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View looking north of new embankments at Serpentine Creek, Chatsworth Island

## **Macleans to Devils Pulpit**

Woolgoolga to Ballina community update – May 2017

The Australian and NSW governments are jointly funding the \$4.36 billion Woolgoolga to Ballina Pacific Highway upgrade. Roads and Maritime Pacific Highway Office and Pacific Complete are working together to deliver the project.

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### **Managing our project vehicles**

Woolgoolga to Ballina project vehicles are restricted to 80 kilometres an hour or less on some local roads to help manage safety and dust.

We have fitted monitoring systems in vehicles, allowing us to track the location and speed of our vehicles as we travel through local communities.

These measures are in place as part of our commitment to managing the impact of our work as the numbers of vehicles and trucks increase on local roads.



## Ongoing and upcoming work

Work continuing between Maclean and Devils Pulpit over the next three months, weather permitting includes:

- geotechnical investigations, power, water and telecommunications relocations, building removal and remediation work to prepare for the start of major work later this year
- installing nest boxes to provide roosting places for wildlife as vegetation clearing continues and relocating threatened vegetation species outside the project alignment
- establishing temporary stockpile areas for materials and equipment along the alignment
- earthworks at Maclean, Harwood and Mororo, including removing and transporting rock and earth to project sites
- soft soil work including loading earth on soft soil sites and installing equipment to monitor settlement



Geotechnical investigations in progress for the new bridge over the Clarence River at Harwood



Monitoring for soft soil work at Farlows Flat in March 2016

- installing environmental controls and monitoring dust, noise, water quality and native plants and animals
- building temporary and permanent diversion roads:
  - Yamba interchange, Maclean
  - Harwood between Watts Lane and Serpentine Channel, Harwood
  - Chatsworth Road South, Chatsworth Island
  - Chatsworth Road North, Chatsworth Island
  - Garretts Lane, Woombah
  - Next to the existing highway opposite Iluka Road, Mororo
- building new bridges over Tabbimoble Overflow and Tabbimoble Creek, Tabbimoble
- building new fences along the alignment for stock and native plants and animals
- building new primary compounds on the Pacific Highway, at the corner of Watts Lane, Harwood, and opposite Iluka Road, Mororo
- building new gates for project access and changing intersections around Tabbimoble, Tullymorgan-Jackybulbin Road, Tullymorgan and Mororo Road, Mororo.

## Harwood Bridge undergoing essential maintenance work

Roads and Maritime Services is carrying out essential maintenance work on the Harwood Bridge over the Clarence River at Harwood. Although a new crossing of the Clarence River is being built at Harwood as part of the Pacific Highway upgrade, the existing bridge will continue to be used in the future for local traffic.

Maintenance work being carried out on the bridge includes patch painting, which involves removing corrosion from the bridge using sand blasting and repainting. Work will progress from north to south across the bridge and is being carried out from scaffolding and a barge located under the bridge. Work is being carried out Monday to Friday between 7am and 6pm and is expected to be completed in 11 months, weather permitting. The Woolgoolga to Ballina project team will work closely with Roads and Maritime to limit disruptions to motorists and to minimise impacts to river users.

If you have any questions about the work please call 131 782.

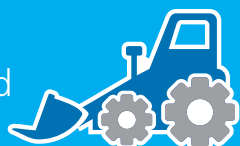
## Soft soil update

Soft soil work between Maclean and Devils Pulpit is now 80 percent complete and will continue in this area. Without soft soil treatment there is the potential for highway foundations and pavement to sink and crack. Soft soil treatment takes time but saves money by improving the long-term performance of the road surface and ride quality for motorists.

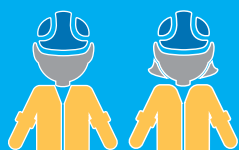
### Soft soil fast facts

- Moved and placed about 160,000 cubic metres of rock for under the embankments, this is equivalent to about 64 Olympic size swimming pools.
- Installed more than 900,000 metres of wick drains.
- Installed and gathered information from more than 715 instruments which are monitoring ground settlement.
- Experienced a maximum of 1.8 metres of ground settlement which means the water is being successfully pushed out of the soft soils.

**550,000** cubic metres of earth moved and placed for embankments



more than **900** employed including **450** local people



### What's a wick drain?

Wick drains remove water from soft soils so the settlement time of the soil is reduced from years to months. The process is like squeezing a sponge to remove moisture.

Wick drains look like flat firefighting hoses and come in large reels, but have a plastic core like a bunch of drinking straws. The wick is covered with a geofabric which filters the water from the soil when downward pressure is applied from earth placed on top. As more earth is placed on top of the embankment, the increased weight pushes the water out of the soft soils, through the wicks into drains alongside the embankments.

### Next steps for soft soil

We are monitoring the level of ground settlement and will continue to do so. Once the settlement has reached the required level, we will remove the excess earth to make way for teams to build the new road. Soft soil work will be monitored between Maclean and Devils Pulpit for the next 18 months until settlement has reached the required level.

## Building foundations

Much of our work to date has been focussed on clearing vegetation, installing environmental controls and preparing soft soils for major work. The next wave of work in the Maclean to Devils Pulpit section will focus on piling for future bridges.

### What is piling?

Piling is one of the methods we use to create a stable foundation for bridges, structures and buildings. Piling transfers the weight of the structure deeper into the ground. Piles are large columns generally made from reinforced concrete or steel. Inserting piles into the ground can take between one to two days to complete depending on the length and size. They can vary in length depending on the ground conditions and are driven or bored into the ground using a combination of cranes, piling rigs and vibrating hammers.

### Managing noise during piling

Piling can create increased noise and vibration levels. It is likely you will be able to hear piling activities if they are near your property. We will carry out noise and vibration monitoring throughout this work. We will also carry out noise mitigation, where possible, including shielding the work area and the use of respite periods.

### Will this work affect nearby buildings?

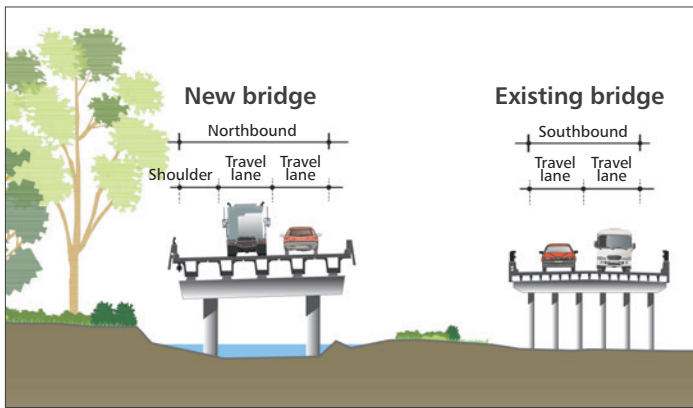
We do not expect piling to have an impact on buildings around our work area, however piling can create vibration. As part of the project, all properties within 200 metres of vibration work are offered a property condition survey. This survey is carried out before work starts and includes an inspection of the interior and exterior of the property, including any external structures such as sheds, driveways, pathways, swimming pools, dams, fences and retaining walls. In the unlikely event that damage does occur, the survey can help demonstrate if this was a result of activities in the area. Most of the property conditions surveys for the upgrade have already been completed and a copy of the survey provided to landowners.

## Foundations for Tabbimoble bridges

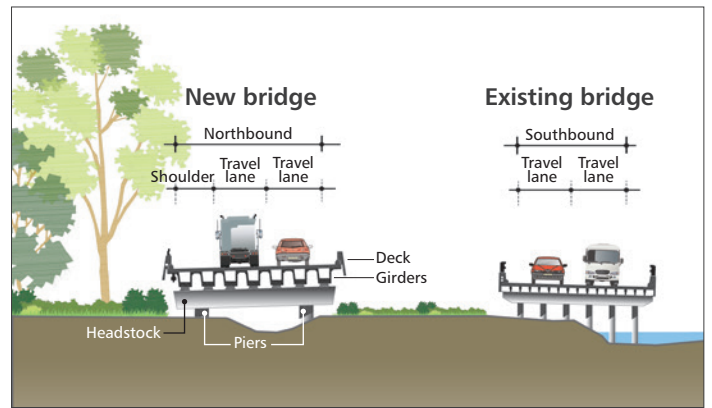
Major work on Tabbimobile bridges is planned to start soon. Davbridge Constructions has been engaged to carry out this work. This work will involve piling piers, placing girders (steel beams), headstocks and decks. We have provided an image below to help explain this work. Early activities will include building access points and platforms followed by piling. Piles will be driven about 15 to 25 metres into the ground. This work will take about four weeks to complete, weather permitting.

## Foundations for the jetties

Piling for the temporary jetty on the Clarence River will start soon. A test pile was carried out at the beginning of April on one of the longest piles on the Harwood Bridge project. The test pile was 2.4 metres in diameter with a 28mm wall thickness. The pile was driven below ground to a depth of about 65 metres. The length of piles across the bridge will vary from about 45 metres to 65 metres. Traffic controls and reduced speed limits may be in place on River Street, Harwood, while we carry out this work. Exclusion zones will be in placed on the Clarence River during major work to manage the safety of both the project team and river users. For more information on navigation around our work, please contact the project team.

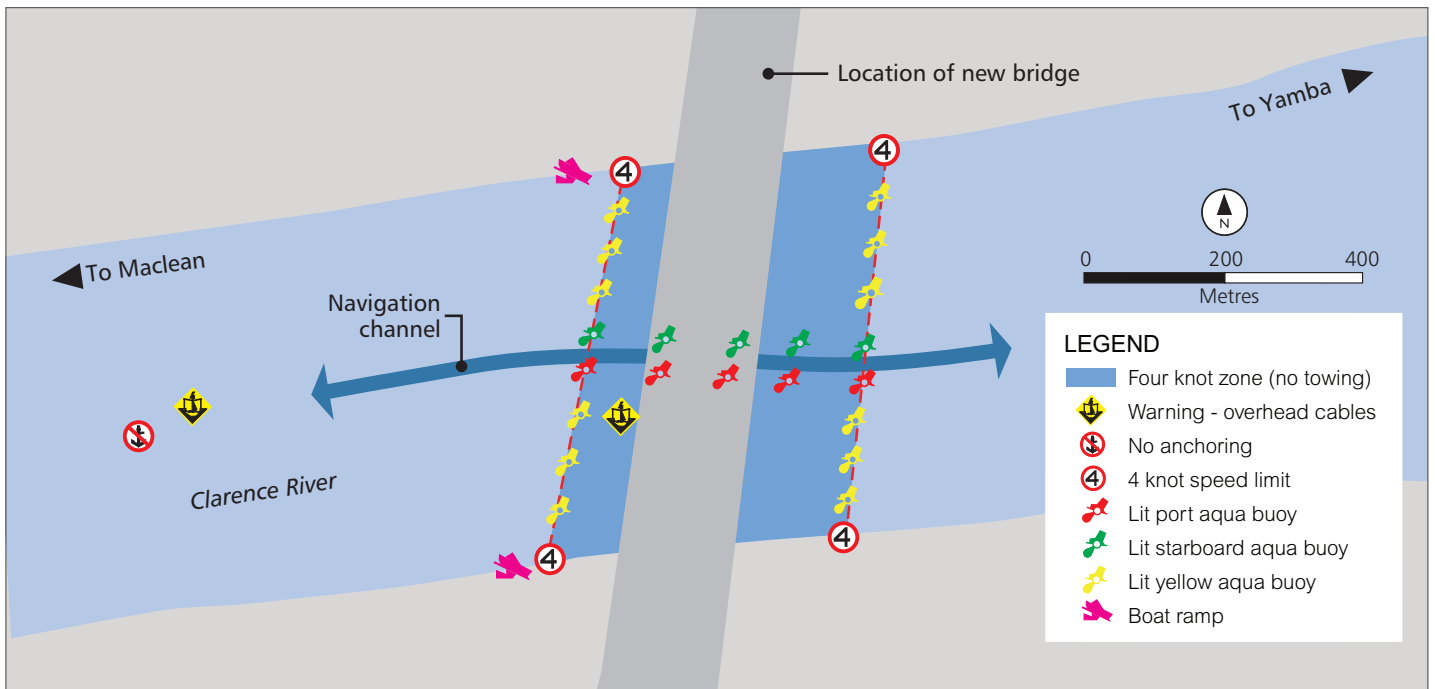


Cross section of bridge over Tabbimoble Creek



Cross section of bridge over Tabbimoble Overflow

## Navigation channel on the Clarence River, Harwood





## Environmental update

### Moving mint bushes

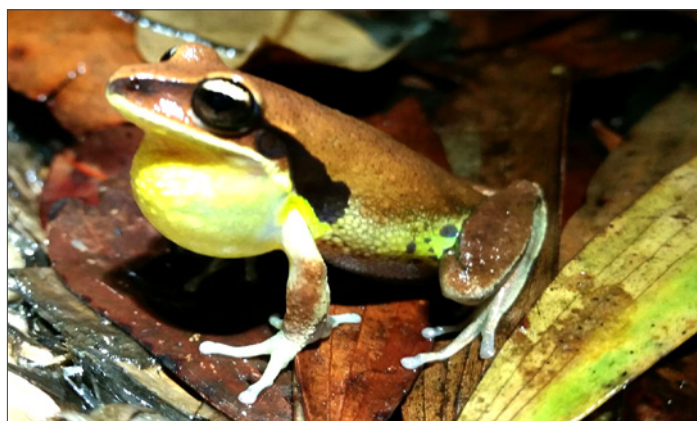
Between Maclean and Devils Pulpit we have a threatened plant species called the Singleton Mint Bush (*Prostanthera cineolifera*). The bush has a strong minty scent and is only found in a small number of locations throughout NSW. Last year we moved a number of these threatened plants from inside the project footprint to new nearby locations. With the help of specialist ecologists, we also collected more than 1200 seeds and cuttings. These seeds and cuttings are now being cultivated in a nursery by an ecologist. We will translocate the seedlings back into the bush when conditions are best for their survival.



Singleton Mint Bush (*Prostanthera cineolifera*) seedlings being cultivated

### Green – thighed frogs

The area between Maclean and Devils Pulpit contains habitat for the Green – thighed frog (*Litoria brevipalmata*). These frogs are only small (three centimetres to four centimetres), renowned for their bright green or blue green colouring and that they make a ‘quack’ or ‘wok’ noise. This threatened species was successfully sighted by ecologists after recent rain. The project team will be installing frog fencing along its habitat areas and around our compound at Iluka Road. This will help establish more frog habitat and keep the frogs safe and out of the areas where we are building the new road.



Green – thighed frogs found at Devils Pulpit

## Removal of Harwood convent

Notifications about the public tender for the removal and relocation of the Harwood convent were displayed in June 2016. Unfortunately no compliant tenders were received during this period.

As a result, the Woolgoolga to Ballina project team removed the building in January in line with the Conditions of Approval, to allow for the new bridge to be built. Before the building was removed three items were salvaged and donated to the Harwood Heritage Group (see photo).

## How this work may affect you

### Changed traffic conditions

For safety of workers and all road users, speed limits along the Pacific Highway through the Harwood Bridge site will be reduced during work hours from 80 kilometres an hour to 60 kilometres an hour until completion of the new Harwood Bridge. Outside working hours the speed limit will return to 80 kilometres an hour to suit local traffic conditions. Please keep to speed limits and follow the direction of traffic controllers and signs. For the latest traffic updates call 132 701, visit [livetraffic.com](http://livetraffic.com) or download the Live Traffic NSW App.

### Innovation – Yellow line trial

To improve the safety of road users and workers we are trialling a number of new ways to guide people through work zones and increase awareness of changed traffic conditions and speed limits. We are doing this because we understand changes to the road environment during major work change your experience of your journey. If you are travelling south from the Yamba Interchange and over the Clarence River bridge at Harwood or if you are travelling north from Farlow’s Flat, just before the Clarence River bridge at Harwood, you should see the yellow line trail at Yamba Interchange with the Pacific Highway.

The yellow lines are marked for more than 1.2 kilometre between the Yamba Interchange and midway along Farlow’s Flat. Warning signs have been installed at either end of the trial section to let road users know they are entering and leaving the yellow line marked zone. Yellow lines will replace white lines at a number of temporary work zones near the existing highway to provide better guidance through work zones and raise awareness of changed conditions. We need your feedback about travelling through the yellow line trial to help us understand if you think they are effective. To be a part of this important safety initiative please complete our five minute survey

[www.surveymonkey.com/r/yellow\\_line\\_trial](http://www.surveymonkey.com/r/yellow_line_trial) or visit [www.rms.nsw.gov.au/w2b](http://www.rms.nsw.gov.au/w2b)



Rosalyn Ryan and Julia Young of the Harwood Heritage Group, receiving salvaged items

## Hydrological mitigation report

The Glenugie to Devils Pulpit hydrological mitigation report is now available. This report sets out the flood management objectives and how the project has and will continue to reduce the impacts of flooding in the Clarence catchment. Your feedback has been considered and addressed in this report. We thank everyone for their involvement during the flooding assessments development. The report is available on Roads and Maritime Services' website [www.rms.nsw.gov.au/W2B](http://www.rms.nsw.gov.au/W2B)

### For more information about the Woolgoolga to Ballina Pacific Highway upgrade contact:

**T** 1800 778 900 (toll free)   **E** [W2B@pacificcomplete.com.au](mailto:W2B@pacificcomplete.com.au)   **P** PO Box 546, Grafton NSW 2460   **W** [www.rms.nsw.gov.au/W2B](http://www.rms.nsw.gov.au/W2B)

**We thank you for your patience during this important work.**

### Privacy

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This document contains important information about public transport projects in your area. If you require the services of an interpreter please contact the Translating and Interpreting Service on 131 450 and ask them to call the Woolgoolga to Ballina project team on 1300 761 923. The interpreter will then assist you with translation.

