 Phytophthora cinnamomi), erosion and sediment control and progressive re-vegetation; (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; (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; (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; (vii) an aquatic vegetation management strategy for mangroves and seagrass. The strategy shall: 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 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 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; (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		

	(ix) mechanism for the monitoring, review and amendment of this sub-plan;		
	(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: (i) identification of nearest sensitive receptors and relevant construction noise and vibration goals applicable to the project; (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; (iii) identification of feasible and reasonable measures proposed to be implemented to minimize construction noise and vibration impacts (including construction traffic noise impacts); (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); (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); (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 (vii) a program for construction noise and vibration monitoring clearly indicating monitoring frequency, location, how the results of this monitoring would be recorded and, procedures to be followed where significant exceedences of relevant noise and vibration goals are detected;		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. 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. 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. 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. A minor update to the Stage 3 NVMP was endorsed by the Environmental Representative on 20 October 2016 in accordance with Section 1.7 of the CEMP.
	(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: (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		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. 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. 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. Roads and Maritime wrote to P&E on 30 July 2014 seeking approval for the Stage 3 SWMP. The SWMP required by this

	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): 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		condition was approved on 13 October 2014.
	(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: (i) In relation to Aboriginal Heritage: 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		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. 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. 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. 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.

	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 (ii) In relation to non-Aboriginal Heritage: 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).		
	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		
	Construction Hours		
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		The requirements of this condition have been incorporated into the NVMP for each stage of the project. See discussion provided for MCoA B31(c).

	(c) at no time on Sundays or public holidays.		
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 that 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 complaints; or (e) with the approval of the Director General in accordance with condition C5.		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 Stage 2 and Stage 3 of the project. Stage 1 opened to traffic on 30 November 2015.
C5	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: (a) details of the nature and need for activities to be conducted during the varied construction hours; (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 (c) evidence of consultation with the EPA on the proposed variation in standard construction hours. 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.		The requirements of this condition have been incorporated into the NVMP for each stage of the Project. See discussion provided for MCoA B31(c). There have been no out of hours approval requests during the reporting period.
C6	Blasting associated with the project shall only be undertaken during the following hours:		The requirements of this condition have been incorporated into the NVMP for each stage of the project. See discussion provided for

<table>
<tr><td></td><td>(a) 9:00am to 5:00pm, Mondays to Fridays, inclusive;
(b) 9:00am to 1:00pm on Saturdays; and
(c) at no time on Sundays or public holidays.
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.</td><td></td><td>MCoA B31(c).
Compliance with the requirements of this condition continues across Stage 2 and Stage 3 of the project. Stage 1 opened to traffic on 30 November 2015.</td></tr>
<tr><td></td><td>Construction Noise and Vibration Goals</td><td></td><td></td></tr>
<tr><td>C7</td><td>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.</td><td></td><td>The requirements of this condition have been incorporated into the NVMP for each stage of the project. See discussion provided for MCoA B31(c).</td></tr>
<tr><td>C8</td><td>The Proponent shall implement all feasible and reasonable mitigation measures with the aim of achieving the following construction vibration goals:
(a) for structural damage, the vibration limits set out in the German Standard DIN 4150-3: Structural Vibration - effects of vibration on structures; and
(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).</td><td></td><td>The requirements of this condition have been incorporated into the NVMP for each stage of the project. See discussion provided for MCoA B31(c).</td></tr>
<tr><td>C9</td><td>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.
Table 1 – Airblast overpressure criteria
<table><tr><th>Airblast overpressure (dB(Lin Peak))</th><th>Allowable exceedance</th></tr><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></table></td><td></td><td>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 Stage 3 of the project. Stage 2 has now completed all blasting activities and Stage 1 opened to traffic on 30 November 2015.
Note, Roads and Maritime’s Stage 3 construction partner sought and received an approval from P&E to increase blasting limits. Monitoring to ensure compliance with the new limits was undertaken at the two closest residents for all blasts.
Roads and Maritime’s Stage 2 construction partner, while not having sought a change to the blasting limits, also conducted monitoring at the closest residential receiver (about 1.5 kilometres from blasting activities).</td></tr>
</table>

<table>
<tr>
<td>C10</td>
<td>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.

Table 2 – Peak particle velocity criteria
<table>
<tr><th>Receiver</th><th>Peak particle velocity (mm/s)</th><th>Allowable exceedance</th></tr>
<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>
</table></td>
<td></td>
<td>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 Stage 3 of the project. Stage 2 has now completed all blasting activities and Stage 1 opened to traffic on 30 November 2015. See additional comments provided for C9.</td>
</tr>
<tr>
<td>C11</td>
<td>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.</td>
<td></td>
<td>The requirements of this condition have been incorporated into the NVMP for each stage of the Project. See discussion provided for MCoA B31(c).

Trial blasts were undertaken on both Stage 2 and Stage 3 prior to commencing the routine blasting programs.</td>
</tr>
<tr>
<td>C12</td>
<td>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 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:
(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).

Unless otherwise agreed by the Director-General, the following exclusions apply to the application of this condition:
(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</td>
<td></td>
<td>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 Stage 2 and Stage 3 of the project. Stage 1 opened to traffic on 30 November 2015. Blasting is complete on Stage 2, however will continue in Stage 3 following the traffic switch from the existing highway to the new southbound carriageway.

Roads and Maritime’s Stage 3 construction partner sought and obtained approval under this condition for an increase to the blasting criteria in three locations across the project. The request was submitted in a letter dated 7 April 2015, and approved by DP&E in a letter dated 5 May 2015.</td>
</tr>
</table>

	(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.		
	Operational Noise Mitigation Review		
C13	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: (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 measures to achieve the criteria outlined in the Environmental Criteria for Road Traffic Noise (Environment Protection Authority, 1999).	Construction	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 review 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. Comments were provided by the department on 7 July 2015. After review of these comments, and a revision of the noise model and report to include the Sancrox Traffic Arrangement Works, Roads and Maritime resubmitted the report to the department on 19 February 2016. The Director General subsequently approved the review on 14 March 2016.
	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 requirements of this condition continues across Stage 2 and Stage 3 of the project. Stage 1 opened to traffic on 30 November 2015.
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 requirements of this condition continues across Stage 2 and Stage 3 of the project. Stage 1 opened to traffic on 30 November 2015. 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. The Maria River Bridge was damaged in a major bushfire in

			November 2016. This was reported to DP&E and OEH in emails on 29 November 2016 and 1 December 2016, respectively.
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 *Managing Urban Stormwater - Soils and Construction Vols 1 and 2, 4th Edition* (Landcom, 2004) and *Managing Urban Stormwater Soils And Construction Vols 2A and 2D Main Road Construction* (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		
	Property Impacts		
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, unless otherwise agreed by the relevant property or utility owner.		Noted. Compliance with the requirements of this condition continues across Stage 2 and Stage 3 of the project. Stage 1 opened to traffic on 30 November 2015.
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 requirements of this condition continues across Stage 2 and Stage 3 of the project. Stage 1 opened to traffic on 30 November 2015.
	Forestry Impacts		
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.
	Traffic Impacts		
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		The requirements of this condition have been incorporated into the TMP for all stages of the project. See discussion provided for

	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.		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 have 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.
	Waste Management		
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 site.		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.
C26	The Proponent shall ensure that liquid and/or non-liquid waste generated on the site is assessed and classified in accordance with *Waste Classification Guidelines* (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: (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 *Environment Protection Manual for Authorised Officers: Bunding and Spill Management*, Technical Bulletin (Environment Protection Authority, 1997). In the event of an inconsistency between the requirements listed from (a) to (c) above, the most stringent requirement shall prevail to the extent of the inconsistency.		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		The requirements of this condition have been incorporated into the CEMPs prepared for each stage of construction. See discussion

	shall: (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. 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 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.		provided for MCoA B30. On 22 April 2016, Roads and Maritime's Stage 2 construction partner sought approval for a change to the DP&E approved ancillary facility on Kundabung Road. This involved a change to the access location for heavy vehicles and was approved by DP&E on 26 April 2016. There have been no requests for approval sought during this reporting period on Stage 3.
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: (a) are located within an active construction zone within the approved project footprint; and (b) have been assessed by the Environmental Representative to have: (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 mpacts 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 requirements of this condition continues across Stage 2 and Stage 3 of the project. Stage 1 opened to traffic on 30 November 2015. A minor ancillary facility on Stage 2, near Kemps Road, was assessed by the Environmental Representative on 26 September 2016.
	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.

	Part E – During operation		
	Operational Noise		
E1	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: (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. 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.	Operation	Noted. 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.

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. Four community updates were published during the reporting period with information, among other things, regarding changed

CoA no.	Requirement	Stage	Status / Reference
			conditions and traffic switches. Further community updates will be issued during subsequent compliance tracking reporting periods. In addition, a joint community information session was held at Wauchope Show on 12-14 August 2016 to provide information about the project's progress to the general public. About 334 people spoke to staff who answered questions and provide information.
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 *Land Acquisition (Just Terms Compensation) Act 1991*.	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 *Land Acquisition (Just Terms Compensation) Act 1991*.	Pre-construction and Construction	Noted. Compliance with the condition is ongoing throughout Stage 2 and Stage 3 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.

CoA no.	Requirement	Stage	Status / Reference
	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 management requirements where feasible and reasonable.	Pre-construction and Construction	Roads and Maritime and its construction partners for the project have developed community communications strategies to outline, 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

CoA no.	Requirement	Stage	Status / Reference
			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 construction, with results reported separately in a construction water quality monitoring report for the reporting period. Further detail is provided in Table 1 / MCoA B17.
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 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		

CoA no.	Requirement	Stage	Status / Reference
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.
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) 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) 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, *Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings*, 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 NOW to address the requirements of this commitment. In addition, EPLs issued for the project required 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		FFMPs have been prepared in consultation with OEH for each

CoA no.	Requirement	Stage	Status / Reference
	construction surveys and protected during construction through exclusion fencing and education of construction workers through the site induction process.		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 this commitment. One threatened plant species (*Maundia triglochinoides*) has been directly impacted by the project. The species occurs at four locations within the project corridor and has been 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 was 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.
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 preclearance 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 during this, and more extensively during previous, reporting periods.
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

CoA no.	Requirement	Stage	Status / Reference
			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 reasonable.		Detailed design of fauna and waterway crossings has been completed for the project. 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. 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.
F18	The feasibility of widening the median will be further investigated in consultation with DECCW during the detailed design.		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. 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. 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. The department indicated that a further supplementary report for

CoA no.	Requirement	Stage	Status / Reference
			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.
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). 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. In a letter dated 9 June 2016, Roads and Maritime submitted an updated Biodiversity Offset Strategy for approval to change the like-for-like requirement, and allow the utilisation of the Collombatti- Clybucca floodplain. The DP&E approved the updated strategy on 4 July 2016.
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). 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. On 22 April 2016 Roads and Maritime submitted an updated Ecological Monitoring Program for approval. An approval for the update Ecological Monitoring Program was issued on 6 December 2016 subject to provision of a final version of the report, which was provided on 8 December 2016. It should be noted that the Department of Environment and Energy also approved the updated plan on 15 November 2016.
	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	Construction	See comment above for CN1.

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	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.		
CN3	Construction will normally be limited to the following hours: • 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: (a) For works that do not cause construction noise to be audible at any sensitive receivers. (b) For the delivery of materials required outside these hours by the Police or other authorities for safety reasons. (c) Where work is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm. (d) 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. (e) Where the work is identified in the construction noise and vibration management plan 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.	Construction	See comment above for CN1.

CoA no.	Requirement	Stage	Status / Reference
	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. Comments were provided by the department on 7 July 2015. After review of these comments, and a revision of the noise model and report to include the Sancrox Traffic Arrangement Works, Roads and Maritime resubmitted the report to the department on 19 February 2016. The Director General subsequently approved the review on 14 March 2016.
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 landscape officer.		See comment above for VAD1.
VAD4	Disturbed areas will be progressively revegetated with consideration to related controls such		See comment above for VAD1.

CoA no.	Requirement	Stage	Status / Reference
	as erosion and sedimentation controls, drainage and future road user safety requirements.		
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. 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	Operation	Detailed design for the project has been completed and includes

CoA no.	Requirement	Stage	Status / Reference
	interchanges offering a safer cycling and pedestrian environment.		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. Design measures have been finalised and arrangements will be made 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. 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.

CoA no.	Requirement	Stage	Status / Reference
	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.
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.

CoA no.	Requirement	Stage	Status / Reference
	Contamination		
C1	Areas of potential contamination identified during preconstruction and construction activities will be further investigated and appropriately managed.	Pre-construction and Construction	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. The outcomes of this report, among other things, were incorporated in the SWMPs prepared for Stage 1 and Stage 3 These SWMPs have been developed in consultation with the EPA, DPI (Fishing) and NOW, and address contamination matters as they related to each specific stage. During a previous reporting period further asbestos dumping sites, sewage contaminated land, and a site contaminated by former underground storage tanks were uncovered on Stage 3. The unexpected finds procedure contained within the SWMP was implemented in these cases. 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. Further detail on the approved SWMPs are provided in Table 1 / MCoA B31(d).
	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	SWMPs have been prepared for each stage of the project in consultation with the EPA, DPI (Fishing) and NOW to address this commitment. Further detail is provided in Table 1 / MCoA B31(d).
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	See comment above for GS1. The SWMPs contain construction acid sulfate management sub-plans that outline how the requirements of this commitment will be addressed.
GS3	Geotechnical investigations will be undertaken as part of the detailed design phase to confirm preliminary geotechnical investigative works.	Pre-construction	Completed and incorporated into the project during development of the detailed design.

CoA no.	Requirement	Stage	Status / Reference
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							
Stage 1 opened to traffic on 30 November 2015. There were therefore no construction related complaints on Stage 1 during this reporting period.							
Stage 2 – Kundabung to Kempsey							
1	22/07/16	Resident	Noise and vibration	A resident reported concerns about damage due to vibration at his residence. The resident also enquired about the remaining works at the Wharf Road bus bay.	4/8/16 (resident unavailable to meet earlier)	The resident was informed of vibration levels in relation to human comfort and structural damage criteria. The residence is located about two kilometres from the project boundary. The resident was also advised of the remaining work associated with the bus stop on Wharf Road.	Closed
2	22/07/16	Resident	Operational Noise	A resident complained about operational noise at his residence since the traffic switch.	22/7/16	A Roads and Maritime representative contacted the complainant and provided them with information about how operational noise impacts have been considered, criteria for when noise treatments are provided and that an operational noise assessment will be completed within 12 months after opening of the project. Further, the resident was advised that they do not currently qualify for noise treatment due to the distance and projected noise impacts expected at their property during operation. However, they were advised that a copy of the operational noise assessment report will be provided to them when complete and that if anything was not clear they can contact Roads and Maritime for further information.	Closed
3	2/08/16	Bus company	Traffic management	A manager for Busways complained about machinery and equipment (ie low loader) obstructing the nominated bus turning area.	2/8/16	The low loader was moved immediately. The issue was raised with the construction team during a prestart meeting the following day and the need to avoid reoccurrences.	Closed
4	4/08/16	Motorists	Damage to property – motor vehicle damage	A motorist reported rock damage to his vehicle within the project boundary.	4/08/16	The motorist was provided with the relevant public liability claim forms.	Closed
5	24/08/16	Motorist	Mud tracking	Motorists complained about mud tracking on the Pacific Highway from construction gate 17 (north)	24/08/16	A street sweeper was deployed to the area immediately. The condition at the gate was monitored during wet weather.	Closed

No.	Receipt	Entity	Category	Description of issue	Response	Action taken	Status
6	30/08/16	Bus company	Worker behaviour	A manager for Busways complained about trucks travelling at speed in the vicinity of the Upper Smiths Creek Road bus turning area. Concerned raised about potential accidents.	31/08/16	A spotter was placed on the gate during bus times. Trucks were instructed to avoid transport movements during bus loading and turning.	Closed
7	12/09/16	Resident	Damage to property – motor vehicle damage	A resident claimed to have damaged her car at the intersection between the driveway entrance to the property and the new Pacific Highway pavement.	12/09/16	The intersection with the driveway was fixed immediately. The resident was provided with the relevant public liability claim forms.	Closed
8	15/09/16	Resident	Damage to property – motor vehicle damage	A resident complained that concrete speckles dripped from a truck carrying concrete onto the windscreen and front areas of the vehicle.	23/09/16	The resident completed and submitted public liability claim forms after the concrete speckles could not be removed by washing the car.	Closed
9	15/09/16	Resident	Waste	A resident called to advise asbestos waste had been dumped at the Smiths Creek Road bus stop (note – the waste was unrelated to project).	16/09/16	The alleged asbestos material was collected by a licensed contractor the next morning and disposed of at the Kempsey Waste Management Centre.	Closed
10	22/09/16	Resident	Property access	A resident complained that access to the service road (Carlyle Road) was too narrow and there is potential for a head on accident to happen	23/09/16	The access was widened to allow for safe vehicle movement.	Closed
11	23/09/16	Resident	Worker behaviour	A resident reported heavy vehicles using Ravenswood Road for haulage were travelling at speed, with no regard for the neighbours on the road.	23/09/16	All truck drivers were reminded about their expected behaviour on the project and that Ravenswood Road is not a designated haulage route.	Closed
12	5/10/16	Resident	Noise and vibration	A resident complained about vibrating rollers operating in the vicinity of his residence, and reported cracks and damage to his dwelling. No building condition report was completed prior to the project due to it being outside the zone of influence.	25/10/16 (meeting delayed due to resident's illness and his work commitments)	The residence is about 120 metres from the closest point of construction. The resident was advised that vibration monitoring would be undertaken during future works when using vibrating rollers. This is expected to be completed during February 2017.	Open
13	12/10/16	Resident	Traffic management	A resident complained about asphalt trucks on night shift hauling down Ravenswood Road.	12/10/16	The vehicle movement and traffic arrangement was altered to eliminate the use of Ravenswood Road.	Closed
14	21/10/16	Resident	Traffic management	A resident raised concern regarding the absence of a deceleration lane for northbound traffic into Ravenswood Road (north) after the traffic switch, and the lack of signage for the post office and the service station.	22/10/16	Appropriate signage was installed the next day.	Closed

No.	Receipt	Entity	Category	Description of issue	Response	Action taken	Status
15	21/10/16	Resident	Traffic management	A resident complained about missing street signs for Ravenswood Road and the absence of a deceleration lane	22/10/16	Appropriate signage was installed the next day.	Closed
16	21/10/16	Resident	Traffic management	A resident complained about missing street signs for Ravenswood Road and the absence of a deceleration lane, as the resident almost drove past the intersection.	22/10/16	Appropriate signage was installed the next day.	Closed
17	24/10/16	Resident	Traffic management	A resident complained about the absence of a turning lane into Ravenswood Road. The resident also complained about the difficulty for anyone to find their property due to inadequate signposting. The resident indicated he would contact his local member of parliament and also raised his concerns with Roads and Maritime site personnel.	24/10/16	The resident was advised that due to the construction of the culvert in the vicinity, there was inadequate space for a deceleration lane at the time of the traffic switch. A temporary turning lane was constructed within four weeks, after extensive consultation with Roads and Maritime.	Closed
18	27/10/16	Resident	Worker behaviour	A resident reported multiple trucks rolling through a stop sign on Rodeo Drive at the Smiths Creek Road intersection.	27/10/16	All truck drivers were reminded about their expected behaviour and responsibilities on the project. The intersection was monitored during the following week by traffic management to check compliance.	Closed
19	1/11/16	Resident	Worker behaviour	A resident complained about a truck rolling through a stop sign on Rodeo Drive at the Smiths Creek Road intersection causing him to break heavily to avoid an accident. The resident then observed the truck roll straight through the Smiths Creek Road and Pacific Highway intersection at speed.	1/11/16	All truck drivers were reminded about their expected behaviour and responsibilities on the project. The companies delivering materials from local quarries were also informed. The Traffic Manager monitored the intersections during the following week to check and ensure compliance.	Closed
20	3/11/16	Resident	Traffic management	A resident complained about the reduced line of sight for vehicles turning right out of Ravenswood Road (north) on to the Pacific Highway. Visibility was reduced due to project vehicles and trucks having parked in the work area to the south of the intersection, making it difficult to see oncoming northbound traffic.	3/11/16	All parked project vehicles and trucks were moved immediately from this location, improving line of sight.	Closed
21	15/11/16	Resident	Damage to property – motor vehicle damage	A resident reported rock damage to his vehicle within the project boundary.	15/11/16	The resident was provided with the relevant public liability claim forms.	Closed

No.	Receipt	Entity	Category	Description of issue	Response	Action taken	Status
22	15/11/16	Resident	Traffic management	A resident complained about the reduced line of sight for vehicles turning right out of Ravenswood Road (north) on to the Pacific Highway. Visibility was reduced due to the temporary placement of box culvert sections in the work area to the south of the intersection, making it difficult to see oncoming northbound traffic.	16/11/16	The box culvert sections were relocated the next day, improving line of sight.	Closed
23	15/11/16	Resident	Traffic management	A resident complained about the reduced line of sight for vehicles turning right out of Ravenswood Road (north) on to the Pacific Highway. Visibility was reduced due to the temporary placement of box culvert sections in the work area to the south of the intersection, making it difficult to see oncoming northbound traffic.	16/11/16	The box culvert sections were relocated the next day, improving line of sight.	Closed
24	16/11/16	Resident	Traffic management	A resident complained about the reduced line of sight for vehicles turning right out of Ravenswood Road (north) on to the Pacific Highway. Visibility was reduced due to the temporary placement of box culvert sections in the work area to the south of the intersection, making it difficult to see oncoming northbound traffic.	16/11/16	The box culvert sections were relocated the next day, improving line of sight.	Closed
25	16/11/16	Resident	Traffic management	A resident complained about the reduced line of sight for vehicles turning right out of Ravenswood Road (north) on to the Pacific Highway. Visibility was reduced due to the temporary placement of box culvert sections in the work area to the south of the intersection, making it difficult to see oncoming northbound traffic.	16/11/16	The box culvert sections were relocated the next day, improving line of sight.	Closed
26	16/11/16	Resident	Traffic management	A resident complained about the reduced line of sight for vehicles turning right out of Ravenswood Road (north) on to the Pacific Highway. Visibility was reduced due to the temporary placement of box culvert sections in the work area to the south of the intersection, making it difficult to see oncoming northbound traffic.	16/11/16	The box culvert sections were relocated the next day, improving line of sight.	Closed
27	16/11/16	Resident	Traffic management	A resident complained about the reduced line of sight for vehicles turning right out of Ravenswood Road (north) on to the Pacific Highway. Visibility was reduced due to the temporary placement of box culvert sections in the work area to the south of the intersection, making it difficult to see	16/11/16	The box culvert sections were relocated the next day, improving line of sight.	Closed

No.	Receipt	Entity	Category	Description of issue	Response	Action taken	Status
				oncoming northbound traffic.			
28	16/11/16	Resident	Traffic management	A resident complained about the reduced line of sight for vehicles turning right out of Ravenswood Road (north) on to the Pacific Highway. Visibility was reduced due to the temporary placement of box culvert sections in the work area to the south of the intersection, making it difficult to see oncoming northbound traffic.	16/11/16	The box culvert sections were relocated the next day, improving line of sight.	Closed
29	29/11/16	Resident	Public road condition	A resident complained about the condition of the Old Pacific Highway.	29/11/16	The section of road in question was inspected by the traffic management team. The road was swept and the potholes repaired.	Closed
30	20/12/16	Resident	Worker behaviour	A resident complained about vehicles speeding along Rodeo Drive and Ravenswood Road since the connection between the two had been opened. The resident also queried the posted speed limit upon completion of construction.	20/12/16	The traffic management team checked the signage and installed additional speed signs prior to the Christmas 2016 shut down period.	Closed
31	6/1/17	Resident	Design	A resident complained about the location of the permanent bus bays. A formal complaint was issued by email to both Roads and Maritime and Busways on 20 January 2017.	6/1/17	A meeting was scheduled in February 2017 between Roads and Maritime and Busways. (Note - a meeting between Busways, the Roads and Maritime construction partner and complainant during the subsequent reporting period. A number of alternatives for the bus bay were considered. However, Busways design limitations prevented the use of any identified alternative locations.)	Open
32	11/01/17	Resident	Design	A resident complained about the location of truck stopping bays on the new Pacific Highway alignment in relation to the residences along both Ravenswood Road and Carlyle Road. The truck stopping bays are already being used during night time.	19/01/17	Signage was changed to 'Emergency' stopping only. Roads and Maritime will monitor the use of the parking bays before and after the opening of the Barrys Creek rest areas.	Closed
33	13/01/17	Resident	Dust	A resident complained about dust generated by trucks transporting excess project material to a private property along a gravel road in the vicinity of the project	13/1/17	The transport of the material was completed shortly after the complaint was received.	Closed
34	18/01/17	Resident	Design	A resident complained about the location of truck stopping bays on the new Pacific Highway alignment in relation to the residences along both Ravenswood Road and Carlyle Road. The truck stopping bays are already being used during	19/01/17	Signage was changed to 'Emergency' stopping only. Roads and Maritime will monitor the use of the parking bays before and after the opening of the Barrys Creek rest areas.	Closed

No.	Receipt	Entity	Category	Description of issue	Response	Action taken	Status
				night time.			
35	20/1/17	Resident	Drainage	A resident complained about the water flowing into his dam from the highway. The complainant advised that water quality in the dam had deteriorated.	21/1/17	All erosion and sediment controls were inspected and had been installed as per the relevant PESCP. It is noted that the culvert outlet is located about 200 metres from the resident's dam and traverses a undisturbed vegetated drainage line and local road before entering the property.	Open
Stage 3 – Oxley Highway to Kundabung							
36	25/07/16	Resident	Traffic management	A resident of Glen Ewan Road complained that trucks were driving on his lawn, potentially causing damage.	25/07/16	Traffic control was implemented on Glen Ewan Road to control the movement of vehicles and keep them on the road pavement.	Closed
37	18/08/16	Resident	Noise and vibration	A resident of Cooperabung Close reported feeling high levels of vibration and suggested that cracks in the building were a result of road construction work.	18/08/16	The dilapidation report prepared at the start of the project highlighted some structural issues with the dwelling. Vibration monitoring in the area has shown compliance with allowable limits and vibration levels have not reached a level that could cause structural damage to the building. No further action has been proposed.	Closed
38	22/08/16	Resident	Traffic management	A resident of Glen Ewan Road complained that trucks were driving on his lawn, potentially causing damage.	22/08/16	Traffic control was implemented on Glen Ewan Road to control the movement of vehicles and keep them on the road pavement. The use of Glen Ewan Road by construction vehicles was reviewed and site traffic directed to use alternative access gates where possible.	Closed
39	01/09/16	Resident	Traffic management / dust	A resident of Glen Ewan Road complained that trucks were causing noise and dust.	01/09/16	Traffic control is implemented on Glen Ewan Road when the volume of construction traffic is heavy. Dust mitigation measures, including watercart and street sweeper are used to minimise dust on the roadway. Construction access to the area was reviewed and site traffic directed to use alternative access gates where possible.	Closed
40	22/09/16	Resident	Dust	A resident of Glen Ewan Road complained about dust from traffic on Glen Ewan Road.	22/09/16	The watercart and street sweeper were sent to the area to remove dirt from the road.	Closed
41	06/10/16	Resident	Worker behaviour	A resident of Glen Ewan Road complained that workers leaving the Glen Ewan Road compound were driving too fast and making too much noise.	06/10/16	Crews were briefed about consideration for neighbours when leaving the compound.	Closed

No.	Receipt	Entity	Category	Description of issue	Response	Action taken	Status
42	01/11/16	Resident	Dust	A resident of the Pacific Highway near Cooperabung complained about dust from the concrete removal.	01/11/16	A supervisor inspected the area and arranged a watercart to manage the dust during the process.	Closed
43	02/11/16	Resident	Dust	A resident of Glen Ewan Road complained about dust from concrete trucks travelling on the roadway.	02/11/16	A supervisor inspected the area and arranged a watercart to manage the dust during the process.	Closed
44	23/11/16	Resident	Dust	A resident of the Pacific Highway near Cooperabung complained about dust from concrete paving work.	23/11/16	A supervisor inspected the area and arranged a watercart to manage the dust during the process.	Closed
45	09/01/17	Business Operator	Dust	A business operator at Sancrox complained about dust from nearby earthworks.	09/01/17	A supervisor inspected the area and arranged a watercart to manage the dust during the process.	Closed

Appendix C
Incidents

Stage 1 environmental incidents

No.	Activity in progress	Incident description	Incident category	Damage caused	Contributing factor(s)	Action taken
Stage 1 opened to traffic on 30 November 2015. There were therefore no construction related incidents on Stage 1 during this reporting period.						

Stage 2 environmental incidents

No.	Activity in progress	Incident description	Incident category	Damage caused	Contributing factor(s)	Action taken
1	Installation of a glider pole	A hydraulic hose split when the outriggers of a crane truck were deployed, spilling about one litre of hydraulic oil.	2	The spill was about 50 metres from temporary basin TB35.80. No material harm was caused.	No specific contributing factors.	• The operator deployed a spill kit to absorb the spill • The waste material was taken to a licensed waste facility.
2	Sediment basin management	Temporary basin TB29.55 (north of Kundabung interchange, east side) was not returned to design capacity within five days of a rainfall event that caused run-off to occur on or from the premises.	2	Quantity of stormwater unknown. No material harm was caused.	• The basin was flocculated three times over a period of five days to reduce turbidity to below criteria. Rain received on site (8 August, 0.2mm, 11 August, 1.8mm), the latter of which caused minor run-off into the basin. • This last rainfall event did not exceed the 5-day design rainfall criteria when considering rainfall received on 4 August (89.4mm) and 5 August 2016 (6.6mm).	• The water quality in the basin was inspected and monitored at 10:00am on 11 August, returning a reading of 85NTU. There was no significant visual improvement of the water quality by 5:00pm that day. The basin capacity was returned by 1:00pm on 12 August, once the turbidity had reduced to below 50NTU • The erosion and sediment control plan relevant to the basin catchment was reviewed and revised, and additional controls installed to further minimise localised erosion and any resulting sediment transport into the basin.
3	Earthworks	A hydraulic hose split on an excavator, spilling about five litres of hydraulic oil.	2	The spill was about 50 metres from culvert C33.10. No material harm was caused.	• No specific contributing factors.	• The operator deployed a spill kit to absorb the spill • The waste material was taken to a licensed waste facility.
4	Placement of fill at an approved	During placement of fill at the former Kundabung rest area,	1	The footprint within the Moist Slopes Forest was	• The excess fill material was being placed without proper regard for	• The material was left in-situ, however arrangements were

No.	Activity in progress	Incident description	Incident category	Damage caused	Contributing factor(s)	Action taken
	stockpile site	some of the material was placed outside of the approved clearing boundary. The total area affected was 16.81 square metres, of which 15.7 square is mapped as Moist Slopes Forest vegetation.		15.7 square metres. No material harm was caused. No vegetation was cleared or trees impacted by the placement of the fill material.	the clearing boundary, which was clearly identified through flagging tape and marker pegs.	made to stop any further material being placed outside the clearing boundary. The footprint of the material placed outside the clearing boundary has been incorporated into the overall clearing required for reuse site 10, as described in the approved Roads and Maritime Consistency Assessment (November 2016) • The importance of compliance with clearing boundary was again identified at prestart meetings. Clearing boundaries and flagging on site has been assessed and areas re-pegged and re-flagged where required. Additional 'Environmentally Sensitive Area' signage is being placed on the boundary fences.
5	Scour protection works at Stumpy Creek bridge, and temporary storage of concrete barriers at Ravenswood Road	During works at Stumpy Creek bridge, the clearing limit was not installed in the correct location to allow for all construction as per the design. At Ravenswood Road, an internal clearing line was disregarded and construction material was placed within an area potentially not required to be cleared. No works were undertaken outside of the approved clearing boundary.	2	No material harm was caused.	• The clearing limit at Stumpy Creek did not allow for the scour protection works, but was based on the extent of the earthworks. Since scour protection works were required as per the final design, the incorrect clearing limit as pegged and installed was disregarded and not re-installed prior to works continuing. At Ravenswood Road, concrete barriers remained within the clearing boundary.	• The correct extent of the works required as per the design was established and the clearing line at Stumpy Creek was re-pegged and installed. At Ravenswood Road the internal flagging limit was taken down and the concrete barriers removed • All clearing boundaries and flagging on site has been assessed and areas re-pegged and re-flagged where required. Additional 'Environmentally Sensitive Area' signs are being placed on the clearing boundary fences.
6	Grout backfill of sacrificial pipe culvert	Grout being used to backfill a sacrificial pipe at Culvert 25.42 leaked out of the downstream end of the pipe, into the dissipater of the culvert.	2	About 1200 litres of liquid grouting material spilt. The spill was about 20 metres from Barrys Creek. No grout was lost to the	• Internal movement of the sleeves between the culvert sections due to the grout pressure and weight.	• The spotter contacted the supervisor immediately, who stopped the pumping of material into the pipe. The subcontractor crew went to the spill site quickly

No.	Activity in progress	Incident description	Incident category	Damage caused	Contributing factor(s)	Action taken
				waterway and no material harm was caused.		and used packing materials to plug the hole and contain the spill • The subcontractor crew had already received a toolbox training session on the Working Near Waterways EWMS, and an inspection protocol has been enforced such that an environmental advisor and engineer to check the controls in the vicinity prior to works commencing in each specific area. Additional measures to be implemented when in close proximity to sensitive waters • Roads and Maritime Surveillance Officers attended site and were satisfied with the containment of the material. Due to the quantity and location of the grout, the spill was de-watered and remainder left to set in-situ..
7	Commencement of work without required environmental approval (reported by Roads and Maritime)	Work on an amenity mound for a local resident commenced without the required environmental approval.	1	The area was mapped as Moist Slopes Forest and approximately 35m^2 of regrowth was disturbed.	• A Roads and Maritime representative authorised the work to proceed, due to landowner pressures to have the work completed.	• The consistency assessment was in progress, and was completed soon after the incident. The work was in the approved Project Boundary, but outside the approved internal clearing limit. • The correct procedure was reinforced to all Roads and Maritime personnel.
8	Placement of mulch outside the clearing limit	A mulch stockpile caught fire during the Christmas site closure period and a machine was floated in to break up the stockpile and extinguish the fire. During this process some of the mulch was spread outside the clearing limits.	2	No material harm was caused (material was spread into an area of cleared, pasture grass).	• No specific contributing factors.	• As soon as the fire was extinguished and it was safe enough to do so, the mulch was pulled back within the clearing limits.
9	Backfilling of	An excavator working on the	2	The spill was about 10	• No specific contributing factors.	• The operator deployed a spill kit

No.	Activity in progress	Incident description	Incident category	Damage caused	Contributing factor(s)	Action taken
	culvert	backfill of Culvert 25.70 blew an O-ring, spilling about 10 litres of hydraulic oil onto the fill.		metres from the flowline at culvert C25.70. No material harm was caused.		to absorb the spill • The waste material was taken to a licensed waste facility.
10	Disposal of reclaimed asphalt pavement	Disposal of about 600 cubic metres of reclaimed asphalt pavement at a private property without a signed and completed Section 143 Notice. Discussions with the landowner revealed that the intended use of the reclaimed asphalt pavement was for road maintenance of unsealed roads on the property, in accordance with the EPA Order and Exemption.	1	No material harm was caused.	• Misunderstanding about the exact requirements associated with the disposal and use of the reclaimed asphalt pavement.	• Immediately after becoming aware of this non-compliance, the transport of recycled asphalt pavement to the property was halted, and both the Roads and Maritime and the EPA were notified of the incident • A S143 Notice was completed and signed by the landowner to use the 600 cubic metres for road maintenance of unsealed roads on the property. The landowner was advised that the 'reasonable period of time' for the application of the reclaimed asphalt pavement, as specified in the Exemption, was not to exceed 3-4 months • To prevent a recurrence of incorrect disposal and non-compliance with EPA resource recovery orders and exemptions, an internal permit system was implemented. The Permit to Dispose of Material Offsite requires all details for any disposal of material to private property to be fully identified, recorded and approved prior to any transport occurring • This internal permit process must be completed prior to Roads and Maritime consideration and acceptance of the associated hold point under the quality system.

Stage 3 environmental incidents

No.	Activity in progress	Incident description	Incident category	Damage caused	Contributing factor(s)	Action taken
11	Transportation of concrete	At 7:20am on 25 July 2016, two grain locks on the back of a tip truck broke while the truck was transporting concrete south from the project batch plant to a paving site at Sancrox. This caused about two cubic metres of dry concrete mix to spill from the truck onto the Pacific Highway.	2	About two cubic metres of dry concrete mix spilt onto the Pacific Highway.	• The failure of two grain locks on the back of a tip truck.	• Traffic control was called to the area and the extent of the spill was assessed. A backhoe and road sweeper were then mobilised to the site to remove the material from the roadway • All concrete tippers were inspected by a mechanic to identify any similar potential weak points. Any potentially defective trucks were taken out of service until they were confirmed to be free of this potential defect. The broken grain locks were sent back to the manufacturer with a description of the potential defect for assessment by the manufacturer.
12	Oxy cutting of a decommissioned bridge pier walkway	While oxy cutting a decommissioned bridge pier walkway, a spark appeared to ignite grass about 10 metres to the east of the operation.	2	When the worker had initially attempted to extinguish the fire, it was about one square metre in diameter. As the workers fire extinguisher did not function, the fire spread to an area of about 3000 square metres by the time a project water cart had brought the fire back under control.	Spark from oxy cutting igniting grass. Fire extinguisher malfunction.	• The worker who was cutting the walkway immediately ceased works on identification of the fire. The worker retrieved a fire extinguished that had been tested within the necessary timeframe. However, when pulling the fire extinguisher trigger, fire retardant was not expelled. The worker then radioed for a nearby water cart to attend to the fire • The faulty fire extinguisher was replaced. The operation was relocated to the western side of the alignment where there was more than 30 metres distance to the nearest vegetation • For all future hot works operations where there is combustible material within the vicinity which has the potential to ignite, a water

No.	Activity in progress	Incident description	Incident category	Damage caused	Contributing factor(s)	Action taken
						cart must be immediately available to extinguish any fire.
13	Concrete curing	Curing compound run-off was detected running within a lined drainage line after light rain.	2	50 litres of concrete cure over 500 metres of a dry lined drain.	Light overnight rain prior to the setting of the concrete cure.	• Paving supervisor and crews received toolbox training and made aware of need to review forecast weather and ERSED controls that need placing prior to application.
14	Concrete curing	Curing compound effected water was detected within Basin 1880. The water within the basin was tinted white and a small amount of compound had been caught by the basin baffle boards. It is thought that this water may have been effected through flushing of the wax off the adjacent pavement following overnight rainfall.	2	About 20 litres of wax from pavement washed into a project construction sediment basin.	Flushing of the wax off the adjacent pavement following overnight rainfall.	• Some floating wax was skimmed from the basins surface. Water carts were deployed to pump the effected water from the basin • Pre-paving inspections have been organised with the construction team and environmental team including Roads and Maritime prior to each paving run through new sections of the project. The inspections incorporate assessment of environmental risks and verification of the suitability of environmental controls.

Appendix D
Monitoring

Flora and fauna

Fauna relocations, injuries and mortalities by species

No. of species	Species / common name	Number	Status
	Stage 1 – Sancrox		
Stage 1 opened to traffic on 30 November 2015. There were therefore no construction fauna interactions on Stage 1 during this reporting period.			
	Stage 2 – K2K		
1	Delicate Skink (*Lampropholis delicata*)	80	Relocated
2	Jacky Dragon (*Amphibolurus muricatus*)	2	Relocated
3	Eastern Crevice Skink (*Egernia mcpheei*)	5	Relocated
4	Red-tailed Calyptotis (*Calyptotis ruficauda*)	4	Relocated
5	Southern Leaf-tailed Gecko (*Phyllurus cornutus*)	2	Relocated
6	Eastern Bearded Dragon (*Pogona barbata*)	2	Relocated
7	Green Tree Snake (*Dendrelaphis punctulata*)	1	Relocated
8	Eastern Small-eyed Snake *(Rhinoplocephalus nigrescens)*	1	Relocated
9	Stripped Marsh Frog (*Limnodynastes peroni*)	17	Relocated
10	Red-backed Toadlet (*Pseudophryne coriacea)*	4	Relocated
11	Eastern Dwarf Tree Frog (*Litoria fallax*)	25	Relocated
12	Peron's tree frog (*Litoria peronii*)	5	Relocated
13	Graceful Tree Frog (*Litoria gracilenta*)	3	Relocated
14	Rocket Frog (*Litoria nasuta*)	6	Relocated
15	Great Barred Frog (*Mixophyes fasciolatus*	7	Relocated
16	Common Froglet (*Crinia signifera*)	17	Relocated
17	Giant Barred Frog (*Mixophyes iteratus*)	2	Relocated
18	Little Bent-wing Bat (*Miniopterus australis*)	18	Relocated
	Stage 3 – OH2Ku		
1	Giant Barred Frog (*Mixophyes iterates*)	1	Relocated

Vegetation clearing by vegetation type

Vegetation type	Total for period (hectares)	Total to date (hectares)	Remaining (hectares)
Stage 1 – Sancrox			
Moist Slopes Forest	0.	6.5468	0.00
Moist Gully Forest	0	0.036	0.00
Riparian Forest	0	0.71	0.00
Total	**0**	**7.29**	**0.0**
Stage 2 – K2K			
Moist Slopes Forest	1.22	34.36	11.06

Vegetation type	Total for period (hectares)	Total to date (hectares)	Remaining (hectares)
Riparian Forest	0.38	5.01	0.88
Dry Ridgetop Forest	0.00	14.87	3.16
Moist Floodplain Forest	1.15	8.56	0.00
Moist Gully Forest	1.51	10.25	0.04
Total	**4.26**	**73.05**	**14.94**
Stage 3 – OH2Ku			
Paperbark Swamp Forest	0	8.6636	0.8583
Moist Floodplain Forest	0	21.2363	0.0176
Dry Ridgetop Forest	0	24.9186	0.9523
Moist Slopes Forest	0	32.8946	0.4591
Moist Gully Forest	0.2693	15.8433	0.8313
Moist Floodplain closed Forest	0.0915	2.053	0.7087
Riparian Forest	0.1399	0.8176	0.2512
Swamp Mahogany Forest	0	10.1632	0.1766
Swamp Oak Forest	0	1.071	0.0393
Fresh Wetland	0	3.624	0.1938
Total	**0.50**	**121.29**	**4.49**

Air quality

Stage 1 air quality monitoring (dust)

Stage 1 Sancrox traffic arrangement works open to traffic on 30 November 2015. No air quality monitoring on Stage 1 was undertaken during this reporting period.

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	20/07/2016	19/08/16	0.6	
		19/08/16	21/09/16	3.2	
		21/09/16	21/10/16	2.2	
		21/10/216	18/11/16	3.5	
		18/11/16	19/12/16	-	Bottle broken at monitoring location
		19/12/16	20/01/17	2.6	
		Annual rolling average		1.4	
K2K 02	Mingaletta Road East	20/07/2016	19/08/16	0.6	
		19/08/16	21/09/16	2.0	
		21/09/16	21/10/16	0.3	
		21/10/216	18/11/16	0.7	
		18/11/16	19/12/16	1.0	
		19/12/16	20/01/17	0.5	
		Annual rolling average		0.6	
K2K 03	35 Old Pacific Highway	20/07/2016	19/08/16	0.8	
		19/08/16	21/09/16	2.5	
		21/09/16	21/10/16	1.8	
		21/10/216	18/11/16	2.8	
		18/11/16	19/12/16	2.8	
		19/12/16	20/01/17	2.1	
		Annual rolling average		2.9	
K2K 04	183 Old Pacific Highway	20/07/2016	19/08/16	0.7	
		19/08/16	21/09/16	1.0	
		21/09/16	21/10/16	1.3	
		21/10/216	18/11/16	1.0	
		18/11/16	19/12/16	1.8	

Site reference number	Location	Deployed	Retrieved	Total insoluble matter g/m^2/month)	Comments (where applicable)
		19/12/16	20/01/17	1.5	
		Annual rolling average		1.1	
K2K 05	8 Wharf Road	20/07/2016	19/08/16	1.7	
		19/08/16	21/09/16	2.7	
		21/09/16	21/10/16	1.6	
		21/10/216	18/11/16	1.8	
		18/11/16	19/12/16	2.5	
		19/12/16	20/01/17	1.6	
		Annual rolling average		1.9	
K2K 06a	Tipping Property	20/07/2016	19/08/16	Monitoring location changed due to approval for stockpile location at the same point. New location at Stockpile 16.	
		19/08/16	21/09/16		
		21/09/16	21/10/16		
		21/10/216	18/11/16		
		18/11/16	19/12/16		
		19/12/16	20/01/17		
		Annual rolling average		NA	
K2K 06	Stockpile 16	20/07/2016	19/08/16	1.0	
		19/08/16	21/09/16	0.5	
		21/09/16	21/10/16	0.8	
		21/10/216	18/11/16	-	Bottle broken during transport to laboratory
		18/11/16	19/12/16	3.9	
		19/12/16	20/01/17	0.3	
		Annual rolling average		1.4	
K2K 07	180 Rodeo Drive	20/07/2016	19/08/16	0.3	
		19/08/16	21/09/16	0.7	
		21/09/16	21/10/16	-	Bottle broken on delivery to laboratory
		21/10/216	18/11/16	1.8	

Site reference number	Location	Deployed	Retrieved	Total insoluble matter g/m^2/month)	Comments (where applicable)
		18/11/16	19/12/16	1.8	
		19/12/16	20/01/17	0.8	
		Annual rolling average		0.9	
K2K 08	100 Ravenswood Road	20/07/2016	19/08/16	0.5	
		19/08/16	21/09/16	0.7	
		21/09/16	21/10/16	0.7	
		21/10/216	18/11/16	1.1	
		18/11/16	19/12/16	1.7	
		19/12/16	20/01/17	0.6	
		Annual rolling average		1.0	
K2K 09	1359 Pacific Highway	20/07/2016	19/08/16	0.5	
		19/08/16	21/09/16	0.5	
		21/09/16	21/10/16	0.7	
		21/10/216	18/11/16	0.6	
		18/11/16	19/12/16	1.4	
		19/12/16	20/01/17	0.5	
		Annual rolling average		1.1	
K2K 10	722 Pacific Highway	20/07/2016	19/08/16	Removed by landholder.	
		19/08/16	21/09/16		
		21/09/16	21/10/16		
		21/10/216	18/11/16		
		18/11/16	19/12/16		
		19/12/16	20/01/17		
		Annual rolling average		NA	
K2K 10a	PB36.85	20/07/2016	19/08/16	1.1	
		19/08/16	21/09/16	1.7	
		21/09/16	21/10/16	1.2	

Site reference number	Location	Deployed	Retrieved	Total insoluble matter g/m^2/month)	Comments (where applicable)
		21/10/216	18/11/16	34.4	Bushfires in area adjacent to monitoring location. Ash component of total insoluble matter = 32.0g/m^2/month
		18/11/16	19/12/16	2.0	
		19/12/16	20/01/17	0.7	
		Annual rolling average		3.8	
K2K 11	38 Kemps Road	20/07/2016	19/08/16	0.7	
		19/08/16	21/09/16	1.7	
		21/09/16	21/10/16	3.1	
		21/10/216	18/11/16	3.3	
		18/11/16	19/12/16	1.8	
		19/12/16	20/01/17	1.1	
		Annual rolling average		1.5	
K2K 12	74 Kemps Road – CONTROL SITE	20/07/2016	19/08/16	0.8	
		19/08/16	21/09/16	4.0	
		21/09/16	21/10/16	2.7	
		21/10/216	18/11/16	**4.2**	Control location – not impacted by project works
		18/11/16	19/12/16	3.8	
		19/12/16	20/01/17	2.3	
		Annual rolling average		2.7	
K2K 14	Wharf Road House	20/07/2016	19/08/16	0.2	
		19/08/16	21/09/16	2.1	
		21/09/16	21/10/16	2.2	
		21/10/216	18/11/16	1.5	
		18/11/16	19/12/16	0.8	
		19/12/16	20/01/17	0.6	
		Annual rolling average		0.9	

Site reference number	Location	Deployed	Retrieved	Total insoluble matter g/m^2/month)	Comments (where applicable)
K2K 15	Scrubby Creek Road	20/07/2016	19/08/16	0.6	
		19/08/16	21/09/16	1.1	
		21/09/16	21/10/16	1.1	
		21/10/216	18/11/16	1.3	
		18/11/16	19/12/16	3.4	
		19/12/16	20/01/17	1.0	
		Annual rolling average		1.2	

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 17000 southbound carriageway	18/07/2016	16/08/2016	1.0	
		16/08/2016	14/09/2016	0.6	
		14/09/2016	14/10/2016	1.6	
		14/10/2016	14/11/2016	1.3	
		14/11/2016	15/12/2016	1.3	
		15/12/2016	31/01/2017	0.9	
		Annual rolling average		1.0	
DML2	Hastings River – Chainage 5500 southbound carriageway	18/07/2016	16/08/2016	1.2	
		16/08/2016	14/09/2016	0.9	
		14/09/2016	14/10/2016	2.7	
		14/10/2016	14/11/2016	1.3	
		14/11/2016	15/12/2016	1.9	
		15/12/2016	31/01/2017	1.3	
		Annual rolling average		1.7	
DML3	Floodplain – Chainage 11400 southbound carriageway at Bill Hill Road (Gauge to be relocated following clearing of the corridor if required)	18/07/2016	16/08/2016	1.9	
		16/08/2016	14/09/2016	0.5	
		14/09/2016	14/10/2016	1.3	
		14/10/2016	14/11/2016	1.8	
		14/11/2016	15/12/2016	**6.3**	High result attributed to the neighbouring tea tree farm spreading fertiliser. No exceedance in previous months.
		15/12/2016	31/01/2017	**7.7**	High result attributed to the neighbouring tea tree farm spreading fertiliser.
		Annual rolling average		1.6	
DML4	Private property Chainage 18000 northbound	18/07/2016	16/08/2016	3.4	
		16/08/2016	14/09/2016	1.0	
		14/09/2016	14/10/2016	1.6	

Site reference number	Location	Deployed	Retrieved	Total insoluble matter g/m^2/month)	Comments (where applicable)
		14/10/2016	14/11/2016	2.3	
		14/11/2016	15/12/2016	0.8	
		15/12/2016	31/01/2017	0.9	
		Annual rolling average		2.0	
DML5	State Forest Chainage 21000 southbound	18/07/2016	16/08/2016	0.7	
		16/08/2016	14/09/2016	0.3	
		14/09/2016	14/10/2016	1.2	
		14/10/2016	14/11/2016	1.4	
		14/11/2016	15/12/2016	1.8	
		15/12/2016	31/01/2017	1.2	
		Annual rolling average		1.2	

Noise and vibration monitoring

Stage 1 noise monitoring

Stage 1 Sancrox traffic arrangement works open to traffic on 30 November 2015. No noise monitoring on Stage 1 was undertaken during this reporting period.

Stage 2 noise monitoring

August 2016

Event No.	Date	Time / duration	Location	Calculated noise management level	Result ($L_{A\ eq(15\ min)}$)	Observations
1	10/08/2016	01:48pm - 15mins	NCA06-409	41-75	56.4	Dominant noise source was project bridge demolition works, specifically hammering of the concrete bridge deck. Highway noise audible intermittently.
2	15/08/2016	10:29am - 15mins	NCA09-396	44-61	60.4	Dominant noise source is project clearing and grubbing works, specifically the mulcher. Local bird noises audible intermittently over project noise.

September 2016

Event No.	Date	Time / duration	Location	Calculated noise management level	Result ($L_{A\ eq(15\ min)}$)	Observations
1	9/09/2016	6:15am - 15mins	NCA09-405	35-47	41.3	Dominant noise source was Pacific Highway traffic, with local fauna noise (mostly birds) audible intermittently. Plant and machinery in operation during monitoring included a concrete pump and agitator truck. Both were only audible when there was no passing traffic on the Highway.
2	19/09/2016	03:52pm - 15mins	NCA08-398	44-68	69.5	Dominant noise source was project earthworks. A D10 dozer, smooth drum roller and grader (all with reverse alarms) were working adjacent to monitoring location. Highway noise was audible intermittently. The minor exceedance of the criteria was due to the change in final design of the local access road and intersection. The model that informs the calculated noise management level (SoundAdvice) had not yet been updated to reflect this change in design. No complaint was received regarding the works.
3	20/09/2016	03:13pm - 15mins	NCA07-438	52-67	66.1	Dominant noise sources were a combination of the concrete batch plant and asphalt works. Heavy construction traffic on local road adjacent to monitoring location became the dominant noise source intermittently. Traffic included heavy plant, trucks, light vehicles and local vehicles. Pacific Highway traffic noise barely audible.

October 2016

Event No.	Date	Time / duration	Location	Calculated noise management level	Result ($L_{A\ eq(15\ min)}$)	Observations
1	18/10/2016	11:17am – 15 mins	NCA10-688	42-57	48.8	Dominant noise source was Pacific Highway traffic. Construction noise inaudible at monitoring location. Local traffic and fauna audible intermittently.
2	19/10/2016	2:08pm – 15 mins	NCA04-471	44-69	63.2	Dominant noise source was Pacific Highway traffic, with local traffic audible intermittently and construction noise audible intermittently. Construction vehicles using local road passed by on three occasions during monitoring.
3	20/10/2016	6:34am – 15 mins	NCA07-439	52 (SoundAdvice)	50.3	Dominant noise source was Pacific Highway traffic, with batch plant operation only audible when no traffic on highway. Local traffic audible intermittently, including traffic using off-ramp and Kundabung Road. No predicted noise management level was available for this activity. As such, the Stage 2 construction partner's SoundAdvice model was used to estimate the management level instead.
4	26/10/2016	1:45pm – 15 mins	NCA08-388	67 (SoundAdvice)	61	Dominant noise source was construction traffic using road adjacent to monitoring location to haul mulch to local property. Local traffic audible intermittently. Four local vehicles passed during monitoring period. No predicted noise management level was available for this activity. As such, the Stage 2 construction partner's SoundAdvice model was used to estimate the management level instead.

November 2016

Event No.	Date	Time / duration	Location	Calculated noise management level	Result ($L_{A\ eq(15\ min)}$)	Observations
1	14/11/2016	3:15pm – 15 mins	NCA06-409	41-75	53.1	Dominant noise source was Pacific Highway traffic. Construction noise inaudible at monitoring location. Local traffic and fauna audible intermittently.
2	14/11/2016	3:45pm – 15 mins	NCA03-466	41-60	55.7	Dominant noise source was Pacific Highway traffic. Construction noise audible intermittently.

December 2016

Event No.	Date	Time / duration	Location	Calculated noise management level	Result ($L_{A\ eq(15\ min)}$)	Observations
1	13/12/2016	5:40pm – 15 mins	NCA04-486	42-60	50	Dominant noise source was Pacific Highway traffic. Construction noise audible intermittently, including verge placer and roller. Construction and local vehicles passed by during monitoring.
2	13/12/2016	6:08pm – 15 mins	NCA05-459	45.6 (SoundAdvice)	42	Dominant noise source was Pacific Highway traffic. Construction noise audible intermittently, including verge placer and roller. Three construction vehicles passed by during monitoring. No predicted noise management level was available for this activity. As such, the Stage 2 construction partner's SoundAdvice model was used to estimate the management level instead.

January 2017

Event No.	Date	Time / duration	Location	Calculated noise management level	Result ($L_{A\ eq(15\ min)}$)	Observations
1	20/01/2017	1:50pm – 15 mins	NCA01-1028	42-60	**62.6**	Dominant noise source was new Pacific Highway traffic. Construction noise audible during monitoring included excavator with hammer, rollers and three bogies. Barking dogs were audible. Construction and local vehicles also passed by during monitoring.
2	20/01/2017	2:22pm – 15 mins	NCA03-821	41-60	59	Dominant noise source was Pacific Highway traffic. Construction noise audible intermittently, including excavator, four construction vehicles and a delivery truck. Three private vehicles also passed by during monitoring.

Stage 3 noise monitoring

August 2016

Event No.	Date	Time/Duration	Location	Calculated noise management level	Result ($L_{A\ eq(15\ min)}$)	Observations
1	29/08/2016	15mins	NCA16	58	**67**	Passing cars on Rollands Plains Road were the dominant noise source. 19 passing cars were recorded at up to 86dB(A). Traffic on the existing Pacific Highway was continuous and measured at between 55-64dB(A).
2	29/08/2016	15mins	NCA17	57	52.8	Wind rustling in the trees was continuously measured at between 45-50dB(A). Birds were also frequently recorded at between 40-53dB(A). The existing Pacific Highway was audible, but peak noise levels were indistinguishable over background noise sources. Three passing cars on Moorside Drive were recorded at up to 70dB(A). Project works were inaudible.
3	29/08/2016	15mins	NCA18	43	40.4	Birds were the dominant noise source ranging between 30 and 45dB(A). No Construction noise audible.
4	29/08/2016	15mins	NCA19	43	**47.7**	The existing Pacific Highway was the dominant noise source with passing traffic generally ranging between 50 and 55dB(A). Intermittent boom lift operations during the monitoring period were recorded at 48dB(A).
5	29/08/2016	15mins	NCA20	56	55	The existing Pacific Highway was the dominant noise source with passing traffic generally ranging between 50 and 55dB(A). Generator running from ply workers cutting was 43dB(A), Franna crane operations during lifts were up to 46dB(A). Boom lift and reversing beepers were up to 47 dB(A).
6	29/08/2016	15mins	NCA21	51	48.2	The existing Pacific Highway was the dominant noise source with passing traffic. Birds were recorded at 49dB(A). Passing cars on Bushland Drive were recorded at up to 70dB(A) . Project works were inaudible. Birds and dog barking were measured at up to 49dB(A).
7	29/08/2016	15mins	NCA22	59	52.3	The existing Pacific Highway was the dominant noise source with passing traffic generally ranging between 58 and 66dB(A). Nearby quarry operations were in

						progress using screens and crushers. Project filling saw-cutting equipment with air-compressor and small truck 53dB(A).
8	29/08/2016	15mins	NCA11	61	59.7	Birds were recorded at up to 52 dB(A). A low drone of construction machinery noise was audible, but peak noise levels were indistinguishable over background noise. The Pacific Highway was audible throughout the monitoring period. A passing truck on Cooperabung Drive was recorded at 77 dB(A) at 12:07 minutes. Sheep were audible from a nearby paddock. A reversing beeper from the project was audible between 5:45 minutes and peaked at up to 50 dB(A). A passing truck on Cooperabung Drive was recorded at 81 dB(A) at 13:40 minutes. Two passing light vehicles were recorded on Cooperabung Drive at 14:13 and were recorded at 77 and 76.5 dB(A).
9	30/08/2016	15mins	NCA12	59	**61.3**	The existing Pacific Highway was the dominant noise source with passing traffic generally ranging between 50 and 65dB(A). Passing trucks peaked at 75dB(A). A project roller was audible, but peak noise was indistinguishable over background noise levels. Birds were recorded at up to 51dB(A).
10	30/08/2016	15mins	NCA13	53	**57.8**	The Pacific Highway was the dominant noise source with noise levels ranged between 50 and 65dB(A). Passing trucks on the existing Pacific Highway were recorded at up to 67dB(A). A roller on the project was faintly audible. Birds were also recorded at up to 56dB(A) throughout the monitoring period.
11	30/08/2016	15mins	NCA14	57	**57.4**	The existing Pacific Highway was the dominant noise source which averaged between 55 and 67dB(A). Passing trucks on the Pacific Highway were recorded at up to 75dB(A). Birds were recorded at up to 53dB(A). A passing council truck on Haydons Wharf Road was recorded at 62dB(A) at 2:27 minutes. Construction (digger on Cut 15) was faintly audible, but peak noise levels were indistinguishable over background noise.
12	30/08/2016	15mins	NCA15	37	**45.8**	Wind rustling in the trees was the dominant noise source and was measured between 42-48dB(A). Birds were frequently recorded at up to 55dB(A). Waves lapping on the river bank and a nearby moored boat were also audible. Construction was inaudible.

September 2016

Event No.	Date	Time/Duration	Location	Calculated noise management level	Result ($L_{A\ eq(15\ min)}$)	Observations
1	15/09/2016	15mins	NCA18	43	42	Birds were the dominant noise source ranging between 30 and 45dB(A). No Construction noise audible.
2	15/09/2016	15mins	NCA19	43	**44.9**	The existing Pacific Highway was the dominant noise source with passing traffic generally ranging between 50 and 55dB(A). Intermittent crane operations during the monitoring period were recorded at 46dB(A).
3	15/09/2016	15mins	NCA20	56	54	The existing Pacific Highway was the dominant noise source with passing traffic generally ranging between 50 and 55dB(A). Three cranes working around the bridge sites were recorded at up to 52dB(A).
4	15/09/2016	15mins	NCA21	51	47.8	The existing Pacific Highway was the dominant noise source with passing traffic. Birds were recorded at 48dB(A). Passing cars on Bushland Drive were recorded at up to 75dB(A). Project works were inaudible. A dog barking was recorded at 47dB(A).
5	15/09/2016	15mins	NCA22	59	50.3	The existing Pacific Highway was the dominant noise source with passing traffic generally ranging between 55 and 63dB(A). Quarry activities including screens and crushers were in operation nearby.
6	27/09/2016	15mins	NCA11	61	54.1	Birds were the dominant noise source and were recorded at up to 55 dB(A) throughout the monitoring period. The Pacific Highway was audible throughout the monitoring period, trucks on the existing Pacific Highway were recorded at up to 44dB(A). A spring lamb in an adjacent paddock called throughout the monitoring period. Passing cars on Cooperabung Drive were recorded at up to 75 dB(A). Three cars passed on Cooperabung Drive over the recording period at 2, 6 and 13 minutes. A reversing beeper from the project was also faintly audible towards the end of the monitoring period. Peak noise levels from the beeper were indistinguishable over background noise.
7	27/09/2016	15mins	NCA13	53	**54.2**	The existing Pacific Highway was the dominant noise source with noise levels ranged between 49 - 55dB(A). Passing trucks on the existing Pacific Highway were recorded at between 63 and 70dB(A). Construction

						was inaudible. Birds were also recorded at up to 57dB(A) throughout the monitoring period.
8	27/09/2016	15mins	NCA15	37	**42.5**	Wind rustling in the trees was measured at up to 47dB(A). Birds were the dominant noise source and were recorded at between 40 and 50dB(A). Construction was inaudible.
9	27/09/2016	15mins	NCA16	58	**65.3**	Passing cars on Rollands Plains Road were the dominant noise source. 13 passing cars were recorded at up to 80dB(A). Traffic on the existing Pacific Highway was continuous and measured at between 55-62dB(A). Passing trucks on the existing Pacific Highway were measured at up to 68dB(A). A passing train was measured at up to 75dB(A) between 10:25 and 11:05 minutes. Birds were audible, but peak noise from birds was below background noise levels.
10	27/09/2016	15mins	NCA17	57	54.4	Birds and insects were the dominant noise sources and were recorded at between 45-55dB(A). Noise from the existing Pacific Highway was continuous and measured at between 40 and 43 dB(A). Two passing cars on Mooreside Drive were recorded at up to 76 dB(A) at 2 minutes. Project works were inaudible.
11	29/09/2016	15mins	NCA12	59	**71.9**	The existing Pacific Highway was the dominant noise source with passing traffic generally ranging between 50 and 88dB(A) including passing trucks. Birds were recorded at up to 52dB(A). Construction was inaudible.
12	29/09/2016	15mins	NCA14	57	**61.4**	The existing Pacific Highway was the dominant noise source which averaged between 50 and 65dB(A). Passing light vehicles on Haydons Wharf Road were recorded at 70dB(A). Seven light vehicles passed during the monitoring period. A reversing beeper within the project was audible at 3:50 minutes. An excavator walking was also audible over the final two minutes of monitoring. However, peak noise levels from these construction noise sources were indistinguishable over background noise.

October 2016

Event No.	Date	Time/Duration	Location	Calculated noise management level	Result ($L_{A\ eq(15\ min)}$)	Observations
1	26/10/16	15mins	NCA11	61	54.1	Birds were the dominant noise source and were recorded at up to 58 dB(A) throughout the monitoring period. The Pacific Highway was audible throughout the monitoring period, trucks on the existing Pacific Highway were recorded at up to 48dB(A). Passing cars on Cooperabung Drive were recorded at up to 75 dB(A). Three cars passed on Cooperabung Drive over the recording period. A faint humming from construction noise was also intermittently audible throughout the monitoring period. Peak noise levels from construction was indistinguishable over background noise.
2	26/10/16	15mins	NCA12	59	**68**	The existing Pacific Highway was the dominant noise source with passing traffic generally ranging between 50 and 80dB(A) including passing trucks. Construction was inaudible.
3	26/10/16	15mins	NCA13	53	**55.9**	The existing Pacific Highway was the dominant continuous noise source with noise levels ranged between 52 - 72dB(A). Birds were also recorded at up to 52dB(A) throughout the monitoring period. A reversing beeper was audible at 1:20 minutes, but peak noise was indistinguishable over background noise. A barking dog was also intermittently audible throughout the monitoring period. However, the peak noise level from barking was indistinguishable over background noise.
4	26/10/16	15mins	NCA14	57	**59.5**	The existing Pacific Highway was the dominant noise source which averaged between 55 and 72dB(A). Passing light vehicles on Haydons Wharf Road were recorded at 70dB(A). Machines operating within the project were intermittently audible throughout the monitoring period. However, the peak noise levels from machines were indistinguishable over background noise.
5	26/10/16	15mins	NCA15	37	**42**	Wind rustling in the trees was measured at up to 44dB(A). Birds were the dominant noise source and were recorded at between 40 and 55dB(A). Construction was inaudible.

6	26/10/16	15mins	NCA16	58	**67**	Passing cars on Rollands Plains Road were the dominant noise source. 14 passing cars were recorded at up to 84dB(A). Traffic on the existing Pacific Highway was continuous and measured at between 55-65dB(A). Birds were audible, but peak noise from birds was below background noise levels. Construction was inaudible.
7	26/10/16	15mins	NCA17	57	53.2	Birds and insects were the dominant noise sources and were recorded at between 45-57dB(A). Noise from the existing Pacific Highway was continuous and measured at up to 45 dB(A). Project works were inaudible.
8	26/10/16	15mins	NCA18	43	42.2	Birds were the dominant noise source ranging between 35 and 41dB(A). No construction noise audible.
9	26/10/16	15mins	NCA19	43	**53**	The existing Pacific Highway was the dominant noise source with passing traffic generally ranging between 45 and 55dB(A). Birds in a nearby tree were also noise generating ranging between 45 and 55 dB(A). The collar on a nearby dog chimed between about 10 and 12 minutes and peaked at up to 45 dB(A). Intermittent crane operations during the monitoring period were recorded at 48dB(A). Intermittent machine noise was also audible within the project alignment and peaked at up to 45dB(A).
10	26/10/16	15mins	NCA20	56	**60.9**	The existing Pacific Highway was the dominant noise source with passing traffic ranging between 50 and 62dB(A). Three trucks passed on Glen Ewan Road during the monitoring period and peaked at up to 83dB(A). Eight light vehicles passed on Glen Ewan Road and peaked at up to 63dB(A). A crane was operating, but peak noise levels from the crane were indistinguishable over background noise. Intermittent machine noise was also audible within the project alignment and peaked at up to 53dB(A).
11	26/10/16	15mins	NCA21	51	48.6	The existing Pacific Highway was the dominant noise source which was recorded at up to 50 dB(A). Birds were recorded at 51dB(A). Passing cars on Bushland Drive were recorded at up to 73dB(A). Project works were inaudible.

12	26/10/16	15mins	NCA22	59	54	The existing Pacific Highway was the dominant noise source with passing traffic generally ranging between 50 and 65dB(A). Construction was inaudible.

November 2016

Event No.	Date	Time/Duration	Location	Calculated noise management level	Result ($L_{A\ eq(15\ min)}$)	Observations
1	29/11/2016	15mins	NCA12	59	**60.9**	The existing Pacific Highway was the dominant noise source with passing traffic (including passing trucks) generally ranging between 50 and 75dB(A). A gurney used in paving activities was audible between 0 and 4:27 minutes. Noise levels from paving activities peaked at up to 48dB(A). Birds were also recorded intermittently throughout the recording period and peaked at 57dB(A) from a nearby *Cracticus torquatus* (Grey Butcherbird).
2	30/11/2016	15mins	NCA21	51	**51.8**	The existing Pacific Highway was the dominant noise source with passing traffic generally ranging between 49 and 54dB(A). Birds were recorded at 53dB(A). Passing cars on Bushland Drive were recorded up to 72dB(A). Some project works, including tipper trucks, rollers, a grader and light vehicles, were audible.

December 2016

Event No.	Date	Time/Duration	Location	Calculated noise management level	Result ($L_{A\ eq(15\ min)}$)	Observations
1	20/12/2016	15mins	NCA22	59	**60.3**	Background noise from birds and general traffic ranged between 50 - 55 dBA. Existing Highway noise from traffic ranged between 55 to 62. Peaks from scrapers for two five-second periods in 15 minutes reached 78 dBA. A car entering Cassagrain Winery disabled car space peaked at 62.5 dBA. A plane flying overhead for 20 seconds averaging 57 - 61 dBA, with a peak of 62.7 dBA.

Stage 1 vibration monitoring

Stage 1 Sancrox traffic arrangement works open to traffic on 30 November 2015. No vibration monitoring on Stage 1 was undertaken during this reporting period.

Stage 2 vibration monitoring

No vibration monitoring on Stage 2 was undertaken during this reporting period.

Stage 3 vibration monitoring

Vibration monitoring was undertaken at one receiver during the reporting period on Stage 3 in response to a vibration complaint (refer to Item 37 of Appendix B). The following table represents measurements taken against structural damage criteria in response to the complaint.

Event No.	Date	Location	Recorded vibration (mm/s)	Guideline value (mm/s)	Comments
1	22/08/2016	Receiver 363 (Cooperabung Close)	0.37	5	Monitoring undertaken during compaction of fill opposite the house using a roller.

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