



Australian Government

**BUILDING OUR FUTURE**



# Pacific Highway upgrade

**Six month report card** July to December 2017

Roads and Maritime Services



Phillip Hughes Bridge at Macksville, Warrell Creek to Nambucca Heads project (December 2017)

## Ministerial Foreword

### Deputy Prime Minister and Minister for Infrastructure and Transport

The Pacific Highway upgrade is one of the Australian Government's signature infrastructure investments. In partnership with the New South Wales Government, we are delivering the full duplication of the highway from Hexham, north of Newcastle to the Queensland border. This is a project which is already saving lives with annual fatalities falling from more than 40 each year prior to the upgrade in 1996 to less than 20 in 2017.

I am pleased the project report card for July to December 2017 shows the upgrade is tracking well towards its planned completion in 2020. The Government's multi-billion-dollar investment has helped deliver modern dual-carriageway roads, safer intersections and other improvements and we expect further safety improvements as the upgrade continues to progress.

In addition to the safety benefits the upgrade is continuing to improve freight and logistics movements and is boosting regional growth between the economic powerhouses of Brisbane and Sydney. It is also better connecting communities up and down the New South Wales north coast making life easier for the thousands of international and domestic visitors flocking to this beautiful region each year. Drivers travelling between Sydney and Brisbane are already saving more than two hours compared to the mid-1990s with travel time savings tipped to reach two and half hours by the time the upgrade is fully complete. This improved travel time also increases business productivity and helps create local jobs.

The project is an economic generator for the region. It is supporting a massive investment in regional jobs with 3,600 direct and 10,800 indirect jobs expected at peak employment in 2018 and local suppliers and contractors are being used wherever possible to deliver the project.

The past six months have seen major milestones including the opening of the 14-kilometre Macksville Bypass on the Warrell Creek to Nambucca Heads section in December 2017 with the remaining six kilometres expected to open in mid-2018. Further south, 18 kilometres of the Oxley Highway and Kundabung section from the Oxley Highway interchange to Haydons Wharf Road opened in November 2017 with the remaining five kilometres of this section expected to open in early 2018.

I look forward to continuing to work closely with the New South Wales Government and contractors to complete the 155-kilometre Woolgoolga to Ballina section which will bring to completion this critical investment in regional road infrastructure and the communities and businesses it serves.

#### Michael McCormack

Deputy Prime Minister  
Minister for Infrastructure and Transport



Michael McCormack, DPM

## Ministerial Foreword

### Minister for Roads, Maritime and Freight

The Pacific Highway upgrade is the centrepiece of the NSW Government's investment in regional road infrastructure and one I am proud to support. The last six months of 2017 personally brought to light the significant human elements of the project which connect communities, businesses and improve the lives of so many people.

The North Coast of NSW has always been my home, and it gave me great pleasure to return several times between July and Christmas last year to celebrate with local communities and the people building our roads as new sections of highway were opened to traffic.

It was fantastic to see the joy on the faces of community members and project workers at the Macksville bypass community open day, as we all walked across the new Phillip Hughes Bridge over the Nambucca River.

The opening to traffic of the 14 kilometres of new highway two days later was an historic moment which reminded me of what can be achieved with hard work and dedication. The notorious holiday traffic chaos normally experienced in Macksville came to an end at that time when the streets were given back to the community.

The progressive opening of sections of the highway is already reaping benefits with regional growth on the rise with improved access, road freight and land use options changing for local communities, allowing some towns to pursue new economic ventures.

Others are enjoying unprecedented employment opportunities to work on the Pacific Highway upgrade, with projects expecting a second peak of employment in 2018, with about 3500 people directly working on upgrading the highway.

When the entire highway is duplicated by 2020 it will cut travel time by about two and a half hours, taking less than seven hours to travel between Newcastle and the Queensland border.

This means more efficient freight movements and travellers saving time and money getting where they need to be faster, with improved quality road trips and business productivity. Motorists are already experiencing significant changes with future benefits to be realised for many generations to come.

The number of lives saved on the Pacific Highway has already improved with less than 20 fatalities in 2017, down from around 50 when the upgrade started in 1996. That is one step closer to zero but we still have work to do.

I'm so proud to be part of the Liberals and Nationals Government making vital improvements to people's lives and creating a global legacy for its social and economic impact.

#### 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 31 December 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 south (June 2017)

**2943** workers  
on site

about **80%** of  
highway length now  
four lane divided road

**134** km  
of highway  
being built

# Status at December 2017



As of 31 December 2017, 523 kilometres of the Pacific Highway upgrade are four lane divided road. The remaining kilometres are either being built or prepared for major work to start. 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:

- ✓ Opened 18 kms of four lane divided highway between Oxley Highway and Haydons Wharf Road
- ✓ Opened the 14 kms Kundabung to Kempsey section of the Pacific Highway upgrade
- ✓ Opened 14 kms, including the new Phillip Hughes Bridge at Macksville, of dual roadway on the Warrell Creek to Nambucca Heads section of the Pacific Highway upgrade.

### From Woolgoolga to Ballina:

- ✓ Opened 26kms of four lane divided highway from Woolgoolga to Glenugie
- ✓ Procurement reached almost \$3 billion for the program
- ✓ Main civils contractors started work between Glenugie and Ballina bypass
- ✓ Piling and building of the precast concrete structures for 170 bridges started.

# Upgrade outcomes

## Where are we now as at 31 December 2017?

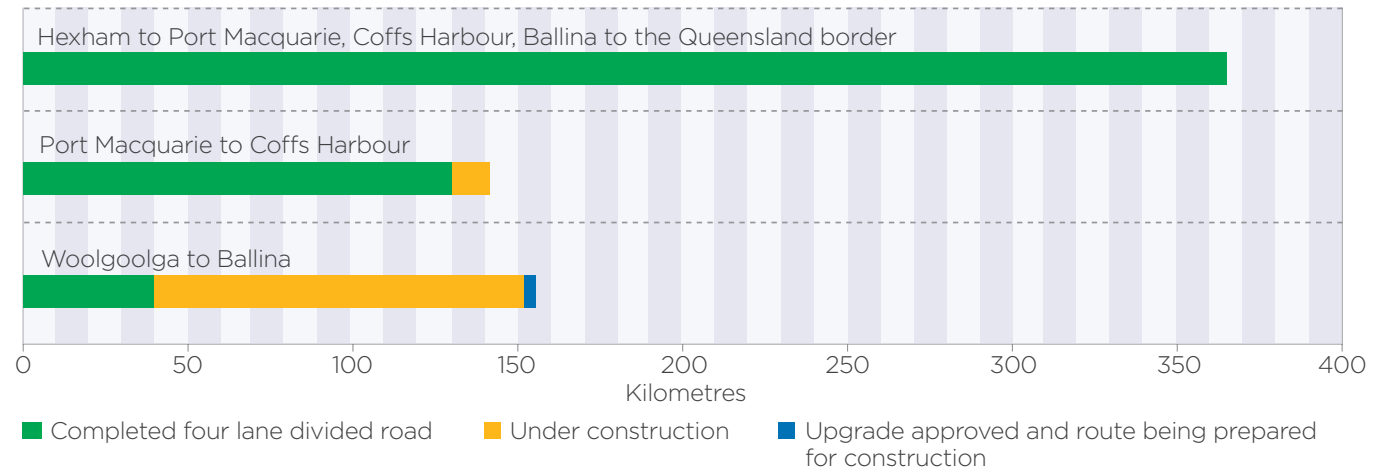
523 kilometres are four lane divided highway – about 80%

The remaining kilometres are either being built or prepared for major work to start.

An average of just under 3000 people have been employed on site from July to December 2017, with about a further 250 people working across the Pacific Highway program. It was expected that peak employment levels on the highway would be around 4,000. Now that main contracts for the remainder of the Woolgoolga to Ballina upgrade are in place, we know that the need for workers on that project is now more evenly spread and won't overlap as much as previously thought with needs on other projects. Employment on the highway was at its highest at just under 3,800 in 2015, with a second, but lower peak at around 3,500 now expected in 2018.

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 increased during this last period 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 July to December 2017 was \$744 million. Expenditure forecasts against actual spend have generally been closely matched over the period. The dry weather between July and September allowed good progress to be made on the upgrade. Contracts for main civil work for the Woolgoolga to Ballina upgrade are now largely in place with construction in progress across the alignment. It is expected that expenditure will ramp up on Woolgoolga to Ballina between January and June 2018 while spend rates on other projects slow as they near completion.



Warrell Creek to Nambucca Heads project community day

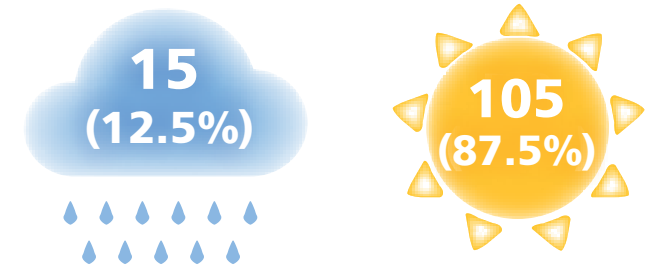
## Wet weather

Weather patterns in the period July to December 2017 were quite dry, with August and September standing out with very few loss of work days due to weather. In that period only three projects lost one day each to weather.

On average, 15.2 days of work were lost across the upgrade projects to weather events, compared to 33 days in the preceding six months.

November was the month with most days lost to wet weather, affecting 12 of the available 24 days on the northern section of the Woolgoolga to Ballina upgrade. Other projects lost 5-6 days each in that month.

## Average work days - July to December 2017 from 120 available working days\*



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



# Upgrade outcomes

## Crashes

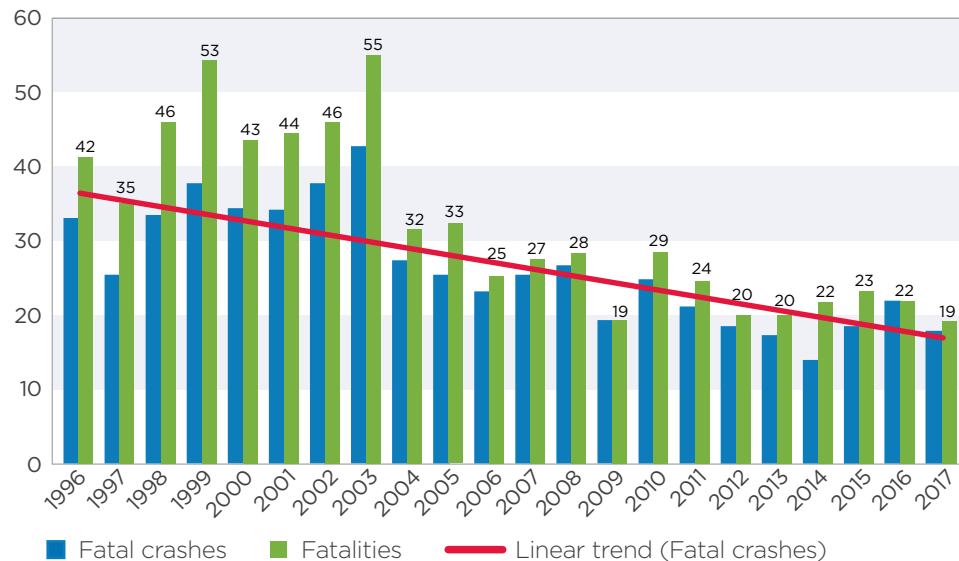
Fatal crashes have halved, down from around 50 each year to less than 25 and most recently to 19 in 2017.

Those 19 people died in 17 fatal crashes. This compares with the previous five year average of 23 fatalities in 19 crashes.

## Travel time

Since the start of the Pacific Highway upgrade program in the mid-1990s, travel time between Hexham and the Queensland border was usually tracked through a survey conducted in late November or early December each year. Since 2015, Google travel time data has been used instead of this manual method, 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 calculated based on large numbers of individual speed readings along a particular route (in this case, the Pacific Highway north of Hexham).

### Fatal crashes and fatalities each year

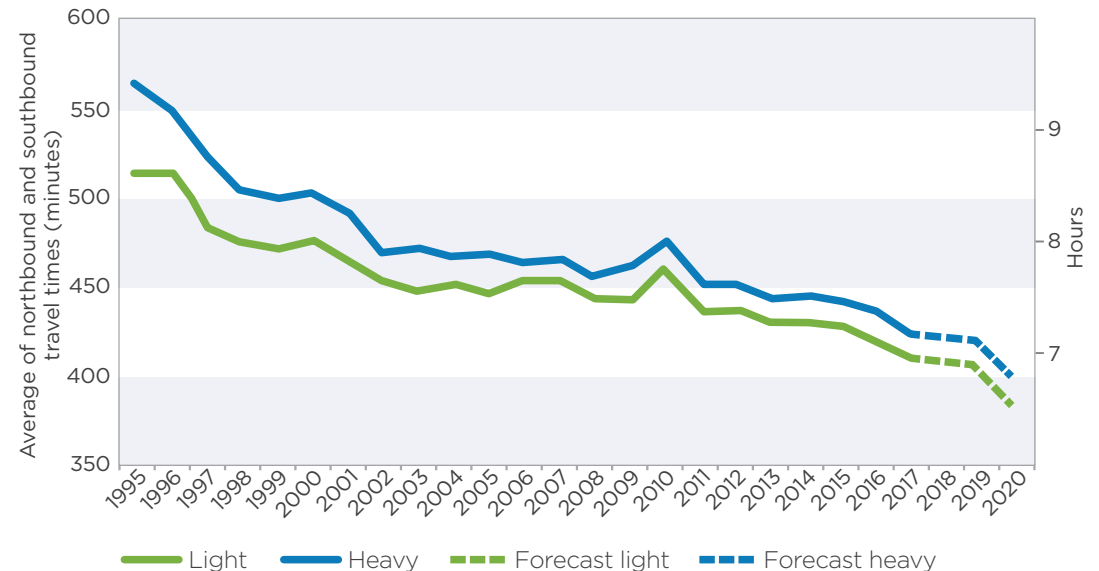


Annual travel time surveys have used the same start and end points to ensure the results over time can be compared. Since the last six month report card and before the 2017 survey, new sections of the highway have opened to traffic, reducing travel times by around 10 minutes. This reduction has been reflected in the travel time results.

Motorists travelling the length of the Pacific Highway between Hexham and the Queensland border are now saving about two hours in travel time compared to 1996. When complete, the upgrade will cut travel time between Hexham and the Queensland border by between two and a quarter and two and half hours.

It should be noted that actual travel time on the Pacific Highway can vary from the survey results. It can be affected by the amount of traffic on the highway, weather conditions, permanent changes in speed limit and work zone delays. The travel time shown in the graphs below do not include the time for recommended or mandatory rests to manage fatigue.

### Travel time trends on the Pacific Highway, Hexham to Queensland border (Adjusted for work site delays but not adjusted for recommended or mandatory rest stops).



# Road openings

The second half of 2017 saw a significant number of road openings with 72 kilometres of dual carriageway opening to traffic. The openings mean there are only 11 kilometres of the Pacific Highway between Hexham and Glenugie, south of Grafton, that is not four lane divided carriageway. These 11 kilometres are due to open in the first half of 2018, weather permitting. The projects already opened represent over \$2 billion in infrastructure spending by the Australian and NSW governments and will significantly increase safety and reduce travel time for highway users.

To celebrate our progress a community day was held and people were invited to walk across the new bridge over the Nambucca River, the Phillip Hughes Bridge, before it was opened to traffic. Over 3000 people attended the event which included a traditional smoking ceremony. The bridge and 14 kilometres of new highway was open to traffic two days later as part of the Warrell Creek to Nambucca Heads project.

## August - Halfway Creek to Glenugie

Twelve kilometres of new divided carriageway opened to traffic in August, with all four lanes opening in September. The project included building twin bridges over Halfway and Wells Crossing creeks, and a Heavy Vehicle Inspection Bay at Halfway Creek.

## September - Kundabung to Kempsey

Prime Minister Malcolm Turnbull attended an event in September to mark 14 kilometres of new divided carriageway open to traffic. All four lanes of the highway were then opened to traffic in October. The project included an interchange at Kundabung Road, new intersections for local access roads, bus stops and new rest areas at Barrys Creek.



NSW Premier Gladys Berejiklian opens the first 14 kms of the Warrell Creek to Nambucca Heads project



Pacific Highway Project Office Director Bob Higgins gives Prime Minister Malcolm Turnbull an update on progress of the Pacific Highway upgrade at the opening of the Kundabung to Kempsey section





### October – Woolgoolga to Halfway Creek

Ten kilometres of new divided carriageway opened to traffic in October, with the remaining four kilometres opening just before Christmas. The project included building an interchange at Range Road, twin bridges over Corindi floodplain as well as local access bridges over the highway at Sherwood Creek Road and Kangaroo Trail Road.

### November – Oxley Highway to Kundabung

Eighteen kilometres of new divided carriageway between Oxley Highway and Haydons Wharf Road opened in November. The remaining five kilometres of this section is due to open in the first half of 2018. This project bypasses the known blackspot at Telegraph Point, provides new bridges over the Hastings and Wilson rivers and a new interchange at Blackmans Point.



Traffic on the new section of Pacific Highway between Woolgoolga and Halfway Creek



Port Macquarie Superintendent NSW Police Paul Fehon, Federal Member for Lyne David Gillespie, State Minister for Roads Melinda Pavey, Federal Member for Cowper Luke Hartsuyker, State Member for Port Macquarie Lesley Williams, Port Macquarie-Hastings Mayor Peta Pinson and John Cassegrain open the new section of Oxley Highway to Kundabung

### December – Warrell Creek to Nambucca Heads

Fourteen kilometres of four lane divided road between Scotts Head Road and Nambucca Heads opened to traffic just before Christmas. This road opening removed a significant bottleneck for holiday travellers by bypassing Macksville and Nambucca Heads. It provided a new bridge over the Nambucca River, named the Phillip Hughes Bridge, and new interchanges at Bald Hill and Old Coast roads.



**Reduce fatalities**  
and serious injury

# Community

## Have you visited our Facebook page?



In the last six months the Pacific Highway project has intentionally used social media platforms to connect more deeply with stakeholders and communities, reach a wider audience and provide more opportunities to engage with customers.

Our most successful post in that time, which promoted the Plan, Awareness, Caution campaign, received 290 likes, 40 comments and was organically shared 169 times resulting in the highest video viewing of 52 000 of any video post for the Pacific Highway project. We will continue to use Facebook to connect with our communities, so check us out at NSW Roads.



## Job road shows

The Woolgoolga to Ballina Pacific Highway upgrade team is working closely with the local and Aboriginal communities to encourage education, training and employment initiatives relating to the construction industry.

During 2017 the upgrade team successfully implemented a number of employment and training initiatives including:

- jobs roadshows
- work ready program.

## Job seekers and local business operators and owners

During September the Woolgoolga to Ballina project team held jobs roadshows in Grafton, Maclean and Ballina.

These roadshows were timed to provide job seekers and local business operators and owners with the best opportunity to secure work on the upgrade. Most contracts have been awarded, including three main civil work and seven bridge building contracts.

More than 300 people attended the sessions and provided their details to the upgrade team and contractors to submit resumes and follow up on potential job opportunities.

Visitors were positive about the experience and many said they have been waiting for a forum where they have an opportunity to speak to the companies employing people for the upgrade.

## Work Ready Program

The Work Ready Program provides an opportunity for job seekers wanting to work on the Woolgoolga to Ballina upgrade to take part in induction and safety training sessions. This gives people the advantage of being 'work ready' when seeking employment on the highway upgrade. The sessions are free and ongoing and held in Grafton, Maclean and Ballina.

The Work Ready Program was based on the success of the Woolgoolga to Ballina Pacific Highway upgrade team's work with TAFE to provide safety induction and 'Mates In Construction' training to Civil Certificate III and Civil Pathways students.

The Work Ready Program was launched in November on [www.pacificcomplete.com.au/jobs](http://www.pacificcomplete.com.au/jobs) with 340 people registering their interest by December. Two sessions were successfully held in Grafton during December and further sessions are planned during early 2018.





# Aboriginal engagement

## Celebrating Aboriginal history and culture

Celebrated in the first full week of July, we paused to acknowledge NAIDOC Week and celebrate the history, culture and achievements of Aboriginal and Torres Strait Islander workers.

More than 100 workers from Pacific Complete and Roads and Maritime Services joined together in Grafton for a lunch as part of NAIDOC Week celebrations held across Australia.

## Smoke, sharing and storytelling

During September, local Aboriginal Elders led a number of traditional smoking ceremonies at site compounds across the Woolgoolga to Ballina project. Smoking ceremonies are an important way to learn about, celebrate and pay respect to Aboriginal culture and the land, ensuring longevity of these ancient practices.

Local respected Elders and people from the community represented the Bundjalung nation, the Yaegl nation and the Gumbaynggirr nation to perform the ceremonies, smouldering native plants from the local area to produce smoke.

Our team members embraced this ancient ritual as they walked through the smoke which is believed to have cleansing qualities and ward off evil spirits. The celebration continued at site barbeques and afternoon teas where the Elders had an opportunity to share more of their insights about the land we are working on.

In holding these shared events, it empowers us all to build a culturally compassionate work environment and ensures traditional Australian beliefs and customs are embraced, celebrated and entrenched in modern day Australian culture.

## Worker profiles

### Desmond Anderson

Desmond Anderson is a local Aboriginal man from Cabbage Tree Island, Northern NSW. Desmond works as a Leading Hand on the Woolgoolga to Ballina Pacific Highway upgrade. Desmond's day to day role is organising the labourers and machines and making sure that tasks are completed at the end of the working day.

Desmond has worked in civil construction for almost a decade. He has a wealth of knowledge and experience and loves the sense of accomplishment he feels after finishing a job. Desmond would like to see other Aboriginal people who are interested in working in civil construction to "back yourself, have confidence in yourself and give it a go".

### Leyla Ferguson

Leyla Ferguson is a local Yaegl (far north NSW) and Biri/Birriah (Collinsville) woman who was born in Lismore and raised in Yamba along the coast of New South Wales. Leyla has joined a



civil construction company and started a traineeship in administration. Leyla's role consists of all things administration such as emails, printing, scanning, filing, invoices, and meetings.

Leyla is enjoying this great opportunity to work on the Pacific Highway upgrade, constantly learning new things and being trusted to take charge of new and exciting tasks within the project on a day to day basis.

## Aboriginal participation

With many of the sections of the Pacific Highway between Port Macquarie and Glenugie now open to traffic, Aboriginal employment on the Pacific Highway has averaged about 9.2 per cent over the second half of 2017. Aboriginal employment on the Woolgoolga to Ballina upgrade averaged 10.7 per cent in the second half of 2017.

The Woolgoolga to Ballina project teams continued to support the NSW government's Aboriginal Participation in Construction (APiC) initiative in the second half of 2017. In November the Woolgoolga to Ballina Pacific Highway upgrade team, its contractors and training and education providers visited local communities to discuss opportunities for Aboriginal participation and employment. More than 120 people attended the five sessions indicating a high level of interest by Aboriginal people in the Pacific Highway projects.

Feedback received from the roadshows was positive with interest ranging from general information about the upgrade, types of work provided and training pathways.



# 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.

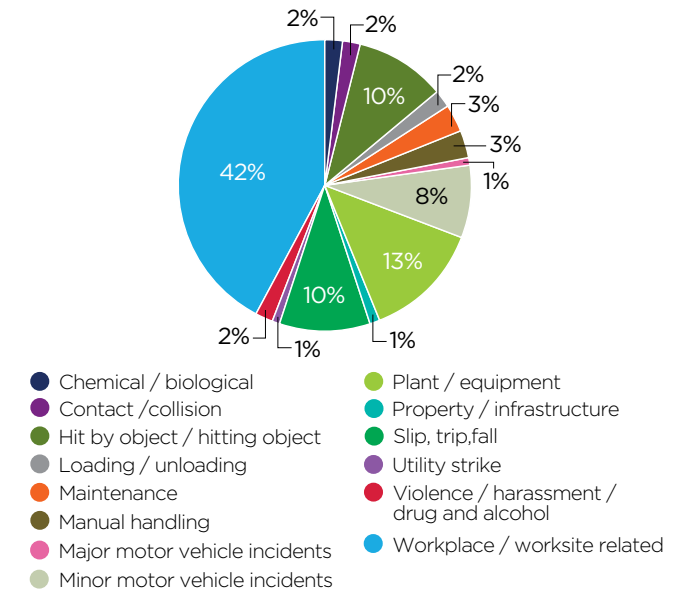
## Managing risk and sharing knowledge

Traffic light results reflect performance against lead (positive activities) and lag (outcome) indicators. In the graph below the green results show all indicators meet requirements. In the period July to December 2017 64 per cent of results were rated green. A relative increase

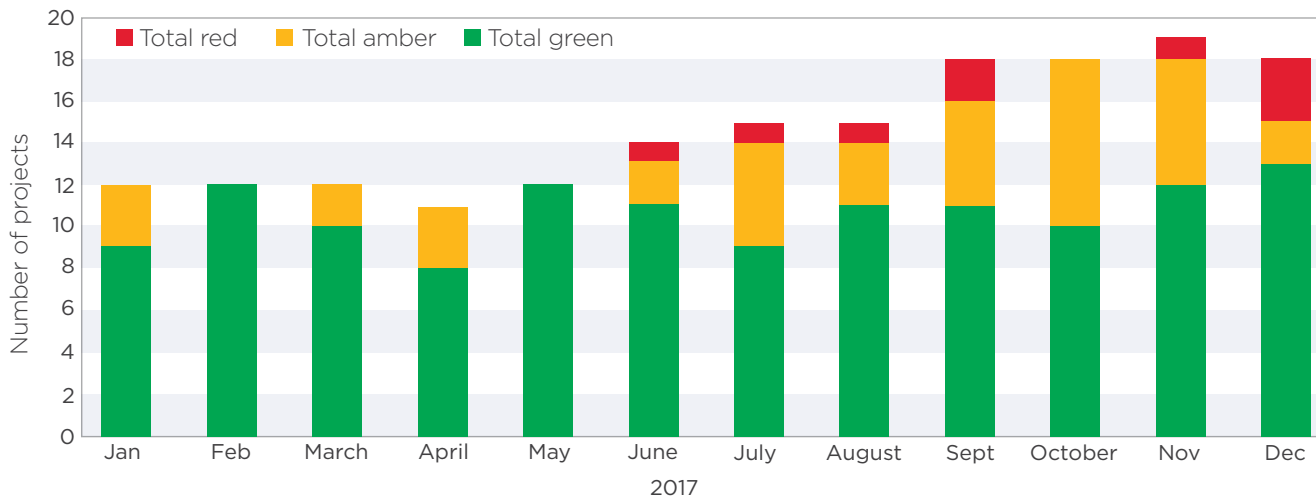
in frequency of red traffic light results in the period was mostly due to some projects not meeting lead indicators such as hazard reporting and leadership activities. During this time 72 incidents were reported, a decrease of 37 per cent since January to June 2017. Workplace and worksite related incidents were the biggest safety risk for all Pacific Highway project sites (Figure 2). Incidents in this category were 42 per cent and included unsafe access, unapproved vehicles on site, or exclusion zones/fall protection not in place.

Incidents involving large machinery and equipment continue to be a safety risk making up 13 per cent of incidents reported. Reported number of injuries totalled 20 during the period, an increase of 43 per cent since January to June 2017. Six of these injuries resulted in lost time. Work environment was the main cause of injury at 75 per cent (Figure 3). Monitoring and inspection of

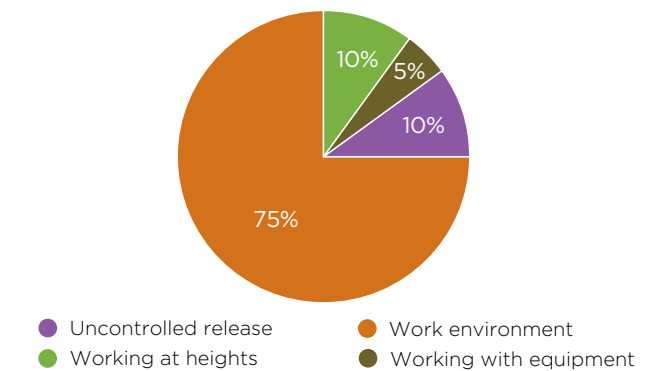
**Figure 2: Reported incidents by category July to December 2017**



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



**Figure 3: Reported injuries July to December 2017**



sites to identify hazards and reduce risks associated with slip, trips and falls, protruding objects and manual handling remain a focus for all projects.

### Safety Initiatives

Roads and Maritime is working with industry partners on a program to provide consistent guidance on worksites to separate workers on foot from vehicles and light vehicles from other larger machines. The Separate Yourself program is the implementation of agreed controls to improve risk management and create a more uniform 'look and feel' across the Pacific Highway upgrade. It allows a person who is unfamiliar with the site to identify and avoid hazards more easily as they are consistent across projects. The evaluation of the implementation of the Separate Yourself program was completed between July and October 2017. Eleven participating sites and contractors were evaluated and provided feedback against implementation criteria, including observations of implementation, interviews with site personnel, systems



A worker trials the halo light during night work at Broadwater

reviews, general workforce survey and focus groups. Categories of achievement were rated highly effective, effective, basic and ineffective. No site or contractor was rated as ineffective. Five sites were rated basic, five rated effective and one rated as highly effective. Since October all participating sites and contractors have continued to implement the program controls with improved consistency and safety across sites and contractors.

### Personal halo light system trialled in night works.

During November Pacific Complete arranged to conduct a trial in Broadwater in collaboration with the designer and manufacturer using new technology to improve worker safety at night. Working in low light conditions at night work is a high risk activity that can result in a slip, trip or fall when workers cannot see changes in

terrain and hazards, hand injuries from not being able to see objects clearly and workers not being easily visible to passing vehicles and machines.

The halo light, an LED light system, is designed to be worn on the rim of a hard hat by workers in the trial. The circumference lighting was expected to provide a larger pool of light when compared to a headlamp and makes the worker more visible from all directions.

The trial results and feedback from workers is being reviewed by the designer and manufacturer to develop improvements in the technology. Further trials may be required following adjustments based on the feedback. Additional controls normally used on night works include hi-vis reflective clothing, area flood lighting and task lights on plant and vehicles.



Woolgoolga to Ballina Glenugie to Maclean section representatives receive their certificate of achievement for the implementation of the Separate Yourself program.

# Traffic management

## Over size over mass

The new Plan Awareness Caution (PAC) campaign was launched in December to keep the public informed about the oversize / over mass vehicle movements (OSOM) for the Woolgoolga to Ballina project. Increasing public awareness is important because there will be up to eight OSOM vehicles each day on the highway and local roads transporting pre-cast concrete elements to project sites along the 155 kilometre upgrade.

The bridge parts are being transported now and will continue over the next 18 months until all 8,500 pre-cast elements have been delivered.

## We encourage everyone to follow PAC.

A new webpage including real time tracking of oversize vehicles, a safety video and social media posts are just some of the tools we are using to keep our communities and roads users informed of PAC. Find out more at [www.rms.nsw.gov.au/W2B](http://www.rms.nsw.gov.au/W2B).



## Variable Speed Limit Signs

During September motorists on the Pacific Highway between Woodburn and Broadwater experienced electronic variable speed limit signs (VLSL) in action on the Woolgoolga to Ballina project.

Controlled remotely, the VLSL system is used to increase the speed limit to 100 km/h when it is safe to do so and decrease it when road work is being done.

This is the first time these types of signs have been used through a work zone or on a road in rural NSW. They eliminate the need for traffic control after hours, improve the safety of employees by keeping workers away from traffic and giving motorists a better travel experience.

The Hon Melinda Pavey, NSW Minister for Roads, Maritime and Freight, officially launched the new system that is the future of traffic control on the Pacific Highway upgrade and other projects.



NSW Roads Minister Melinda Pavey with local member for Clarence Christopher Gulaptis instructing the Traffic Management Centre to activate the signs



The VSLS system is a great example of the role technology and innovation is playing in the efficient and safe delivery of the Woolgoolga to Ballina project. We asked for feedback and you told us:

- 82 per cent of road users surveyed indicated that electronic variable speed limit signs made them more aware of their speed in a work zone



A variable speed limit sign before being placed at site

- 90 per cent of road users surveyed indicated that electronic variable speed limit signs will improve safety for road users and workers
- 83 per cent indicated that electronic speed limit signs were easier to see in wet weather or at night
- a total of 80 per cent of road users indicated that their journey through a work zone was improved by electronic variable speed limit signs.

In 2018 we will be carrying out a Driver Safety Study to evaluate driver behaviour when they are moving through a work zone.



A variable speed limit sign

## Feedback

**“ I liked the signs, made it clear what the speed limit was at that time. Some work areas can be confusing with speeds going up and down in short distances. ”**

**“ Remote speed limit changes remove the frustration of low speed limits during construction stand down periods. It is an excellent initiative! ”**

**“ Much more positive control. It empowers me as a driver knowing the speed indicated is current and up to the minute and prepares me for the possibility of a hazard ”**

**“ Though I usually always go the speed limit I’ve noticed other road users slowing down more often in the VSLS section. Perhaps this is because it notifies road users that there are definitely dangers up ahead or workers on site because the road limit has been reduced. Whereas normally a road user may assume at a certain time or date, there isn’t any danger so they will speed up to 100km. It is nice to be able to go 100km/hr when there is no danger or workers on site. I would like to see this system employed in other locations on the W2B project. ”**

# Environment

## Quick look at the last six months:

- Submitted the Woolgoolga to Ballina Biodiversity Offset Package which was developed in close consultation with the NSW Office of Environment and Heritage and identifies over 5000 hectares of proposed biodiversity offsets for the project
- Ecological monitoring results from Oxley Highway to Kempsey and Woolgoolga to Halfway Creek projects have demonstrated that Giant Barred Frog populations continue to inhabit areas bisected by the highway upgrade. This indicates the pre-clearing surveys, frog fencing and erosion and sediment control measures are working to protect frogs
- Successful rehabilitation of Tabbimobile Creek and associated Oxleyan Pygmy Perch habitat. This work received praise from NSW Department of Primary Industries Fisheries
- Reduced animal deaths due to road strike after the partial opening of Oxley Highway to Kempsey and Warrell Creek to Nambucca Heads projects. This indicates the fauna fencing is working to keep animals off the road.

## Protecting koalas

During July to December 2017 significant work was done to protect koalas and their habitat and implement the Koala Management Plan in a collaborative effort between the project team, Friends of the Koala and Ballina Shire Council.



Tabbimobile creek old bridge before rehabilitation May 2016



Tabbimobile Creek after rehabilitation, August 2017.

Our work with Ballina Shire Council has reduced koala deaths and road strikes on local and state roads by implementing a range of measures reduce the overall mortality of the Ballina koala population including:

- Installing about nine kms of koala fencing along the existing highway and Wardell Road. Koala fatalities as a result of road strikes have been reduced to zero compared to seven koala fatalities in the previous 12 months on the existing Pacific Highway
- Installing six vehicle activated koala signs and seven static safety signs on local roads in the area to increase driver awareness of koala habitats and reduce vehicle strikes
- Reducing the speed limits from 100 km/hr to 80 km/hr along a number of local roads where there is known koala habitat
- Working with local property owners on a predator control program to eliminate wild dogs and foxes with six foxes and one wild dog captured.

We have also installed two koala grids and speed limit signs of 10 km/h on Old Bagotville Road to allow fauna to cross the road safely through a 70 metre gap in fencing to access known habitat areas for koalas and long nosed potoroos.

Cortisol studies were started by the University of NSW to test the stress levels of koalas (from their droppings) during pre-construction, early construction and construction phases to get data about whether the upgrade is causing additional stress on the koala. The results will be available in mid 2018 and the data used to better understand the impact of work on the koala population.

By December 2017 we planted koala food and habitat trees on 110 hectares of previously cleared land with another 20 hectares of land to be planted after the road opens to provide a connected and long term koala habitat once the upgrade is complete

We continue to work with stakeholders to ensure the best outcome for the koalas and are keeping the community informed of progress, sharing information and working collaboratively through a quarterly Progress Update on the Koala Management Plan.

### Threatened species app

Roads and Maritime and Pacific Complete have developed a mobile app to track and record sightings of threatened species along the Pacific Highway upgrade between Woolgoolga and in Ballina in real time.

The app will provide staff with the ability to immediately record animal sightings in the field to help our environment team capture an accurate estimate of the location, number and type of wildlife along the project corridor.

The app uses GIS technology and allows information to be uploaded directly to the Office of Environment and Heritage's BioNet Atlas.

All information recorded using this app is fed into the project's reporting systems to better inform our monitoring programs. It also ensures accurate, relevant and reliable data is stored and easily accessed.

### Why did the fish cross the road?

It is a good question and one that is being answered in a collaborative effort between Roads and Maritime, Pacific Complete, NSW Environmental Protection Authority, Davbridge Pty Ltd and NSW Department of Primary

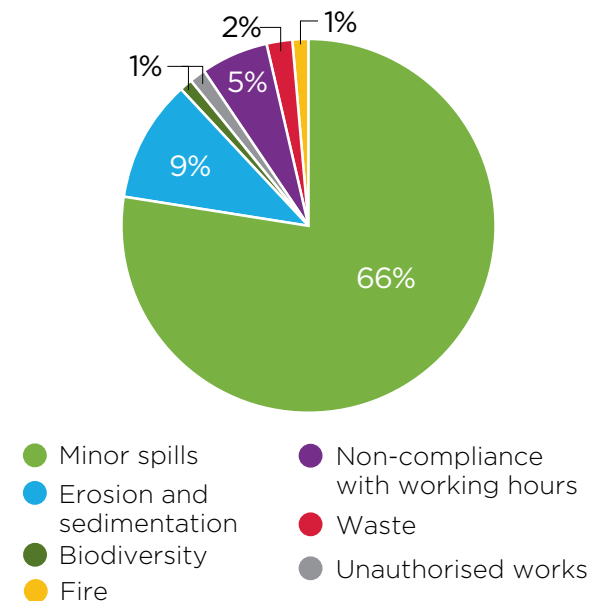
Industry and Fisheries to rehabilitate habitats for a very small endangered fish. The Oxleyan Pygmy Perch (OPP) is listed as endangered *under the NSW Fishery Management Act 1994, Commonwealth Threatened Species Conservation Act 1995 and Environment Protection and Biodiversity Conservation Act 1992* due to their limited distribution, rarity, dependence on specific habitat characteristics, and their vulnerability to habitat loss or degradation, water pollution, changes to hydrological regimes, barriers created instream, and competition or predation from introduced species.

It would be easy to overlook an adult fish measuring between 3.5 to 6 cm in size. The fish usually spawn between October and April when water temperatures exceed 20° celcius in waterways of the unique, lowland coast 'wallum' heaths. The OPP has a very limited habitat located from the north-eastern coast of NSW through to south-eastern Queensland. The decline in fish numbers highlights how important it is to conserve habitats to protect biodiversity.

We are doing our part on the Woolgoolga to Ballina project and have built a new bridge over Tabbimoble Creek and rehabilitated the old one. The Tabbimoble Creek under the old bridge on the Pacific Highway was polluted from cattle use and the lack of soil erosion protection under the old bridge deck. Pygmy Perch are very particular in their water needs so we will also retrofit operational water quality measures on the old bridge by capturing bridge deck runoff and piping to nearby water treatment ponds (water quality basins).

Cattle are now excluded from the site and the banks of the creek have been extensively stabilised. This site has been replanted with native vegetation specifically selected for sensitive habitat areas of the creek bank and surrounds.

### Environmental incidents recorded July to December 2017



There were 85 incidents recorded on active Pacific Highway construction projects from July to Dec 2017. Minor spills refer to spills less than 10 litres that have not left the project boundary and are cleaned up immediately. There was one biodiversity incident related to a small area of clearing <400m2 outside project clearing limits but no threatened species or habitat trees were impacted. Unauthorised works - relates to works occurring without our internal approvals in place.



# Port Macquarie to Coffs Harbour overview



Status of upgrade at December 2017

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. Forty six kilometres of upgraded roadway across three projects was opened to traffic between July and December, leaving only 11 kilometres between Port Macquarie and Coffs Harbour to be finished.

The remaining kilometres are expected to be open in the first half of 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.

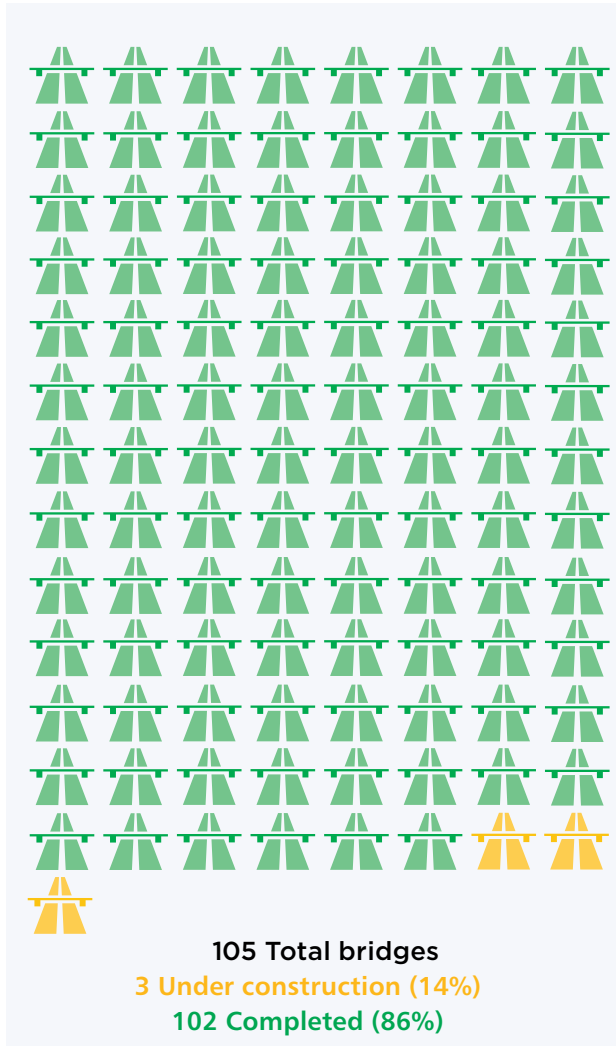
The summaries on the following pages outline progress in completing this section of the Pacific Highway upgrade, including key activities from July to December 2017.



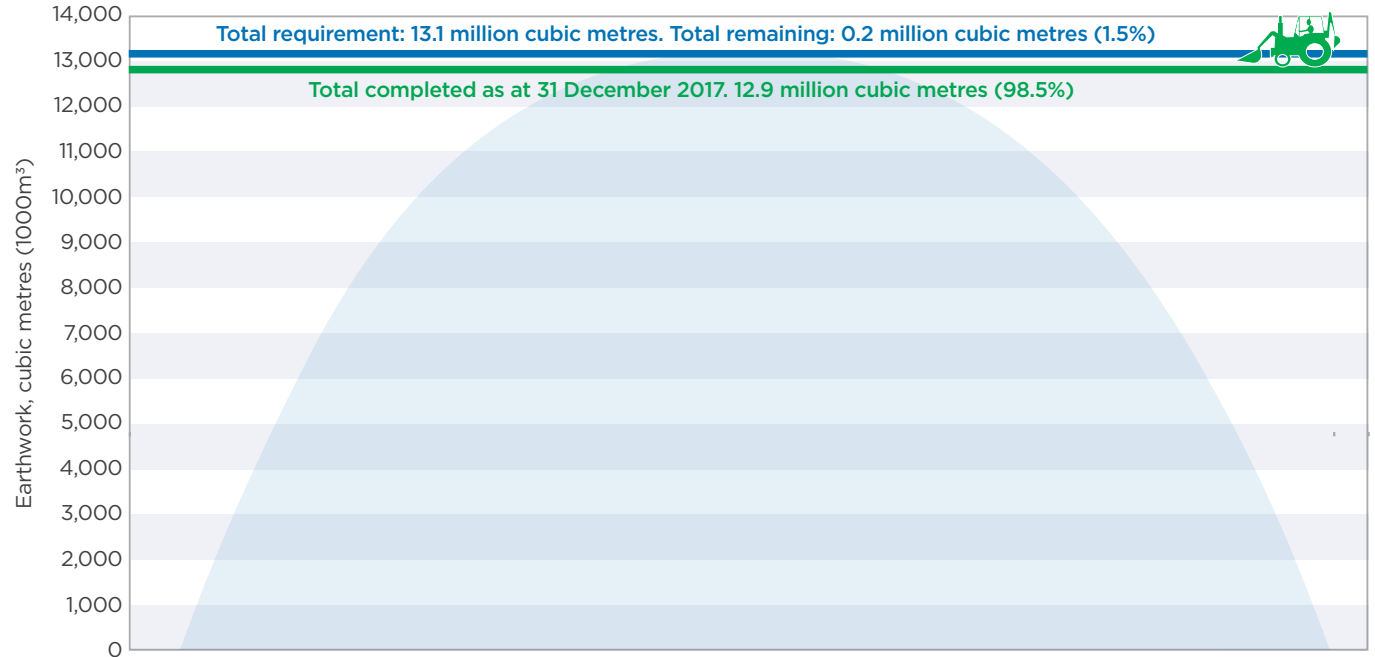
Aerial view of the new bridge over the Hastings River looking north east, December 2017

# 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:** 310 workers per month

**Average pieces of large machinery on site during the past six months:** 66 pieces of machinery per month

**Start date of major construction:** October 2014

**Completion date:** 18 kilometres open to traffic; the remaining 5 km to open in early 2018

**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.

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

### July to December 2017, work progress:

- ✓ opened 18km of four lane divided highway between Oxley Highway and Haydons Wharf Road
- ✓ completed all bridges on the project

- ✓ finished all of the major drainage culverts and fauna crossings on the northern section of the project
- ✓ completed earthwork between Haydons Wharf Road and Barrys Creek
- ✓ finalised work on local roads.


### January to June 2018, expected work progress: weather permitting

- finish and open to traffic the final 5kms between Haydens Wharf Road and Kundabung
- finish noise treatments on residences
- continue ecological monitoring.



 on average **310** workers on site per month

 on average **66** pieces of large machinery on site

 about **93%** complete

**PARTIALLY OPEN TO TRAFFIC**



June 2017



Aerial view of the new bridge over Wilson River (June 2017)

December 2017



Aerial view of the new bridge over Wilson River (December 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:** 141 workers per month

**Average pieces of large machinery on site during the past six months:** 34 pieces of machinery per month

**Start date of major construction:** November 2014

**Completion date:** Open to traffic

**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.

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

### July to December 2017, work progress:


- ✓ opened all four lanes at 100km/hr
- ✓ completed all concrete paving
- ✓ opened Barrys Creek rest areas
- ✓ opened the southbound Heavy Vehicle Inspection Bay.

### January to June 2018, expected work progress: weather permitting

- complete landscaping, fencing and finishing work
- complete all ancillary work on side roads.



 on average **141** workers on site per month

 on average **34** pieces of large machinery on site

 open to traffic

**OPEN TO TRAFFIC**



June 2017



Aerial view of the interchange at Kundabung Road (June 2017)

December 2017



Aerial view of the interchange at Kundabung Road (December 2017)



# Projects being built

## Project snapshot

**Contractors:** Pacifico (Acciona Ferrovia Joint Venture)

**Form of contract:** Design and build

**Average workers on site during the past six months:** 354

**Average pieces of large machinery on site during the past six months:** 136

**Start date of major construction:** December 2014

**Completion date:** Remainder to open to traffic in mid-2018.

**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.

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

### July to December 2017, work progress:

- ✓ opened 14 kilometres of dual carriageway between Bald Hill Road and the Nambucca Heads interchange

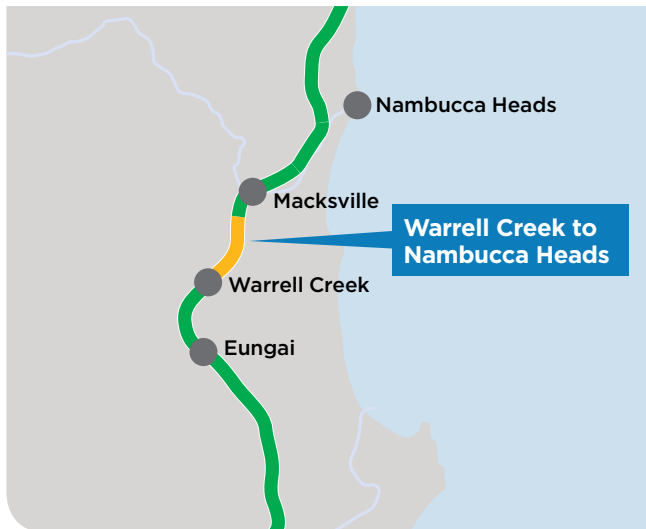
- ✓ completed rail switchback at the rail overpass at Warrell Creek
- ✓ started paving south of Scotts Head Road
- ✓ held a community open day and bridge walk
- ✓ completed glider poles and fauna underpasses in the northern section of the project.

### January to June 2018, expected work progress: weather permitting

- complete the Williamson Creek and Upper Warrell Creek bridges, the southern interchange and asphaltting
- open the remaining six kilometres of dual carriageway.


### Community issues:

- published final report regarding Browns Crossing Road flooding
- continue installing at-house noise treatments.



 on average **354** workers on site per month

 on average **136** pieces of large machinery on site

 about **92%** complete

**PARTIALLY OPEN TO TRAFFIC**



May 2017



Old Coast Road and north facing ramps looking south towards Philip Hughes Bridge (May 2017)

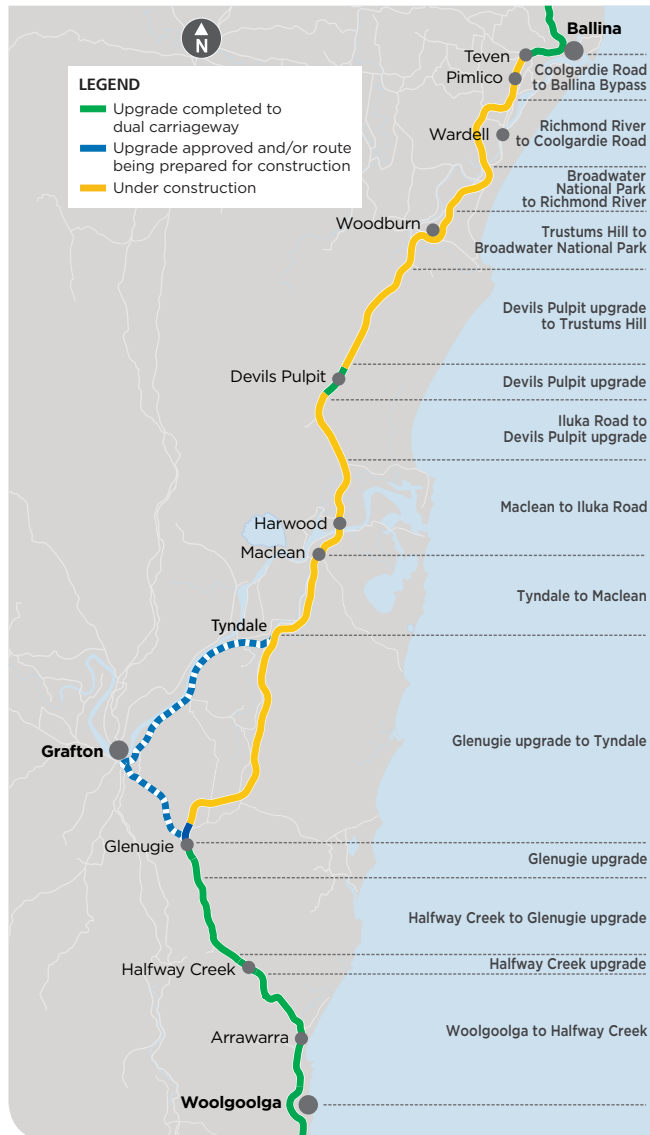
December 2017



Old Coast Road and north facing ramps looking south towards Philip Hughes Bridge (December 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
- 14.3 million cubic metres of earthwork
- nine interchanges
- five towns/villages bypassed.

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

**July to December 2017, work progress**

- ✓ opened 26 kilometres of new four lane divided highway between Woolgoolga and Glenugie
- ✓ started alignment wide bridge piling activities from Glenugie to Ballina Bypass
- ✓ awarded all main civil work and highway bridge construction contracts except section from Maclean to Iluka Road
- ✓ started site and construction work for the major bridge over Richmond River
- ✓ started off-site manufacture and delivery of pre-cast concrete elements
- ✓ completed bridge piling on the southern and northern banks of the Clarence River at Harwood and started girder construction.

**January to June 2018, expected work progress: weather permitting**

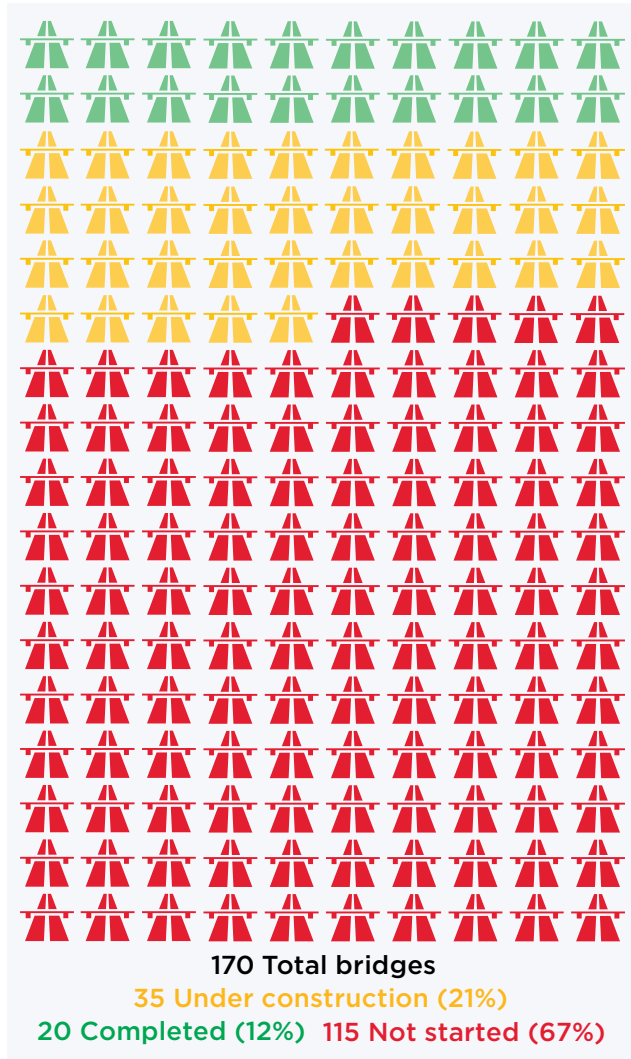
- Commence mainline paving for Glenugie to Maclean, Maclean to Devils Pulpit and Richmond River to Ballina sections
- Install the final girder on the new bridge over the Clarence River bridge at Harwood.

 on average **2176** workers on site per month

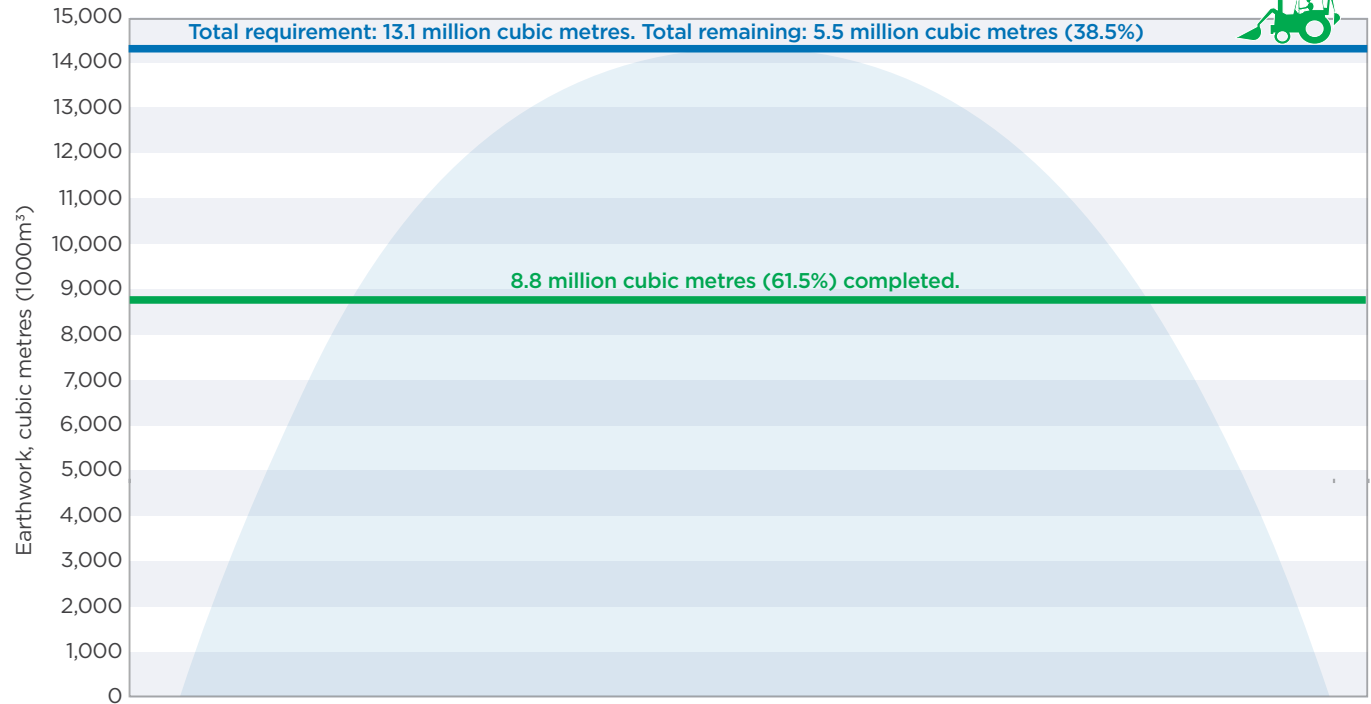
 on average **341** pieces of large machinery on site

# Woolgoolga to Ballina overview

## Bridges



## Earthwork



## Road surface (road carriageway kilometres)





# Projects being built

## Project snapshot

**Contractors:** Civil Mining and Construction and OHL and York joint venture

**Form of contract:** Build only

**Average workers on site during the past six months:** 196 workers per month

**Average pieces of large machinery on site during the past six months:** 96 pieces of machinery per month

**Start date of major construction:** June 2015

**Completion date:** Open to traffic

**Project value:** Form parts of the Woolgoolga to Ballina upgrade



## Woolgoolga to Glenugie

**The Woolgoolga to Glenugie project forms the first section of the 155 kilometre Woolgoolga to Ballina upgrade. The 26 kilometre section was jointly funded by the Australian and NSW governments and includes twin bridges over Halfway and Wells Crossing creeks, a 300 metre bridge over the Corindi River floodplain, a wide median to assist animals crossing at Newfoundland State Forest and a new rest area at Arrawarra.**

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

### July to December 2017, work progress:

- ✓ opened 26 kilometres of new four lane divided highway
- ✓ opened Arrawarra Rest Area
- ✓ finished installing signage, line-marking, property work and removal of temporary work between Halfway Creek and Glenugie

- ✓ finished fauna connectivity work between Halfway Creek and Glenugie
- ✓ completed concrete paving between Arrawarra to Dirty Creek Range.

### January to June 2018, expected work progress: weather permitting

- complete Arrawarra Rest Area landscaping
- complete fencing along new highway
- refresh line-marking and final seals on local roads
- complete line-marking and signage for Eggins Drive bike path
- complete the new heavy vehicle inspection bay at Halfway Creek.

### Community issues:

- continue at-house noise treatments
- complete property adjustment work.

 on average **196** workers on site per month

 on average **96** pieces of large machinery on site

 open to traffic

**OPEN TO TRAFFIC**

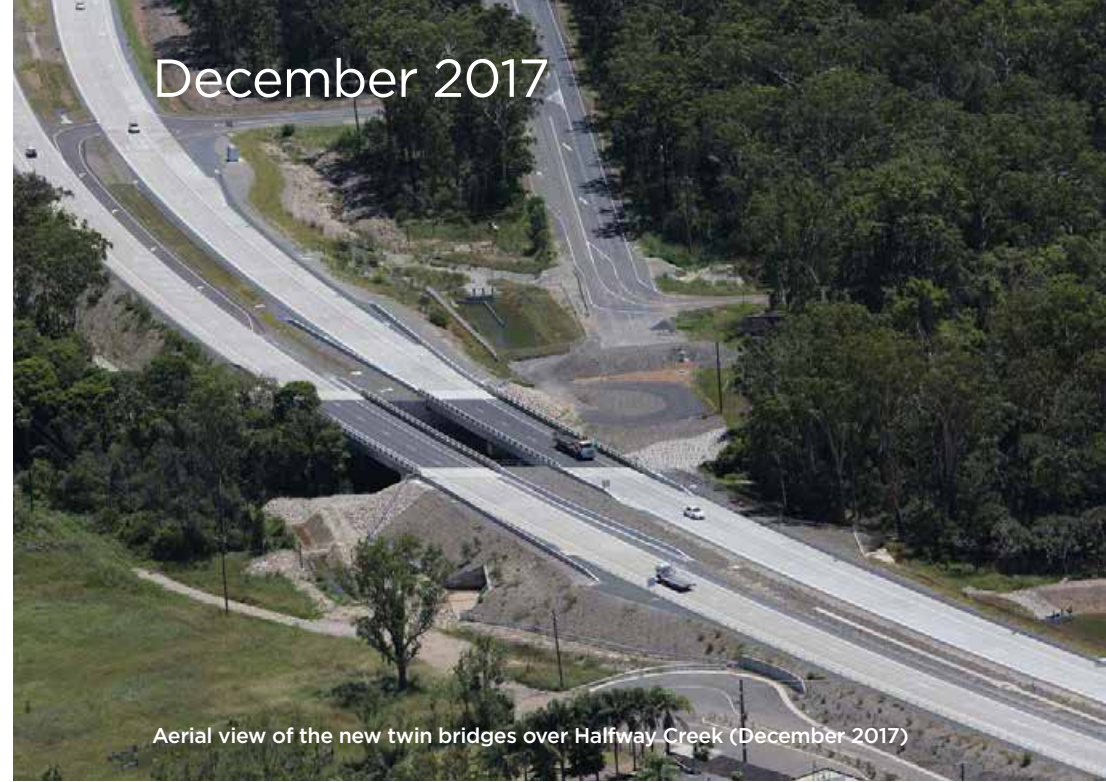


May 2017



Aerial view of the new twin bridges over Halfway Creek (May 2017)

December 2017



Aerial view of the new twin bridges over Halfway Creek (December 2017)



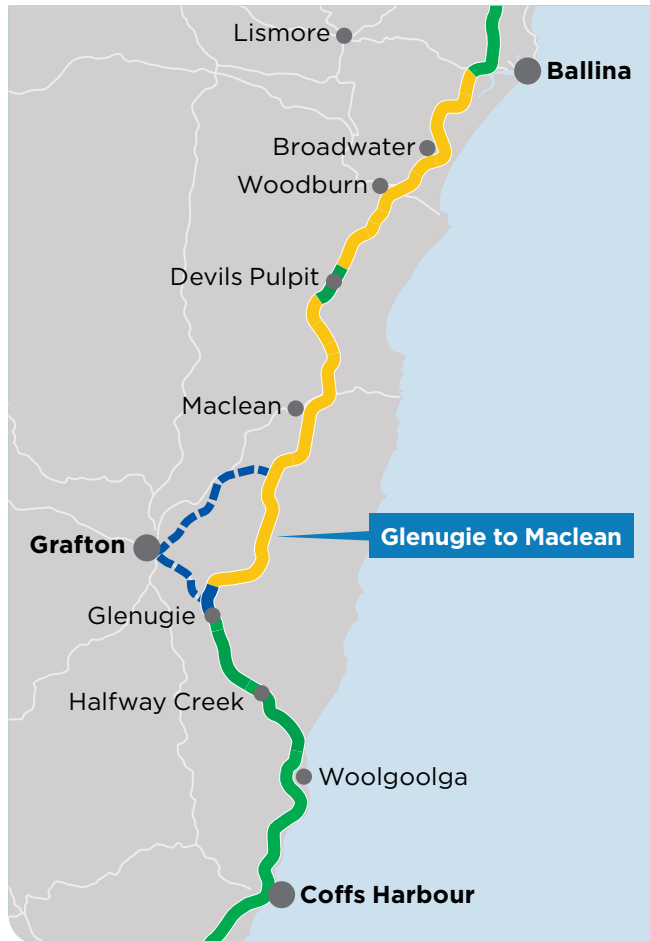
Aerial view of the cutting at Dirty Creek (May 2017)



Aerial view of the cutting at Dirty Creek (December 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.

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

### July to December 2017, work progress:

- ✓ completed early work and soft soil treatment packages
- ✓ Started work on bridges between Glenugie and Maclean

- ✓ started main civil construction work
- ✓ received tenders for rigid pavement work
- ✓ completed Tyndale site compound.

### January to June 2018, expected work progress: weather permitting

- award major work package for construction of rigid road pavement
- complete bridge construction between Glenugie and Shark Creek
- start work on section of highway near Eight Mile Lane, Glenugie.

### Community issues:

- provide regular notifications to local residents about traffic changes, including temporary road closures and changes to speed limits, and continuing to work with Clarence Valley Council and local police to address impacts to the local road network
- impacts on local companies from major subcontractor going into administration.

 on average **320** workers on site per month

 on average **79** pieces of large machinery on site

 about **20%** complete

### Main contract partners on site

Seymour Whyte Constructions  
BGC Contracting Pty Ltd|  
BMD Construction



May 2017



Aerial view north of Tyndale looking north (May 2017)

December 2017



Aerial view north of Tyndale looking north (December 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.

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

### July to December 2017, work progress:

- ✓ completed and opened diversion at Yamba interchange
- ✓ completed and opened Carrols to Fischers local road
- ✓ completed widening of Pacific Highway at Chatsworth Island

- ✓ completed building two bridges at Tabbimoble
- ✓ awarded the contract for main civil work from Iluka Road to Devils Pulpit
- ✓ started building overpasses, bridges and floodplain bridges between Maclean and Iluka Road
- ✓ finished clearing vegetation between Iluka Road and Devils Pulpit.


### January to June 2018, expected work progress: weather permitting

- finish remediation work at old United Service Station and Roads and Maritime service depot
- finish soft soil treatment.

### Community issues:

- consulting the community about the *Glenugie to Devils Pulpit hydrological mitigation report - Maclean levee* including two community information sessions and one staffed display.

 on average **270** workers on site per month

 on average **80** pieces of large machinery on site

 about **20%** complete

### Main contract partners on site

Golding Contractors  
 Davbridge Properties  
 BMD Construction  
 Bielby Hull Albem Joint Venture





May 2017

Aerial view of Clarence River North Arm at Mororo looking east (May 2017)

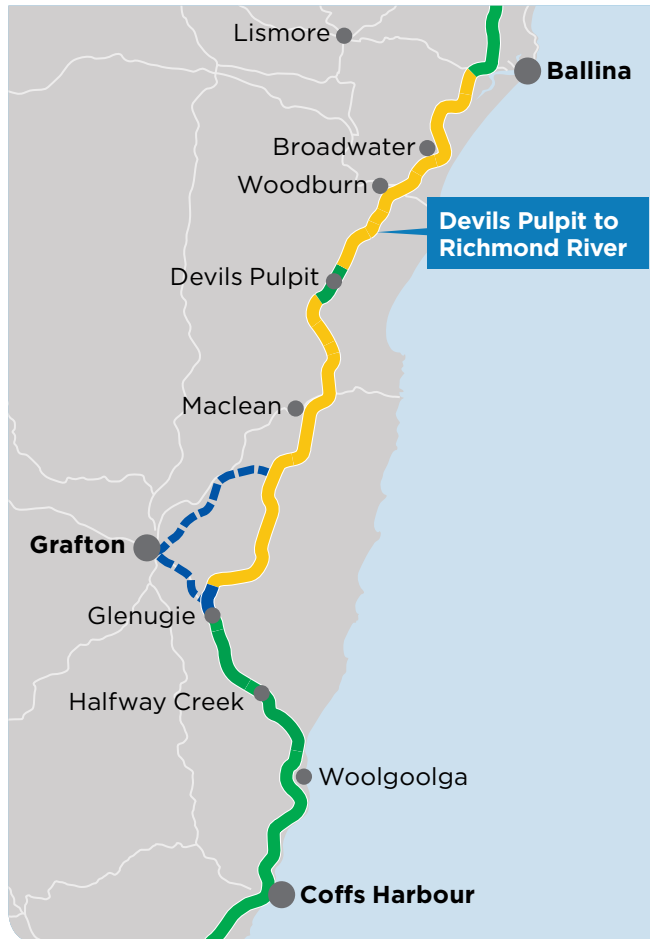


December 2017

Aerial view of Clarence River North Arm at Mororo looking north (December 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.

**1 day was lost to wet weather in the past six months.**

### July to December 2017, work progress:

- ✓ started building bridges between Trustums Hill and Richmond River
- ✓ awarded contract for main civil work packages between Devils Pulpit and Richmond River
- ✓ completed soft soil treatment
- ✓ major work package for civil work awarded.


### January to June 2018, expected work progress: weather permitting

- open Woodburn to Broadwater service road
- complete two bridges near Broadwater National Park.

### Community issues:

- work with local property owners to understand and respond to drainage issues
- consult with community about the Moonimba Quarry proposal including two information sessions and one on one meetings with landowners.

 on average **150** workers on site per month

 on average **36** pieces of large machinery on site

 about **22%** complete

### Main contract partners on site

SEE Civil  
Bielby Hull Albem Joint Venture  
CPB Contractors  
Rous Water



May 2017



Aerial view north of Woodburn looking north (May 2017)

December 2017



Aerial view north of Woodburn looking north (December 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.

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

### July to December 2017, work progress:

- ✓ finished first stage of vegetation clearing
- ✓ finished removal of existing Duck Creek and Emigrant Creek bridges
- ✓ awarded major contract for building bridges between Richmond River and Coolgardie Road
- ✓ started main civil work
- ✓ finished installing permanent wildlife exclusion fencing along Pacific Highway
- ✓ started road foundation treatment at Whytes Lane West and Coolgardie roundabout
- ✓ started 13 month soft soil settlement period south of Duck Creek and north of Emigrant Creek

- ✓ started piling for bridge construction
- ✓ completed utility diversions for power and communications.

### January to June 2018, expected work progress: weather permitting

- start soft soil treatment at Coolgardie intersection
- start building new Emigrant Creek Bridge
- complete vegetation clearing along existing Pacific Highway south of Whytes Lane
- finish building Old Bagotville and Montis roads.


### Community issues:

- publish the operational noise report

### Environmental issues:

- ongoing dust management and local access
- implement the Koala Management Plan.

 on average **219** workers on site per month

 on average **62** pieces of large machinery on site

 about **20%** complete

### Main contract partners on site

Georgiou Group  
Quickway Constructions  
Lendlease



May 2017



Aerial view of the Pacific and Bruxner highways near Ballina, looking south

December 2017



Aerial view of the Pacific and Bruxner highways near Ballina, looking south



# Projects being built

## Project snapshot

**Contractors:** Pacifico

**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



## New bridge over Clarence River at Harwood

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

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

### July to December 2017, work progress:

- ✓ finished installing pile casings in the river and on the northern and southern shores of the Clarence River
- ✓ installed 20 precast concrete bridge girders
- ✓ established on-site concrete batch plant.

### January to June 2018, expected work progress: weather permitting

- start building embankment on the southern shore of the Clarence River
- start pouring concrete for bridge deck
- install girders on the southern approach
- finish building piles at southern approach.




Clarence River at Harwood looking south (May 2017)



Clarence River at Harwood looking north (December 2017)

 on average **294** workers on site per month

 on average **50** pieces of large machinery on site

 about **62%** complete

 **1** contractor company on site

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

**1 day was lost to wet weather in the past six months.**

### July to December 2017, work progress:

- ✓ site compound completed and occupied
- ✓ finished main alignment earthwork at southern approach embankment

- ✓ finished building temporary jetty
- ✓ started delivering Super-T bridge girders to site
- ✓ started building bridge piles on southern bank of Richmond River.

### January to June 2018, expected work progress: weather permitting

- finish vegetation clearing
- start building first pre-cast bridge headstocks
- start piling work in the Richmond River
- finalise bridge design.





Aerial view north of Broadwater looking east (May 2017)



Aerial view north of Broadwater looking east (December 2017)

 on average **80** workers on site per month

 on average **7** pieces of large machinery on site

 about **30%** complete

 **1** contractor company on site





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