



Sportsmans Creek new bridge
Recommended Option Report
Investigation of Traffic and Transport Issues

transportation planning, design and delivery

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Investigation of Traffic and Transport Issues

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Table of Contents

1. Introduction	1
1.1 Background	1
1.2 Purpose of this Report	1
1.3 References	1
2. Existing Transport Infrastructure	2
2.1 Regional road network	2
2.2 Local roads	2
2.3 Traffic volumes	4
2.4 Bluff Point Ferry	5
2.5 Public transport	6
2.6 Walking and cycling	7
2.7 Crash statistics	7
2.8 Traffic growth	7
3. Transport & Traffic Issues and Constraints	8
3.1 Road safety	8
3.2 Traffic capacity	8
3.3 Integration with user and community needs	9
3.4 Constructability	10
4. Transport Framework for Options Evaluation	11
4.1 Strategic transport objectives	11
4.2 Community objectives	11
4.3 Bridge design objectives, standards and performance criteria	14
5. Summary	15
Figures	
Figure 2.1: Regional Road Network	2
Figure 2.2: Local Road Network in Study Area	3
Figure 2.3: Grafton-Lawrence Road (looking north)	4
Figure 2.4: Bridge Street (looking north)	4
Figure 2.5: Grafton Street (looking north)	4
Figure 2.6: Rutland Street (looking north)	4
Figure 2.7: Sportsmans Creek bridge – Average Hourly Traffic Volumes, 6-19 February 2013	5
Figure 2.8: River Crossings in Lawrence	6
Figure 4.1: Clarence River Way Master Plan	13

1. Introduction

1.1 Background

Sportsmans Creek is located in Clarence Valley Council local government area, south of the township of Lawrence, and runs east-west as a tributary of the Clarence River.

The existing Sportsmans Creek bridge in Lawrence NSW is located at the southern approach to the township, on Bridge Street. It forms part of the Grafton-Lawrence Road, which in turn is a section of Tourist Route 22 between Grafton, Maclean and Yamba.

The existing bridge structure has geometry and design limitations which makes it unable to safely cater for the haulage requirements of the surrounding agricultural industries, two-way traffic, as well as to accommodate pedestrian and cyclist access. As such, the Roads and Maritime Services Timber Truss Heritage Conversation Strategy identifies the Sportsmans Creek bridge for replacement with a new structure. The project is funded as part of the \$290 million 'Bridges for the Bush' initiative – a NSW Government commitment to improving road freight productivity by replacing or upgrading bridges over the next five years. This is also an integral part of the NSW Long Term Transport Master Plan.

1.2 Purpose of this Report

This Transport and Traffic Issues, Opportunities and Constraints Investigation informs the development of the recommended option for a new bridge across Sportsmans Creek at Lawrence, and forms a background to feed into the evaluation of alignment options.

It discusses the existing transport situation, issues, constraints and needs including traffic demand, traffic safety, population growth and development, with the objective of developing a base traffic model to assist in the development and assessment of Concept Options.

1.3 References

In the preparation of this report, reference has been made to the following:

- Valley Vision 2020. Clarence Valley Council. 2008.
- Demolition of Existing Bridge and Construction of New Bridge Over Sportsman's Creek Lawrence – Environmental Impact Statement. Roads and Traffic Authority, May 2002.
- Sportsmans Creek Bridge Lawrence Investigation - Advantages & Disadvantages of Options. Clarence Valley Council, 2000.
- Clarence River Way Masterplan. Clouston Associates, February 2009.
- Mid North Coast Regional Strategy 2006-2031. NSW Department of Planning, March 2009.

2. Existing Transport Infrastructure

2.1 Regional road network

The Pacific Highway (Route A1) forms the key regional route in the Clarence Valley, and provides a high-capacity road link between Grafton and Maclean and further to the north to Brisbane.

The Summerland Way (Route B91) forms an inland regional route linking Grafton with Casino and Kyogle.

Between Grafton and Maclean, the Grafton-Lawrence Regional Road (MR 152) forms an alternative route to the Pacific Highway, running west of the Clarence River through Lawrence.

Forming part of the alternate route between Grafton and Maclean is a ferry crossing of the Clarence River between Bluff Point in Lawrence and the Woodford Dale Road on Woodford Island, linking with Lawrence Road and Macfarlane bridge to Maclean and beyond to Yamba. The existing Sportsmans Creek bridge forms part of the Grafton-Yamba Regional Road (MR 152) route. See Figure 2.1.

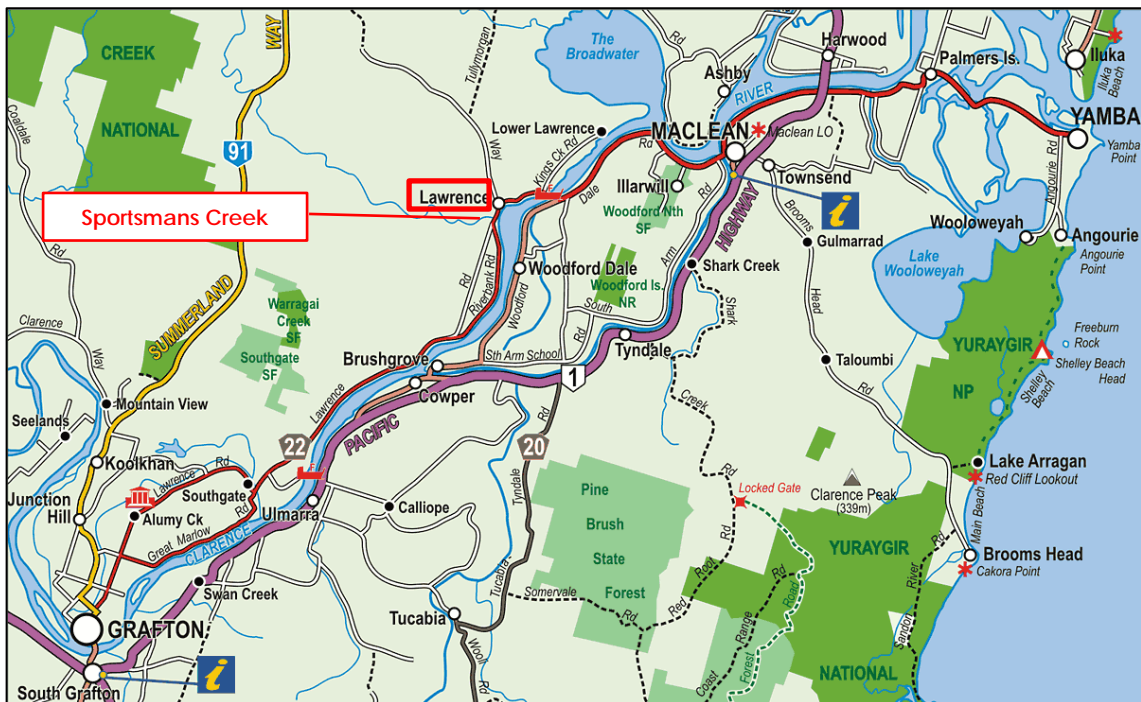


Figure 2.1: Regional Road Network

Source: Clarence Valley Tourism

2.2 Local roads

Key local roads in Lawrence include Bridge Street, Grafton Street and Rutland Street. Figure 2.2 shows the context of the key local roads in Lawrence, key features and the extent of the study area.

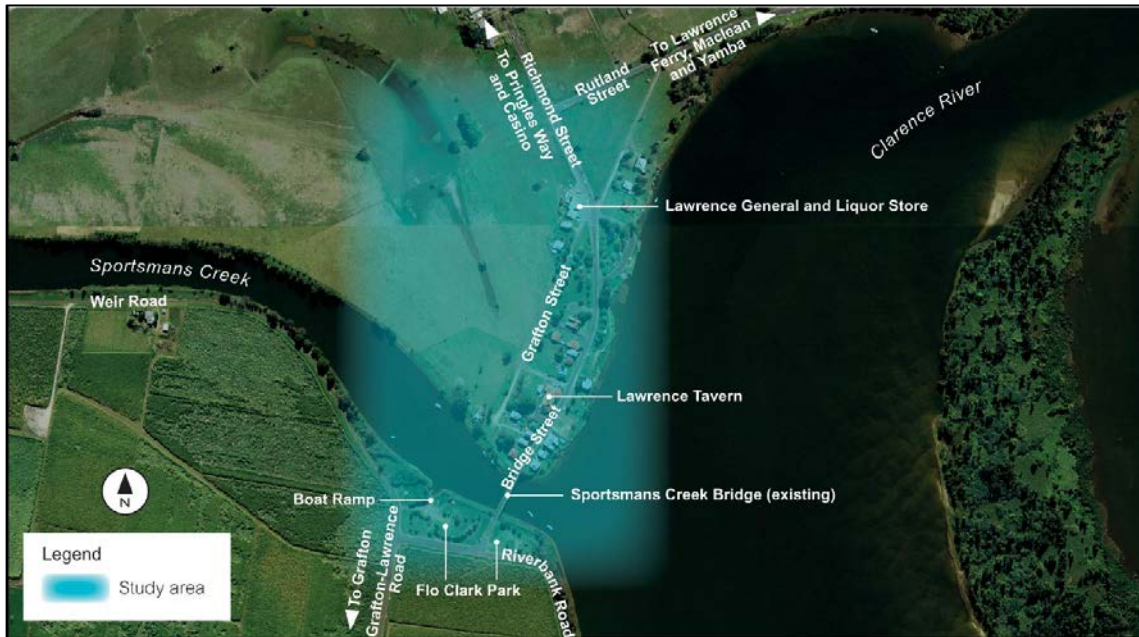


Figure 2.2: Local Road Network in Study Area

Source: Roads and Maritime Services

Bridge Street

Bridge Street is a regional road providing property access in the Lawrence village centre. It also forms part of the Grafton-Yamba route and as such carries a relatively high volume of through traffic, via Rutland Street to the Bluff Point Ferry. It consists of a 10 metre wide road reserve.

Bridge Street runs in a north-south manner with the existing Sportsmans Creek bridge at the south end. Its northern end intersects with Rutland Street and Grafton Street, where the Lawrence General Store is located.

Figure 2.4 shows an image of Bridge Street immediately north of Sportsmans Creek bridge.

Grafton Street

Grafton Street runs parallel and to the west of Bridge Street, with the south end terminating at the approach to Sportsmans Creek. It consists of a 20 metre wide road reserve.

Grafton Street mainly functions as rear access to properties fronting Bridge Street on the eastern side of Grafton Street. The western side is largely undeveloped.

Figure 2.5 shows an image of Grafton Street looking north towards the Lawrence General and Liquor Store.

Rutland Street

Rutland Street provides the link to Bluff Point Ferry, about 1 kilometre north east of the Lawrence village centre.

Figure 2.6 shows an image of Rutland Street from the vicinity of the Richmond Street/Bridge Street intersection.



Figure 2.3: Grafton-Lawrence Road (looking north)



Figure 2.4: Bridge Street (looking north)



Figure 2.5: Grafton Street (looking north)



Figure 2.6: Rutland Street (looking north)

2.3 Traffic volumes

Traffic volume counts undertaken by Roads and Maritime in February 2013 indicate that the average daily traffic across Sportsmans Creek bridge is 1,032 vehicles per day, of which about 7.4 per cent are heavy vehicles.

The AM peak hour was between 8:00 and 9:00, with an average of 96 vehicles were recorded over the survey period. The weekday AM peak volume was 116 vehicles for both directions. The recorded PM peak hour was between 4:00pm and 5:00pm, with about 91 vehicles on average.

Figure 2.7 shows the hourly variation of traffic volumes across Sportsmans Creek bridge in February 2013.

Previous counts undertaken in 2002 indicate that the traffic volume measured 1,061 vehicles per day (vpd), with heavy vehicles comprising 10.2% of the volume. While not specifying when in 2002 the counts were undertaken, it is understood that heavy vehicle traffic is influenced by seasonal sugarcane haulage activities (June to December).

Significant seasonal sugarcane haulage activities rely on Sportsmans Creek bridge for access. A total of 300 hectares of sugar cane plantations exist to the south of Sportsmans Creek, with 40,000 tonnes (3,720 trips) of harvested cane transported across the bridge.

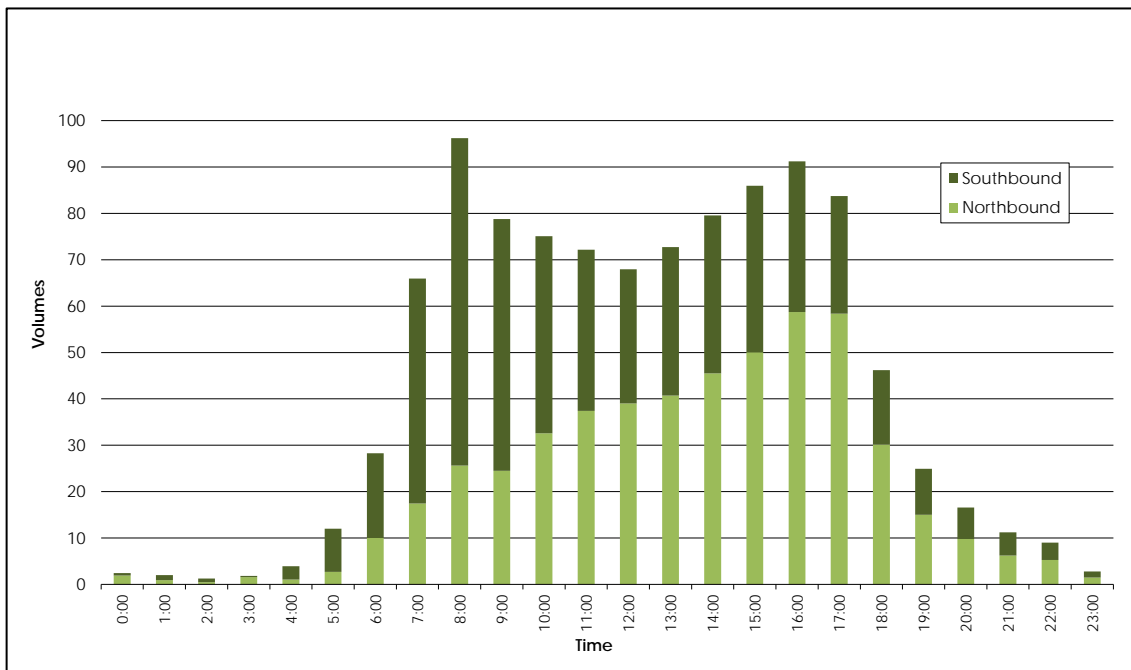


Figure 2.7: Sportsmans Creek bridge – Average Hourly Traffic Volumes, 6-19 February 2013
Data source: Roads and Maritime Services

2.4 Bluff Point Ferry

The Bluff Point Ferry is a cable ferry linking Rutland Street and Bluff Point on the Lawrence side and the Woodford Dale Road – Lawrence Road junction on Woodford Island. It forms part of the transport link between Lawrence and Maclean along Tourist Drive 22, and is used by more than 800 vehicles daily, which is between 70 and 80 per cent of the volume on Sportsmans Creek bridge.

The ferry operates 24 hours a day, seven days a week. The ferry stops for maintenance every Tuesday from 9.30am to 11am. However, there is no interruption to service during maintenance periods as two ferries are available at this crossing.

The Bluff Point Ferry has recently been upgraded to provide a higher capacity vessel in what is reputed to be the busiest vehicle ferry in Australia. From the previous 35,000 vehicles a month, the ferry’s capacity is now 46,800 vehicles a month.

Figure 2.8 shows the context of the Bluff Point Ferry and Sportsmans Creek bridge in Lawrence.

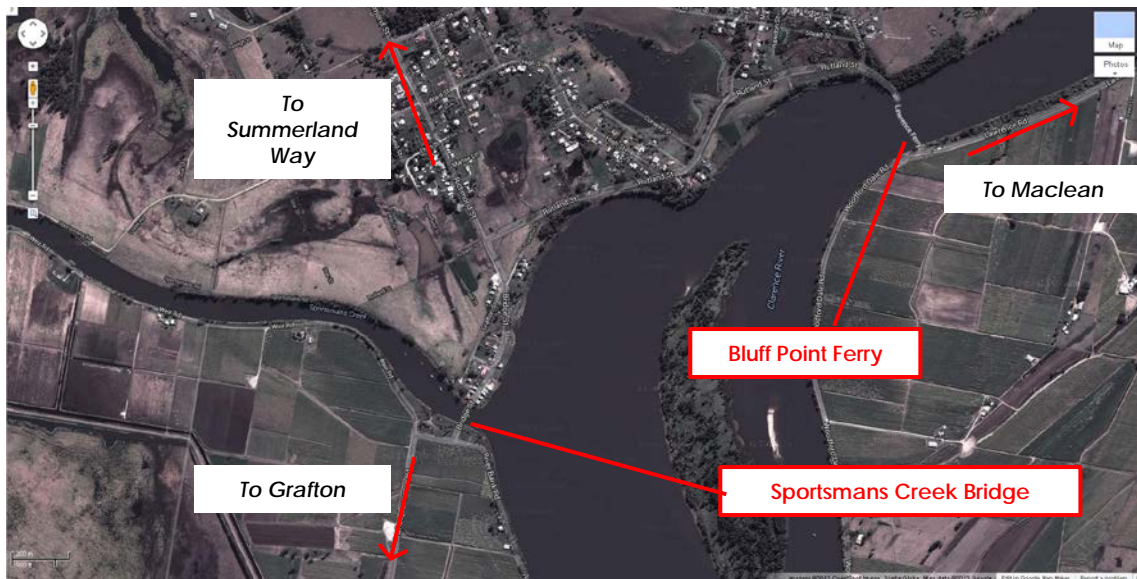


Figure 2.8: River Crossings in Lawrence

2.5 Public transport

Lawrence Bus Service operates two routes in Lawrence:

Route 384: Lawrence to Grafton

- A daily weekday AM service to Grafton departing at 7:45am and arriving at 8:30am.
- An additional Town Bus AM service to Grafton on Tuesdays and Fridays, departing 9:30am and arriving at 10:10am.
- A daily weekday PM service from Grafton departing at 3:10pm and arriving at 4:10pm.
- An additional Town Bus PM service from Grafton on Tuesdays and Fridays, departing at 2:00pm and arriving at 2:30pm.
- No services operate on public holidays.

Route 385: Lawrence to Maclean

- A daily weekday AM service to Maclean departing at 7:45am and arriving at 8:45am.
- An additional Town Bus AM service to Maclean on Thursdays, departing 10:30am and arriving at 11:00am.
- A weekday PM service from Maclean at departing at 3:20pm and arriving at 4:10 pm.
- An additional Town Bus PM service from Maclean on Tuesdays and Fridays, departing at 2:00pm and arriving at 2:30pm.
- No services operate on public holidays.

Site observations indicate that the main bus stop in Lawrence is outside the Lawrence General and Liquor Store, although no formal bus passenger facilities are provided.

2.6 Walking and cycling

There are no designated cycleways in Lawrence. No footpaths exist in the study area either.

2.7 Crash statistics

Crash data would be sourced from Roads and Maritime to inform the final traffic study.

2.8 Traffic growth

Based on a review of previous traffic counts in Lawrence, future traffic growth over the period 1970 to 1990 was at an average of 1.1 per cent per annum. More recent traffic counts undertaken in 2002 indicated that traffic volume over the bridge is expected to increase at an annual growth rate of 2.5% per annum for the next 25 years.

3. Transport & Traffic Issues and Constraints

The key transport and traffic issues and constraints that need to be considered for Sportsmans Creek new bridge include:

- Road safety
- Traffic capacity
- Integration with the user and community needs
- Constructability.

3.1 Road safety

3.1.1 Pedestrian facilities

One of the key design objectives for the Sportsmans Creek new bridge is to provide a 2.5 metre shared path to accommodate pedestrians and cyclists on the downstream side of the bridge.

The provision of a pedestrian and cyclist shared path on the new bridge would positively contribute towards improving the level of safety for the pedestrian and cycling environment.

3.1.2 Design speed

A careful balance needs to consider the transition from a less restricted traffic environment through a straight alignment of the bridge and approaches against a lower speed environment that would cater to the safety needs of pedestrians and cyclists who would be sharing the use of the bridge.

3.1.3 Sight lines

The current bridge alignment has sub-standard sight distances which reduces the level of safety. The new bridge alignment will consider sight lines which provide a higher level of road safety.

3.2 Traffic capacity

3.2.1 Traffic growth

The design and alignment of the Sportsmans Creek new bridge needs to incorporate increases in traffic through growth in normal economic activities, as well as growth opportunities identified in a number of strategies and policies that have an impact on Lawrence. These include Council's vision and the anticipated growth in tourism traffic as part of the Clarence River Way Strategy.

Investigations undertaken for the upgraded ferry at Bluff Point will be considered, as the traffic demand for Sportsmans Creek new bridge and the upgraded Bluff Point Ferry are

intertwined. It is noted that the existing detour for heavy vehicles which cannot use Sportsman Creek bridge is more than 75 kilometres.

3.2.2 Seasonal variation

Traffic demand in Lawrence, particularly by heavy vehicles increases significantly during the sugarcane harvest season. Activities relating to sugarcane harvest are scheduled, as equipment and heavy vehicle fleet capacities also play a role in controlling the peaks.

3.2.3 Intersection operations

The approach to the existing bridge from the south incorporates two 90-degree turns that slow down traffic speeds on the approach to the town.

The alignment of the new bridge and approach roads would need to consider how the intersections operate to facilitate key traffic flows along established desire lines, at the same time ensuring that other traffic movements are not delayed beyond acceptable limits.

Changes to the current alignment may have an impact on the Bridge Street/Grafton Street/Richmond Street and the Richmond Street/Rutland Street intersections towards the north of the study area. Towards the south of the study area, the configuration of intersections with the Grafton-Lawrence Road and Riverbank Road will be considered.

3.3 Integration with user and community needs

3.3.1 Key origin-destination links

It is noted that a considerable portion, estimated to be at least 70 to 80 per cent of the traffic on Sportsman Creek bridge use the Bluff Point Ferry. It could therefore be considered that a key desire line for the bridge alignment would be to link with Rutland Street.

This would need to be assessed against other objectives for the new bridge, including providing local access to Lawrence village.

3.3.2 Land use integration

In selecting options for the new bridge, it is important to consider how it integrates with existing and desired land uses in the surrounding area, particularly for Lawrence Village.

Consideration would need to be given to how the location of the Lawrence General Store is integrated into the new bridge alignment, given that it is a major destination for residents, as well as passing trade.

One particular issue that needs careful consideration is the petrol facilities operated by the Lawrence General and Liquor Store, and how vehicles could safely access and use this location.

3.3.3 Public transport route integration

Currently, public transport service to Lawrence runs along Bridge Street, on the existing bridge and servicing the local village.

The opportunity for providing a link to the local network needs to be considered, such that bus routes efficiently run through a new bridge alignment without the need for unnecessary detours.

3.4 Constructability

3.4.1 Traffic management during construction

Transport links across Sportsmans Creek will be maintained during the construction of the new bridge.

The northern link with Rutland Street and the southern link with the Grafton-Lawrence Road need to be managed during construction of the new bridge, whatever alignment is selected.

3.4.2 Construction access routes

The new bridge structure will require construction vehicles including heavy vehicles to access the construction site. Consideration needs to be given to the identified heavy vehicle access routes to the construction site on Sportsmans Creek.

4. Transport Framework for Options Evaluation

4.1 Strategic transport objectives

The overall strategic objectives outlined in a number of overarching policies, strategies and plans serve to guide the overall process for evaluating the transport objectives for the project.

These include:

- NSW 2021. A Plan to make NSW Number One (State Plan)
- NSW Long Term Transport Master Plan
- Mid North Coast Regional Strategy.

NSW 2021

NSW 2021 is the 10 year plan to rebuild the economy, provide quality services, renovate infrastructure, restore Government accountability and strengthen our local environment and communities. Transport agencies are investing in new and improved infrastructure to ensure that State Plan priority targets will be met. Transport initiatives will increase capacity in all forms of transport.

One of the transport goals in NSW 2021 states, " An integrated transport system is required to ensure different transport modes work together and the interests of the travelling public are put first".

NSW Long Term Transport Master Plan

The key aspect of the NSW Long Term Transport Master Plan that relates to the project is to promote greater efficiency in the transport of freight, particularly in regional areas. This has led to the Bridges for the Bush program. Replacing the existing bridge with a new one would contribute to meeting the regional freight efficiency aims.

Mid North Coast Regional Strategy

The Mid North Coast Regional Strategy identifies Lawrence as a village, an inland settlement with limited local services. This puts in perspective the overall urban development expected of the area.

4.2 Community objectives

The objectives of the community are outlined in a number of Council strategies and plans, including:

- Clarence Valley Council – Interim Valley Vision 2024
- Clarence River Way Master Plan.

Clarence Valley Council – Interim Valley Vision 2024

Interim Valley Vision 2024 is Council's update of the earlier strategic plan, Valley Vision 2020, for guiding the area's development for the next ten years. It states that the aim for the human habitat is characterised by sustainable communities, supported by efficient

and effective transport services. Goal 11 of the vision outlines efficient transport and access, including efficient private and public transport systems that connect the local government area with the region and the world. It also aims to have the transport network provide good access to facilities and services in conjunction with the layout and provision of well-serviced settlements.

Clarence River Way Master Plan

The Clarence River Way Master Plan is a tourism development initiative that aims to increase economic outcomes by linking the towns and villages in the region and leverage the competitive advantage of the Clarence River. The master plan provides a framework of management, guidance and interpretation based on the character and history of the region. For Lawrence, the Clarence River Way Master Plan proposes to put emphasis on the Bluff Point ferry crossing, improve the public accessibility of waterfront road reserves, and provide opportunities for interpretation of the bird hide/wetlands from the Rutland Street road reserve.

Figure 4.1 shows the Clarence River Way Master Plan graphic that provides an overall context for Lawrence in relation to the other towns and villages along the Clarence River.

In addition to these documents, the objectives of the local community have been articulated during the community consultation session undertaken for the project at Lawrence on 18 July 2013. These include aspirations to maintain levels of local transport connectivity, which have been incorporated in the issues identification.

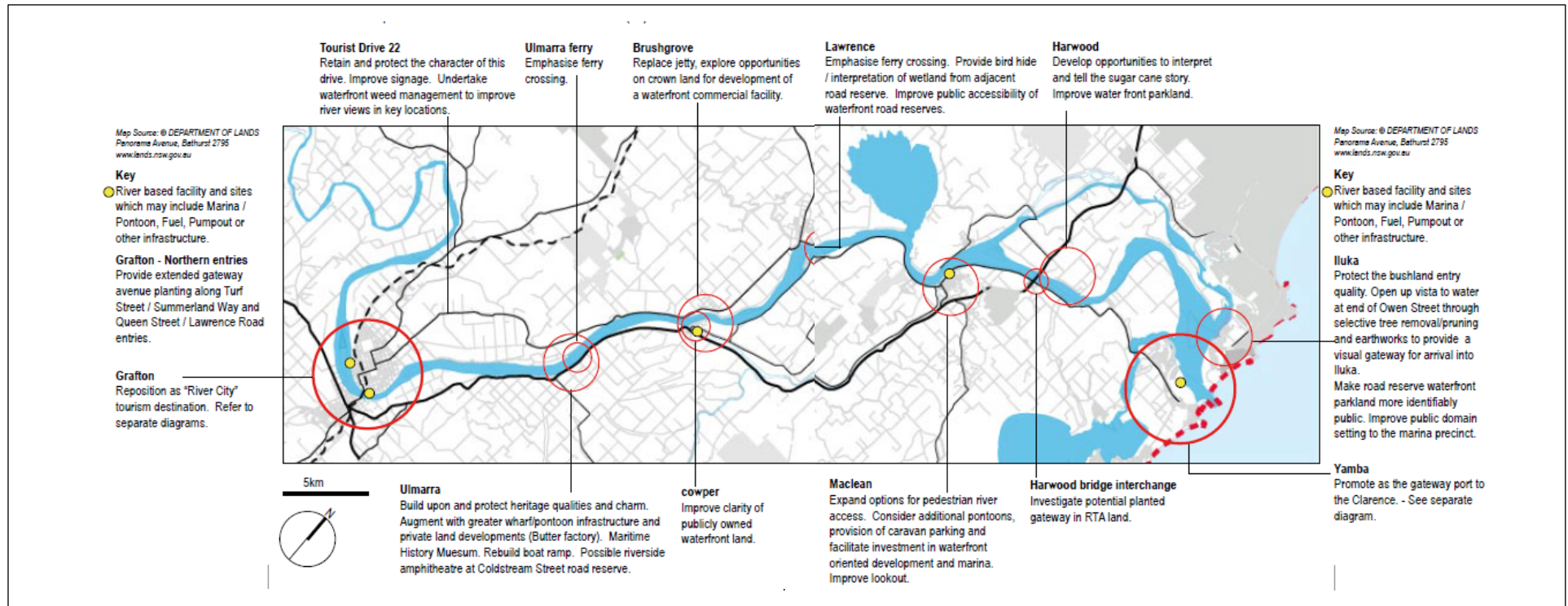


Figure 4.1: Clarence River Way Master Plan

Source: Clarence River Way Master Plan, Clouston Associates, 2009.

4.3 Bridge design objectives, standards and performance criteria

In addition to the project objectives design standards and performance criteria for bridge structures, as identified in AUSTRROADS and Australian Standards documents, will be considered in the evaluation of options.

Options that do not meet design standards will be discarded.

5. Summary

In terms of transport and traffic considerations, based in the preliminary investigations undertaken as part of this study, the alignment options for the Sportsmans Creek new bridge will consider:

- Road safety
- Traffic capacity
- Integration with user and community needs
- Constructability issues.

The options would be evaluated in the context of:

- strategic transport objectives, as outlined in State and regional plans and policies
- Council and community objectives
- Design standards and performance criteria.

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