



Australian Government

BUILDING OUR FUTURE



Pacific Highway upgrade

Six month report card January to June 2017

Roads and Maritime Services



Oxley Highway to Kundabung upgrade. Aerial view of the new Hastings River bridge (June 2017)

Ministerial Foreword

Minister for Infrastructure and Transport

The Australian Government, in partnership with the New South Wales Government, is pleased to present the Pacific Highway upgrade report card for January to June 2017.

The report card highlights the progress being made on one of the Government's signature investments in the nation's transport infrastructure. The upgrade, which will fully duplicate the Pacific Highway from Hexham, north of Newcastle, to the Queensland border, is powering toward its planned completion in 2020.

The Pacific Highway is a key link in the National Land Transport Network keeping the supply chain flowing along the eastern seaboard between the busy economic hubs of Sydney and Brisbane. The highway also connects numerous New South Wales north coast communities; and provides access to the spectacular tourism destinations that draw thousands of domestic and international visitors each year.

Duplicating the entire 657 kilometres of the highway will change lives and save lives. Already, annual fatalities on the highway have fallen from around 50 each year at the start of the upgrade in 1996, to less than 25 in recent years.

This is in large part due to the Australian Government's multi-billion-dollar investment in safely separating traffic through modern dual-carriageway roads, safer intersections, smoother road alignments, better bridges and other improvements.

The full upgrade of the Pacific Highway is expected to support 3,600 direct and 10,800 indirect jobs at peak employment in late 2017 and early 2018, benefitting local communities and service providers along the length of the upgrade.

New sections continue to be opened, with 14 kilometres from Kundabung to Kempsey, 11 kilometres from Halfway Creek to Glenugie and 10 kilometres from Woolgoolga to Halfway Creek the latest to reach completion. These openings have taken the total works completed to around 75 per cent.

Already, travellers are saving around 90 minutes off the Sydney to Brisbane journey compared to the mid-1990s. When complete, we expect to see a saving of two and a half hours between Hexham and the Queensland border.

The lives already being saved; the communities benefiting from safer transport connections; and improved efficiency and productivity for the freight industry make this project one of the good news stories of the Australian Government's record \$75 billion investment in infrastructure nationwide.

Great projects are successful because of great partnerships. I thank New South Wales Government and contractors for joining with us in delivering this critical piece of infrastructure that will make such a difference to so many.

Darren Chester

Minister for Infrastructure and Transport



Minister Chester with Pacific Hwy workers

Ministerial Foreword

Minister for Roads, Maritime and Freight

The Pacific Highway is more than just a road project; it is one of the biggest infrastructure upgrades NSW has ever seen.

Following the horrific bus crash in 1989, the NSW and Australian governments invested billions into the highway to improve safety and efficiency.

In the last 20 years Pacific Highway upgrades have made significant improvements to North Coast residents, substantially contributing to regional growth.

Local communities have unprecedented opportunities to benefit from Pacific Highway upgrade projects – 3700 people are expected to be directly working on upgrades next year, resulting in 9900 indirect jobs.

When completed in 2020 it will cut travel times by two hours, taking less than seven hours to travel between Newcastle and the Queensland border.

This means freight is more efficient and travellers can get to where they need to be faster. The freight industry saves a dollar each minute saved in travel.

This upgrade saves lives. Travellers are already seeing significant changes and it will be this investment our children and grand-children continue to benefit from in the future.

The Pacific Highway hits close to home, not just for the people to live along it, but the millions of Australians who use this road to travel the breadth of the country.

I often cast my mind back to the two tragic bus crashes along this road and as the Minister for Roads, Maritime and Freight and the Member of Oxley, a key community the road passes through, I'm so proud to be part of the Liberals and Nationals Government making these vital improvements.

Already fatalities along the Pacific Highway have more than halved from 50 to less than 25 in recent years. That is one more step towards zero.

The Pacific Highway is a centrepiece of the Government's investment in regional road infrastructure.

It is held as a global benchmark in innovation and is pushing the boundaries in how roads can be built, delivering a legacy not only for the North Coast of NSW but also for the whole of Australia.

The Hon. Melinda Pavey, MP

Minister for Roads, Maritime and Freight



Melinda Jane Pavey, MP

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Overview

This report provides a progress update on the Pacific Highway upgrade program for the six months to 30 June 2017.

The Pacific Highway connects Sydney and Brisbane and is a major contributor to Australia's economic activity. The road is a vital piece of the nation's infrastructure and is a key link in the National Land Transport Network.

The Australian and New South Wales governments have a shared commitment to completing the Pacific Highway upgrade by 2020.

An upgraded Pacific Highway must continue to service the needs of the travelling public and achieve transport efficiencies, while also ensuring ecological sustainability and meeting the needs of the coastal communities that live along the highway.



Bald Hill Road interchange looking north (June 2017)

2548 workers
on site

about **70%** of
highway length now
four lane divided road

161 km
of highway
being built

Status at June 2017



As of 30 June 2017, 459 kilometres of the Pacific Highway upgrade are four lane divided road. About 161 kilometres of the highway are currently being upgraded to four lane divided road with the remaining sections being prepared for work. All projects are on schedule to open to traffic by 2020.

Key project milestones achieved during the past six months

From Port Macquarie to Coffs Harbour:

- ✓ Completed all bridges, bulk earthwork and paving on Kundabung to Kempsey project
- ✓ Completed and opened to traffic local overbridges at Albert Drive, Bald Hill Road and Mattick Road on Warrell Creek to Nambucca Heads project
- ✓ Major traffic switch on Oxley Highway to Kundabung project.

From Woolgoolga to Ballina:

- ✓ Total of 7.7 million cubic metres of earthwork completed from a total of 14.3 million cubic metres for the project
- ✓ Major work started on the new bridge over the Richmond River
- ✓ Total of 125 work packages out of 129 have been tendered or awarded
- ✓ Completed building all bridges on the Halfway Creek to Glenugie project
- ✓ Completed a series of changes to meet deadline requirements for delivery by 2020.
See page 4 for more information.

Upgrade outcomes

Where are we now - at 30 June 2017?

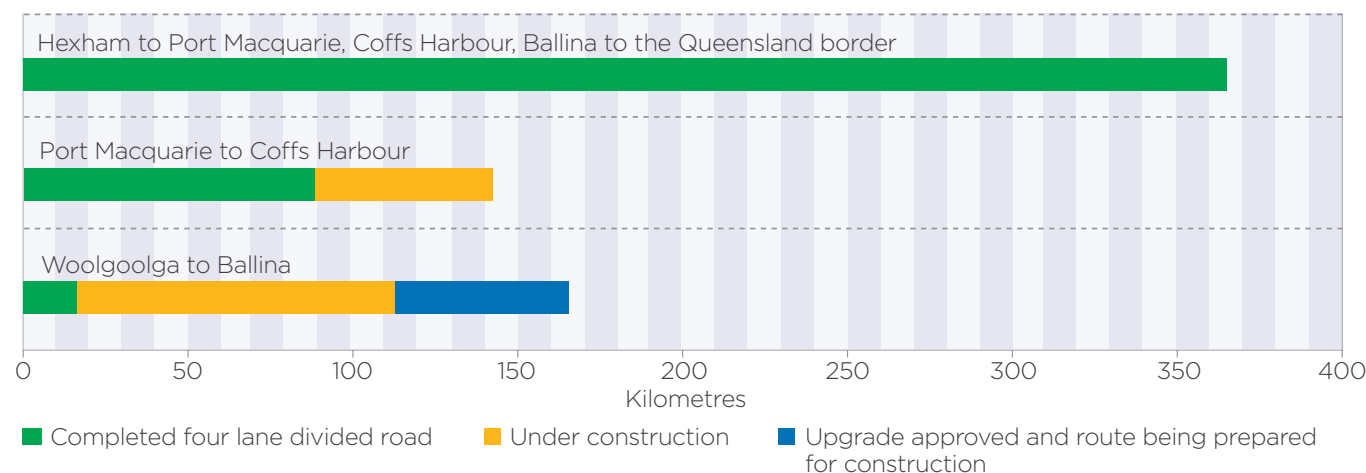
459 kilometres are four lane divided highway - about 70 per cent

161 kilometres are being built

The remaining sections of two lane highway are being prepared for major work to start by the end of 2017.

An average of 2548 people have been employed on site from January to June 2017, with about a further 200 people working across the Pacific Highway program. The peak early employment period is expected to be late 2017 and early 2018 when about 3600 workers are estimated to be employed as a result of the Pacific Highway upgrade. Roads and Maritime Services and its contractors, wherever possible, use local products and services for infrastructure construction projects. The graph to the right shows actual and predicted direct jobs. Future predictions have been estimated on the basis of 2.39 direct jobs per million dollars forecast to be spent. It is anticipated that the number of indirect jobs would be three times the number of direct jobs. This graph has changed over time to reflect packaging and procurement and revision in the schedule of work. Employment has plateaued due to the completion of the Tintenbar to Ewingsdale, Frederickton to Eungai and Nambucca Heads to Urunga projects. Employment will rise again in late 2017 as major work starts across all sections of the Woolgoolga to Ballina project.

Four lane divided road status



Direct jobs created by the Pacific Highway upgrade

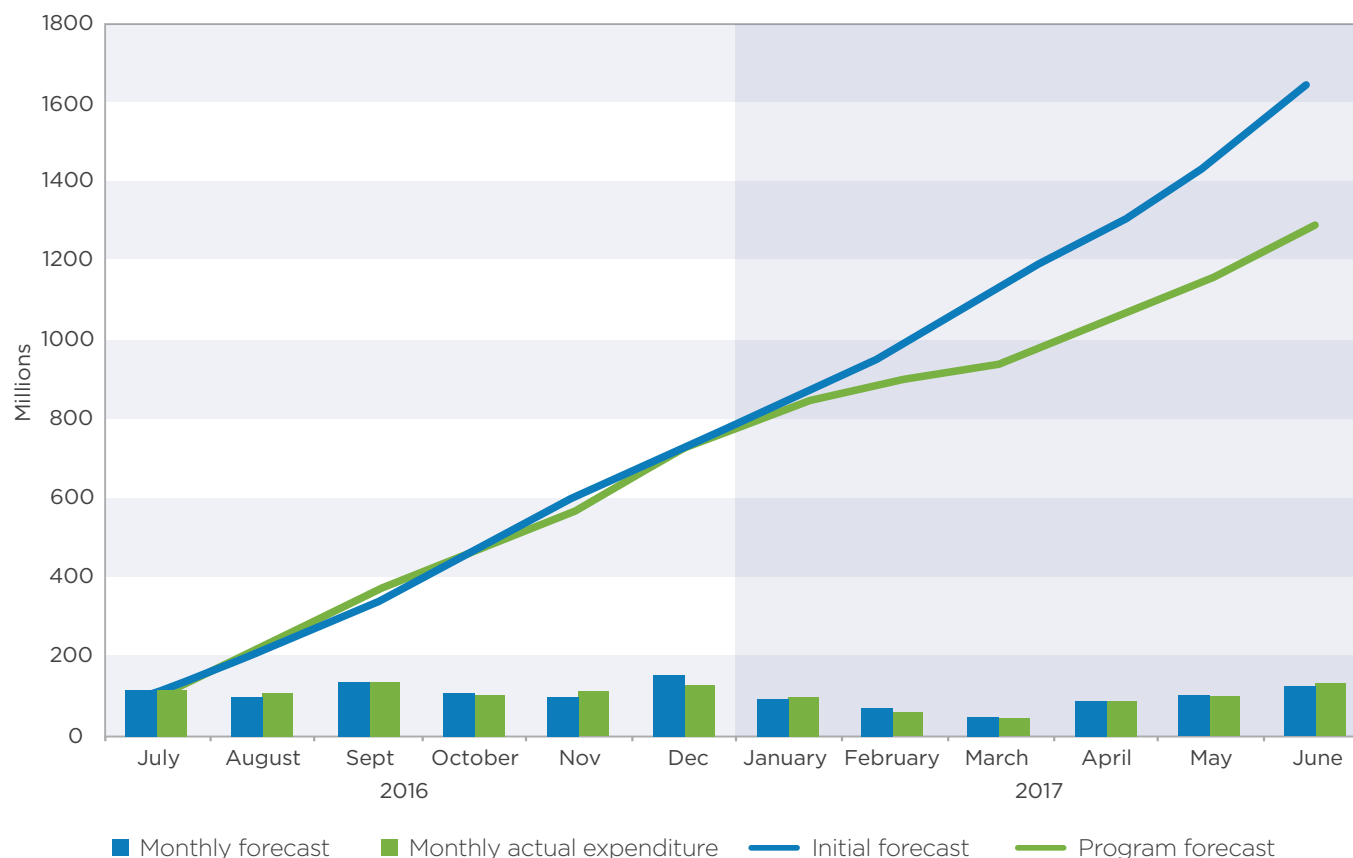


Upgrade outcomes

Expenditure update

The total expenditure for the upgrade program for the period January to June 2017 was \$561.1 million (see graph below). The graph below also shows expenditure against forecasts and generally there has been a close match between the two. Due to the complexities of the Woolgoolga to Ballina upgrade there was a delay in procurement on the master supply agreements (concrete, quarry's and pre-cast elements, bridge and main civils packages) and we did not achieve the forecast spend for 2016/17. Contracts have since been awarded for these packages.

Pacific Highway program expenditure by month – July 2016 to June 2017



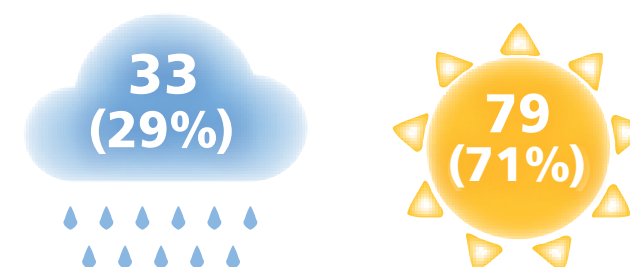
Wet weather

Weather patterns in the period January to June 2017 were relatively dry, however a significant weather event occurred in March 2017, which was the result of the combination of ex tropical cyclone Debbie and an east coast low.

During the period on average, 33 days were lost across the upgrade projects to weather events, compared to 22 days in the preceding six months.

Work on the Woolgoolga to Ballina upgrade between Glenugie and Maclean was most adversely affected by rain with about 40 per cent of available working days lost to wet weather. During the March weather event, about 73 per cent of work days were lost on site because of the rain and saturated ground conditions.

Average work days - January to December 2017 from 121 available working days*



* based on average number of work days across all projects under construction

Upgrade outcomes

Crashes

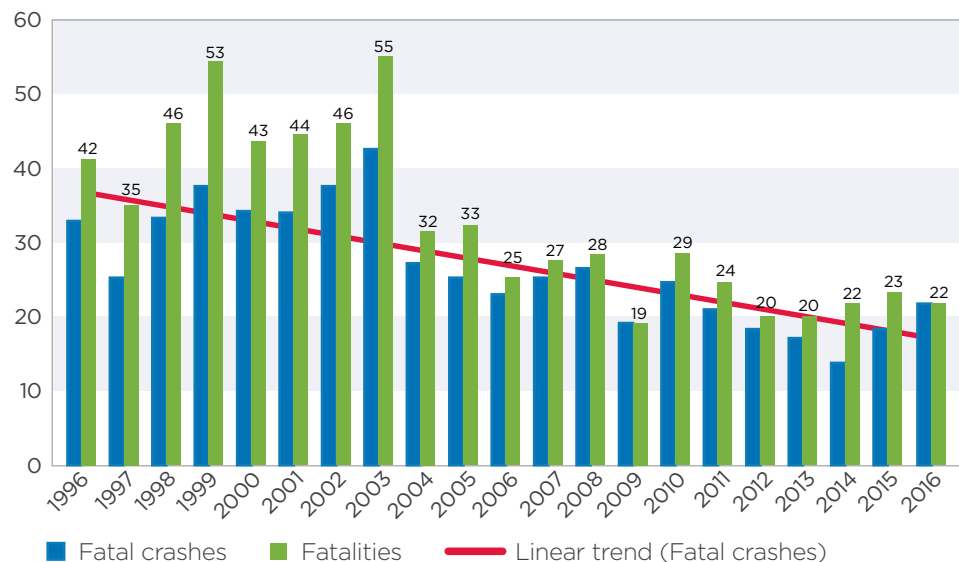
Fatal crashes have halved, down from around 50 each year to less than 25 in recent years.

In 2016, 22 people died in 22 fatal crashes. This is comparable with the previous five year average of 19 fatal crashes and 23 fatalities. Preliminary data indicates that there have been six fatal crashes and fatalities in the period January to June 2017.

Travel time

Since the start of the Pacific Highway upgrade program in the mid-1990s, travel time between Hexham and the Queensland border has been tracked. In 2015 and 2016, Google travel time data was used instead of the manual method used in the past, almost eliminating work health and safety risks previously associated with collecting the data. Google travel time data is relatively easy to collect, analyse, and is reliable. It is based on speed readings collected from large numbers of individual speed readings along a particular route.

Fatal crashes and fatalities each year

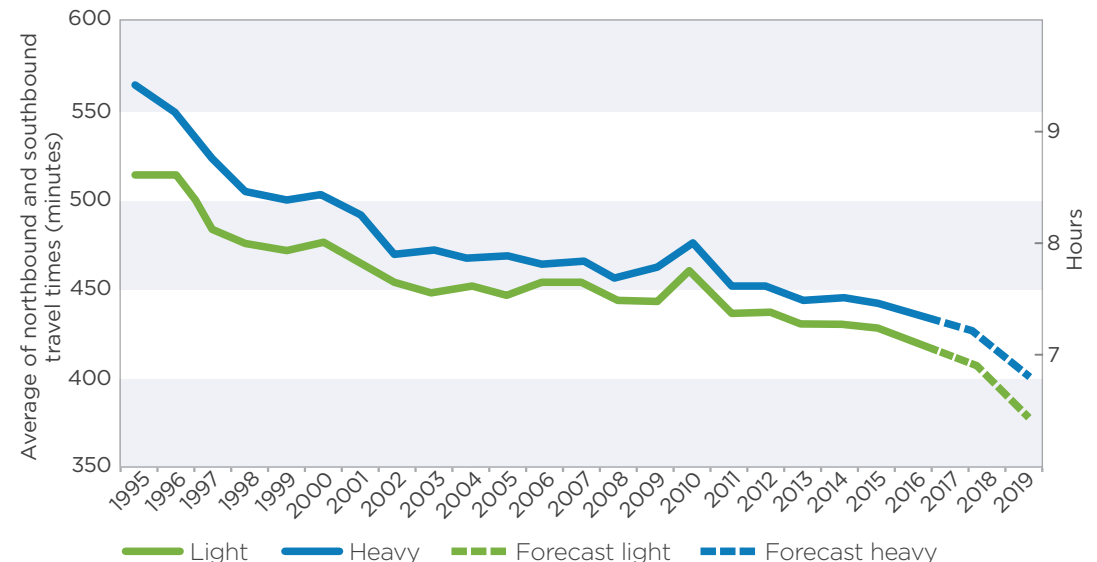


Annual travel time surveys are conducted at the end of each year using the same start and end points to ensure the results can be accurately compared. Since the last six month report card, no new projects have been opened to traffic.

Motorists travelling the length of the Pacific Highway between Hexham and the Queensland border are already saving about an hour and three-quarters in travel time. When complete, the upgrade will cut travel times between Hexham and the Queensland border by between two and a quarter and two and half hours.

It should be noted that travel time on the Pacific Highway is not only based on the amount of traffic on the highway and weather, but can be affected by new speed limits in place on particular sections of the highway, completed since travel time surveys began in 1995.

Travel time trends on the Pacific Highway, Hexham to Queensland border (adjusted for work site delays)



Community

A snapshot of community consultation carried out for the Pacific Highway upgrade in the past six months:

More than 1000 face to face meetings

Distributed 217 notifications and project updates to about 29,900 householders/people

Managed more than 145 media releases and inquiries

Reached over 184,300 people with 32 social media posts.



Facebook post: 'How many trucks does it take to move a mountain? June 1, 2017'

Facebook: How many trucks does it take to move a mountain?

The Pacific Highway project reported its most successful post on the Roads and Maritime Facebook page in June 2017.

The post commented on the Woolgoolga to Halfway Creek project having one of the largest cuttings on the Pacific Highway.

The post received 760 likes, 80 comments and was organically shared 222 times resulting in the highest organic reach of 67,184* of any post on the Roads and Maritime Facebook page.

The Dirty Creek Range cutting is about 48 metres deep, and with a fleet of excavators, scrapers and haul trucks, about 1.2 million cubic metres of earth and rock is being removed and reused across the project. Building the new highway through the mountain range increases transport efficiency and safety.

Future posts will provide ongoing project updates as construction continues along the Pacific Highway. You can find us on Facebook as NSW Roads.

New Pacific Highway interactive map for customers

A new interactive map has been launched to keep the community updated about current and completed projects along the Pacific Highway between Sydney and Brisbane.

The map is useful for anyone travelling between Hexham and the Queensland border wanting to know where work is being carried out.

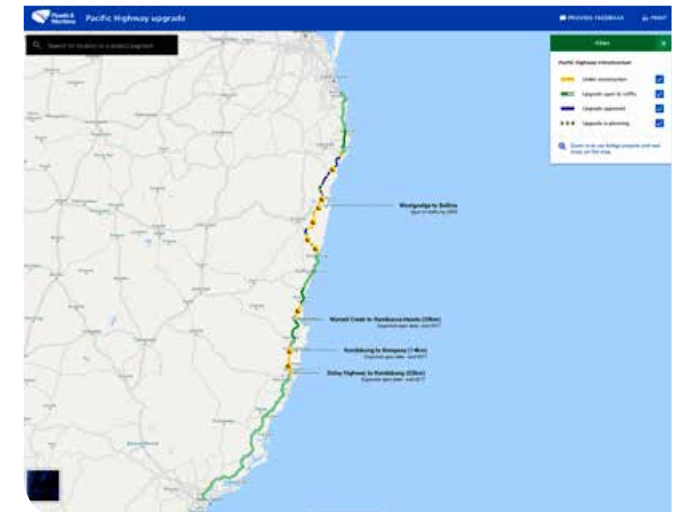
* as at June 30, 2017

It also shows where rest stops and service stations are located so motorists can better plan their trip and where they can expect to be driving on four lane divided road.

People living in nearby communities can view this map and find out what the upgrade involves and when work is expected to be completed.

The map is designed to be user friendly on hand held devices like mobile phones and tablets as well as desktop computers so people can search by location.

The interactive map is available by visiting the Roads and Maritime website at: www.rms.nsw.gov.au/projects/pacific-highway/index.html.



The new interactive map

Aboriginal engagement



Workers on the Woolgoolga to Ballina project

The updated NSW Government's Aboriginal Participation in Construction (APiC)* policy introduced a requirement for 1.5 per cent of a project's spend to be directed towards Aboriginal participation. This applies to contracts awarded from July 2016 and includes the section of the Woolgoolga to Ballina upgrade between Glenugie and Ballina. The Pacific Highway upgrade has plans in place for all of its construction projects to encourage Aboriginal employment opportunities, including apprenticeship and traineeship programs. For the first six months in 2017 almost 10 per cent of people employed on the Pacific Highway upgrade projects were Aboriginal.

Aboriginal participation initiatives

The Pacific Highway Upgrade Program has always had a strong focus on increasing the direct employment of Aboriginal workers on construction sites. A range of different options are being used on the Woolgoolga to Ballina upgrade to achieve the 1.5 per cent spend including direct employment and engaging with qualified Aboriginal businesses through NSW procurement processes, as well other biodiversity, environmental management and design initiatives.

From April to May 2017, the Aboriginal Participation Program (APP) Careers Roadshow travelled to Grafton, Maclean, Ballina, Woodburn, Yarrowarra, Casino and Lismore. The careers roadshow gave local Aboriginal people the ability to discuss employment opportunities and training options for the Woolgoolga to Ballina project. The seven sessions were a success, with 274 participants attending the roadshow.

Each session had representatives from education providers, recruitment agencies, construction contractors, and Pacific Complete available to discuss the work activities on site, types of employment available, work hours, training and support options. Experiences and knowledge of the construction industry were also shared and how to get involved were key discussion points.

Visitors were positive about the experience and many said they had been waiting for a forum where they could get the chance to ask questions in person. This was reflected in the feedback responses where 119 were received with 112 participants rating the sessions with a four + star rating (out of five) in terms of being useful.

The Woolgoolga to Ballina project team support the Aboriginal Participation in Construction initiative. Employment participation is planned to continue during 2017 and beyond.



on average
233 Aboriginal workers
on site per month

* The Aboriginal Participation in Construction (APiC) policy is an initiative from the NSW government to support greater participation by Aboriginal people in government construction projects across NSW.

Workplace health and safety

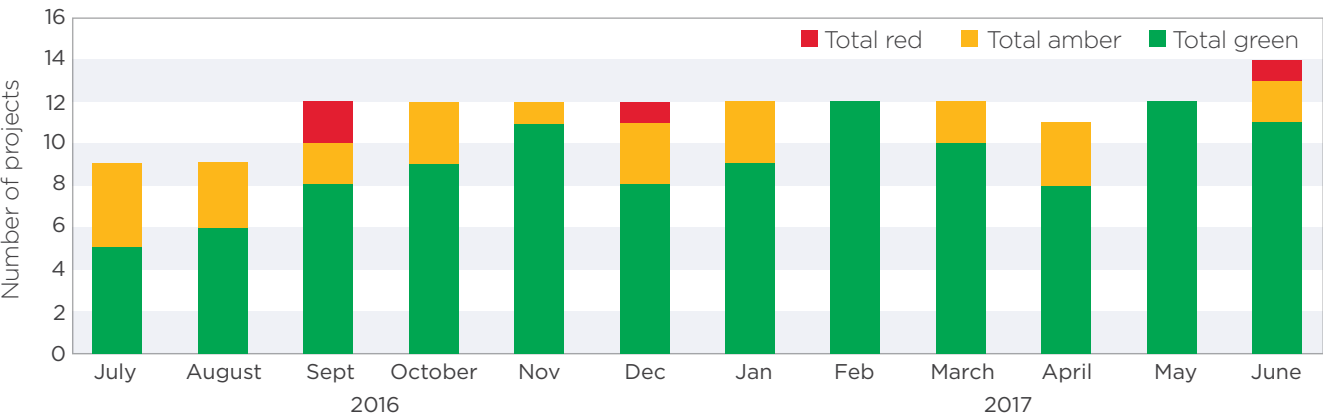
Safety is a core value for Roads and Maritime and its contract partners. We are focused on the safety of all road users and our workers.

As the agency responsible for enabling safe and efficient journeys throughout NSW, Roads and Maritime has a moral, legal and shared duty to ensure the health and safety of all our workers and others who may be affected by our activities. We consult and collaborate with our industry partners to eliminate risks and put safety first across the Pacific Highway upgrade.

Managing risk and sharing knowledge

Traffic Light results reflect performance against Lead (positive activities) and Lag (outcome) indicators. Green results reflect all indicators meet requirements. In the period January to June 2017 85 per cent of results were rated green. During the six month period 114 incidents were reported, a decrease of 8 per cent

Figure 1: Work health and safety traffic light status (comparing lead and lag indicators) January 2017 to June 2017



since July to December 2016. Workplace and worksite related incidents were the biggest safety risk for all Pacific Highway project sites (Figure 2). Incidents in this category totalled 29 per cent and include incomplete documentation or exclusion zones not in place.

Incidents involving large machinery and equipment continue to be a safety risk with 26 per cent of incidents being reported. Reported number of injuries totalled 14 during the period, a decrease of 41 per cent since July to December 2016.

Slip/Trip/Fall was the main cause of injury with 29 per cent and manual handling with 21 per cent of cases (Figure 3). Monitoring and inspection of sites to identify hazards and reduce risks associated with slip, trips and falls and manual handling remain a focus for all projects.

Figure 2: Reported incidents by category January to June 2017

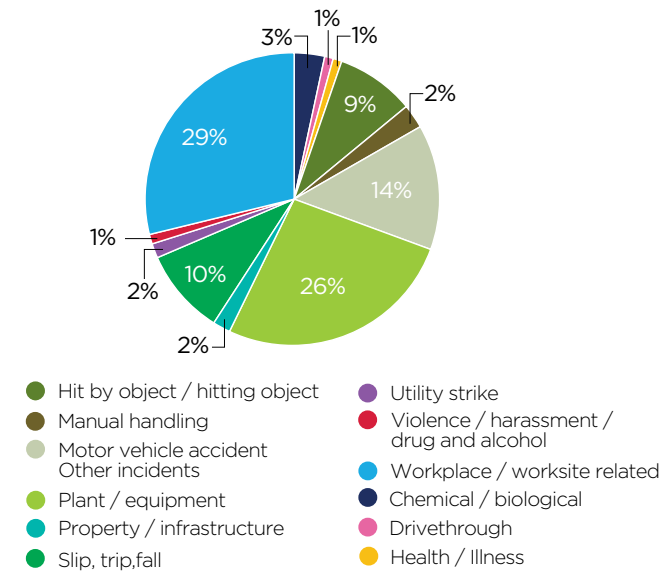
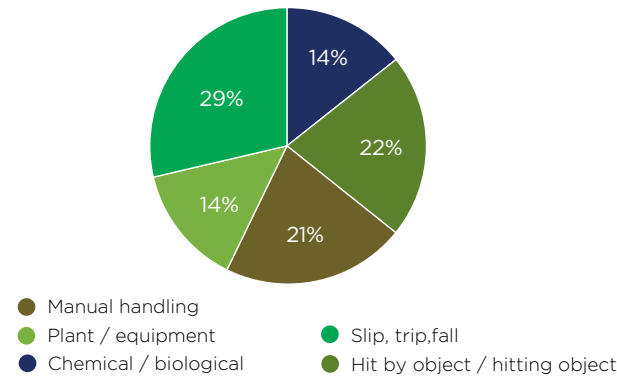


Figure 3: Reported injuries January to June 2017



Safety initiatives on the Pacific Highway upgrade

Separate Yourself

Safety is a core agency value and project teams are continually trialling new initiatives to improve safety across the worksites.

Currently a trial is underway across Pacific Highway work sites to have consistent approaches and controls around delineation and signage.

The 'Separate Yourself' trial program aims to give each worksite on the Pacific Highway a similar look and feel to reduce potential confusion for a person unfamiliar with a site, allowing them to navigate their way safely onto and through a worksite based solely on the controls on the ground.



The Project Office and industry have worked closely together on nine risk areas to trial including entrance signage, site risk information and delineation of paths of travel for vehicles.

The risk areas and controls have been agreed to by industry and endorsed at a SafeR forum, between Roads and Maritime and contractors, in December last year.

Monitoring the application of these standards will be completed by principal contractors and Roads and Maritime Work Health and Safety partners. It is expected hazards and near misses reporting will increase due to increased awareness of the standards, while total frequency and severity of occurrences will decrease due to increased separation.

Woolgoolga to Halfway Creek Contractor: OHL York joint venture

Setting the Golden Rules

After observing inconsistencies in site safety compliance across project sites, contractor OHL York joint venture stopped work for all haulage operators and management to discuss safety, site procedures and risk treatments. Due to varied understandings of site and risk treatments OHL York joint venture developed a haulage specific, one page set of 'Golden Rules' to be kept in all haulage vehicles.

OHL York joint venture has also implemented a process to monitor, review and audit ongoing operations. So far there has been a noticeable change in haulage operator's behaviour and compliance with the Golden Rules.

The Golden Rules

- Keep five metres away from truck in front when parked ready to clean the tailgate
- Don't put yourself between the tailgate and truck body when cleaning the gate
- Always engage grain locks when loaded with concrete
- Always ensure tailgate locks are engaged with travelling on the highway
- Speed limit when passing workers on the ground
- Empty trucks to Give Way to loaded concrete trucks when travelling through site
- Positive UHF communication when passing mobile plant, approaching traffic control and when call up signage in place. Use correct UHF channel
- Maximum speed limit onsite, drive to condition
- Obey all site signage
- Never talk or text on mobile phone when driving through site or on the highway
- Turn the truck off and give the keys to the concrete testers when load being tested.

Environment

Koala food habitat

We have committed to replanting 130 hectares of previously cleared land with local koala food trees for the Woolgoolga to Ballina project, between Wardell and Blackwall Range. About 50,000 food trees have been planted by project teams with another 40,000 food trees to be planted this year. The revegetation strategy is part of the Koala Management Plan to minimise impact to koalas as part of the highway upgrade. The revegetation strategy will:

- provide a new habitat for local koalas and compensate for habitat lost during the clearing and construction process
- improve habitat connectivity on both sides of the highway
- guide koalas to use safer crossing structures to pass under the road.

The koala food trees are being planted now to ensure they are well developed in time for the Pacific Highway's planned completion in 2020. We are also building dedicated fauna crossings, connectivity structures and fauna exclusion fencing to help the Wardell koala population to grow.



56% of food trees
have been **planted**



90,000 koala food trees to be planted near Wardell

Koala detection dogs



Jet the koala detection dog helping to locate koala activity during a pre-clearing survey

Koala detection dogs are being used for pre-clearing surveys on the Woolgoolga to Ballina project from Broadwater to Coolgardie Road, near Wardell. Highly specialised koala detection dogs and their handlers are a key strategy outlined in the Koala Management Plan to assist ecologists to protect koalas during the clearing process. A dog is able to detect a scent 1000 times better than humans and cover more land more efficiently which makes them ideal to find koala activity in the project area.

A koala was recently detected at Broadwater during pre-clearing surveys when Jet the koala detection dog identified fresh koala droppings near a feed tree. Jet is trained to sit near the tree to help his handler find the koala. When a koala is located a buffer zone is established around the tree to allow them to safely move out of the area.

Woolgoolga to Ballina connectivity strategy approval

The Woolgoolga to Ballina Connectivity Strategy has been approved by the NSW Department of Planning and Environment, and Australian Department of Environment and Energy.

The NSW North Coast bioregion contains the greatest biological diversity in NSW and also contains the largest number of threatened species. Fauna connectivity is an important, long term, environmental strategy that provides animals with structures to pass under or over the Pacific Highway so that their habitats remain connected on each side.

The strategy sets out mitigation measures to manage the project's impact on key threatened and other animal species as part of our overall biodiversity mitigation framework for the project.

The strategy is the result of nearly three years of collaborative consultation between government agencies and stakeholders throughout the project development, extensive ecological surveys, and detailed design phase of the project to inform the approved wildlife connectivity solutions.

Key wildlife crossings will include bridges, dedicated fauna culverts, fencing, widened medians, and aerial crossings along this 155 kilometre section. There will be around 133 dedicated fauna crossings built from Woolgoolga to Ballina.

We are committed to the ongoing safe movement of local wildlife under or over the new highway now and in the future.

Animal monitoring

There have been a number of monitoring programs to record and report on the take-up and use of fauna crossings and nest boxes over the past six months.

Project ecologists have been monitoring the fauna crossings, including glider poles, installed on the Frederickton to Eungai Pacific Highway upgrade. Sugar and feathertail gliders are also regularly using the glider poles, with a surprise visit by a brush-tailed phascogale. Solar-powered cameras will be installed next to monitor the aerial crossings on the Kundabung to Kempsey section of the highway upgrade.

Reptiles, echidna, wallabies, bandicoots, and even the threatened Brush-tailed Phascogale have all been recorded by camera trap monitoring technology using the dedicated fauna underpasses on the project.

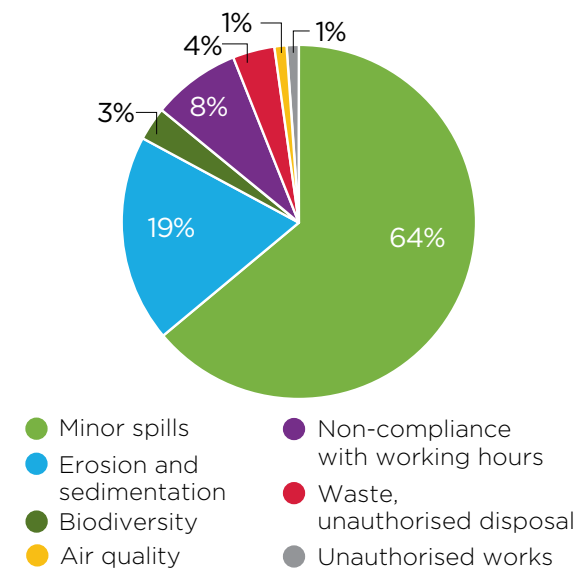
Quick look at the past six months - Woolgoolga to Ballina project:

- Continued installing temporary and permanent koala and fauna fencing
- Started the koala predator control program near Wardell
- Consulted with Ballina Shire Council to decide locations for koala warning and vehicle activated signs
- Started phased resourced reduction and koala monitoring near Wardell
- Provided tree root balls to National Parks and Wildlife Services and Landcare organisations for riverbank stabilisation and rehabilitation work
- Urban Design Landscape Management Plan went on exhibition for Glenugie to Ballina sections.



Sugar gliders in a nest box

Environmental incidents recorded January to June 2017



Traffic management

Traffic management

The safety of our employees and customers is our number one priority and, as an agency, we pride ourselves on being at the forefront of road safety innovation. On the Pacific Highway upgrade project we have key initiatives in place to improve safety, traffic management and road users' journey experience by using yellow lines, electronic speed signs, improved construction methods, radar activated speed signs, bluetooth travel time monitoring and Roads and Maritime Services 'Q' system (road performance).

Yellow line marking trial

In 2016 a cross section of Roads and Maritime and industry partners participated in *Working Near Traffic Collaboration workshops* to consider a number of initiatives for managing road safety risks during construction. The Pacific Highway upgrade team and Pacific Complete also conducted a series of *Traveller Experience workshops* to see how the safety and travel time of journeys through worksites could be improved.

This has resulted in a 'yellow line' safety trial which is currently underway on the 155 kilometre Woolgoolga to Ballina section of the Pacific Highway upgrade. Yellow lines will replace white lines at a number of temporary work zones near the existing highway to provide better guidance through work zones and raise awareness of changed conditions.

Yellow lines are in place near the Harwood Bridge / Yamba turn off to help motorists identify changes and reduce risk in the project area.



Yellow line marking trial on the Pacific Highway between Maclean and the Harwood Bridge

Photos, dashcam footage and a survey will be used to understand if the yellow markings have encouraged motorists to more safely and easily drive through work zones.

Respondents to the customer survey have so far told us:

- yellow lines make drivers more aware of work zones (70 per cent respondents)
- yellow line marking will improve driver and worker safety (80 per cent respondents).

More improvements in road safety and traffic management

Changes to construction methods

We have significantly improved road safety by making major changes to construction methods used to build the new Pacific Highway. This includes greater separation on vehicular traffic, wider shoulders, breakdown and enforcement bays and providing runout and recovery areas.

New Traffic Control Room

A Traffic Control Room has been established in the Grafton Regional Office to better coordinate planned roadworks and maintenance as well as manage unplanned incidents in the northern region. Management teams from Pacific Highway Program office, Roads and Maritime Traffic Operations and Pacific Complete Traffic Management work together in the traffic control room to allow more timely and effective communication in planning and response to conditions in the road corridor. The aim is to minimise overall travel times, respond in a timely and coordinated way when incidents occur and reduce delays due to work or traffic incidents.

Remotely changing variable speed limit signs

Roads and Maritime is applying existing technology to construction sites on the Pacific Highway upgrade to increase safety, manage the traffic network and improve road users' journey experience. This will allow electronic

variable speed limit signs (VSLS) to be adjusted remotely by operators rather than entering the roadway to change speed limit signs. By taking this approach, traffic control workers will experience reduced exposure to highway traffic.

The speed limit displayed on the VSLS will be managed under road occupancy licenses from Roads and Maritime and changed at times designated by onsite traffic controllers. In the event that the signs fail or lose power, a "black out" sign, located at the start of the section, will indicate a default speed limit of 80 km/h.

Road users will also benefit from the reduced time it will take to lower or raise speed limits to match road conditions and when there is a traffic incident or roadwork.

The signs will first be used on the Woolgoolga to Ballina project, just south of Broadwater. It will involve 24 trailer mounted VSLS signs which will be rolled out in stages from late August to mid September 2017.

The most common complaints received from customers about temporary roadwork speed zones are the:

- use of lower speed zones when there is no apparent change in road conditions
- use of lower speed zones when work sites are not active, and
- lack of consistency of the speed zoning.



A variable speed limit sign

Port Macquarie to Coffs Harbour overview



The Australian and NSW governments are investing **\$3.3 billion** to upgrade 105 kilometres which will complete the Pacific Highway upgrade to four lane divided road between Port Macquarie and Coffs Harbour. The remaining 57 kilometres still to be upgraded is well advanced.

There were no projects open to traffic during the period. The remaining three projects will progressively

open to traffic throughout late 2017 and early 2018, weather permitting. The Coffs Harbour bypass is currently in its planning stages and does not form part of the 2020 completion date or the current funding for the Pacific Highway upgrade.

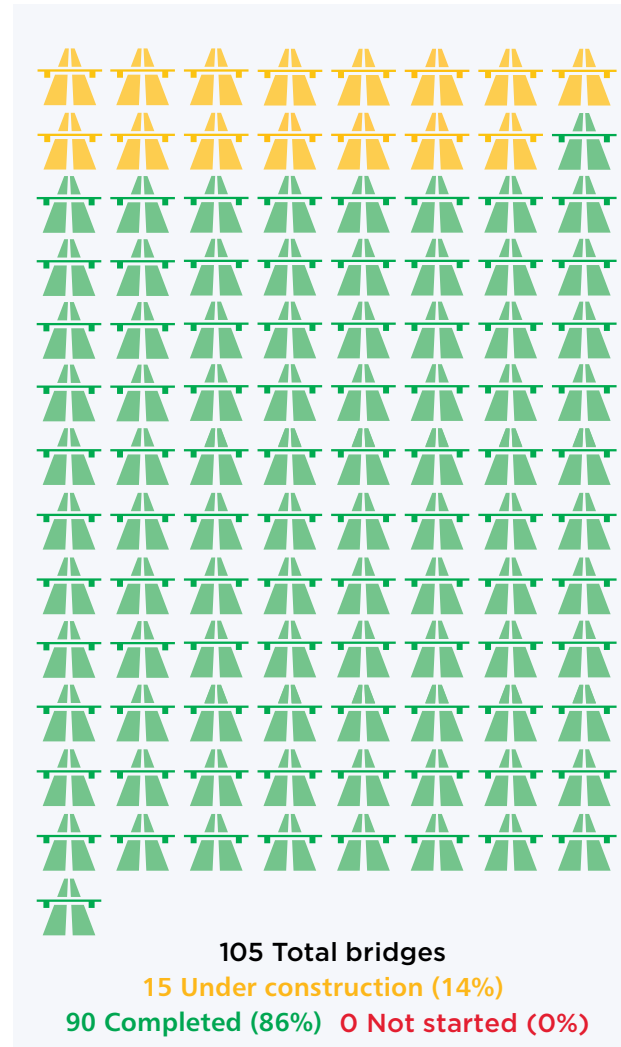
The summaries on the following pages outline progress in completing this section of the Pacific Highway upgrade, including key building activities.



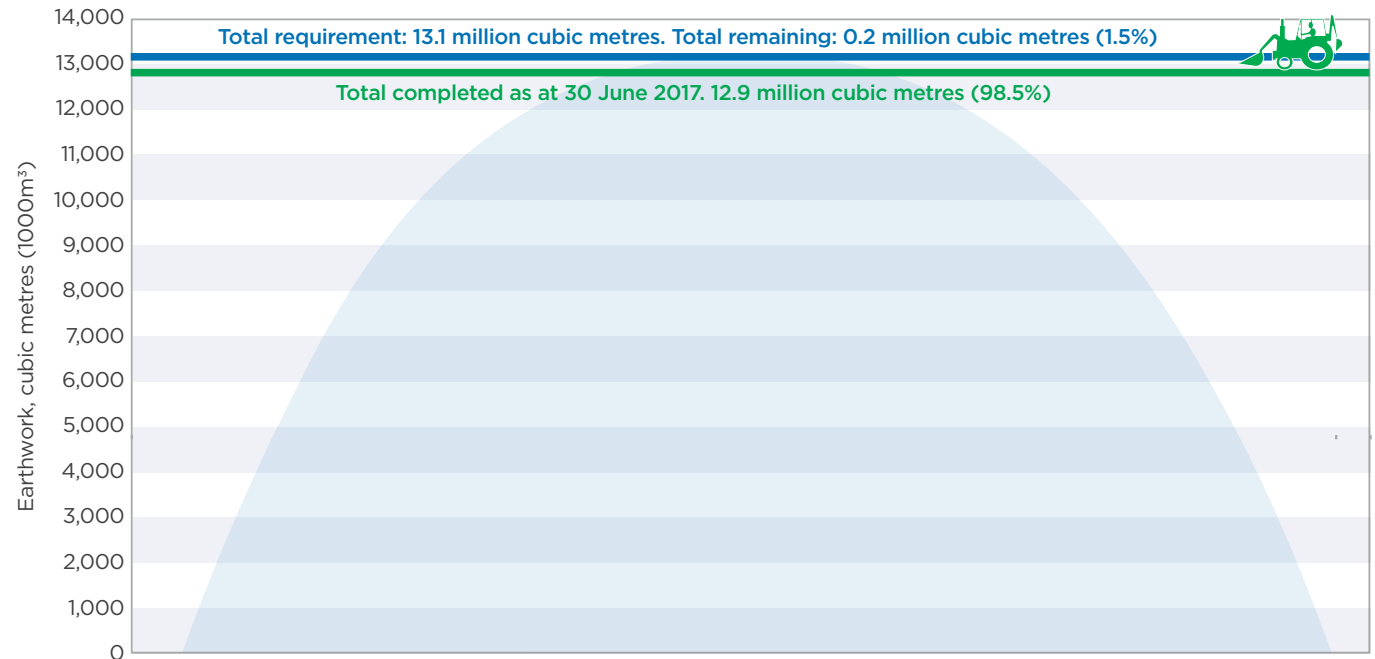
Aerial view of the new bridge over the Nambucca River at Macksville (June 2017)

Port Macquarie to Coffs Harbour overview

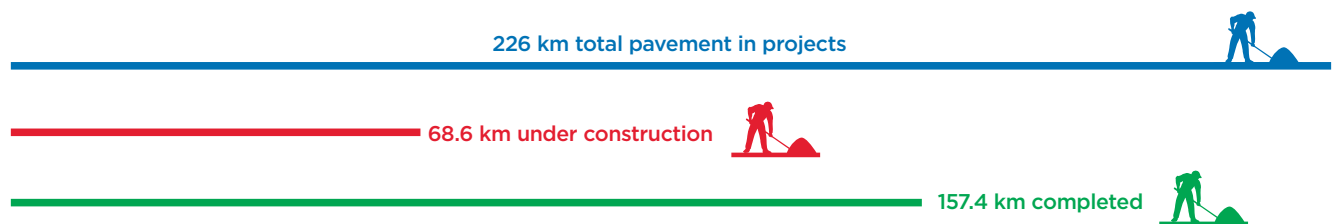
Bridges



Earthwork



Road surface (road carriageway kilometres)



Projects being built

Project snapshot

Contractors: Lendlease

Form of contract: Design and build

Average workers on site during the past six months: 392 workers per month

Average pieces of large machinery on site during the past six months: 106 pieces of machinery per month

Start date of major construction: October 2014

Completion date: 2017 (weather permitting)

Project value: \$820 million

Oxley Highway to Kundabung

The Oxley Highway to Kundabung project is the southern section of the Oxley Highway to Kempsey upgrade, which was approved by the NSW Minister for Planning and Infrastructure in 2012 and the Federal Department of the Environment in January 2014.

The project is jointly funded by the Australian and NSW governments. It involves building 23 kilometres of four lane divided road, including bridges over the Hastings and Wilson rivers.

25 days were lost to wet weather in the past six months.

January to June 2017, work progress:

- ✓ finished stage two controlled blasting work at Cooperabung cutting
- ✓ completed asphalt paving work on the Wilson River floodplain, except for the final wearing coarse layer
- ✓ completed stage two earthwork south of Fernbank Creek and earthwork near Barrys Creek

- ✓ traffic moved onto completed northbound carriageway in the Cooperabung Range so southbound lanes can be built
- ✓ continued mainline concrete paving
- ✓ completed the new Hastings River bridge.

July to December 2017, expected work progress: weather permitting

- complete all bridges on the project
- complete pavement and open Oxley Highway to Haydons Wharf Road section
- complete earthwork between Haydons Wharf Road and Barrys Creek.

Community issues:

- continued at-house noise treatments
- ongoing consultation with directly impacted landowners about property adjustments.


Environmental issues:

- ongoing ecological monitoring.



 on average
392 workers
on site per month

 on average **106**
pieces of large
machinery on site

 about
83%
complete



Aerial view of the new bridge over the Wilson River as part of the Oxley Highway to Kundabung upgrade (June 2017)

Projects being built

Project snapshot

Contractors: McConnell Dowell-OHL joint venture

Form of contract: Build only

Average workers on site during the past six months: 167 workers per month

Average pieces of large machinery on site during the past six months: 83 pieces of machinery per month

Start date of major construction: November 2014

Completion date: 2017 (weather permitting)

Project value: \$230 million

Kundabung to Kempsey

The Kundabung to Kempsey project is the northern section of the Oxley Highway to Kempsey upgrade, which was approved by the NSW Minister for Planning and Infrastructure in 2012 and the Federal Department of the Environment in January 2014.

The project is jointly funded by the Australian and NSW governments. It involves building 14 kilometres of four lane divided road, including a new interchange at Kundabung and two new rest areas.

42 days were lost to wet weather in the past six months.

January to June 2017, work progress:

- ✓ completed all nine bridges
- ✓ completed all bulk earthwork
- ✓ prepared for next traffic switch onto northbound carriageway.

July to December 2017, expected work progress: weather permitting

- complete all concrete paving
- complete the new heavy vehicle inspection bay
- complete construction of the new Barrys Creek rest areas
- complete landscaping, fencing and finishing work on the new main highway alignment
- complete work on the new northbound carriageway
- complete the project and progressively open Kundabung to Kempsey section to traffic.

Community issues:

- scoping for at-house noise treatments continued and building work on some residences continued
- ongoing consultation about property adjustments
- consultation with residents about temporary traffic and access changes.


Environmental issues:

- Ongoing ecological monitoring.



 on average
167 workers
on site per month

 on average **83**
pieces of large
machinery on site

 about
86%
complete



View looking south over Barrys Creek rest Areas on the Kundabung to Kempsey project (June 2017)



View looking over Kundabung Interchange on the Kundabung to Kempsey project (June 2017)

Projects being built

Project snapshot

Contractors: Pacifico (Acciona Ferroviaria Joint Venture)

Form of contract: Design and build

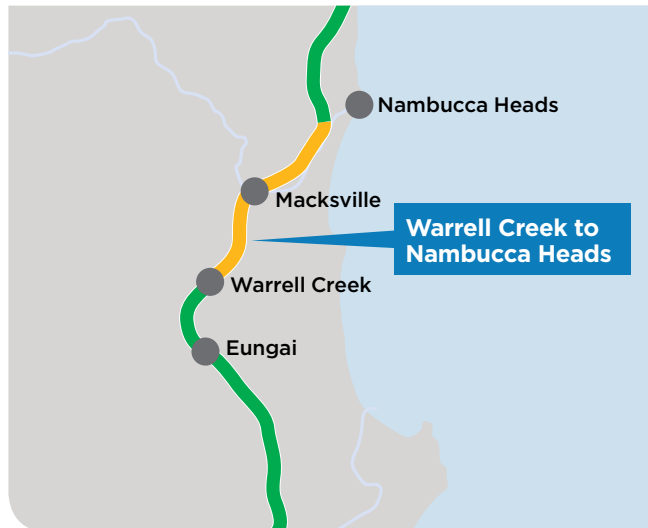
Average workers on site during the past six months: 337

Average pieces of large machinery on site during the past six months: 147

Start date of major construction: December 2014

Completion date: Macksville bypass open by Christmas; remainder progressively open early 2018 (weather permitting)

Project value: \$830 million



Warrell Creek to Nambucca Heads

The Warrell Creek to Nambucca Heads project is the second stage of the Warrell Creek to Urunga upgrade, which was approved by the Minister for Planning and Infrastructure in 2011. The Federal Department of the Environment approved this upgrade in December 2014.

The project is jointly funded by the Australian and NSW governments.

47.5 days were lost to wet weather in the past six months.

January to June 2017, work progress:

- ✓ completed detailed design
- ✓ completed, and opened to traffic, local road overbridges at Albert Drive, Bald Hill Road and Mattick Road
- ✓ continued work for the North Coast railway underpass
- ✓ continued placement of bridge girders.

July to December 2017, expected work progress: weather permitting

- complete bulk earthwork, drainage and paving north of Scotts Head Road
- complete Lower Warrell Creek, Gumma floodplain and Nambucca River bridges
- open Cockburns Lane, Rosewood Road, Scotts Head Road quarry, Old Coast Road south and Old Coast Road north bridges to traffic
- open Macksville bypass to traffic
- finishing work will continue into the first quarter of 2018.

Community issues:

- ongoing consultation with affected residents on local dust, noise and road issues
- scoping for at-house noise treatments continued and building work on some residences continued
- investigate flood modelling for Browns Crossing Road.

Environmental issues:

- ongoing ecological monitoring including flying-foxes, nest and bat boxes.

 on average **337** workers on site per month

 on average **147** pieces of large machinery on site

 about **80%** complete

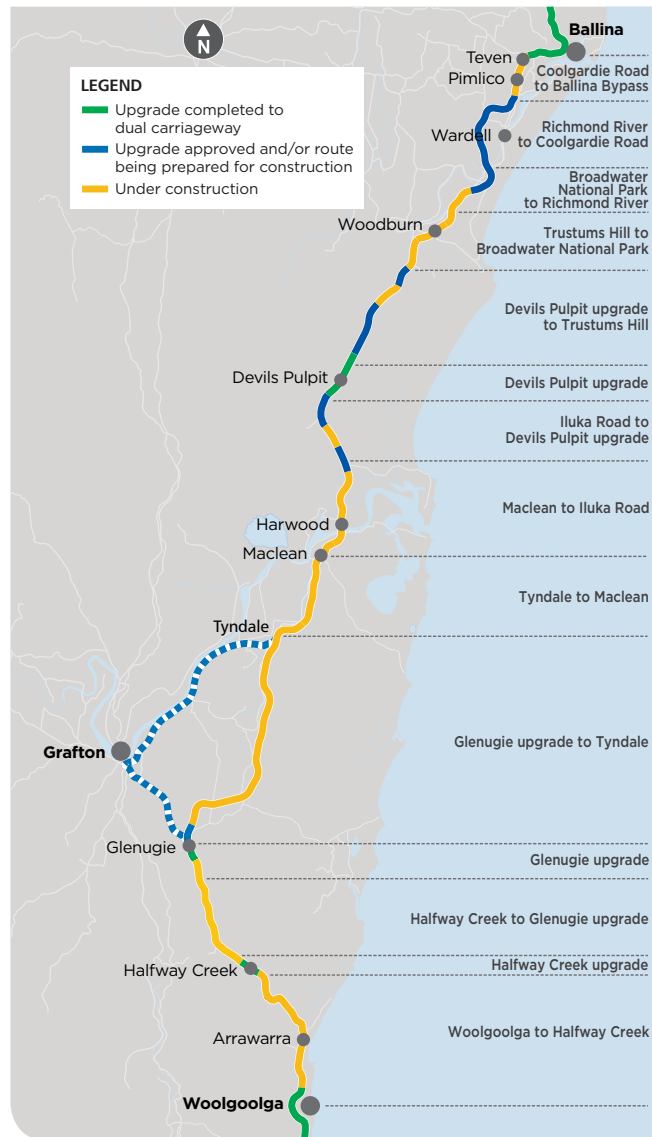


View of the Warrell Creek Bridges on the Warrell Creek to Nambucca Heads project, looking south (June 2017)



View of Bald Hill Road interchange on the Warrell Creek to Nambucca Heads project, looking south (June 2017)

Woolgoolga to Ballina overview



The 155 kilometre upgrade between Woolgoolga and Ballina is the last highway link between Hexham and the Queensland border to be upgraded to four lanes. The project was approved by the NSW Minister for Planning in June 2014 and the Federal Minister for Planning in June 2014 and the Federal Minister for the Environment in August 2014; and is jointly funded by the Australian and NSW governments. Roads and Maritime are partnering with Pacific Complete to deliver the Woolgoolga to Ballina upgrade.

Key features of the Woolgoolga to Ballina upgrade:

- 155 kilometres of dual carriageway
- \$4,356 billion cost
- 170 bridges to be built
- 14.2 million cubic metres of earthwork
- nine interchanges
- five towns/villages bypassed.

59 days were lost to wet weather in the past six months.

January to June 2017, work progress:

Work has started on 104 kilometres of the 155 kilometre project, with mainline construction well advanced on 26 kilometres between Woolgoolga and Glenugie

which will open to traffic by the end of 2017, weather permitting. Continued building bridges at Cooperabung Creek and Yarrabee Road.

Contracts

- ✓ awarded the preferred supplier arrangements for the supply of fuel, concrete and quarry materials
- ✓ awarded specialist contracts for koala management
- ✓ award the design and construction contracts for the new bridge over the Richmond River at Broadwater.

Design:

- ✓ completed detailed design.

Environment

- ✓ continued installation of about 700 nest boxes in trees along the Pacific Highway upgrade to provide alternative nesting and roosting places for wildlife
- ✓ started work on koala fencing and revegetation between Broadwater and Coolgardie. Installed temporary and permanent koala and fauna fencing and planted more than 50,000 trees for koala revegetation (Section 10)
- ✓ Fauna Connectivity Strategy approved by both Federal Department of Environment and Energy and NSW Department of Planning and Environment.

Stakeholder engagement

- ✓ published reports and held drop in consultation sessions about the Clarence River and Richmond River floodplain Hydrological Mitigation reports
- ✓ continued meeting with councils, stakeholders including emergency services, community members and directly impacted landowners along the alignment

- ✓ started yellow line trial to help drivers navigate through work zones to improve driver and worker safety.

July to December 2017, expected work progress; weather permitting:

Contracts

- shortlist and award tenders for bridge and major civil contracts
- invite tenders for main paving contract.

Environment

- continue work to implement the Koala Management Plan
- continue securing biodiversity offset properties with BioBanking agreements as part of the Biodiversity Offset Strategy
- approval of Urban Design and Landscape Management Plans for Sections Glenugie to Ballina Bypass (Sections 3 to 11)
- consult an urban designer to produce landscape plans for the new bridge over the Richmond River.

Stakeholder engagement

- provide information about the final detailed design for the upgrade
- work with the community and neighbours to prepare for the start of major work.

The summaries on the following pages outline progress in completing this section of the Pacific Highway upgrade, including key building activities.

For more information:

www.rms.nsw.gov.au/w2b



Moving pile casings into place for land piling at Harwood bridge (June 2017)



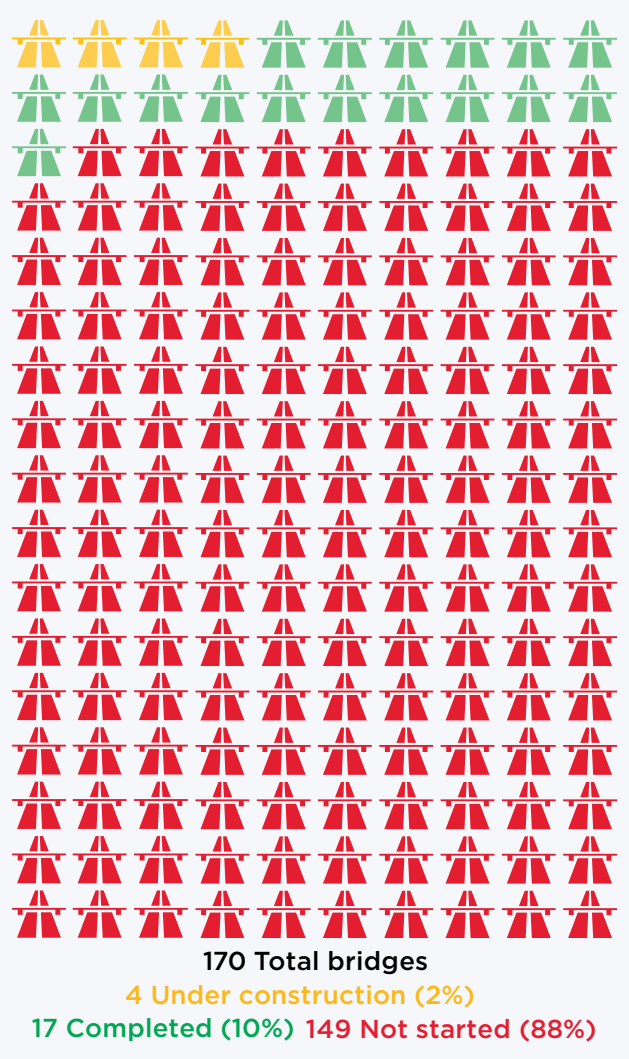
Devils Pulpit to Richmond River, piling for service road (June 2017)



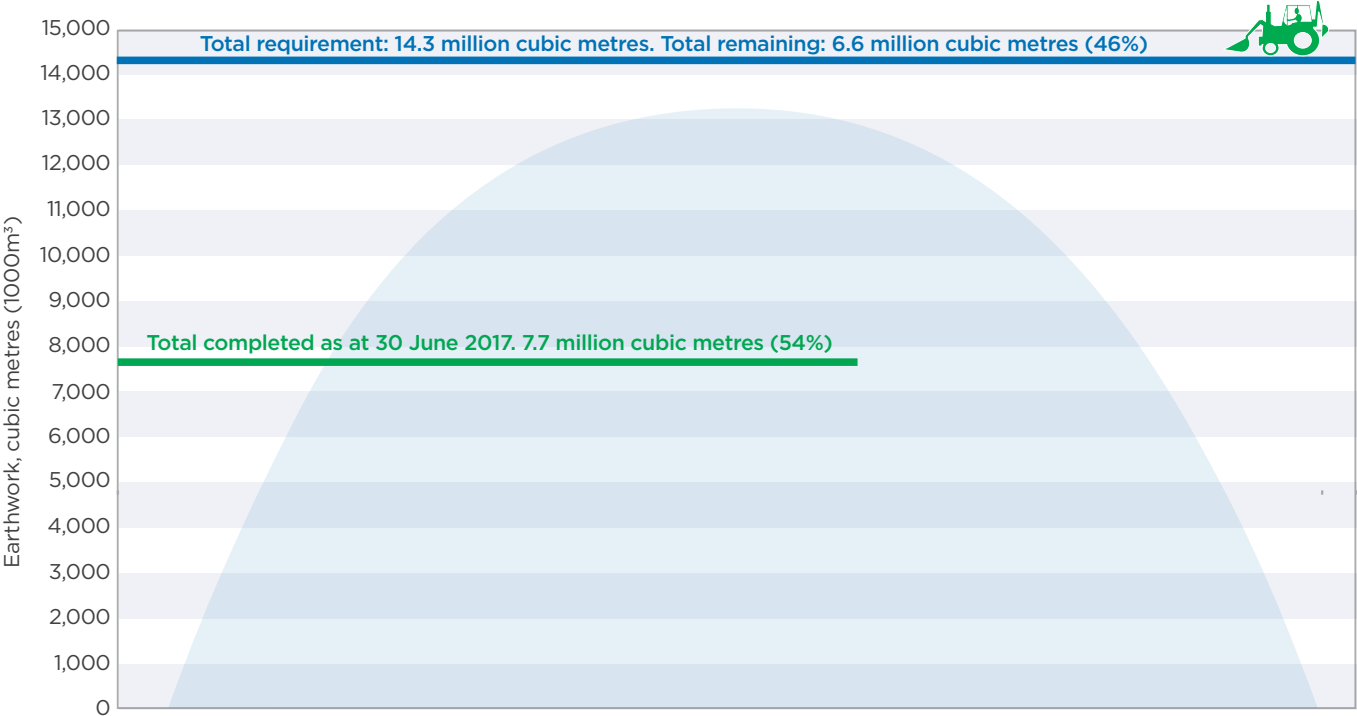
Maclean to Devils Pulpit, asphalt Overlay Pacific Highway and Chatsworth South Road (June 2017).

Woolgoolga to Ballina overview

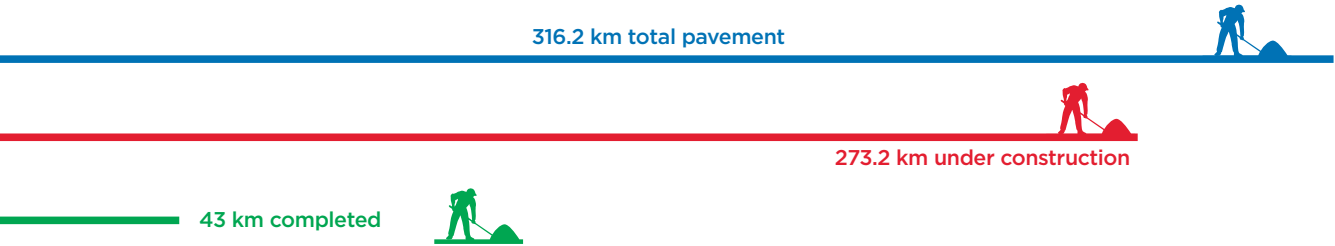
Bridges



Earthwork



Road surface (road carriageway kilometres)





Concrete paving at Wells Crossing (May 2017)

Projects being built

Project snapshot

Contractors: OHL and York joint venture

Form of contract: Build only

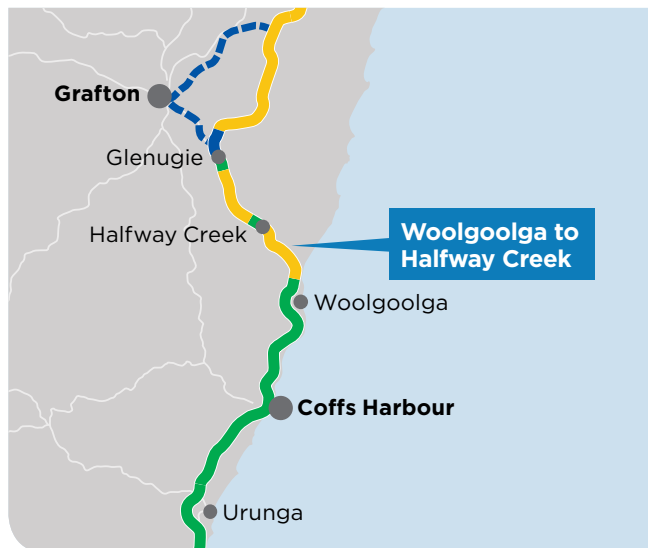
Average workers on site during the past six months: 142 workers per month

Average pieces of large machinery on site during the past six months: 109 pieces of machinery per month

Start date of major construction: June 2015

Completion date: End of 2017 (weather permitting)

Project value: Form parts of the Woolgoolga to Ballina upgrade



Woolgoolga to Halfway Creek

The Woolgoolga to Halfway Creek project – the first section of the overall Woolgoolga to Ballina upgrade – will link the Sapphire to Woolgoolga project in the south and the existing Halfway Creek upgrade in the north, providing about 14 kilometres of divided road.

The project is jointly funded by the Australian and NSW governments. The key features of the Woolgoolga to Halfway Creek upgrade include a 300 metre long twin bridge over the Corindi floodplain to allow flood waters to pass under the highway and bridges over the highway to Sherwood Creek Road and Kangaroo Trail Road for local road access.


28 days were lost to wet weather in the past six months.

January to June 2017, work progress:

- ✓ traffic switched onto the new northbound carriageway under contra-flow, north of Range Road
- ✓ completed Eggins Drive upgrade
- ✓ continued concrete paving south of Range Road
- ✓ installed variable message signs (VMS).

 on average **142** workers on site per month

 on average **109** pieces of large machinery on site

 about **83%** complete

July to December 2017, expected work progress: weather permitting

- complete rest area at Arrawarra
- complete concrete paving between Arrawarra to Dirty Creek Range
- continue work on southbound carriageway between Dirty Creek Range and Halfway Creek
- continue finishing work including landscaping, line marking, barrier installation and local access roads
- progressively open Dirty Creek Range section.

Community issues:

- scoping for at-house noise treatments continued and building work on some residences continued
- drainage issues near site of the new Arrawarra Rest Area are being investigated
- ongoing consultation about property adjustments.

Environmental issues:

- Nil



Woolgoolga to Halfway Creek project, looking south (May 2017)

Projects being built

Project snapshot

Contractors: Civil Mining & Construction

Form of contract: Build only

Average workers on site during the past six months: 128 workers per month

Average pieces of large machinery on site during the past six months: 31 pieces of machinery per month

Start date of major construction: June 2015

Completion date: 2017 (weather permitting)

Project value: Form parts of the Woolgoolga to Ballina upgrade



Halfway Creek to Glenugie

The Halfway Creek to Glenugie project – the second section of the overall Woolgoolga to Ballina upgrade – will link the completed Halfway Creek upgrade in the south and the existing Glenugie upgrade in the north. The project will be completed in two stages, the first stage is expected to open to traffic in 2017 and includes 12 kilometres of new southbound carriageway and six kilometres of new northbound carriageway. The second stage, which includes six kilometres of new northbound carriageway from Wells Crossing to Franklins Road, is in planning and will open to traffic in 2020.

The project is jointly funded by the Australian and NSW governments. Key features of the Halfway Creek to Glenugie section include twin bridges over Halfway Creek and Wells Crossing Creek, as well as a wide median to assist animals crossing at Newfoundland State Forest.


39 days were lost to wet weather in the past six months.

January to June 2017, work progress:

- ✓ completed all bridges on the project
- ✓ continued landscaping, fencing and finishing work on the new highway alignment

 on average **128** workers on site per month

 on average **31** pieces of large machinery on site

 about **85%** complete

- ✓ continued work on the new heavy vehicle inspection bay at Halfway Creek
- ✗ completion of concrete paving, (completed August 2017).

July to December 2017, expected work progress: weather permitting

- complete landscaping, fencing and finishing work on the new highway alignment
- complete the new heavy vehicle inspection bay at Halfway Creek
- open Halfway Creek to Glenugie section to traffic.

Community issues:

- scoping for at-house noise treatments continued and building work on some residences continued
- consultation with residents about temporary turning arrangements between Wells Crossing Creek and Franklins Road
- ongoing consultation about property adjustments.

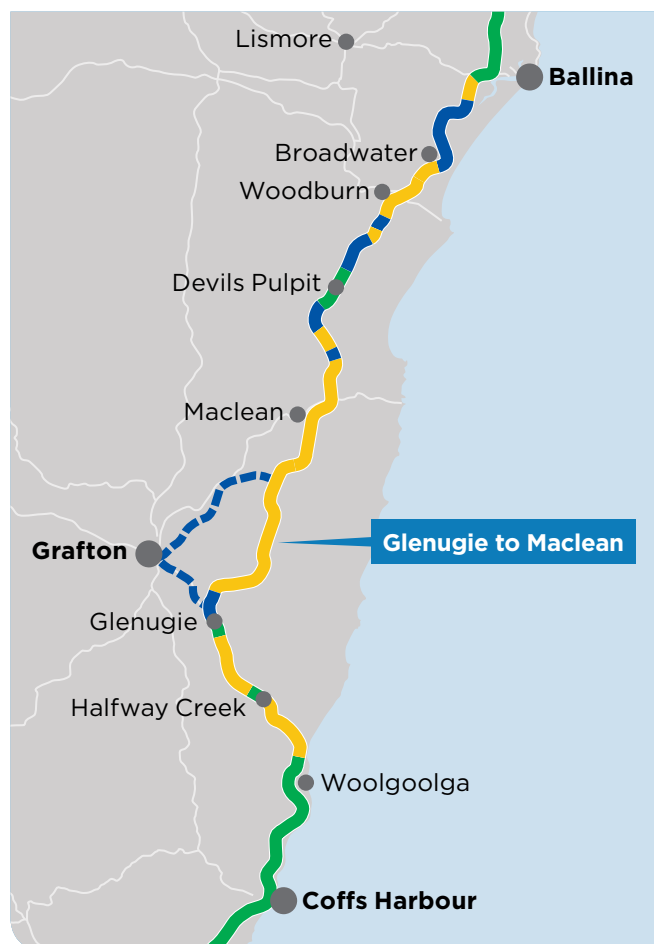
Environmental issues:

- Nil



View of concrete paving on Halfway Creek to Glenugie project on the mainline south of Wells Crossing (May 2017)

Projects being built



Glenugie to Maclean

The Glenugie to Maclean section of the Woolgoolga to Ballina, Pacific Highway upgrade extends more than 48 kilometres. Diverging from the existing Pacific Highway at Glenugie the new alignment heads east passing through Pillar Valley joining the existing Pacific Highway at Maclean. The upgrade in this location includes the Glenugie, Tyndale and Maclean interchanges.

The project is jointly funded by the Australian and NSW governments.

52 days were lost to wet weather in the past six months.

January to June 2017, work progress:

- ✓ continued placement of foundations and wicking of soft soil, south of Shark Creek
- ✓ continued excavation at Tyndale
- ✓ completed construction of Bailey Bridge over Chaffin Creek
- ✓ completed clearing work
- ✓ completed Avenue Road site compound
- ✓ completed rock layer work, clearing and grubbing at soft soil site.

July to December 2017, expected work progress: weather permitting

- completion of soft soil treatment work (Wave 3 & Wave 5A)
- completion of Tyndale site compound
- award of major work packages for civil work and bridge construction
- start piling work and construction of highway bridges
- start major construction work.

Community issues:


- ongoing discussion with agencies and Clarence Valley Council about the temporary reduction to speed limits in local roads to contribute to improved safety conditions for project workers and all road users
- ongoing consultation with Aboriginal Groups and affected landowners about property adjustments.

Environmental issues:

- Nil

 on average **404** workers on site per month

 on average **267** pieces of large machinery on site

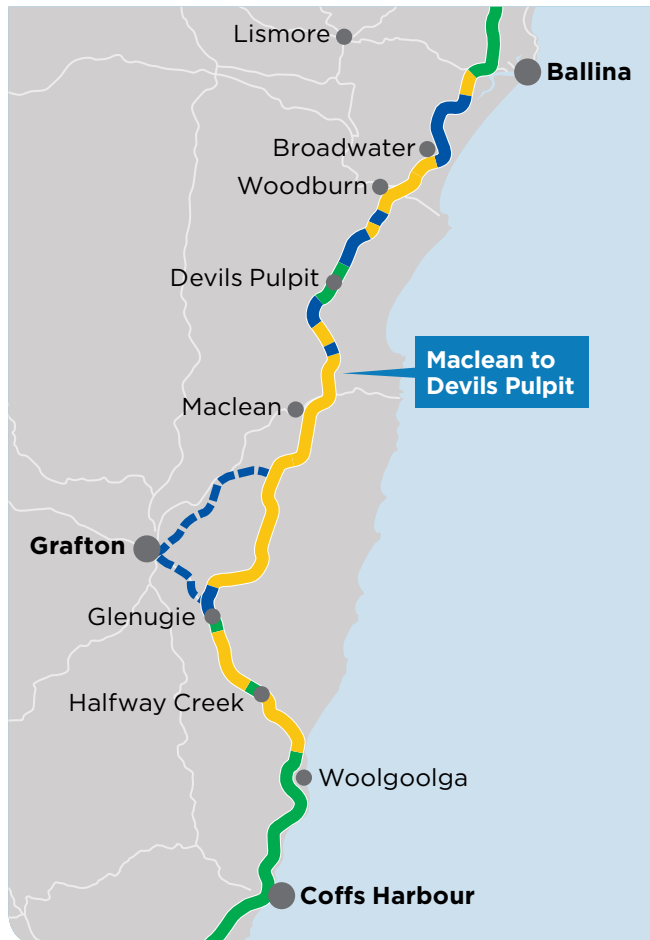
 about **13%** complete

 **15** contractor companies on site



Glenugie to Maclean upgrade looking North from Tyndale (May 2017)

Projects being built



Maclean to Devils Pulpit

The Maclean to Devils Pulpit section of the Woolgoolga to Ballina, Pacific Highway upgrade extends more than 29 kilometres. The upgrade in this location generally follows the existing Pacific Highway and includes Yamba, Harwood and Iluka interchanges.

The project is jointly funded by the Australian and NSW governments.

33 days were lost to wet weather in the past six months.

January to June 2017, work progress:

- ✓ started work on site for temporary and permanent diversion lanes
- ✓ started building highway bridges at Tabbimoble
- ✓ completed construction of compound facility opposite Iluka Road, Mororo
- ✓ installed new fences along the alignment for stock and native animals.

July to December 2017, expected work progress: weather permitting

- complete soft soil work (Wave 1) i.e. loading earth on soft soil sites and installing equipment to monitor settlement
- award major work packages for civil work and bridge construction
- start piling work and construction of highway bridges
- start main civil work on site.


Community issues:


- regular meetings with key stakeholders including local schools, industry, businesses and agencies.

Environmental issues:

- Nil

 on average **222** workers on site per month

 on average **40** pieces of large machinery on site

 about **8%** complete

 **10** contractor companies on site



View looking north over Serpentine Creek, Chatsworth Island on the Maclean to Devils pulpit project (May 2017)

Projects being built



Devils Pulpit to Richmond River

The Devils Pulpit to Richmond River section of the Woolgoolga to Ballina, Pacific Highway upgrade begins about 13 kilometres north of Mororo Road and extends about 34 kilometres north to Richmond River Bridge. In this area the upgrade bypasses Woodburn, Broadwater and Wardell and includes Broadwater and Wardell interchanges.

The project is jointly funded by the Australian and NSW governments.

37 days were lost to wet weather in the past six months.

January to June 2017, work progress:

- ✓ continued soft soil work including installation of wicks, drainage and fill placement with continued settling and monitoring
- ✓ started piling preparation work for construction of highway bridges
- ✓ awarded contract for construction of bridges
- ✓ completed construction of the Woodburn to Broadwater service road.

July to December 2017, expected work progress: weather permitting

- award of major work package for civil work
- completion of soft soil treatment work
- start of piling work and construction of highway bridges
- start of main civil work on site.

Community issues:


- continued consultation with directly impacted landowners following wet weather events
- ongoing discussion with local community about the building and operation of the Woodburn to Broadwater service road
- consultation about the draft urban design and landscape management plan.

Environmental issues:

- construction may need to stop during spawning season of endangered Oxleyan Pygmy Perch, October to April.

 on average
109 workers
on site per month

 on average **45**
pieces of large
machinery on site

 about
7%
complete

 **10** contractor
companies on site



Devils Pulpit to Richmond River upgrade soft soil works at Tuckombil Canal, Woodburn (May 2017)

Projects being built



Richmond River to Ballina Bypass

The Richmond River to Ballina bypass section of the Woolgoolga to Ballina, Pacific Highway upgrade, extends more than 18 kilometres from the Richmond River bridge to just south of the Ballina interchange.

The project is jointly funded by the Australian and NSW governments.

No days were lost to wet weather in the past six months.

January to June 2017, work progress:

- ✓ completed soft soil work including installation of wicks and drainage and fill placement
- ✓ completed construction of site compounds at Wardell Road and Whytes Lane
- ✓ started upgrade of intersections at Carlisle Street and the Pacific Highway and at Bath Street, Wardell
- ✓ monitored the koala population and started phased resource reduction work
- ✓ started work on the final stage of the Pimlico to Teven section of the highway.

July to December 2017, expected work progress: weather permitting

- award contract for civil works and bridge construction
- start piling work and construction of highway bridges
- start main civil work on site
- complete utility diversions for power and communications.


Community issues:


- met with neighbours to discuss start of work, building a site compound and emergency road repair work.

Environmental issues:

- Nil.

 on average
57 workers
on site per month

 on average **11**
pieces of large
machinery on site

 about
7%
complete

 **17** contractor
companies on site



Richmond River to Ballina Bypass upgrade looking North at Emigrant Creek (May 2017)

Projects being built

Project snapshot

Contractors: Acciona Ferrovial Joint Venture

Form of contract: Design and build

Start date of major construction: August 2016

Completion date: Open to traffic by 2020

Project value: Form parts of the Woolgoolga to Ballina upgrade



Bridge over Clarence River at Harwood

The bridge over the Clarence River at Harwood will be the longest of 170 bridges to be built as part of the Woolgoolga to Ballina Pacific Highway upgrade.

The project involves building a 1.5 kilometre long, four lane divided bridge, about 20 metres east of the existing Harwood Bridge. Activities included drilling and investigation work so that ground condition information can be considered in the detailed design. The main construction work has now started and will continue in the land and on the water.

The project is jointly funded by the Australian and NSW governments.

23 days were lost to wet weather in the past six months.

January to June 2017, work progress:

- ✓ complete fit out of a piling barge at Harwood
- ✓ mobilise a piling barge to build a temporary jetty at River Street, Harwood
- ✓ mobilise a piling barge for the installation of the main bridge piles

- ✓ start the driving of main piles for the new bridge
- ✓ complete the importation of quarry materials for the ancillary facility
- ✗ start the casting of main girders.

July to December 2017, expected work progress: weather permitting

- complete driving pile casings in the river and northern side bank
- start driving pile casings on the south bank
- start casting columns and headstocks
- start the casting of main girders.

Community issues:

- discussion with the community about the start of piling work for the bridge on land and in the water
- regular meetings with key stakeholders including local schools, industry, businesses and agencies..

Environmental issues:

- Nil.

 on average **173** workers on site per month

 on average **33** pieces of large machinery on site

 about **1%** complete

 **1** contractor company on site



Aerial view of the existing bridge (May 2017)

Projects being built

Project snapshot

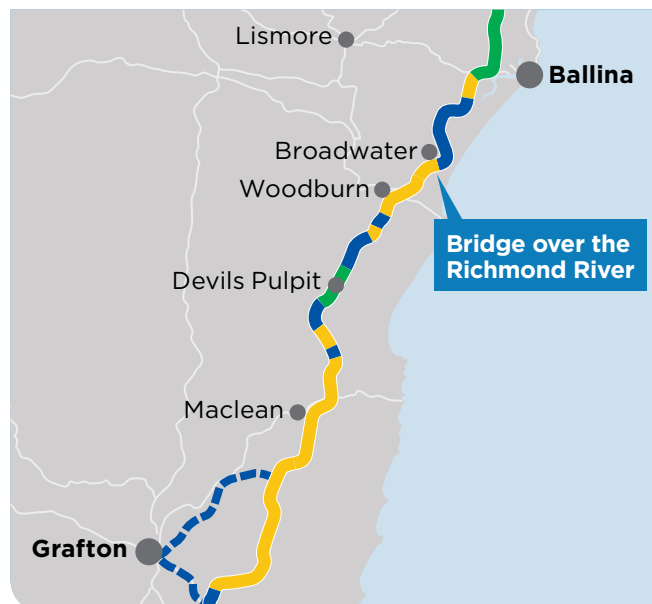
Contractors: Lendlease

Form of contract: Design and build

Start date of major construction: June 2017

Completion date: Open to traffic by 2020

Project value: Forms parts of the Woolgoolga to Ballina upgrade



New bridge over Richmond River at Broadwater

The bridge over the Richmond River at Broadwater will be one of two major bridges for the Woolgoolga to Ballina Pacific Highway upgrade.

The project involves building a one kilometre long, four lane divided bridge, about 500 metres north of Broadwater. Activities included drilling and investigation work so that ground condition information can be considered in the detailed design. The main construction work will progress from the northern side of the Richmond River towards the southern bank.

The project is jointly funded by the Australian and NSW governments.

No days were lost to wet weather in the past six months.

January to June 2017, work progress:

- ✓ project Deed executed
- ✓ survey & geotechnical investigation work commenced
- ✓ assessment of proposed compound site
- ✓ release of Devils Pulpit to Ballina hydrological mitigation report
- ✓ commence detailed design.

July to December 2017, expected work progress: weather permitting

- complete early investigative works
- establish site compound and access
- detailed design progressed
- commence piling works on land
- commence marine piling works in the river
- commence pier construction
- deliver storage of precast elements.

Community issues:

- Nil.

Environmental issues:

- Nil.



on average
82 workers
on site per month



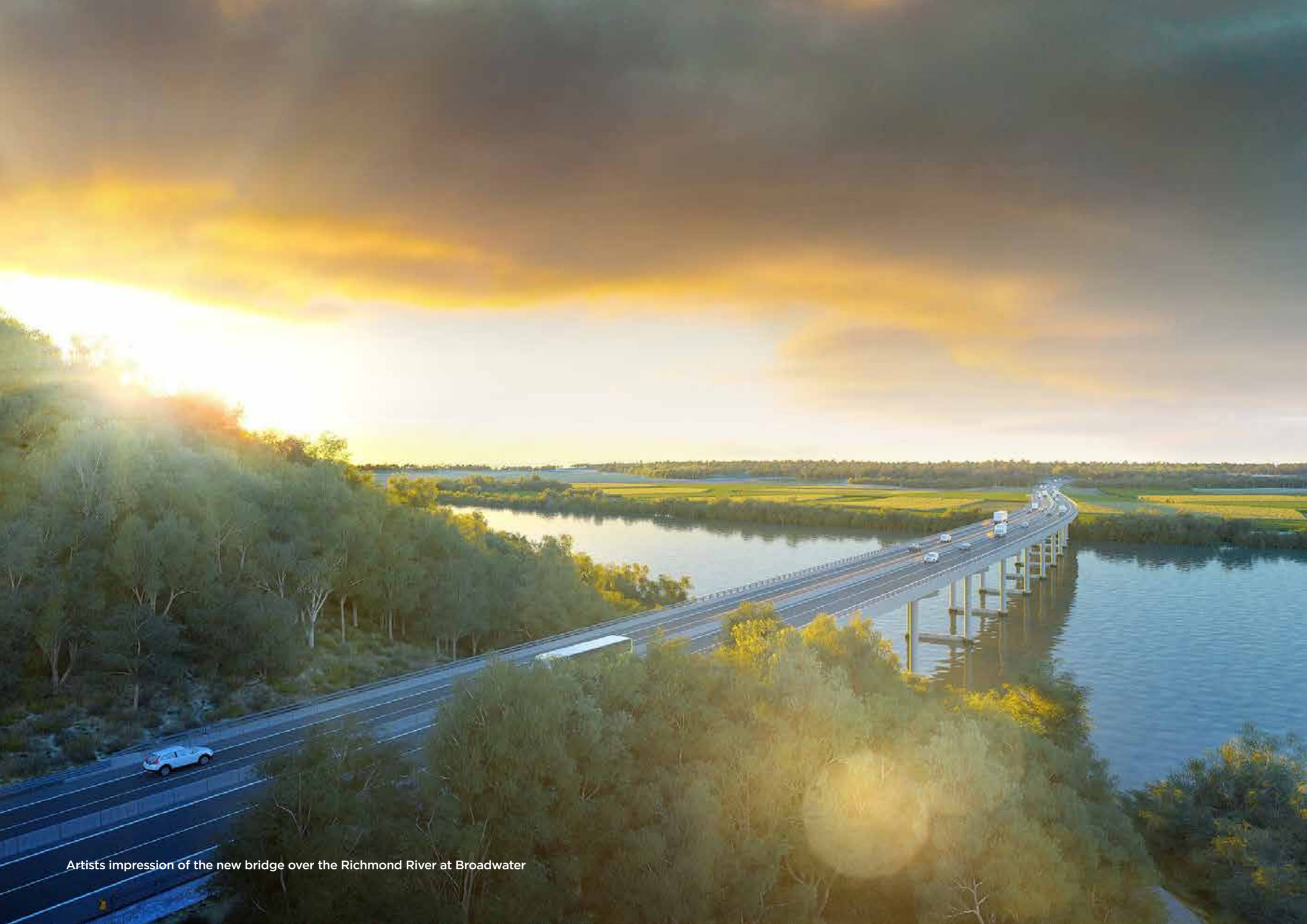
on average **8**
pieces of large
machinery on site



about
0%
complete



5 contractor
companies on site



Artists impression of the new bridge over the Richmond River at Broadwater



For more detailed information visit the project website at www.rms.nsw.gov.au/pacific or call the Pacific Highway office on **1800 653 092**