

Overview

Nowra Bridge project Princes Highway upgrade



Transport
Roads & Maritime
Services

NOVEMBER 2013

EARLY INVESTIGATIONS

Roads and Maritime Services is starting early investigations to improve conditions on the Princes Highway over the Shoalhaven River in Nowra. The NSW Government has allocated funding to prepare technical studies, assess potential locations, and undertake environmental impact assessment and concept design work for a potential new river crossing.

The investigations will look at how to maintain the existing southbound iron truss bridge, and whether it can remain in use. The project provides an opportunity to improve traffic conditions and manage traffic congestion around the bridges. Roads and Maritime has not decided if the southbound bridge will be replaced or kept, and community input will be an important part of this consideration.

The Nowra Bridge project will also consider opportunities to look at both a future bypass of Nowra and a future railway corridor across the Shoalhaven River.



During construction of the iron truss bridge



Aerial view of Nowra Bridges

Purpose of the project

The Princes Highway in Nowra crosses the Shoalhaven River on two bridge structures. The first bridge structure, which carries southbound traffic, is an iron 'Whipple' truss bridge built in 1881. The second bridge structure, which carries northbound traffic, is a concrete bridge built in 1981.

The southbound bridge is over 130 years old and has historical and community value. The two available traffic lanes are narrow and can experience heavy congestion. The bridge structure restricts the movement of oversize vehicles and is at risk of damage from over height vehicles that may collide with the structure when using the bridge. Maintenance of the southbound bridge is becoming increasingly difficult due to the large volume of traffic crossing the Shoalhaven River.

The Nowra Bridge project will investigate ways to address the issues associated with the southbound bridge including:

- Maintenance of the southbound bridge while allowing traffic to flow freely.
- Traffic congestion on the southbound bridge and surrounding junctions.
- Restrictions to oversize freight and some large freight vehicles and the risk of collision with the bridge structure.
- Potential road safety risks.

At this stage the Nowra Bridge project does not have a particular solution in mind to address these issues. Any solution must ensure that the maintenance needs of the bridge can be met under existing and forecast traffic volumes. The project will also consider opportunities to improve southbound access for freight vehicles, and to improve general travel conditions and manage traffic congestion around the bridges.

Options that are identified will attempt to improve accessibility, safety and efficiency for all road users, and minimise impacts on the physical and social environment. In considering options, Roads and Maritime will work closely with the community and strive to provide value for money.

What happens next?

The Nowra Bridge project is only just beginning and there is a lot of work to be done. Roads and Maritime has been working to gather information and to investigate information gaps. Project documents will be made available to the community as they are prepared.

In early 2014, Roads and Maritime will have enough information to begin considering potential options. More detailed investigations into the viability of proposals will then be carried out with community involvement as the project progresses.

Have your say

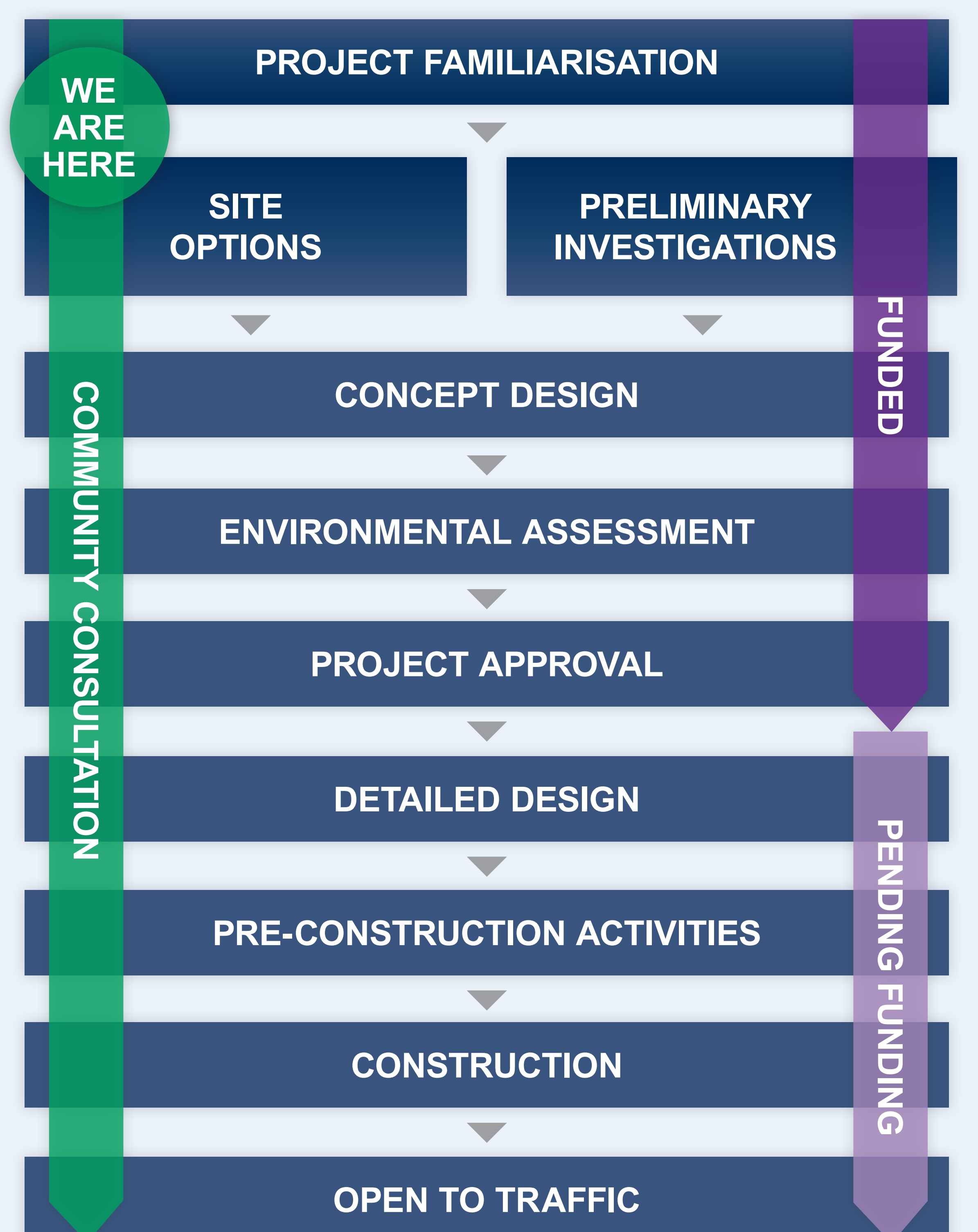
Roads and Maritime considers the community to be an essential part of the Nowra Bridge project. The project team are committed to involving the community throughout the life of the project and will provide regular updates and opportunities for the community to provide feedback.

Information on the Nowra Bridge project can be found on the Roads and Maritime Services website. You can leave your thoughts and feedback via our project information line, by email or by post.

You are also encouraged to register your contact details so that the project team can keep you informed by email. Roads and Maritime look forward to discussing all aspects of the project with you as it progresses.



Southbound view of the iron truss bridge



For more information:

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Sydney NSW 2000

Project information line:
1800 331 713 (free call)

Email: NowraBridgeProject@rms.nsw.gov.au

Web www.rms.nsw.gov.au/roadprojects/projects/princes_hway/nowra_bridge/index.html

Consideration of environmental impacts will be an important part of the Nowra Bridge project. Aboriginal and European heritage, property impacts, flora and fauna, marine, vegetation, and social amenity are just some of the many issues that will need to be considered.

Assessments carried out at this early stage will mostly involve researching known information and databases, and will focus on identifying potential impacts. Where practical, Roads and Maritime Services will take the opportunity to conduct more detailed assessments and field studies to look for environmental concerns only visible at certain times of year, such as flowering orchids or spawning frogs.

More extensive environmental assessment will be required as the Nowra Bridge project progresses and more becomes known about the location and design of any new crossing.

Environmental assessments include more than just heritage or flora and fauna. They also include impacts on people, properties and businesses. Members of the community who may be affected by the Nowra Bridge project are encouraged to talk to the project team to discuss their concerns.



Aerial view of Bomaderry Creek



During construction of the iron truss bridge



Northbound view of the iron truss bridge



Nowra Heath Myrtle (*Triplarina nowraensis*)

Environmental assessments

Early reviews of the existing environmental information cover an area from the west of Nowra near Mundamia Creek to the east of Nowra at Pig Island. Information has been gathered from a range of material including existing environmental studies, planning strategies, registers and other available public information. The initial review identified potential environmental constraints which will require further investigation as the Nowra Bridge project progresses.

Aboriginal and European heritage

There is the potential for Aboriginal heritage sites along the Shoalhaven River, particularly in locations where sandstone outcrops may have been suitable for rock shelters. This is consistent with the location of many of the known registered Aboriginal heritage sites in the project area, most of which are located to the west of the existing bridges.

There are numerous European heritage sites within the study area that are listed on local, State and Commonwealth heritage registers. The southbound iron 'Whipple' truss bridge itself is included in the Roads and Maritime Section 170 Heritage and Conservation Register.

Property impacts

The majority of the study area is classified as urban area and contains a mix of residential, agricultural, commercial, recreation and environmental protection land use and zones under the current Shoalhaven Local Environmental Plan 1985 (SLEP). Shoalhaven City Council has prepared a new draft Local Environmental Plan which will be submitted to the Department of Planning and Infrastructure for finalisation.

Flora and fauna

There are several native vegetation communities and records of threatened flora and fauna that are protected under State and Commonwealth legislation across the study area. These records tend to be more concentrated to the west of the existing bridges, largely within areas of intact vegetation, along riverbank corridors, and occasionally through the developed urban areas of Nowra. Further investigation would be required to establish if any Endangered Ecological Communities (EEC) exist within the native vegetation communities in the area.

Marine vegetation

The Shoalhaven / Crookhaven Estuary is listed as a Nationally Important Wetland. Mapping obtained for the Shoalhaven and Crookhaven estuaries indicates that seagrass is present around Pig Island and along the edges of the Shoalhaven River near the existing bridges. Seagrass is a sensitive vegetation community providing valuable aquatic habitat and nursery areas for fish, and is rare to be present so far inland.

Social amenity

Maintaining good pedestrian and cyclist access around the existing bridges and Shoalhaven River foreshore and the river itself is important to the local community. It is also expected that the visual aesthetics of any new infrastructure would need to sit well in the landscape and be sympathetic to the natural and built environment.

What happens next?

Broader environmental assessments will be completed in the short term to help determine the best location for any new river crossing and to guide investigations for the project in later stages.

These early assessments will involve talking to the community to better understand the potential property, business and social amenity impacts of the Nowra Bridge project and to gain knowledge of the local environment the community may have. A preliminary urban design assessment of the existing Princes Highway crossing will also be prepared and there may be opportunities in the coming months to do field studies in areas where Endangered Ecological Communities (EEC) may be present.

Detailed environmental investigations will happen once more is known about the location of any new river crossing and a preferred concept design is ready to be developed.

In the meantime the project team would like to hear from community and business stakeholders who have concerns or ideas about the Nowra Bridge project.



Public space east of the bridges

The bridges across the Shoalhaven River regularly experience traffic congestion. It is not uncommon for traffic to queue almost the entire length of the southbound bridge. The northbound bridge also experiences queues and traffic delays. Traffic conditions often deteriorate further during holiday periods when the Princes Highway becomes a popular tourist route for the Shoalhaven and the NSW south coast.

Poor traffic conditions at and around the bridges is caused by:

- Not having enough lanes on the southbound bridge.
- Traffic issues at the junctions with Bolong Road, Illaroo Road, Bridge Road and Pleasant Way.
- Incidents that cause lane closures on the bridges.

The Nowra Bridge project may provide an opportunity to improve traffic conditions on the Princes Highway at and around the Shoalhaven River.



Traffic north of the bridges



Traffic to the north of the bridges

Traffic information

Traffic volumes across the Shoalhaven River bridges are amongst the highest volumes experienced on the NSW south coast with almost 50,000 vehicles crossing the river on an average day. During peak hour periods about 3000 vehicles use the bridges in the morning and about 3500 vehicles use the bridges in the afternoon. These figures are fast approaching the capacity of the two bridges.

Traffic surveys from 1994 and 2003 indicate that between about five and 15 per cent of traffic crossing the river pass through Nowra on their way to other destinations. The remaining vehicles are either travelling to or from the local area or local traffic travelling entirely within Nowra-Bomaderry. Roads and Maritime Services are working with Shoalhaven City Council to update these figures in early 2014.

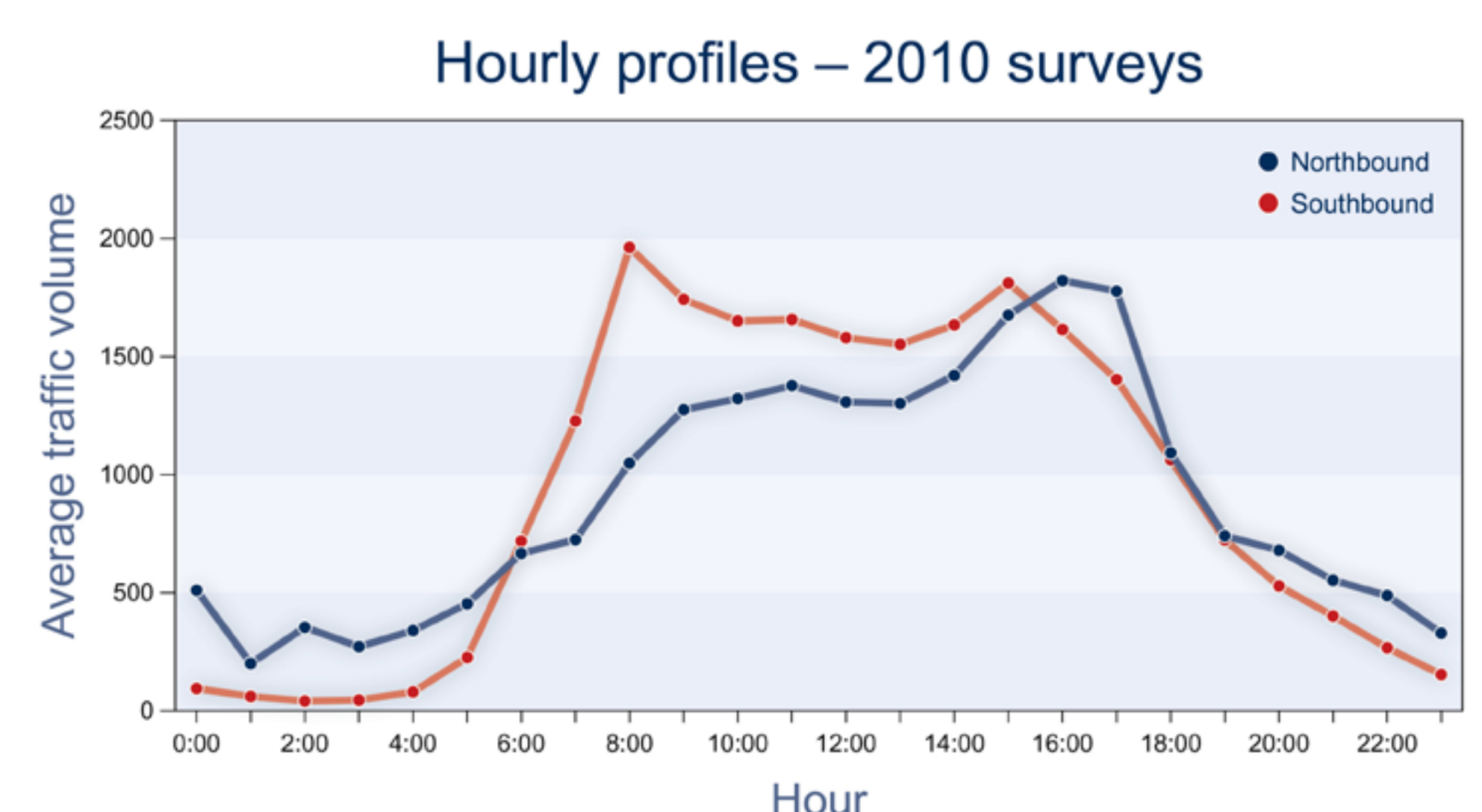
Heavy vehicles and freight are estimated to make up about six per cent of the traffic that crosses the Shoalhaven River during the day.

Traffic modelling completed as part of the Gerringong to Bomaderry upgrade forecast that once the highway upgrade is complete, many vehicles which currently use Bolong Road and the 'sandtrack' will begin to use the Princes Highway. This would change traffic patterns around Bolong Road and will need to be considered as the Nowra Bridge project progresses.

Roads and Maritime and Shoalhaven City Council have identified additional traffic capacity will be needed at the existing river crossing. Previous work has also indicated traffic volumes can be expected to continue to increase due to population growth on the NSW south coast. These investigations have also suggested that a bypass of Nowra is unlikely to relieve traffic conditions at the Princes Highway but more traffic modelling is needed to confirm this.



Traffic figures passing through Nowra



What happens next?

Understanding the current traffic issues and forecasting future conditions is a crucial part of the Nowra Bridge project. While a lot of work has been done in the past, much of it will need to be updated as the data used is either old or relies on out of date network assumptions.

Roads and Maritime is working closely with Shoalhaven City Council to update existing traffic data and complete new modelling. This information will play an important role in deciding what traffic problems need to be addressed, what infrastructure would be necessary, and where any new infrastructure should be located.

Location

Nowra Bridge project Princes Highway upgrade



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The Princes Highway is the only continuous transport corridor connecting Sydney and the Illawarra region with the Shoalhaven and the NSW south coast. Nowra-Bomaderry is an important regional centre located on the Princes Highway with Nowra and Bomaderry separated by the Shoalhaven River. The two bridge structures at the Princes Highway are the only location where it is possible for the community to cross. It serves as a local access point between Nowra and Bomaderry and as a crossing for road users passing through Nowra on the Princes Highway.

The Nowra Bridge project will look at the best location for any potential new river crossing to address the issues experienced on the southbound Nowra Bridge. It may also provide an opportunity to consider longer term transport needs including potential options for a future extension of the South Coast rail line over the Shoalhaven River, and a bypass to remove 'passing through' traffic from the existing Princes Highway.

Roads and Maritime Services need to investigate and test all possible ideas before developing concept options in too much detail. These investigations will be vital when determining the location of any new river crossing.



Rail corridor at Bomaderry



Aerial view of Nowra Bridges and surrounds

Strategic options

A *Strategic Site Options Study* is being prepared to consider whether a solution to the issues experienced on the southbound Nowra Bridge can also provide for the longer term transport needs of the NSW south coast.

An important part of the study will be to consider the benefits and costs associated with all options, and will include looking at environmental, social, design, traffic and other impacts.

The study will also recommend clear objectives that the Nowra Bridge project should address, and will determine the best location to start developing designs. The *Strategic Site Options Study* will consider a number of options within the three transport corridors:

- The possible future bypass corridor to the west of Nowra-Bomaderry.
- The area around the South Coast rail line.
- The existing Princes Highway corridor.

Possible future bypass corridor

Shoalhaven City Council has been working towards reserving a regional services corridor to the west of Nowra. This corridor could in future be used as a highway bypass of Nowra-Bomaderry. Roads and Maritime has supported Council's efforts to reserve the corridor, however there are no plans at this stage to bypass Nowra-Bomaderry.

The study will need to consider if a new crossing at the location of the bypass corridor would address the problems currently being experienced on the southbound Nowra Bridge.

South Coast rail line

The South Coast rail line largely follows the same route as the Princes Highway until it terminates at Bomaderry on the northern side of the Shoalhaven River. There are no plans at this stage to extend the rail line across the Shoalhaven River into Nowra however growth in the region may see the need for this extension in the future.

The study will need to consider whether a project near the South Coast rail line would address the problems currently being experienced on the southbound Nowra Bridge.

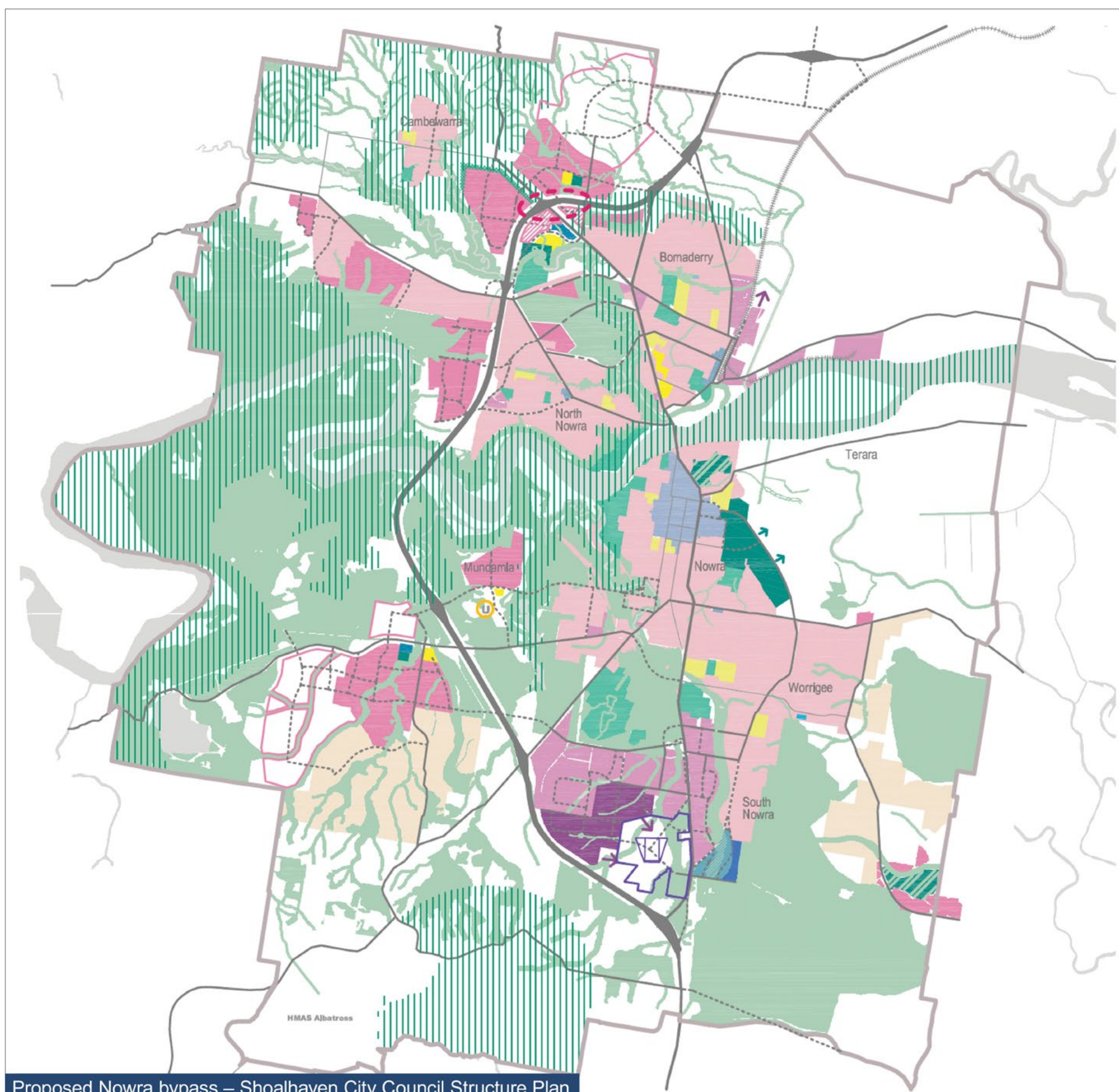
The Princes Highway

The study will need to consider if a project at or near the location of the existing Princes Highway would address the problems currently being experienced on the southbound Nowra Bridge.

What happens next?

The project team will be carrying out additional studies where needed. The feedback received from the community will form an important part of the information assessed.

Outcomes of the *Strategic Site Options Study* will be available by mid 2014 and a community update will be provided once the study is complete.



Proposed Nowra bypass - Shoalhaven City Council Structure Plan

The Nowra Bridge project is in the very early stages of development and it is too soon to know what solutions will be needed to address the problems on the existing southbound bridge. At this stage, Roads and Maritime Services is identifying design issues for the area that will assist in the development of potential options.

Some of the relevant design issues that need to be considered at this stage include impacts on the environment and private property, geotechnical conditions and terrain, balance of earthworks, flooding and drainage, ease of construction and traffic impacts during construction.



Riverfront east of the bridges



View of the bridges across the Shoalhaven River



View from below the bridges and across the Shoalhaven River

Design considerations

Roads and Maritime has been investigating the issues that may be encountered for a range of different design possibilities.

Any new infrastructure would need to be built without removing any of the existing traffic capacity crossing the river. The high volumes of traffic crossing the river on a daily basis would experience substantial queues and delays if traffic volumes were restricted in peak times. If the Nowra Bridge project proposes a new crossing near the two existing bridges, it would need to be designed so that both of the existing bridges could remain in place during construction.

Major road work may be necessary to tie in any new bridge structure to the existing highway. This could include overpasses or underpasses to remove traffic conflicts at existing intersections and would potentially add to the impact on properties and the environment.

There may also be an opportunity for the Nowra Bridge project to include provision for a future rail line extension so this will also need to be considered as part of any bridge design.

What happens next?

The initial design work will identify a variety of design constraints and will help assess potential locations for any new crossing. Detailed investigations for geotechnical conditions, constructability, and other necessary information will be carried out to assist the design process once the location has been decided.

The design process is complex with many changes and refinements carried out before construction can begin. Community consultation will be a large part of the entire design process.

Concept and detailed design process

Strategic site selection study

This study will consider a wide range of constraints over a relatively wide study area, and community input is a critical aspect of the strategic studies.

Concept design

The concept design considers a smaller range of options in a smaller study area. More information, in greater detail, is obtained to allow options to be developed and evaluated.

Detailed design

Detailed design occurs once a single concept has been identified as preferred. Detailed design concludes with the production of drawings for construction.

Community consultation

Maintenance

Nowra Bridge project Princes Highway upgrade



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The southbound iron 'Whipple' truss bridge over the Shoalhaven River was constructed in 1881 and is more than 130 years old. Like any bridge of its age, it requires regular and sometimes extensive maintenance.

The northbound concrete box girder bridge was constructed in 1981 and experiences relatively fewer operational issues for maintenance.

Almost 50,000 vehicles cross the Shoalhaven River on an average day. The high volume of traffic makes it difficult to perform any major maintenance tasks required on the southbound bridge without having to close it. Traffic volumes are also too high to close either bridge during peak times because it reduces traffic flow at the crossing and would cause major traffic delays.

Ongoing maintenance and its impact on traffic flow is the primary reason for the Nowra bridge project.



The iron truss bridge in 1879 (during construction)



Height restrictions on the iron truss bridge

Heavy vehicles

In addition to maintenance issues, the iron truss structure of the southbound bridge is not suitable for 4.6 metre or higher vehicles and is at risk of damage from vehicles that collide with the top of the structure. A large impact to the iron truss could make the bridge unsafe and potentially close the bridge to all traffic until repaired. The capacity to move traffic between Bomaderry and Nowra would be reduced and would restrict the travel of people and freight on the NSW south coast.

What will happen to the old bridge?

Roads and Maritime understands that the community has an interest in the future plans for the southbound bridge. A question that will need to be considered as part of the Nowra Bridge project is whether the existing southbound bridge should be kept in use or replaced by a new structure.

Keeping the bridge for use in any capacity would require funding to continue to maintain it to a satisfactory level. There are also social and heritage issues associated with demolishing or removing the bridge.

What happens next?

Roads and Maritime has undertaken an assessment of the current structural condition of the southbound bridge and, once finalised, a report will be made publicly available.

The Nowra Bridge project will need to consider whether the existing iron 'Whipple' truss bridge can be strengthened or upgraded to stay in use. The project team is carrying out additional investigations to better understand the feasibility, benefits and costs of retaining the old bridge.

Roads and Maritime continues to perform maintenance activities on and around the existing bridges. This includes an upgrade to the overheight vehicle warning detection system and a project to fix corrosion on the southbound bridge.

The community is encouraged to contact the project team and share their views on the future of the bridge.



Corrosion on the iron truss bridge