Additional crossing of the Clarence River at Grafton

Preliminary Route Options Report – Part One
Volume 2
Technical paper – Landscape and urban character

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6.1 Landscape and urban design goals 54
Grafton is a major regional centre situated on the Clarence River in the north coast of New South Wales. The Clarence River passes through the centre of the city, dividing Grafton into two separate urban areas that are linked by a single bridge crossing. Grafton Bridge currently provides the only rail, motor vehicle, pedestrian and cyclist connection between Grafton (north of the river) and South Grafton, for local and regional travellers alike. The existing bridge has limited capacity to meet the demands of the large volumes of road traffic that cross it during peak times. It is likely that this demand will increase over time due to the future urban growth that is envisaged for Grafton as part of the Clarence Valley Council’s (CVC) regional urban planning strategies. As such, the NSW Roads and Traffic Authority (RTA) has identified a need to provide an additional bridge crossing in Grafton.

This urban design strategy report has been prepared by Spackman Mossop Michaels for Arup, on behalf of the RTA, to assist in the selection of a preferred location for a future additional crossing of the Clarence River in Grafton. The purpose of the urban design strategy is to provide the framework for evaluating—from a landscape and urban design perspective—proposed options for the location and design of a new bridge, as well as any associated approach routes to the new bridge. The urban design strategy forms the basis of the overall landscape and urban design study for an additional bridge crossing for Grafton. The strategy identifies a series of urban design goals, and related design principles, that will guide the concept landscape and urban design proposal for a new bridge crossing.
STUDY METHOD
The preparation of this report has involved:

- Analysis of the existing site conditions, through on-site investigations and desktop review of current background studies.
- Identification of the key landscape and urban design values of Grafton.
- Identification of the primary landscape and urban design issues that could affect the design of the new bridge and its approach routes.
- Identification of landscape and urban design opportunities that could arise from the introduction of an additional bridge crossing in Grafton.
- Formulation of landscape and urban design goals, and associated design principles, to inform the design and selection of a preferred additional crossing and approach routes.

These tasks were undertaken in collaboration with Arup’s engineering design team, and in consultation with key stakeholders within the RTA and Clarence Valley Council.

BACKGROUND
The RTA is currently undertaking investigations to identify an additional crossing of the Clarence River at Grafton to address short-term and long-term transport needs.

The design for the existing bridge over the Clarence River at Grafton commenced in 1915. It comprised a moveable span railway bridge with allowance for pedestrian use. Later in 1922, vehicular traffic was incorporated into the design. The bridge was opened to traffic in 1932.

Since the early 1970s there have been various discussions and studies into a second crossing of the Clarence River near Grafton. In 1977, the NSW Department of Main Roads (DMR, now the NSW Roads and Traffic Authority) identified that a new bridge should align along Bent Street and Fitzroy Street. It was recognised at that time that the second river crossing proposal was not of immediate priority, but rather a long-term project.

Over the last 10 years, the RTA has carried out a number of studies to identify areas that would be suitable for a second crossing of the Clarence River at Grafton. The most recent comprehensive RTA study was undertaken between 2003 and 2004. It consisted of a feasibility study (February 2003) followed by an environmental overview (January 2004) and a corridor evaluation workshop (April 2004). These studies identified that the most suitable location for a new crossing of the Clarence River would be near the existing Grafton bridge. However, a preferred route was not selected at that time and it was recognised that further investigations were needed to determine a preferred route.

Funding availability for the proposal became an issue in 2005 and, as a result, investigations into a second crossing of the Clarence River were placed on hold.

In 2009, in response to increasing traffic congestion in Grafton and South Grafton and operational safety issues with the existing bridge, the RTA recommended further investigations. These consisted of a revised traffic analysis that compared previous traffic modelling with updated traffic information. This was undertaken to understand the existing transport demands and traffic patterns within Grafton and the surrounding region. The December 2009 traffic study confirmed that a new bridge, close to the existing bridge, would cater for the traffic needs in the local area.

In February 2010 the RTA displayed four preliminary route options for community comment. These preliminary route options were developed based on traffic modelling only and were all in the vicinity of the existing bridge. This display also defined a study area for this investigation.

In December 2010 the RTA released a community update announcing a revised process for the identification and preservation of a route for a second crossing. The community update included the route options considered at the April 2004 corridor evaluation workshop, the four preliminary route options...
publicly displayed in February 2010 and options suggested by the community following the February 2010 display.

Between December 2010 and April 2011, the RTA has sought further community input on where the route should be located. This included a postal survey, residential telephone survey, business survey and a series of community forums.

This technical paper will be used to define the existing environment and constraints in the Grafton area that may affect the proposal.

PROJECT PURPOSE

The project purpose is to identify an additional crossing of the Clarence River at Grafton to address short-term and long-term transport needs.

PROJECT OBJECTIVES

The project objectives will be used to determine the feasibility of the options generated by the community as well as the resulting shortlist of options. The project objectives are:

- Enhance road safety for all road users over the length of the project.
- Improve traffic efficiency between and within Grafton and South Grafton.
- Support regional and local economic development.
- Involve all stakeholders and consider their interests.
- Provide value for money.
- Minimise impact on the environment.
URBAN DESIGN STRATEGY
2 THE EXISTING SITUATION
2.1 REGIONAL CONTEXT

LOCATION
The City of Grafton is situated on the northern New South Wales coastal plain, within the Clarence Valley local government area. It is located on the banks of the Clarence River, approximately 36.5km inland from the coast and 65.5km from the river’s mouth at Yamba. Grafton is the major urban centre for the region, being the primary focus of commercial, industrial, institutional and administrative activities in a predominantly rural part of the north coast.
Above: Road and rail approaches to Grafton Bridge at South Grafton
(1) Bent Street, (2) North Coast railway, (3) Gwydir Highway, (4) Pacific Highway

REGIONAL TRANSPORT NETWORK

KEY
- NATIONAL HIGHWAY
- STATE ROUTE
- RAILWAY LINE
- NATIONAL PARK
- NATURE RESERVE
- STATE FOREST
Being a regional centre, Grafton is well serviced by transport infrastructure. It is situated at the junction of the Pacific Highway and the Gwydir Highway, both of which are National Highway routes. The planned long-term upgrade route for the Pacific Highway between Wells Crossing and Iluka Road will run from the Glenugie State Forest north to Tyndale, completely bypassing Grafton.

The Summerland Way, a State Route, runs north from the Gwydir Highway and Pacific Highway, across the Grafton Bridge, through Grafton and onward to Woodenbong in Queensland. The Summerland Way is promoted as a tourist drive that provides a ‘quieter, scenic alternative’ to the Pacific Highway route between Brisbane and Coffs Harbour.

Due to the local topography and the relationship of the railway bridges to the local road network, heavy vehicles do not utilise the Prince Street section of the Summerland Way in Grafton. Instead, there is a heavy vehicle diversion route along Villiers Street to connect with the Dobie Street section of the State Route.

Grafton is also located on the North Coast railway line, the main passenger and freight rail connection between NSW and Queensland. Grafton Bridge currently provides the only major crossing of the Clarence River for both the railway line and the Summerland Way.
MAIN ROAD 83 SUMMERLAND WAY | ADDITIONAL CROSSING OF THE CLARENCE RIVER AT GRAFTON | PRELIMINARY ROUTE OPTIONS REPORT | 06: LANDSCAPE AND URBAN CHARACTER

REGIONAL HYDROLOGY

KEY

- WATERWAY
- FLOOD PLANNING AREA
- FLOODWAY
- WATER CATCHMENT AREA

(Data source: CVC Draft LEP 2010)
HYDROLOGY

Grafton is located in the lower reaches of the Clarence River catchment, within the Clarence Valley—one of the largest coastal floodplains in the country. Most of the city is situated within Council’s flood planning area (Draft Clarence Valley LEP 2010) and the only part of the township that is not part of the floodplain is the southern approach to Grafton Bridge, along Bent Street. Due to the large size of the river catchment upstream of Grafton (approximately 19,800m²), flooding is a major concern for the city. A series of levee banks has been constructed over time to protect both Grafton and South Grafton from the regular flooding of the Clarence River. These levee banks are a distinctive characteristic of the Clarence riverfront in Grafton and South Grafton.