



Australian Government

Nation Building Program

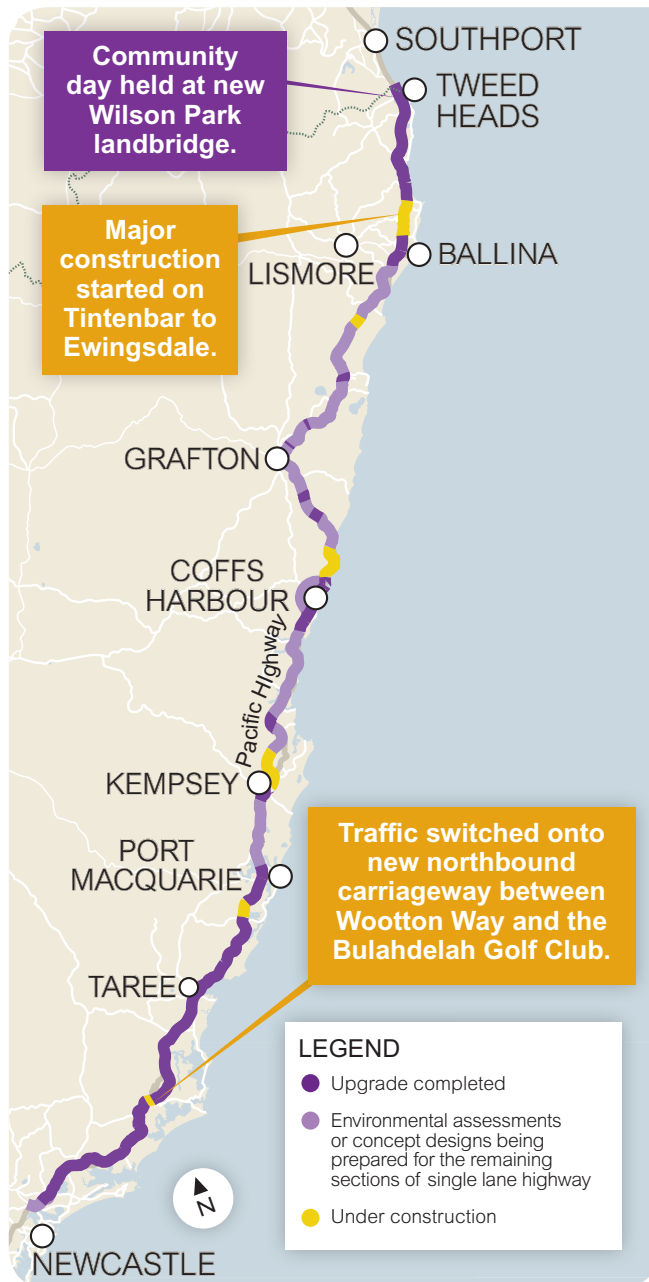


Transport
Roads & Maritime
Services

Pacific Highway upgrade

Monthly achievement report **September 2012**

Banora Point community day



Pacific Highway upgrade

This report will provide you with information about Pacific Highway upgrade projects, including the current status and key activities carried out on construction projects in the past month.

As at 30 September 2012, 346 kilometres are completed four lane divided road, about 73 kilometres are under construction, and about 105 kilometres have received planning approval and are being prepared for construction.

Planning is also being progressed on the remaining single lane divided road sections of the highway.

About 52 per cent of the final highway length of 664 kilometres is now four lane divided road.



73 km of highway under construction September 2012.



1680 workers on site.



For overall upgrading strategy refer to the second last page.

Under construction



Australian Government



Transport
Roads & Maritime
Services

Contractors: Boulderstone Pty Ltd

Form of contract: Construction contract

Workers on site: 106

Pieces of large plant: 50

Start date of major construction:
August 2010

Expected completion date:
First half of 2013 (weather permitting)

Project value: \$315 million

Australian Government contribution:
\$303.6 million **

NSW State Government contribution:
\$11.4 million **

** Contribution amounts may vary from year to year.



Traffic being switched onto
new northbound carriageway

Bulahdelah upgrade

Background

The Bulahdelah upgrade was approved by the NSW Minister for Planning on 9 July 2007.

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

It involves the construction of about 8.5 kilometres of four-lane divided road with an eastern bypass of the Bulahdelah township.

On 26 September 2012, the Minister for Roads and Ports announced the project had been delayed as a result of significant wet weather and the bypass would now be opening to traffic in March 2013 (subject to further fine weather).

Key construction activities during September 2012

No days were lost due to wet weather during this time.

- Bombah Point Road bridge opened.
- Traffic switched from the old highway section between Wootton Way and the Bulahdelah Golf Club turnoff onto the new northbound carriageway under two-way traffic. This will allow the existing highway to be rebuilt into the final southbound carriageway.
- Major bridgework completed on all 12 bridges for the project. Finishing work carried out at the southern interchange, northern interchange, southern floodplain and Myall River bridges.
- Concrete paving of the final surface and saw cutting work continued.
- Rock bolting and shotcreting work continued in the main cutting north of Bombah Point Road.
- Treatment of basins for water quality continued.
- Topsoiling of slopes for revegetation continued.

Bulahdelah upgrade under construction



Earthworks under way on the main carriageway



View of Bombah Point Road



Pipelaying work under way on the main carriageway



View of the southern interchange bridge

Under construction



Australian Government

Nation Building Program



Transport
Roads & Maritime
Services

Contractors: BMD Constructions Pty Ltd

Form of contract: Construction contract

Workers on site: 57

Pieces of large plant: 20

Start date of major construction:
March 2011

Expected completion date:
Second half of 2013 (weather permitting)

Project value: \$60 million

Australian Government contribution:
\$53 million **

NSW State Government contribution:
\$7 million **

** Contribution amounts may vary from year to year.



Deck construction on the
Herons Creek floodway bridge

Herons Creek to Stills Road upgrade

Background

The Herons Creek to Stills Road upgrade was approved to proceed on 5 October 2007.

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

It will upgrade 3.5 kilometres of highway between Herons Creek and Stills Road.

Key construction activities during September 2012

About two days were lost due to wet weather during this time.

- Earthworks continued, including cut and fill operations north and south of Bago Road.
- Construction continued on the Herons Creek floodway, Herons Creek bridge and Bago Road interchange.
- Foundation treatment work continued across the project with treatments north and south of the fauna underpass completed.
- Establishment of site accesses continued.
- Topsoiling and hydroseeding work continued.
- Installation of cross drainage pipelines continued.
- Construction continued on stormwater drainage and clean water drains throughout the project.
- Construction continued for a future northern side track.
- Contaminated material remediation action plan completed. Consultation continued with landowners and residents about the contaminated material investigation (see below).

Incident investigation – site contamination

Roads and Maritime Services (RMS) is remediating a suspected contamination area on the project which affected the health of a number of workers. This contamination area is where, in December 1980, a truck carrying a mixed load including radioactive waste, pesticide, food additives and other waste crashed on the Pacific Highway.

Results from the testing of two external sites and a roadside area near the Herons Creek School where fill from the site was used have confirmed that this material has not been impacted by the former burial pit at the roadworks site and no further assessment, remediation or management is required.

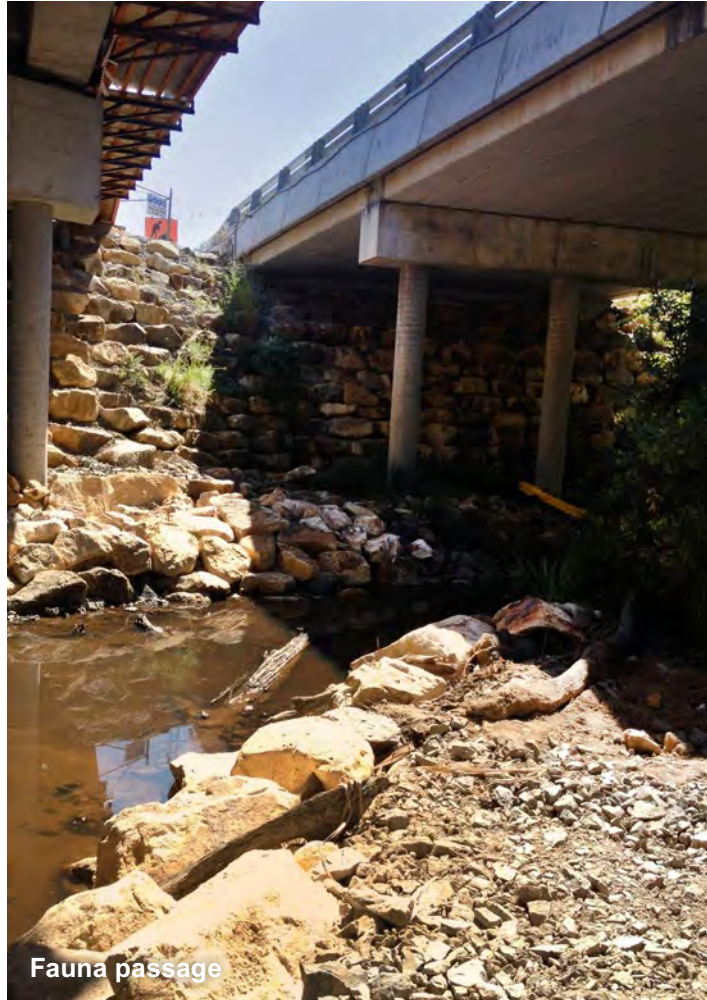
The remediation of the cutting on the worksite where the contamination was found is complete. Interim advice from the third party auditor supports the findings that the site has been successfully remediated.

Reports from independent specialists were placed on the Pacific Highway website on 21 September 2012. These and other detailed reports about the outcomes of these investigations to date are available on the project website (see address at the bottom of this page).

Hérons Creek to Stills Road upgrade



Pouring the deck on the
Hérons Creek floodway bridge



Fauna passage



Reinforced earth wall at Cutty Creek



Select material placement at Bobs Creek Road



Bridge construction under way



Steel reinforcement
for the Herons Creek floodway bridge

Under construction



Australian Government

Nation Building Program



Transport
Roads & Maritime
Services

Contractors: RMS has formed an alliance with Leighton Contractors, AECOM and Coffey Geotechnics to build the Kempsey bypass.

The bridge over the Macleay River is being built by Abigroup Contractors under a separate design and construct contract.

Form of contract: Alliance and design and construct contract

Workers on site: 869

Pieces of large plant: 135

Start date of major construction:
June 2010

Expected completion date:
Early 2013 (weather permitting)

Project value: \$618 million

Australian Government contribution:
Fully federally funded
(Building Australia Fund) \$618 million



Asphalt surfacing on bridge deck

Kempsey bypass

Background

The Kempsey bypass was approved by the NSW Minister for Planning on 10 July 2008.

As part of the Building Australia Fund, the Australian Government is providing \$618 million for construction of the bypass. The 14.5 kilometre project is part of the larger 40 kilometre Kempsey to Eungai upgrade, which extends from the existing four lane divided road south of Kempsey to the existing four lane divided road at Eungai Rail.

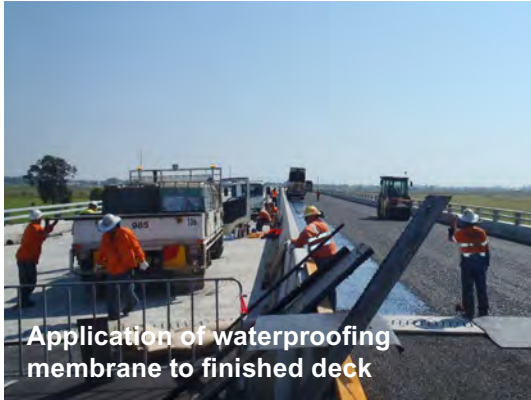
The bridge over the Macleay River and floodplain will be 3.2 kilometres long, making it the longest bridge in Australia.

Key construction activities during September 2012

No days were lost due to wet weather during this time.

- Flood mitigation work completed.
- Base concrete paving completed through the South Kempsey interchange area (between Stumpy Creek and the squash courts) in preparation for an upcoming traffic switch which will allow for the completion of the interchange.
- Concrete paving completed on both carriageways between the main Northern Railway Line and the Bingis Lane fauna underpass, through to the completed paving north of the Crescent Head overbridge.
- Finishing work is in progress from Pola Creek to the southern end of the Macleay River and floodplain bridges.
- Concrete paving preparation completed on the main alignment over the existing highway at Frederickton.
- Backfilling of the dam north of Yarrabandinni Road continued.
- Removal and relocation of the rock platform from the northern to the southern side of the river completed.
- All 941 super-T girders have been delivered to the site and put into position.
- 91 deck pours completed on the Macleay River and floodplain bridges. The installation of bridge walls and railings continued. Waterproofing and paving started.
- Removal of the northern rock platform completed.

Kempsey bypass under construction



Application of waterproofing membrane to finished deck



South interchange overbridge



Excavation of old dam



Installation of final girder for Macleay River and floodplain bridge



Ready for base concrete paving



Steel reinforcement for final series of deck pours



Reinforcement formed ready for base paving



Contractors:

Leighton Fulton Hogan Joint Venture

Form of contract:

Design and construct contract

Workers on site: 327

Pieces of large plant: 260

Start date of major construction:

August 2010

Expected completion date:

Early 2014 (weather permitting)

Project value: \$705 million

Australian Government contribution:

\$632 million **

NSW State Government contribution:

\$73 million **

** Contribution amounts may vary from year to year.



Earthworks looking north from
Greys Road on the Woolgoolga bypass

Sapphire to Woolgoolga upgrade

Background

The NSW Minister for Planning approved the Sapphire to Woolgoolga upgrade on 13 January 2009. The project is jointly funded by the Australian and NSW governments.

It will provide a four-lane divided highway extending about 25 kilometres from Campbell Close (at Sapphire) to Arrawarra Beach Road (at Arrawarra).

Key construction activities during September 2012

About three days were lost due to wet weather during this time.

- Construction continued on the service road between Gaudrons Road and Sugarmill Road and between Maccues Road and Wakelands Road.
- Construction continued on the Hearnes Lake Road roundabout and the new Palmer Road and Bark Hut Road intersection.
- Work continued at the Newmans Road underpass.
- Earthworks and bridge works continued for the Arrawarra interchange.

- Controlled blasting continued about two kilometres northwest of Woolgoolga.
- Work continued on the construction of fauna crossings between Bark Hut Road and Farm Trail Road.
- Retaining wall construction continued.
- Public utility relocations continued.
- Bulk earthworks, bridge work and drainage work continued across the project.

Sapphire to Woolgoolga upgrade under construction



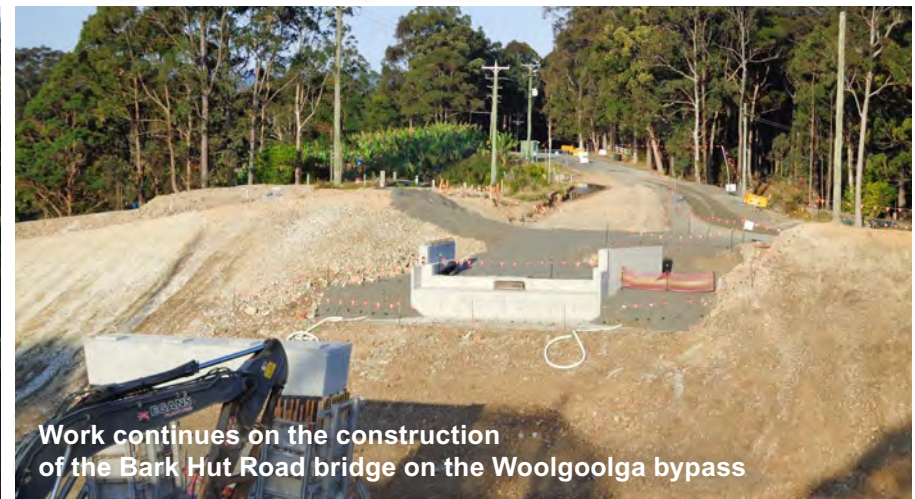
Woolgoolga Creek Road bridge under construction



Drainage works under way at Sapphire



Looking south to Newmans Road,
work continues on the construction of the Poundyard Creek bridge



Work continues on the construction
of the Bark Hut Road bridge on the Woolgoolga bypass



Contractors: John Holland

Form of contract: Construct only contract

Workers on site: 90

Pieces of large plant: 45

Start date of major construction:
December 2011

Expected completion date:
Mid 2013 (weather permitting)

Project value: \$77 million

Australian Government contribution:
\$62 million **

NSW State Government contribution:
\$15 million **

** Contribution amounts may vary from year to year.



Culvert construction

Devils Pulpit upgrade

Background

The Devils Pulpit upgrade was approved by the NSW Minister for Planning on 1 February 2011. The project is jointly funded by the Australian and NSW governments.

It includes the upgrading of about seven kilometres of highway between Grafton and Ballina. It forms part of the larger Woolgoolga to Ballina project.

Key construction activities during September 2012

About four days were lost due to wet weather during this time.

- Bulk earthworks 50 per cent completed.
- Fencing work 80 per cent completed.
- Bridging rock for foundation treatments in fill areas nearing completion.
- Construction continued on a number of major box culvert structures with two structures completed.
- Stormwater pipe installation continued.
- Bridge work continued with work on two bridges at Tabbimoble nearing completion.
- Installation of irrigation system for Tabbimoble floodplain completed.
- Work on open drains neared completion.
- Trial concrete pavement mixing started.
- Sedimentation and erosion control measures established and being adjusted.
- Sedimentation basin construction continued.

Devils Pulpit upgrade under construction



Earthworks under way



Bridge work under way at Tabbimoble



Pouring bridge decking at Tabbimoble



Contractors: Boulderstone Pty Ltd

Form of contract: Design and construct

Workers on site: 137

Pieces of large plant: 60

Start date of major construction:
September 2012

Expected completion date:
Second half of 2014 (weather permitting)

Project value: \$862 million

Australian Government contribution:
\$566.1 million **

NSW State Government contribution:
\$295.9 million **

** Contribution amounts may vary from year to year.



Backfilling of stormwater drain

Tintenbar to Ewingsdale upgrade

Background

The NSW Minister for Planning approved the project on 29 January 2010.

The Tintenbar to Ewingsdale upgrade is jointly funded by the Australian and NSW governments.

It will provide 17 kilometres of four-lane divided road from the northern end of the Ballina bypass at Ross Lane to the existing Ewingsdale interchange.

A contract has been awarded to Boulderstone Pty Ltd to design and build the project. Construction is expected to start next month.

Key construction activities during September 2012

Substantial construction began on 24 September 2012. No days were lost to wet weather during this time.

- The project team moved into the site compound on Bangalow Road.
- Fencing work continued.
- Detailed design work continued.
- Property adjustments and site access work continued.
- Community information sessions held on 18 September to provide information on direction signage, crushing and stockpile locations and controlled earthworks blasting.

Tintenbar to Ewingsdale upgrade under construction



Start of earthworks at Byron Creek



Temporary site access gate works



Contractors: RMS has formed an alliance with Abigroup Contractors, Seymour Whyte and SMEC.

Form of contract:

Alliance design and construct contract

Workers on site: 30

Pieces of large plant: 4

Start date of major construction:

December 2009

Expected completion date:

Final completion in December 2012
(weather permitting)

Project value: \$359 million

Australian Government contribution:

\$349 million **

NSW State Government contribution:

\$10 million **

** Contribution amounts may vary from year to year.

Banora Point upgrade

Background

The NSW Minister for Planning approved the Pacific Highway upgrade at Banora Point on 26 February 2009.

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

The upgrade is about 2.5 kilometres long running from the northern end of Barneys Point bridge to the southern end of the Tweed Heads bypass.

Key construction activities during September 2012

No days were lost due to wet weather during this time.

- Community day held on 22 September 2012 to mark the opening of the project and the Wilson Park landbridge.
- Shared user path completed.
- Landscaping neared completion.
- Ongoing discussions with residents to resolve any outstanding concerns relating to construction of the upgrade.



Community day at Wilson Park

OPEN
TO TRAFFIC

Banora Point upgrade under construction



Wilson Park landbridge now completed



Finishing Wilson Park



Wilson Park information sign



Finishing work on Sexton Hill drive looking south



Finishing work under way on shared user path

Preconstruction projects



Australian Government

Nation Building Program



Transport
Roads & Maritime
Services

Priority two

(Port Macquarie to Raleigh)

The completion of the Pacific Highway upgrade has been divided into three key priorities. Priority one projects will be completed by the end of 2014. Priority two projects will complete four-lane divided road between Port Macquarie and Coffs Harbour. Progress is already being made on this section with the construction of the Kempsey bypass.

Following completion of the Kempsey bypass, there are 105 kilometres left to be upgraded to four-lane divided road, in order to complete priority two. These projects are being prepared for major work to start. They include:

Frederickton to Eungai

The NSW Minister for Planning approved the total Kempsey to Eungai upgrade in 2008. The Frederickton to Eungai section is the second stage of this upgrade and will provide about 26.5 kilometres of four-lane divided road from the Kempsey bypass (now being built) to Eungai Rail.

Activities under way in September 2012

- Tender assessment continued for the design and construction of this section of the highway upgrade.
- A contract is expected to be awarded by the end of the year.
- Land acquisitions and field investigations continued to prepare for the start of major work in 2013.
- Weather permitting, the project will open to traffic by the end of 2016.

Nambucca Heads to Urunga

(forms part of the larger
Warrell Creek to Urunga project)

The NSW Minister for Planning approved the total Warrell Creek to Urunga upgrade in 2011. Planning for the project is jointly funded by the Australian and NSW governments. The 42 kilometre project involves an upgrade of the existing highway from the existing Allgomera deviation, south of Warrell Creek, to the existing Waterfall Way interchange at Raleigh. The project will be built in two sections from Nambucca Heads to Urunga and from Warrell Creek to Nambucca Heads.

Activities under way in September 2012

- Tenders received and are being assessed from three shortlisted contractors, Abigroup, Boulderstone and Thiess, for the design and construction section.
- The preferred tender is expected to be announced by the end of this year.
- Land acquisitions continued.
- Utility relocations under way.
- Field investigations (including plant and animal, geotechnical, survey, water quality, environmental and Aboriginal heritage) continued to prepare for the start of major work in 2013.
- Weather permitting, the project will open to traffic by the end of 2016.

Preconstruction projects



Australian Government

Nation Building Program



Transport
Roads & Maritime
Services



Geotechnical investigations



Field investigations

Oxley Highway to Kempsey

The NSW Minister for Planning and Infrastructure approved the Oxley Highway to Kempsey upgrade on 8 February 2012. It will provide about 37 kilometres of four-lane divided highway between the Oxley Highway at Port Macquarie and the Kempsey bypass.

Planning for the project is jointly funded by the Australian and NSW governments. The project will be built in two sections.

Activities under way in September 2012

- Geotechnical investigations and ground survey work continued.
- Aboriginal archaeological investigations and plant and animal investigations carried out.
- Land acquisitions continued.
- Work continued to finalise the concept design for the whole Oxley Highway to Kempsey project.
- Detailed design work continued for the Kundabung to Kempsey section and the Sancrox interchange.

Warrell Creek to Nambucca Heads

(forms part of the larger
Warrell Creek to Urunga project)

The NSW Minister for Planning approved the total Warrell Creek to Urunga upgrade in 2011. Planning for the project is jointly funded by the Australian and NSW governments.

The 42 kilometre project involves an upgrade of the existing highway from the existing Allgomera deviation, south of Warrell Creek, to the existing Waterfall Way interchange at Raleigh. The project will be built in two sections from Nambucca Heads to Urunga and from Warrell Creek to Nambucca Heads.

Activities under way in September 2012

- Preconstruction activities under way, including land acquisitions, survey, geotechnical and environmental works.
- Work started on the preparation of tender documents for a design and construction contract.

Preconstruction projects



Australian Government

Nation Building Program



Transport
Roads & Maritime
Services

Priority three

(Woolgoolga to Ballina)

The completion of the Pacific Highway upgrade has been divided into three key priorities.

Priority one projects will be completed by the end of 2014, weather permitting.

Priority two projects (to complete four-lane divided road between Port Macquarie and Coffs Harbour) are being prepared for major work to start.

Priority three involves completing the remaining single carriageway sections of the Pacific Highway between Woolgoolga and Ballina.

Woolgoolga to Ballina

Background

The Woolgoolga to Ballina project will upgrade about 155 kilometres of highway to four-lane divided road. It is made up of four previous planning projects:

- Woolgoolga to Wells Crossing.
- Wells Crossing to Iluka Road.
- Iluka Road to Woodburn.
- Woodburn to Ballina.

This project does not include the recently completed Glenugie upgrade or the Devils Pulpit upgrade (which is currently being built).

Activities under way during September 2012

- Land acquisitions continued.
- Work continued on an environmental impact statement that is expected to be placed on display for public comment in late 2012.
- Bore hole drilling, test pits, excavator pits and seismic work continued, with geotechnical site investigations completed on the Devils Pulpit to Ballina section. This work will provide design input for cuttings, embankments, bridges, drainage structures, material sources, and pavement reuse.
- Survey investigations continued, to gather data for design purposes.
- Placement of fill material continued between Pimlico Road and Teven.



Meeting with the community

Under construction



Australian Government

Nation Building Program



Transport
Roads & Maritime
Services

Safety improvement work

Contractors:

RMS, Road and Fleet Services

Workers on site: 0

Pieces of large plant: 0

Start date of major construction:

November 2009

Expected completion date:

Mid 2014 weather permitting

Project value: \$55 million



General fill over the bridging layer next to the existing highway at Farlows Flat

Background

A program of safety improvement work has been developed as part of the Australian and NSW governments commitment to upgrade the Pacific Highway in the next five years to mid 2014.

While most of the funding will be directed to upgrading the highway to four-lane divided road, there is a need to address road safety and traffic issues on sections of two-lane highway.

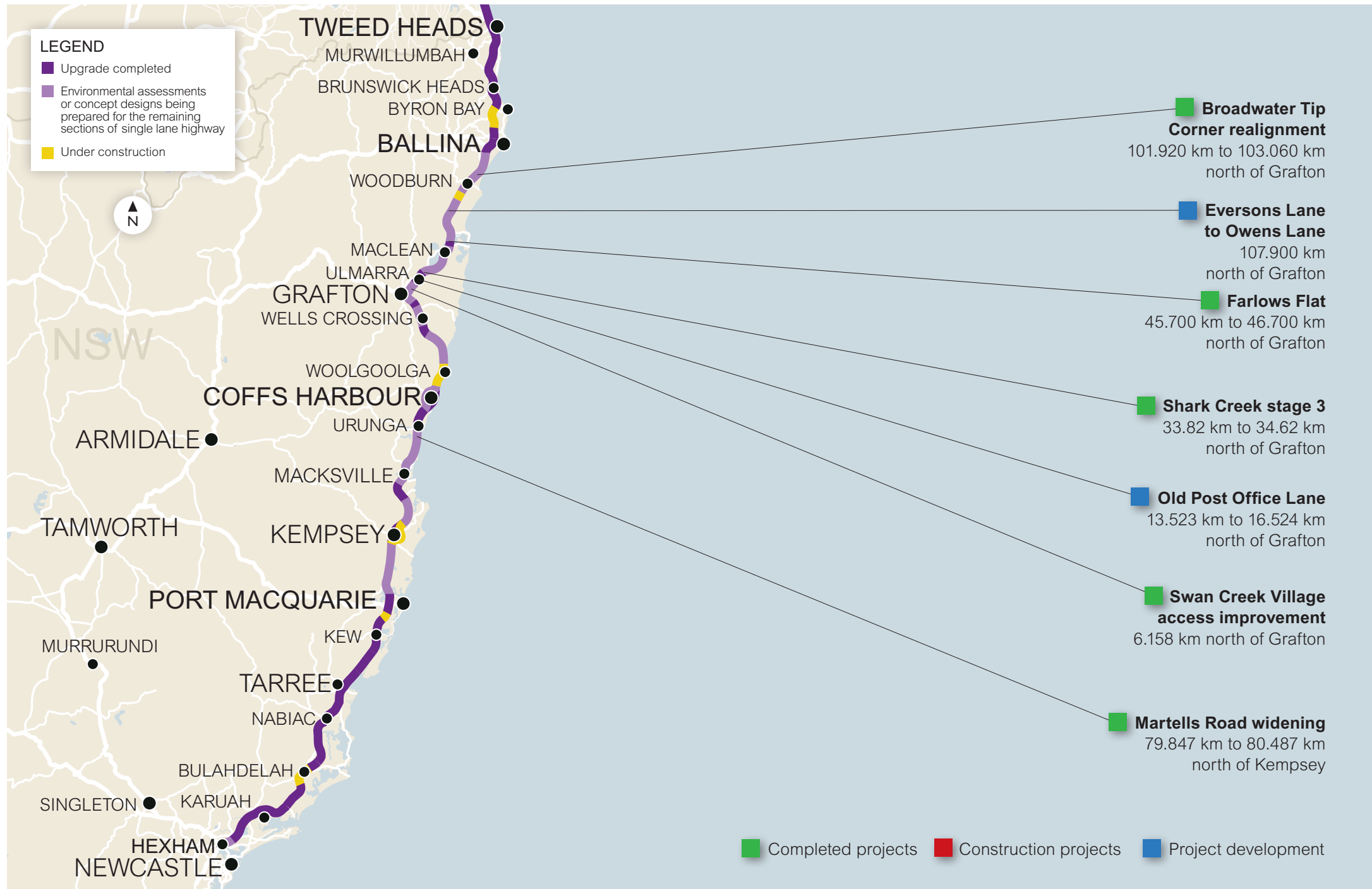
A package of smaller work is being delivered to keep these sections safe and serviceable until upgrades can be completed. This work is also aimed at reducing the delays caused by local and major flood events.

Key construction activities during September 2012

No days were lost due to wet weather during this time.

- Development work in progress on improvements at Old Post Office Lane, near Ulmarra. Work is expected to start in December 2012.
- Safety work carried out at Farlows Flat as part of the Pacific Highway safety improvement work program is complete. Separate resurfacing work is continuing in the area.

Safety improvement works under construction





Environment

Acid sulfate rock is a naturally occurring rock containing iron sulfides. When these sulfides are exposed to air or water, oxidation takes place and sulfuric acid is ultimately produced. This rock can remain underground indefinitely without reacting or breaking down.



Excavation of cutting involving acid sulfate rock

Bulahdelah upgrade

Acid Sulfate Rock Management, north of Bombah Point Road

Acid sulfate rock was identified in a major cutting just north of Bombalah Point Road as part of the environmental assessment for the Bulahdelah bypass project during geotechnical investigations. The rock cores extracted from these investigations expanded during storage and caused minor rusting of the steel storage boxes. This prompted further testing and investigations and specialist consultants were engaged to provide advice on the most appropriate management measures.

Prior to excavation of the cutting north of Bombah Point Road (Cut 2), additional samplings were taken to determine the reactivity of the underlying acid sulfate rock. Samples were initially mixed with peroxide and vigorous bubbling indicated that the rock was likely to be highly reactive.

The samples were then taken away for specialist testing. These tests determine the amount of lime required to neutralise the rock before it is reused in fill. The site team reduced the time between the extraction of the rock and its reuse wherever possible, to minimise the exposure of the rock to oxygen. At the fill site, the excavated rock is mixed with the appropriate amount of lime, compacted and capped with other layers of fill. All water runoff from these areas is directed to a water treatment basin as a precaution. These basins are regularly tested and none have shown signs of acid runoff.

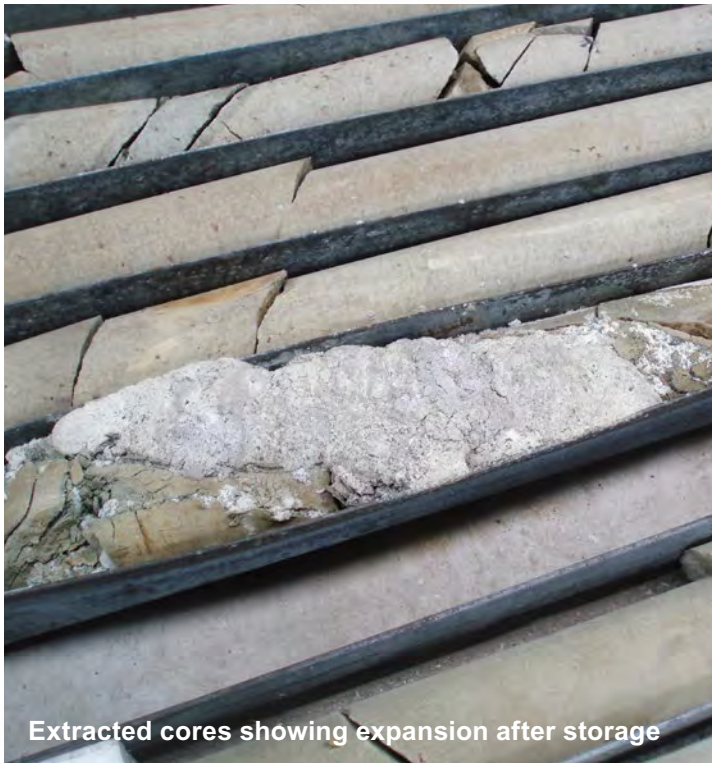
The exposed batters in Cut 2 also require treatment as the acid sulfate rock can continue to react with oxygen. These management requirements, developed in consultation with

a geotechnical engineer and landscape architect, vary depending on batter slope. On flatter batters, a layer of topsoil is applied that is first mixed with lime to buffer any acid that may leach from the underlying rock. It is then landscaped with acid-tolerant plants. If left untreated, steeper batters can crumble as the acid sulfate rock continues to react with oxygen. Therefore, a layer of concrete is placed over steeper batters to minimise the amount of oxygen able to react with the surface of the rock and to provide structural stability. The final surface of these steeper batters will be treated to make them more aesthetically pleasing.

These management measures aim to prevent the generation of acid runoff from Cut 2. Despite this, surface water in these areas is also managed to prevent any potential acid runoff entering waterways untreated or mixing with 'clean' run-on water. All water running off Cut 2 during operation is being directed to the water treatment basin near Bombah Point Road as a precaution. The inlet, outlet and rock scour protection of this basin contain limestone rock to neutralise any acid that may be captured. Plastic pipes have been used to direct water to this basin as these are less likely to corrode than concrete pipes. To minimise the amount of water being captured within this sediment basin, 'clean' water from north of Cut 2, is directed into separate pits which divert this water directly to the Myall River.

In total approximately 200 000m³ of acid sulfate rock was extracted, treated and managed and majority of this was reused on the project – this is the equivalent of 80 olympic sized swimming pools!

Environment Bulahdelah upgrade acid sulfate rock management





Dual carriageway status

