



Australian Government

**BUILDING OUR FUTURE**



Transport for NSW

# Pacific Highway Upgrade - Six month report card



New bridge over Richmond River at Broadwater looking south

January to June 2019

## Ministerial Foreword

Deputy Prime Minister and Minister for Infrastructure, Transport and Regional Development.

If you live in New South Wales and enjoy holidays on the Mid-North or North Coasts, then you've more than likely travelled along the Pacific Highway.

Each and every year, tens of thousands of families pack the car and hit this 657-kilometre stretch of road to create their fondest memories. I am proud the Australian and NSW Liberal and Nationals Governments are working together to remove 2½ hours from Hexham to the Queensland border.

We are duplicating the entire 657km section making this important upgrade the largest road infrastructure project in the nation.

This report offers a bite-sized window into the complex schedule of projects which, taken together, will help make sure the Pacific Highway is still fit for purpose ahead of its second century.

Just one statistic is needed to illustrate the ambition of the Woolgoolga to Ballina section of the upgrade: 170 bridges. Of these, 135 are already completed and a further 34 are under construction.

But for the many Australians who live along the route, who are occasional tourists or the end consumers of the goods delivered along it, the benefits are more immediate and personal.

For example, more than 3,100 people have worked on the Pacific Highway upgrade during the six-month period of this report. This means real money on the table for many families.

Safety has also improved since the commencement of the Pacific Highway upgrade with the number of fatal crashes continuing to decrease. There were nine fatalities in 2018 which is less than half the average for the previous five years.

### It's true – safer roads save lives.

This project is just one of thousands we're investing in right across the nation as part of our \$100 billion pipeline of Infrastructure projects to get Australians to where they need to be sooner and safer.

I commend this report to you. It makes for interesting reading.

### The Hon. Michael McCormack, MP

Deputy Prime Minister  
Minister for Infrastructure, Transport and Regional Development



The Hon. Michael McCormack  
DPM

## Ministerial Foreword

Minister for Regional Transport and Roads

The Pacific Highway upgrade is a vital piece of the nation's infrastructure and is a key link in the National Land Transport Network and a significant investment for both the Australian and NSW governments.

With work proceeding rapidly on the final stretches of the Woolgoolga to Ballina section, the end of this multi-generational project is in sight. That means smoother, faster and, most importantly, safer journeys along the North Coast of NSW. That is game changing for local communities, for interstate freight movement and for tourists travelling up and down the Pacific Highway. Faster, safer and smoother travel means that businesses can move goods faster, which means more productivity and a growing economy. It means commuters get to work, to family and friends, to the shops, and back home safely and quickly. It means more tourism and more visitors each year, which means more money in regional communities, which is good news for local businesses.

We're nearly there. This report highlights how far we have come, the progress we have made across a number of areas and the remaining steps as we approach completion in late 2020.

I appreciate patience shown by so many while the upgrade work impacts commuters and local communities. I look forward to monitoring progress and outcomes in my new role as Minister for Regional Transport and Roads.

### The Hon. Paul Toole, MP

Minister for Regional Transport and Roads



The Hon. Paul Toole, 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 2019. 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 duplication of the Pacific Highway in 2020. The upgrade is 82 per cent complete with safety and travel efficiency benefits being realised on completed sections.**

The remaining sections in major construction between Glenugie and Ballina are on track to progressively open to traffic before or during 2020. Development of the Coffs Harbour bypass is also well underway with the projects' environmental impact statement planned to be displayed in mid- 2019. The project is expected to start construction in 2020, subject to all relevant planning and environment approvals being received. 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.



Construction continues for the new bridge over Koala Drive at Farlows Flat, Maclean

# Status of upgrade at June 2019



As of 30 June 2019, building continues on the sections of highway between Woolgoolga and Ballina. About 530 kilometres of the final 657 kilometre length of the Pacific Highway are four lane divided road. The remaining kilometres are all in major construction and are on schedule to open before or during 2020. This excludes the Coffs Harbour bypass as the existing Pacific Highway is already dual carriageway through this area. The Coffs Harbour bypass is in planning and subject to all planning and environmental approvals is expected to start construction in 2020.

**Key project milestones achieved during the past six months**

**Glenugie to Ballina (June 2019):**

- ✓ Moved traffic onto more than 20 kilometres of new road between Glenugie and Ballina, one lane in each direction
- ✓ Opened 14 overpass bridges providing safe and reliable access across the highway upgrade
- ✓ Complete consultation for temporary concrete batch plant operations at Avenue Road, Lavadia and Coldstream Road, Tyndale
- ✓ Completed consultation for a temporary asphalt batch plant to supply asphalt between Maclean and Devils Pulpit.

 about **82%** of highway length now four lane divided road

 **129km** of highway being built

# Upgrade outcomes

**Where are we now**

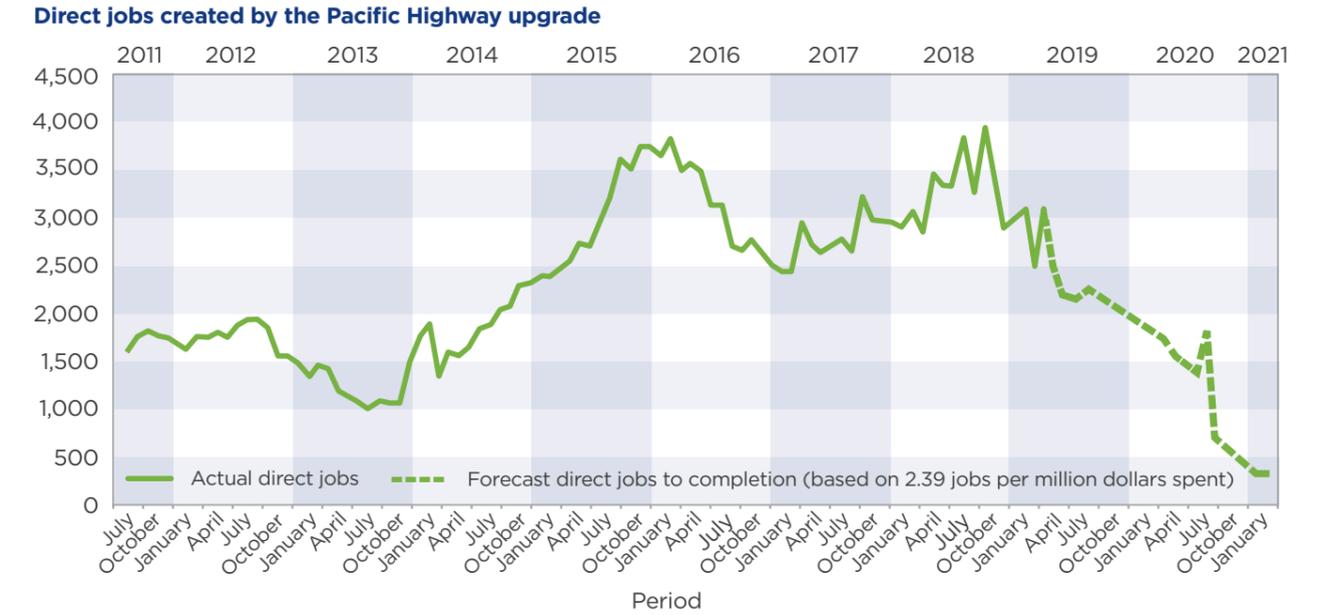
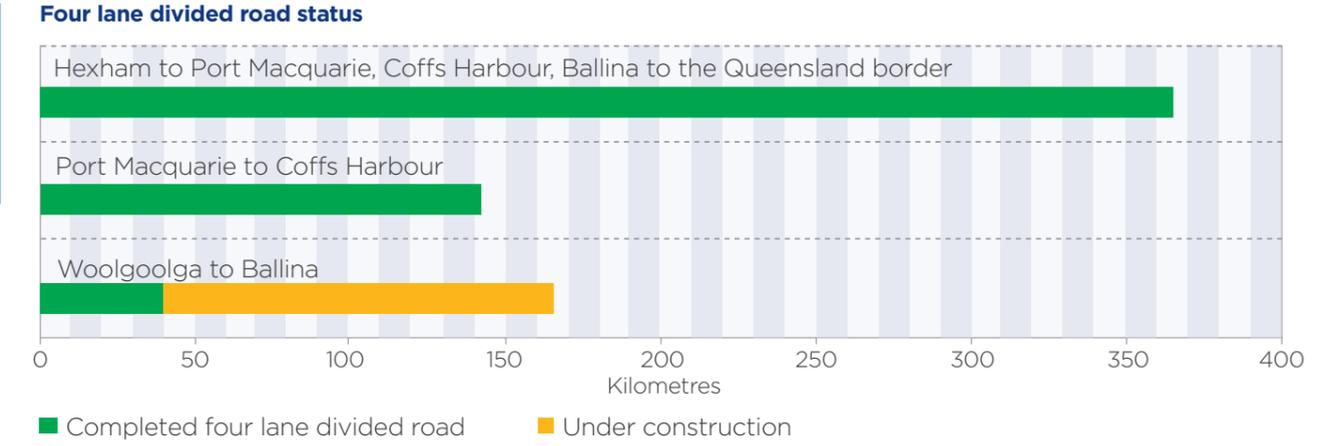
About **530 kilometres** of the final 657 km length of the Pacific Highway are four lane divided road

The remaining kilometres are under construction.

An average of about 3162 people have been employed on the highway upgrade from January to June 2019. This is compared to the 3249 workers employed in the previous six months. During the last six months, the number of people employed on the Woolgoolga to Ballina upgrade has steadied. Meanwhile, work elsewhere on the highway has reduced as projects between Port Macquarie and Coffs Harbour have been completed.

Apart from some finalisation activities between Warrell Creek and Nambucca Heads, construction is focused between Glenugie (south of Grafton) and Ballina. Transport for NSW 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.



# Upgrade outcomes

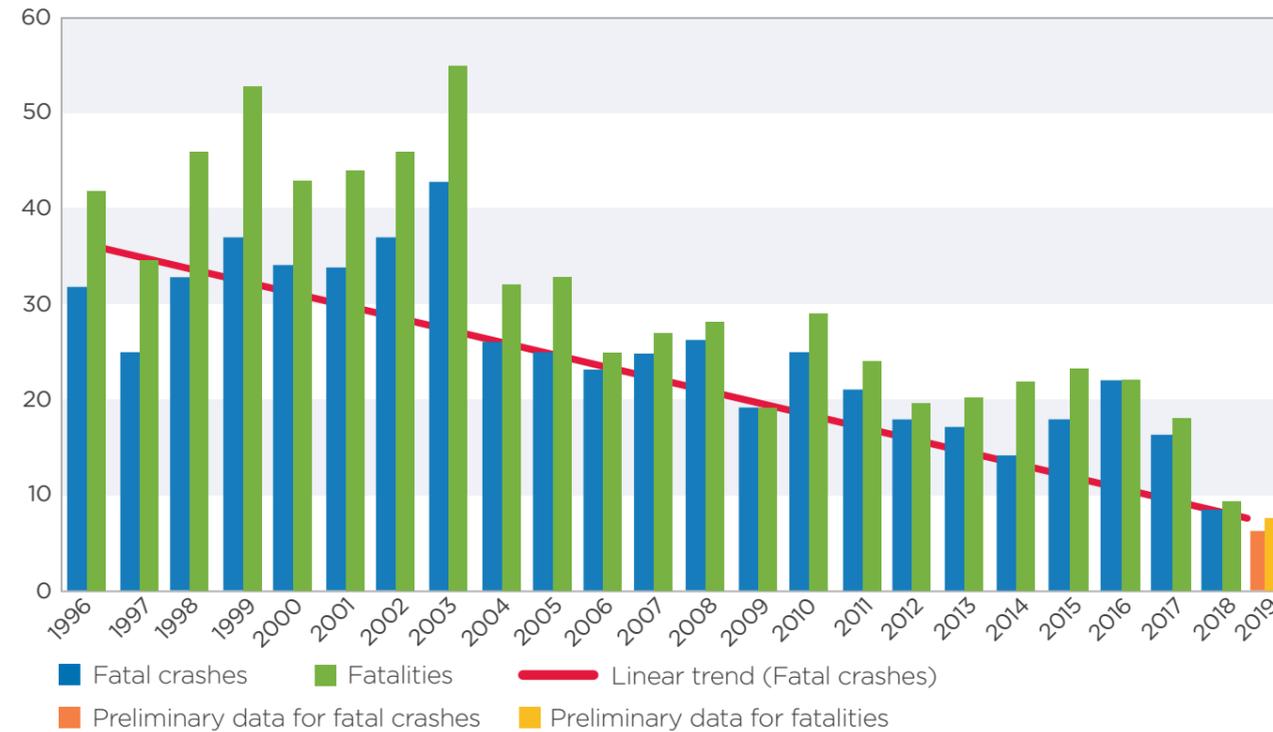
## Safety update

All road users in New South Wales should be able to arrive safely at their destinations. Safety continues to be a key driver of the upgrade program.



The Arrawarra rest area forms part of the overall rest area strategy for the Pacific Highway, encouraging and ensuring motorists have a place to rest on long trips.

Fatal crashes and fatalities each year



## Crashes reduced

Fatal crashes have halved, down from around 50 each year to less than 25 and most recently to 8 in 2018. In 2018, 9 people died in 8 fatal crashes. This compares with the previous five year average of 21 fatalities in 17 crashes. In the first half of 2019, 8 people died in 7 fatal crashes.



# Upgrade outcomes

## 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 and 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). Annual travel time surveys have used the same start and end points to ensure the results over time can be compared.

Since the previous travel time survey in 2017 new sections of the highway have opened to traffic (Oxley Highway to Kundabung, Warrell Creek to Nambucca Heads) and speed limit has increased on other sections.

The average travel time between Glenugie to Ballina has reduced from 123.2 minutes to 114.7 minutes in the first half of 2019.

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. Actual travel time is also dependent on the number of and time taken 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).



## Saving time

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.



## Upgrade outcomes

The Woolgoolga to Ballina project team continue to support the New South Wales Government's Aboriginal Participation in Construction (APiC) initiative. Aboriginal employment on the Woolgoolga to Ballina upgrade (Glenugie to Ballina sections) averaged six per cent in the first half of 2019. In addition, there were also a number of Aboriginal businesses that continued to supply goods and services throughout the first half of 2019. The Woolgoolga to Ballina upgrade project continues to lead in civil construction and industry for Aboriginal participation.

### Expenditure update

The total expenditure for the upgrade program for the period January to June 2019 was \$614 million, with continued strong delivery in Woolgoolga to Ballina construction with an average monthly spend of \$95 million. Additional significant expenditure has been incurred on southern projects within the program and Coffs Harbour bypass. Expenditure on the program for the full year was \$1.32 billion.

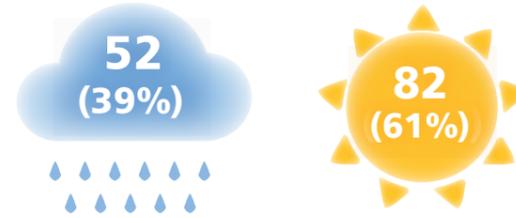


**170 out of 178 contracts awarded as at June 2019 (95.5%)**

### Wet weather

Weather patterns in the period January to June 2018 included an average of 52 days of work lost across the upgrade projects to weather events. This compares to 51.5 days between July to December 2018. June was the month with most days lost to wet weather, losing 17 out of a planned five days of wet weather in sections between Glenugie and Ballina.

**Average work days – January to June 2019 from 134 available working days\***



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



Deck pours complete on the new bridge over Shark Creek

## Case study: No barriers to improving safety

Transport for NSW Services recently trialled a number of barrier systems at the St Helena Tunnel to prevent access of unauthorised vehicles entering the tunnel during planned maintenance closures.

The St Helena Tunnel was opened to traffic in December 2015, and has since become an iconic feature of the Pacific Highway.

The St Helena Tunnel is closed to traffic for two nights every three months for routine maintenance to ensure the tunnel systems are safe and operational for the travelling public. The closure is coordinated from the Regional Traffic Operation Centre, located above the tunnel.

Every aspect of maintaining the tunnel is carefully planned to ensure the time is used efficiently.

We carry out systems testing, including the fire suppression and traffic management systems. Other key activities include lighting repairs, maintenance of jet fans and electronic signs, wire rope repairs, vegetation management and general maintenance including cleaning of traffic cameras.

During one of these closures earlier this year a vehicle entered the tunnel compromising the safety of workers and the road user.

In response, the project team trialled a number of measures to protect workers and motorists, including portable boom gates, empty water-filled barriers to provide a visual deterrent at on/off ramps and vehicle mitigation barriers to disable high speed unauthorised vehicles on the motorway.

The trial found that the portable boom gates allowed easy entrance and exit into the site through designated access points. The empty water-filled barriers filled gaps at the on/off ramps and provided a good visual barrier to prevent the entry of unauthorised vehicles.

But the stand-out was the vehicle mitigation barriers.

The barriers are used as the last line of defence and stop unauthorised vehicles before it enters a site where people are working. The barriers can be set up over the full width of the road in 15 minutes with no special machinery or lifting equipment. The deployment trailer, developed by the Critical Infrastructure and Security Branch, lowers to the ground reducing manual handling issues when lifting the barriers in and out of the trailer.

It's anticipated the barriers will be used again during tunnel maintenance in the future.



The barriers are transported in a trailer that hydraulically lowers to the ground to minimise manual handling



Vehicle mitigation barriers installed across the road to prevent unauthorised vehicles entering site

## Case study: Celebrating 30 years of Port Macquarie-Hastings Driver Reviver

The Driver Reviver program operates throughout Australia during school holidays and over long weekends to reduce fatigue-related crashes on our roads. The sites offer toilet facilities, shade, seating and water. Some offer activities for children, baby change tables and pet bowls. This year, the Port Macquarie-Hastings Driver Reviver celebrated 30 years of operation. Since 1989, the site has catered to many thousands of visitors from across Australia and overseas, encouraging drivers to stop and take a break while travelling up and down the east coast using the Pacific Highway.



L-R: SES Local Commander Paul Burg, SES Unit Controller Michael Ward, Port Macquarie-Hastings Mayor Peta Pinson, SES Deputy Zone Commander Anthony Day and A/Regional Director Vicky Sisson

Transport for NSW recognised the contribution of the Port Macquarie-Hastings volunteers with a morning tea attended by over 100 people, including members of the SES and NSW Police. While the event marked



Driver reviver volunteers, past and present, SES and NSW Police representatives

the closure of the facility due to the completion of the upgraded highway, the efforts of volunteers over the years to assist those regularly stopping to take a break will be remembered.

## Case study: Crash cars on show

Transport for NSW and Police Highway Patrol joined forces to discuss road safety at the Coffs Harbour Show, held in May.

The collaborative partnership offered the opportunity to educate road users about the ways they can change their behaviour and make better driving choices.

With a focus on speed, fatigue and drink driving, the event showcased the Crash Car display, which featured two vehicles crashed at speed in a crash lab.

These crash tests duplicate a head-on crash with a vehicle of a similar size travelling at the same speed – one crash test taking place at 60km/h and the other crash test at 100km/h – resulting in very different outcomes.

The outcomes show that drivers travelling at higher speeds are more at risk of serious head, neck and right femur injuries.

Visitors to the event were also encouraged to explore the Transport for NSW Used Car Safety Ratings review and buy the safest vehicle they can afford.

Newer vehicles provide more protection in a crash as they use high-strength materials and have features like improved impact crumple zones and collapsible steering columns.

The average risk of death or serious injury to the driver in a crash in a 2016 car is nearly 50 per cent less than in a 1996 car.



Crash car display featuring vehicles crashed at speed in a crash lab

# Workplace health and safety

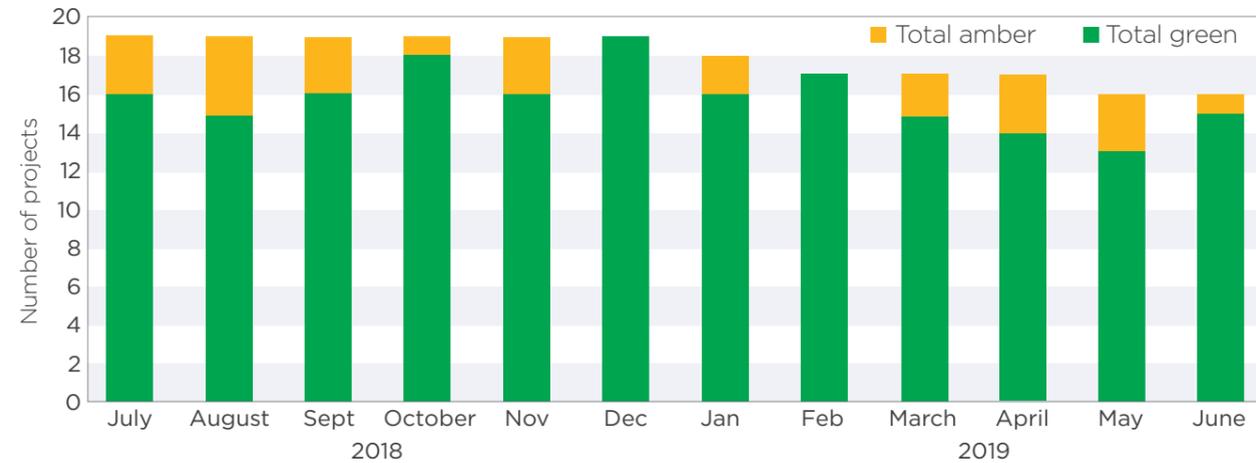
**Safety is a core value for Transport for NSW and its contract partners. We are focused on the safety of all road users and our workers.**

As the agency responsible for enabling safe and efficient journeys throughout NSW, Transport for NSW 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

A 'traffic light' reporting system is used to identify performance against prescribed safety targets. In the graph below, the green results show those activities that meet these safety requirements. During the period January 2019 to June 2019 91 per cent of results were rated green compared to 88 per cent green for the period July to December 2018. This demonstrates an

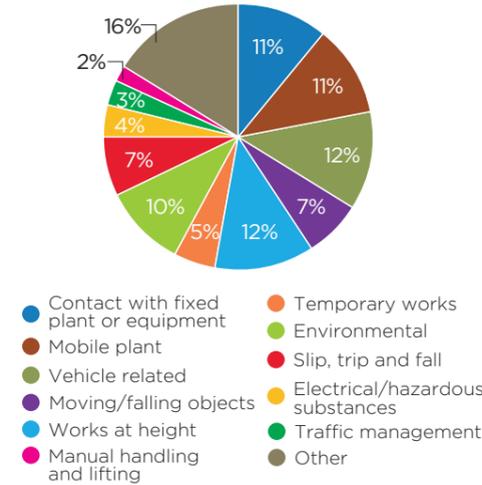
**Figure 1: Traffic Lights 12 months to end of period 30 June 2019**



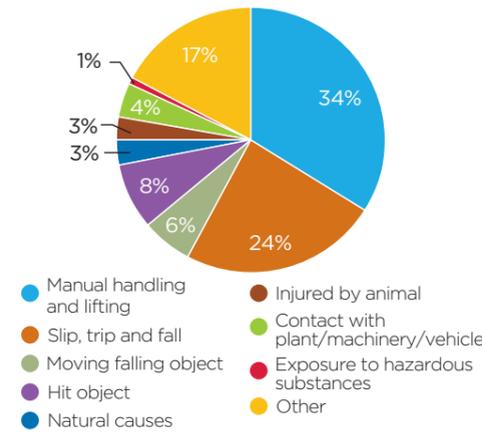
ongoing trend of improvement in overall achievement of key measures and metrics for workplace health and safety with no red results in January to June 2019.

964 hazards were reported during this period, a 13 per cent increase in hazard reports compared to the previous six months. Vehicle related and Works at height related hazards were the most common type of hazards identified on Pacific Highway project sites. Hazards in these categories were 12 per cent each of total hazards and includes potential light vehicle collision, defective vehicles and unapproved light vehicles on site. Mobile plant and contact with fixed plant were the second most common with 11 per cent each of total reports. These included potential collision between plant, plant striking people and defective plant. Other category (16 per cent) includes incorrect or absent personal protective equipment and incorrect documentation or approvals. Identifying hazards and resolving them has been a focus

**Figure 2: Reported hazards by category January to June 2019**



**Figure 3: Reported injuries January to June 2019**



\* 'Other' includes contact with underground service or mobile plant, manual tasks such as slip, trip or fall, and environmental conditions

of Pacific Highway sites to maintain safe worksites and reduce overall risk to our workers and the public.

107 injuries were reported during the period. The injuries in the current period included six lost time injuries and 11 medical treatment injuries. Manual Handling 34 per cent and slip trip fall 24 per cent were the two leading causes of injury consistent with the previous period. The category 'Other' includes injuries not otherwise classified or where the cause is uncertain or unknown. Monitoring and inspection of sites to identify hazards and reduce risks associated with manual handling and slips, trips and falls remain a focus for all projects.

Pacific Highway upgrade projects have been leaders in safety and innovation. Following are two examples where innovation and safety have been recognised by industry and SafeWork.

## Safety Award - New bridge over the Richmond River

### Engineering Global Employee Excellence Award

The new bridge over the Richmond River, built as part of the Woolgoolga to Ballina upgrade received the 2018 Global Employee Excellence Award in the category Excellence in Safety by a Team. The award recognised an integrated team effort that made a significant difference to the safety, care and well-being of site personnel.

Amongst other innovations, the team re-engineered the bridge design to target key safety, quality and environmental risks through the innovative design of a single precast headstock shell. This innovation minimised the amount of work required to be completed 'at height', enabling the team to eliminate a critical safety risk.

This innovation represents the first time in Australia that a bridge of this width has been constructed with a single precast headstock shell eliminating over 20,000-man hours of working at height as well as the need for temporary construction works.

In developing the single pre-cast headstock, the following positive outcomes were achieved:

- Project completed with no lost time injuries (LTI) and with two medical treatment injuries (MTI) during 26 months of construction
- Eliminated more than 20,000-man hours working at height, greatly reducing exposure to a critical incident or a fatal risk
- Eliminated the need to construct headstock falsework towers and formwork at heights over water and live traffic as well as many lifting activities
- Eliminated the need for temporary supports by designing them into the columns themselves
- Increased productivity and efficiency because of reducing this program-critical task from three weeks to two days



Geofabric spreader in operation

- Delivered a product of far higher quality than traditional methods due to the controlled factory environment in which it's produced, therefore giving the client a more consistent and aesthetically pleasing bridge
- Solved industry wide issues of heat of hydration and resulting durability issues.

## Safety Award - Pacific Highway project team

The Pacific Highway project team was recognised at the 2018 NSW SafeWork awards in the *Best solution to an identified WHS issue* category for their collaboration with Paul Neilson Fabrication. The team developed an engineered attachment to allow rolls of geofabric to be spread by machine, significantly reducing the risk of manual handling injuries that were prevalent in the task.

The equipment was developed and trialled during construction on the Woolgoolga to Ballina project at various locations north of Devils Pulpit and south of the Richmond River. Following the success of the trial use of the engineered attachment has expanded, promoting manual handling risk reduction across industry.



Members of the Pacific Highway project team at the 2018 NSW SafeWork awards

# Environment

## Woolgoolga to Ballina - it's a jungle out there

Transport for NSW, Pacific Complete and its contract partners recently hosted 15 delegates from South East Asia on an educational tour of the Woolgoolga to Ballina Pacific Highway upgrade. As part of the 155 kilometre upgrade, more than 350 structures will be placed to facilitate the movement of wildlife across the road while reducing the risk of wildlife-vehicle collision. These include fauna culverts and glider poles.

The three-day tour with delegates from Bangladesh, India, Sri Lanka and Nepal took in wildlife land bridges at Yelgun and a number of other sites under construction between Woolgoolga and Ballina. The study tour was funded and coordinated by the Asian Development Bank in association with the Wildlife Institute of India. The tour was held in association with the International Association for Impact Assessment Conference, held in Brisbane in April 2019.



Delegates from Bangladesh, India, Sri Lanka and Nepal with Simon Wilson and Matthew Mulcahy from Woolgoolga to Ballina project team

The group was particularly interested in how they can apply the learnings from their visit to Australia to their target species such as elephants, tigers, leopards and other large mammals.

Delegates were able to visit sites and treatments being built, including the new bridge over the Richmond River at Broadwater, which features the preservation of trees next to and under the bridge to maintain connectivity for arboreal wildlife, such as koalas. A highlight of the trip was spotting a wild koala just outside the construction footprint, west of Wardell.



International delegates and environment team members from the Woolgoolga to Ballina project team discussing fauna mitigation measures

As leaders in Australian fauna-sensitive road design, the Woolgoolga to Ballina upgrade project has over 300 kilometres of fauna fencing and over 300 fauna crossing structures. Unlike any other state, New South Wales now has five fauna land bridges, with two more in the design/planning stages.

Development and implementation of the fauna connectivity structures has been based on results from ecological monitoring over the last 18 years. Transport for NSW continues to work with ecologists, designers and engineers to adapt and improve fauna connectivity design and implementation.

The organisation remains committed to improving outcomes, not only in terms of safety for the public, but also local wildlife.

## Construction management actions proving to be successful in protecting populations and habitat

Transport for NSW is monitoring Oxleyan Pygmy Perch (OPP) populations in accordance with the Woolgoolga to Ballina Threatened Fish Management Plan. The results to date indicate the threatened fish management actions adopted along the Woolgoolga to Ballina upgrade during the second year of construction between Devils Pulpit and Broadwater are successfully protecting OPP populations and habitat. OPP have been captured at known sites including within the construction boundary where streams have been realigned and rehabilitated along the upgrade. The numbers captured of OPP during the 2018 surveys demonstrate populations remain strong.



Threatened fish management measures and stream rehabilitation site at McDonalds Creek south of Broadwater, on the Woolgoolga to Ballina upgrade, where Oxleyan Pygmy Perch have been found

## Strategic biodiversity offsets achieves regional conservation and community benefits

Achieving offsets for large infrastructure projects presents complex challenges and the focus on like-for-like offsets can result in missed opportunities. One such opportunity is to deliver regional benefits to biodiversity and local communities.

The Woolgoolga to Ballina Pacific Highway upgrade project was approved in 2015 with conditions to secure like-for-like offsets for biodiversity impacts. Transport for NSW developed a strategy centred on engaging with the local community to secure a network of offset sites to achieve regional conservation benefits. While like-for-like was a key consideration, other selection criteria

like landscape connectivity were strong drivers in site selection. Community interest was sought, resulting in a list of properties that were then assessed through joint agency assessment panels. Panel participants were presented with data on bioregional values and rapid site assessments. Detailed assessments of short-listed properties were then completed.

Stewardship agreements for each property were established as the mechanism for conservation and meeting the offset obligation in perpetuity. Transport for NSW managed and funded the development of each agreement, including formal contractual commitments to landowners, completion of biodiversity assessment reports, and identifying threats to biodiversity.

We worked with the landowners to develop management actions and funding plans to maximise conservation outcomes.

The strategy has been successful in meeting the conditions of approval and averting loss of biodiversity. To date, 30 properties form a regional network of offset sites conserving over 4,000 hectares of private and public land. Importantly, positive regional benefits were realised through securing landscape connectivity, conservation of threatened species, funding revegetation and koala habitat restoration, and engaging with the community in conservation actions.

Involving the community to deliver a large offset program with regional benefits, provides a positive model for future offset programs with consideration of issues and solutions. Shifting the focus to regional conservation allows for like-for-like offsets plus a range of other benefits.



Biodiversity offset property at Pillar Valley, part of the Pacific Highway upgrade Biodiversity Offsets Program. The 395HA property has a number of protected species of plants and animals, including the Angophora robur

## Case study: Paving the way with recycled glass on the Woolgoolga to Ballina upgrade

The Woolgoolga to Ballina Pacific Highway upgrade project team is finding new ways to improve sustainability during the building of Australia's largest regional infrastructure project.

Two successful pavement trials were recently carried out on the upgrade between Broadwater and Pimlico with recycled glass added into the concrete mix.

Recycled glass has previously been used for ramps and drainage, but this is the first time it has been used on the main road of the Pacific Highway.

The glass was collected locally from Lismore City Council's waste collection system, which includes household recycling bins and Return and Earn stations.

After being sorted, the glass was crushed into sand at Council's material recovery facility, delivered to onsite batch plants for cleaning before being mixed with sand, and used in the normal concreting process.

The recycled glass sand was used in place of sand quarried for this purpose, reducing material consumption and waste at the same time.

The mix meets Transport for NSW's specifications for concrete pavement and will be tested for quality in the same way as traditional concrete pavement. The mix will not require any additional maintenance.

A grant for the trials was awarded by the NSW Environment Protection Authority through the 'Waste Less, Recycle More' program, which aims to stimulate new investment and transform waste and recycling across the state.

The trial created great opportunities to reduce landfill and support new markets and opportunities for recyclable materials, reducing the impact of changes in the global recycling market.

The recycled glass pavement trials completed in May are one of many environmental initiatives on the project. Others include harvesting waste water from work sites

to suppress dust; using cleared mulch for sediment controls; reusing rock and dirt cut from one site to fill other sections; fuelling a biomass-fired power generator with green waste; and reusing over 500 root systems and 800 timber pins recovered from the vegetation removal process to stabilise local river banks and restore fish habitats.



Concrete paver using recycled glass mix as part of the trial

## Case study: Riverbank remediated using logs from Pacific Highway upgrade

Tree root-balls are a common waste product from clearing vegetation because they are too large to mulch.

Transport for NSW worked with local regulatory and community stakeholders to facilitate and provide logs and root-balls cleared from the Woolgoolga to Ballina Pacific Highway upgrade to be used to reduce bank erosion and restore aquatic habitat in local rivers. The logs and root-balls are pinned to the river banks for stabilisation and placed in streams to re-establish fish habitat areas.

In addition, Transport for NSW has been coordinating the Clarence River erosion management project from 2014 to help mitigate the impact of high-wash boating as well as land use, flooding, loss of vegetation, stock and natural factors. This project involves growing a large number of saplings to form the foundation of the revegetation work and cultivation of a tough aquatic grass as an adjunct to the land work. Boating restrictions have already been introduced on sensitive sections of the upper Clarence River including a trial of barge work that has proven successful results.



Oxley River with severe riverbank erosion



Oxley River following riverbank remediation

# Coffs Harbour bypass



Aerial view looking south of Coffs Harbour



Save up to  
**11 minutes travel time**



Improve  
motorist and pedestrian safety



Better and more  
**reliable trips**  
for people, business and freight



Up to  
**12 traffic lights bypassed**



Reducing traffic  
from existing Pacific Highway  
a key objective

The Australian and NSW governments are funding the Coffs Harbour bypass. The project includes a 14 kilometre upgrade from Englands Road in the south to Sapphire in the north.

The existing highway through Coffs Harbour forms part of the Sydney-Brisbane freight corridor and carries up to 35,000 vehicles per day. The area is already experiencing high levels of congestion and traffic volumes are expected to increase over time in line with population growth.

Once complete, the bypass will remove thousands of vehicles from the centre of town, making Coffs Harbour an even better place to live, work and visit.

Significant benefits to Coffs Harbour and the region once it is open to traffic include:

- **reducing travel times** - motorists are expected to save around 11 minutes travel time
- **travel efficiency** - bypassing 12 sets of traffic lights will enable more consistent, reliable travel, particularly for heavy vehicles
- **safety** - the existing highway has a casualty crash rate three times higher than the network average. By reducing traffic on the existing highway we make it much safer for all road users
- **improved CBD amenity** - Removing thousands of vehicles from the Coffs Harbour CBD will make it a more attractive place to visit, shop and work.

The Coffs Harbour region will receive extensive benefits during the building of the bypass, with thousands of direct and indirect jobs created during construction.

Transport for NSW will work with the relevant authorities to finalise the relevant planning approvals so construction can begin in late 2020 and will take four to five years to build, weather permitting.

## January to June 2019

- ✓ Reviewed submissions received during the Preferred concept design display
- ✓ Investigated design refinements in response to community feedback
- ✓ Finalise the environmental impact statement (EIS).

## Community consultation

- Held the first meeting of the project's Community Consultative Committee
- Met with directly impacted property owners
- Met with individual residents to discuss their questions and concerns about the project.

## Community issues

- Concerns over the noise, visual, Aboriginal heritage and construction impacts
- Community has stated a preference for tunnels rather than land bridges and cuttings
- Design of the Korora Hill interchange and the need for Coramba Road interchange
- Impacts to agriculture as a result of property acquisition.

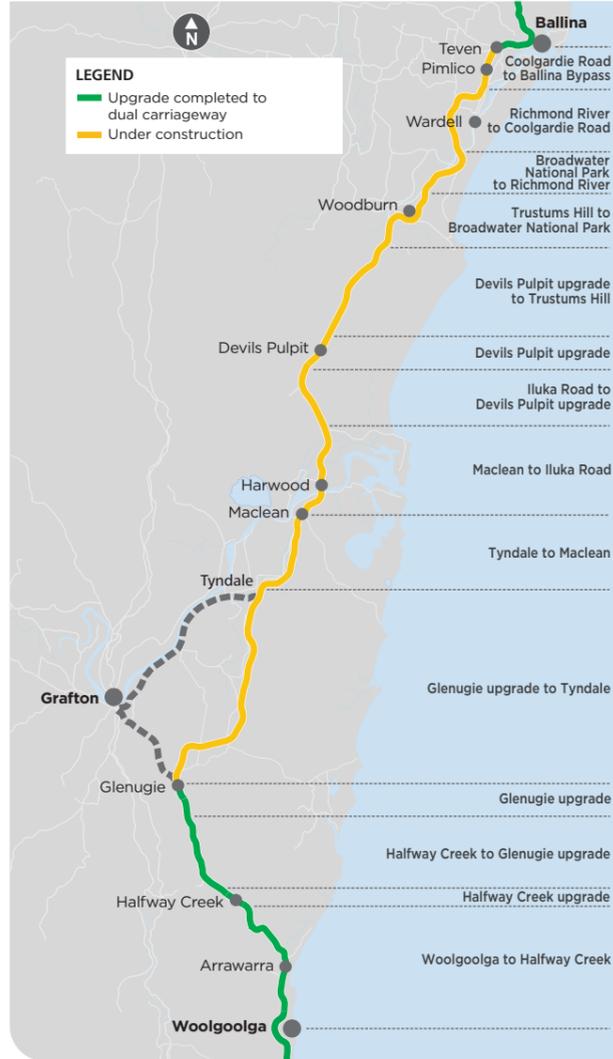
## June to December 2019

- Finalise and exhibit EIS
- Review submissions and start preparation of the Response to Submissions and Amendment reports.



Artist impression of the Coramba Road interchange. Design is subject to further refinement.

# Woolgoolga to Ballina overview



The Australian and NSW governments are jointly funding the Woolgoolga to Ballina Pacific Highway upgrade. Transport for NSW, Pacific Complete and contractor partners are working together to deliver the project.

**Key features of the Woolgoolga to Ballina upgrade:**

- 155 kilometres of dual carriageway
- \$4.945 billion
- More than 170 bridges to be built
- 14.9 million cubic metres of earthwork
- Nine interchanges
- Five towns/villages bypassed

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

**January to June 2019, work progress:**

- ✔ Complete manufacture of precast units
- ✔ More than 50 per cent of bridges built
- ✘ Release 2018 Woolgoolga to Ballina workforce survey.

## July to December 2019, expected work progress, weather permitting:

- Open northbound lanes between Devils Pulpit and Woodburn in three stages, one lane each direction, weather permitting
- Complete delivery of precast units.

 on average **3162** workers on site per month

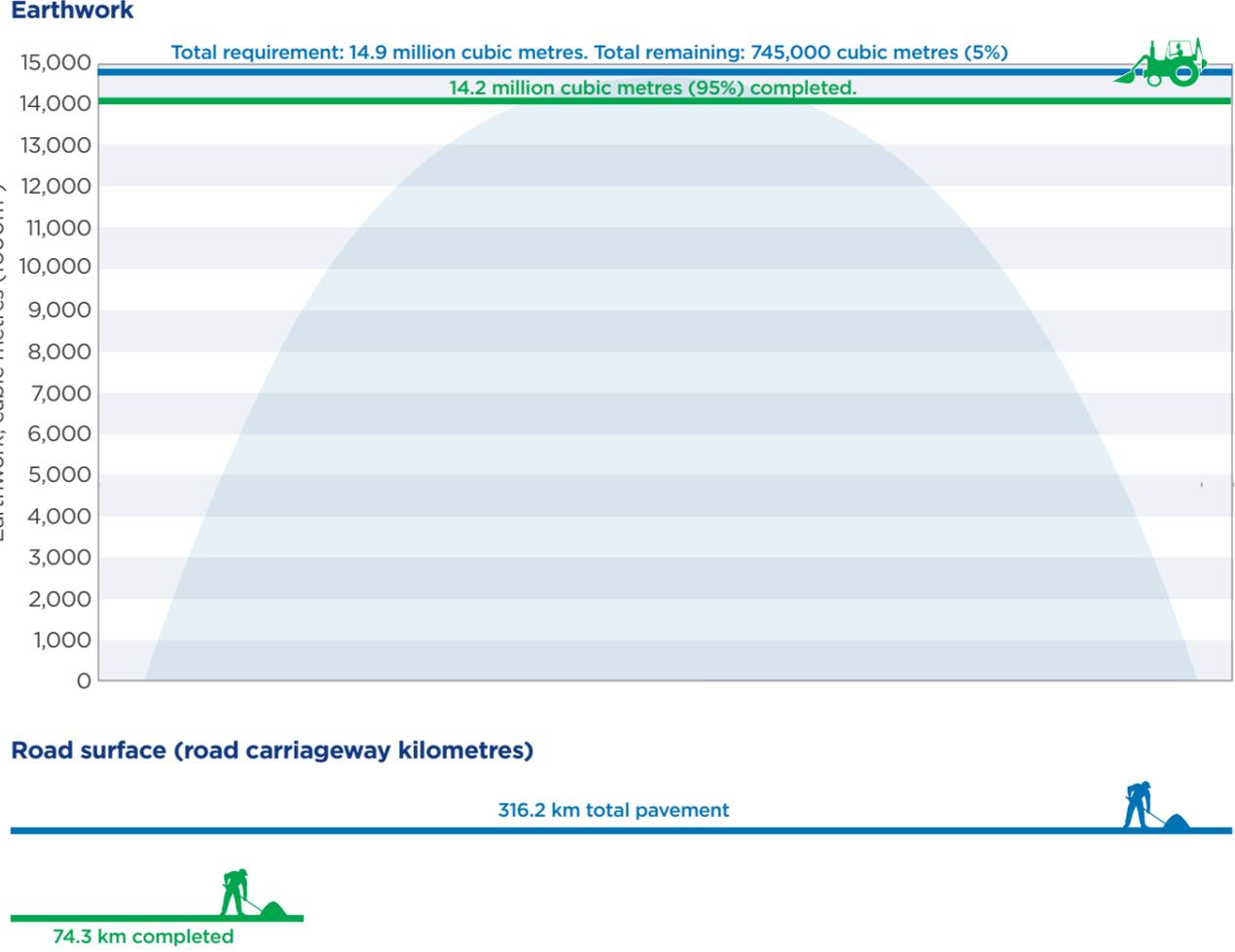
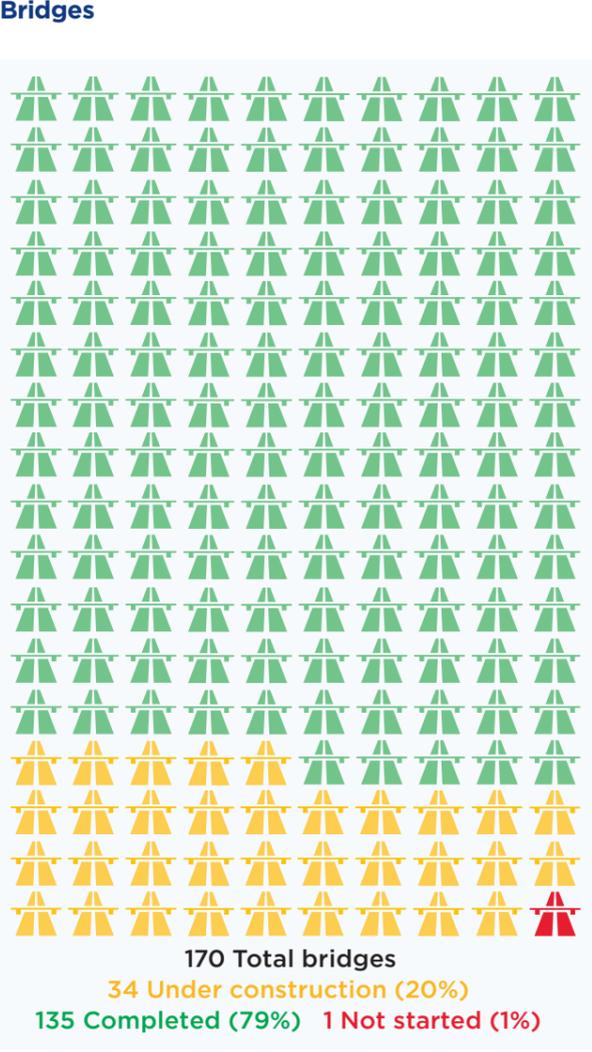
 about **74.5%** complete

 on average **990** pieces of large machinery on site



Looking south-east at the new bridge over the Richmond River

# Woolgoolga to Ballina overview



\*Wet weather days – impacts to work vary depending on rainfall event and activities being carried out

# 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.

\*29 days were lost to wet weather in the past six months.

### January to June 2019, work progress:

- ✔ Finish bridge construction between Glenugie and Shark Creek
- ✔ Complete the Byrons Lane overpass bridge
- ✔ Complete Somervale Road overpass bridge
- ✔ Complete the bridge over Champions Creek south
- ✔ Open to traffic McIntyres Lane overpass bridge Gulmarrad
- ✔ Open new northbound lanes at Glenugie, one lane in each direction.

### July to December 2019 expected work progress, weather permitting:

- Complete concrete paving between Tyndale and Maclean
- Complete bridge work between Glenugie and Maclean
- Start work on Pinebrush rest area



Aerial view at Gulmarrad

**Main contract partners on site**  
 Seymour Whyte Constructions  
 BGC Contracting Pty Ltd  
 BMD Construction

 on average **837** workers on site per month

 on average **225** pieces of large machinery on site

 about **61%** complete

\*Wet weather days – impacts to work vary depending on rainfall event and activities being carried out



Aerial view looking south of construction at Tyndale

# 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.

**\*32 days were lost to wet weather in the past six months.**

### January to June 2019, work progress:

- ✓ Complete the southbound off ramp and east roundabout at the Iluka interchange
- ✓ Install the final girders for the overpass bridges at Chatsworth, Iluka and Serpentine Channel (north) roads
- ✓ Open northbound lanes between Maclean and Yamba interchange, one lane in each direction
- ✓ Open southbound lanes between Iluka and Mororo Road, one lane in each direction
- ✓ Open northbound lanes between Mororo and Devils Pulpit, one lane in each direction.

### July to December 2019, expected work progress, weather permitting:

- Open to traffic Chatsworth Road north and south overpass bridges
- Open to traffic Maclean north to Serpentine including the new bridge over the Clarence River at Harwood



Aerial view of Iluka interchange being built

### Main contract partners on site

Golding Contractors  
 SEE Civil  
 Shamrock Construction  
 BMD Constructions  
 Bielby Hull Albem Joint Venture  
 Davbridge  
 AFS

on average **417** workers on site per month

on average **116** pieces of large machinery on site

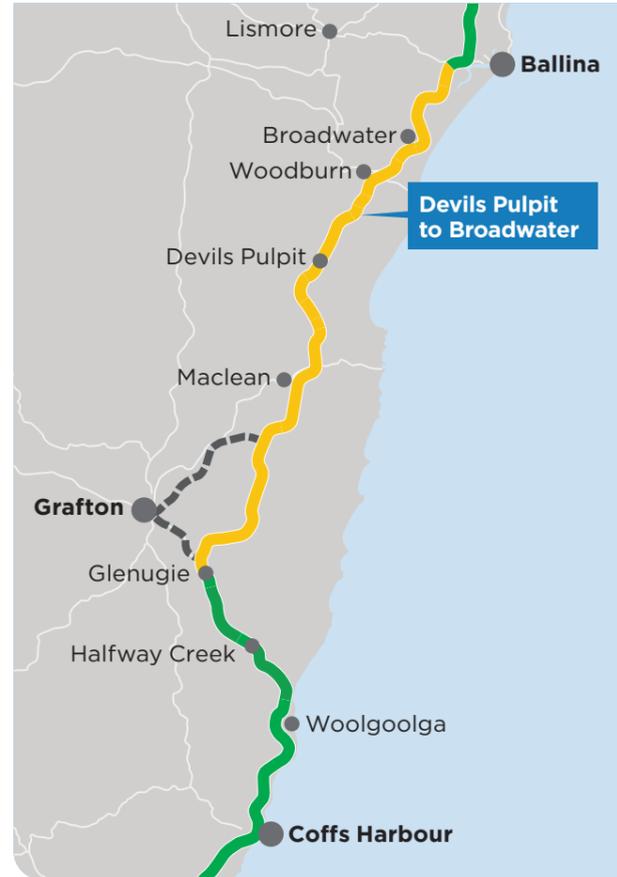
about **70%** complete

\*Wet weather days - impacts to work vary depending on rainfall event and activities being carried out



Aerial view of Chatsworth Road north overpass bridge being built

# Projects being built



## Devils Pulpit to Broadwater

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

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

### January to June 2019, work progress:

- ✓ Complete bridge on Woodburn interchange
- ✓ Open to traffic Woodburn Evans Head Road overpass bridge.

### July to December 2019, expected work progress, weather permitting:

- Open to traffic a nine kilometre section of northbound carriageway between Devils Pulpit and New Italy, one lane each direction
- Complete Oxylan Pigmy Perch structures.



Aerial view of Woodburn interchange

on average **922** workers on site per month

on average **406** pieces of large machinery on site

about **63%** complete

### Main contract partners on site

AFS  
Bielby Hull Albem Joint Venture  
CPB Contractors

\*Wet weather days - impacts to work vary depending on rainfall event and activities being carried out



Woodburn-Evans Head Road overpass bridge looking north

# Projects being built



## Broadwater to Ballina bypass

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

**\*41 days were lost to wet weather in the past six months.**

### January to June 2019, work progress:

- ✓ Finish fauna crossing culvert at Wardell Road
- ✓ Finish building more than half of the bridges in this area
- ✓ Finish building Old Bagotville and Montis' roads
- ✓ Complete general earthwork on southbound alignment north of Whytes Lane bridge
- ✓ Start parapet installation on Whytes Lane bridge
- ✓ Carry out about 14.8 hectares of revegetation work between Broadwater and Ballina.

### July to December 2019, expected work progress, weather permitting:

- Open to traffic Whytes Lane overpass bridge
- Open to dual carriageway section between Coolgardie and West Ballina.



Looking north towards Ballina at the bridge over Emigrant Creek

on average **432** workers on site per month

on average **100** pieces of large machinery on site

about **87%** complete

### Main contract partners on site

Georgiou Group  
Quickway Constructions  
Lendlease Engineering

\*Wet weather days - impacts to work vary depending on rainfall event and activities being carried out



Coolgardie interchange looking north

# 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 before or during 2020

**Project value:** Forms part 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.

\*26 days were lost to wet weather in the past six months.

**January to June 2019, work progress:**

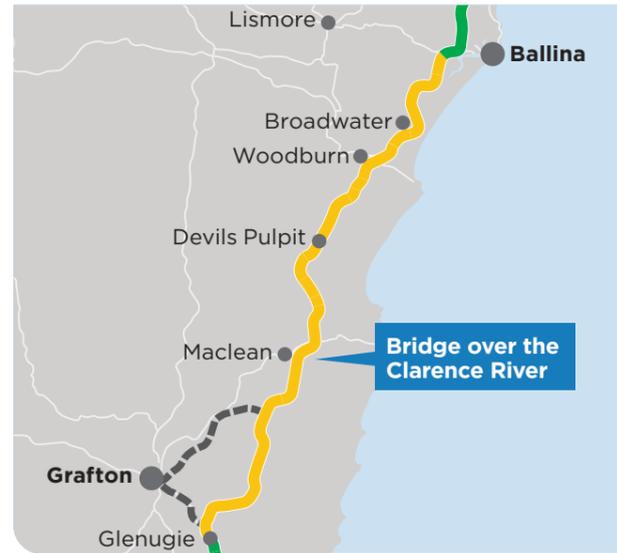
- ✓ Completion of northern bridge approach slab and associated drainage.

**July to December 2019, expected work progress, weather permitting:**

- Complete revegetation work.



Aerial view of the new bridge over the Clarence River at Harwood



on average **45** workers on site per month

on average **15** pieces of large machinery on site

about **99.7%** complete

**1** contractor company on site

\*Wet weather days – impacts to work vary depending on rainfall event and activities being carried out

**Project snapshot**

**Contractors:** Lendlease Engineering

**Form of contract:** Design and build

**Start date of major construction:** June 2017

**Completion date:** Open to traffic before or during 2020

**Project value:** Forms part 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.

\*18 days were lost to wet weather in the past six months.

**January to June 2019, work progress:**

- ✓ complete concrete deck pours
- ✓ Complete installation of all expansion joints
- ✓ Delivery of final precast pieces.

**July to December 2019, expected work progress, weather permitting:**

- Complete revegetation work.



View of the new bridge over the Richmond River at Broadwater at sunset

on average **86** workers on site per month

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

about **99%** complete

**1** contractor company on site

\*Wet weather days – impacts to work vary depending on rainfall event and activities being carried out

