

# SPORTSMANS CREEK BRIDGE

LAWRENCE

urban design and landscape character & visual impact assessment report



NOVEMBER 2013 REPORT



This report has been prepared:

FOR:

**KBR**

BY:



Level 3, Studio 3  
"The Cooperage"  
56 Bowman Street  
PYRMONT NSW 2009

t. +61 29571 7900  
f. +61 29571 7600

email: [jvg@kistudio.com.au](mailto:jvg@kistudio.com.au)

Contact: Judy van Gelderen

Issue	Date of Issue	Submission	Author	Review
A	130823	Preliminary Draft Report	JvG	MW
B	130826	Preliminary Draft Report	JvG	MW
C	130904	Preliminary Draft Report	JvG	MW
D	131112	Draft Report	JvG	MW

# CONTENTS

<b>01</b>	<b>INTRODUCTION</b>	<b>1</b>
	Background	1
	Purpose of this report	2
	Methodology	2
<b>02</b>	<b>CONTEXTUAL ANALYSIS</b>	<b>4</b>
	Landscape Context	4
	Network Context	6
	Built and Community Context	6
	Ecological Values Context	8
	Waterway Context	8
<b>03</b>	<b>LANDSCAPE CHARACTERISTICS</b>	<b>10</b>
<b>04</b>	<b>OPPORTUNITIES &amp; CONSTRAINTS</b>	<b>19</b>
<b>05</b>	<b>LANDSCAPE CHARACTER ANALYSIS</b>	<b>23</b>
	Landscape Character Zones	23
<b>06</b>	<b>URBAN DESIGN VISION &amp; OBJECTIVES</b>	<b>27</b>
	Urban Design Vision	27
	Urban Design Objectives	27

# 01 INTRODUCTION

## BACKGROUND

Roads and Maritime Services (Roads and Maritime) is proposing to construct a new vehicular bridge over Sportsmans Creek directly south of the village of Lawrence, located 25km north of Grafton, NSW. The project encompasses the replacement of an existing bridge that provides limited transport capabilities on the road that connects Lawrence and Grafton.

The existing bridge was built in 1911 as a single lane carriageway of 5.5 metres and consists of three timber approach spans and two timber Dare Truss spans. The central bridge pier is a twin cylinder cast iron pier which is a remnant of the original bridge, constructed in 1885.

Poor alignment, sight distances, limited loading capability and no pedestrian facilities are key constraints of the existing structure. The bridge is situated on a regional road and is an important link for the transport industry, particularly the cane and cattle farming industries that exist in the immediate area. Significant seasonal cane haulage activities rely on this bridge for access.

The Sportsmans Creek new bridge project is part of the 'Bridges for the Bush' initiative that aims at improving road freight productivity in regional NSW.

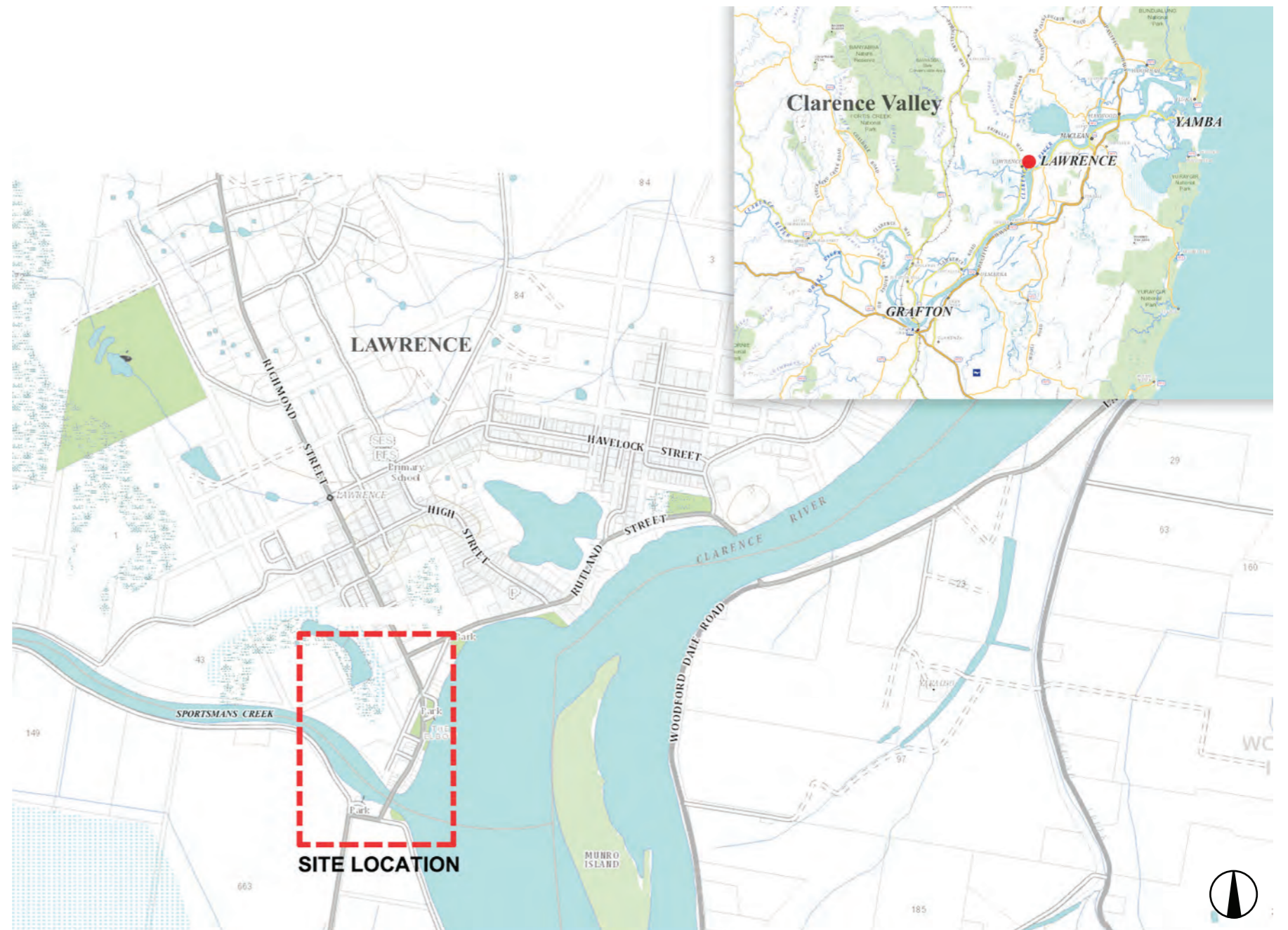


Figure 1.1 General location map (not to scale)



## THE PROJECT

A study area identified by Roads and Maritime extends north of Rutland Street to south of Riverbank Road and the from west of Grafton-Lawrence Road to the Clarence River.

Key objectives of the project is to:

- provide a new bridge over Sportsmans Creek
- improve traffic efficiency within Lawrence
- enhance road safety for motorists, residents, cyclists and pedestrians
- improve road transport productivity, efficiency, maintainability and reliability
- support local and regional economic development
- minimise the impact on the natural, cultural, social and built environment
- consider community members' views
- deliver value for money.

## PURPOSE OF THIS REPORT

KI Studio Pty Ltd has been commissioned by Kellog Brown & Root Pty Ltd (KBR) to provide urban and landscape design input, whilst simultaneously undertaking a visual and landscape character impact assessment.

The visual and landscape character impact assessment informs the design process by: identifying potential visual impacts that the proposed project would have on the surrounding project area, identifying strategies to improve the design and proposes mitigation measures for the identified impacts.

The resulting urban and landscape strategy, combined with the visual and landscape character assessment, informs the project approval authority, other agencies and the community about the overall design and expected visual impacts of the project.

## METHODOLOGY

Preparation of this report has involved a desktop analysis and a site visit. The assessment is based on Roads and Maritime Guidelines, specifically:

- Guidelines for landscape character and visual impact assessment No. EIA-N04, "Version 2.0 Issue Date 28 March 2013; and consideration of the Roads and Maritime' latest revision to this document.
- Beyond the Pavement
- Bridge Aesthetics
- Landscape Design Guidelines

The assessment is based on both the landscape character impact and the visual impact. The landscape character impact is based on the aggregate of an area's built, natural and cultural character and sense of place. In this regard, it is measured by the combination of the area's sensitivity and the magnitude (scale, character and distance). As part of the sensitivity assessment, public perception of the project, its absorption capacity and the area significance whether local, regional or national have been taken into account.

For example, commercial properties are generally considered less sensitive than private residences, and heritage properties are generally considered more sensitive than residential properties. Transient type spaces are generally considered less sensitive compared to spaces that people linger in.

The visual impact is based on specific viewpoints taking into consideration the sensitivity of the viewer as well as the visual effect or magnitude of the project based on scale, distance, contrast etc.

The table shown below illustrates how the level of sensitivity and magnitude are combined to achieve an overall level of impact for both the landscape character impact and the visual impact.

The methodology used to undertake the study is summarised as follows:

- background review of the concept design and supporting material to gain an appreciation of the project
- detailed site visit to identify sensitivities, views, visual catchments, magnitude of change etc
- contextual analysis evaluating the characteristics of the site including land uses, scenic values, character zones and landform
- determination of sensitivity levels based on the contextual analysis
- determination of visual exposure
- in collaboration with the project team, identification of strategies that would improve the outcome of the project from an urban design, landscape character and visual impact point of view for the subsequent detail design phase
- description of the design based on the urban design input and mitigation strategies
- evaluation of the project's impact on the landscape character
- selection of viewpoints within the visual catchment that are representative of the varying site conditions and the project
- evaluation of the project's visual impact by comparing the sensitivity of existing viewpoints and the magnitude of impact of the project upon them
- identification of any further mitigating measures that could be incorporated into the design.

		Magnitude					
		high	high to moderate	moderate	moderate to low	low	negligible
Sensitivity	high	high	high	moderate to high	moderate to high	moderate	negligible
	high to moderate	high	moderate to high	moderate to high	moderate	moderate	negligible
	moderate	moderate to high	moderate to high	moderate	moderate	moderate to low	negligible
	moderate to low	moderate to high	moderate	moderate	moderate to low	moderate to low	negligible
	low	moderate	moderate	moderate to low	moderate to low	low	negligible
	negligible	negligible	negligible	negligible	negligible	negligible	negligible
	negligible	negligible	negligible	negligible	negligible	negligible	negligible

Table 1: Landscape Visual Impacts Rating Table - EIA Guidance Note EIA-N04



## 02 CONTEXTUAL ANALYSIS



### LANDSCAPE CONTEXT

The landscape setting of the project's study area is defined by five key elements: the heritage village, the township (the higher village), the floodplains, the ephemeral wetlands and the sugar cane fields. These elements define the pattern of the landscape setting.

### Township

The main township of Lawrence is situated on the mid and upper slopes north of the older settlement of the study area. This area is on a ridgeline that affords views of the Clarence River, and surrounding lower areas including wetlands, rural areas, Sportsmans Creek and sugar cane areas.

The township is spread over a wide area and is characterised by low built form elements typically one to two storeys in height. Towards the southern end of the township and located within the low lying areas facing the Clarence River and Sportsmans Creek is a heritage precinct somewhat isolated from the rest of the town. This area is discussed under Heritage Village.

### Heritage Village

This older heritage village of Lawrence hugs the western bank of the Clarence River at this location and is focussed on Bridge Street. This area with a number of heritage properties, combined with the bridge structure, creates a memorable gateway setting as the entry point into town from the south. This entry point is defined by the bridge, historic buildings as well as open space/parks that provide a strong visual and spatial relationship with the Clarence River.

This visual relationship is considered significant as it strongly contributes to the sense of place and character and provides a strong sense of arrival that partly defines the impression of the town.

### Ephemeral Wetlands

These areas surround the higher village and create a strong presence township forms a distinctive, strong green lush cordon along the western edge of town that highly contrasts with the otherwise relatively semi-arid landscape.

### Waterways

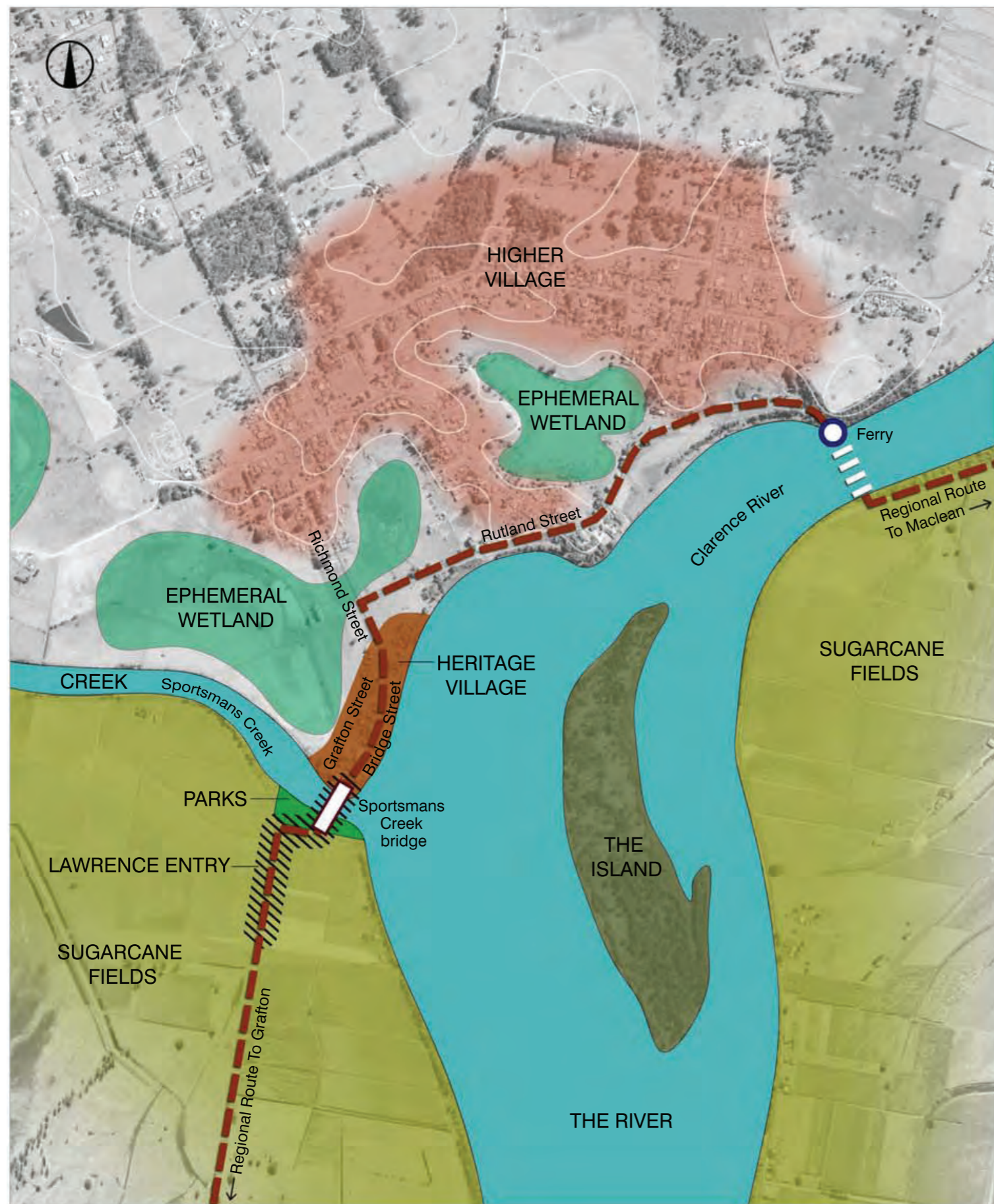
The waterways are defined by the Clarence River and Sportsmans Creek. The wide waterways of the Clarence River offer expansive vistas including views to Woodford Island that underpin the high quality of the setting and natural beauty of the area and strongly contribute to the identity of the township. Sportsmans Creek, a rather narrow tributary/water element in comparison to the expanse of the river, provides a more intimate character and has a limited interface with the village.

### Sugarcane Fields

Further afield and towards the east and south across the waterways, sugarcane fields dominate the setting. These fields are located within the low-lying land adjacent to the waterways and are characterised by the green uniformity of the fields. These areas were originally wetlands which would have enhanced the overall ecological value to the water systems of the area.

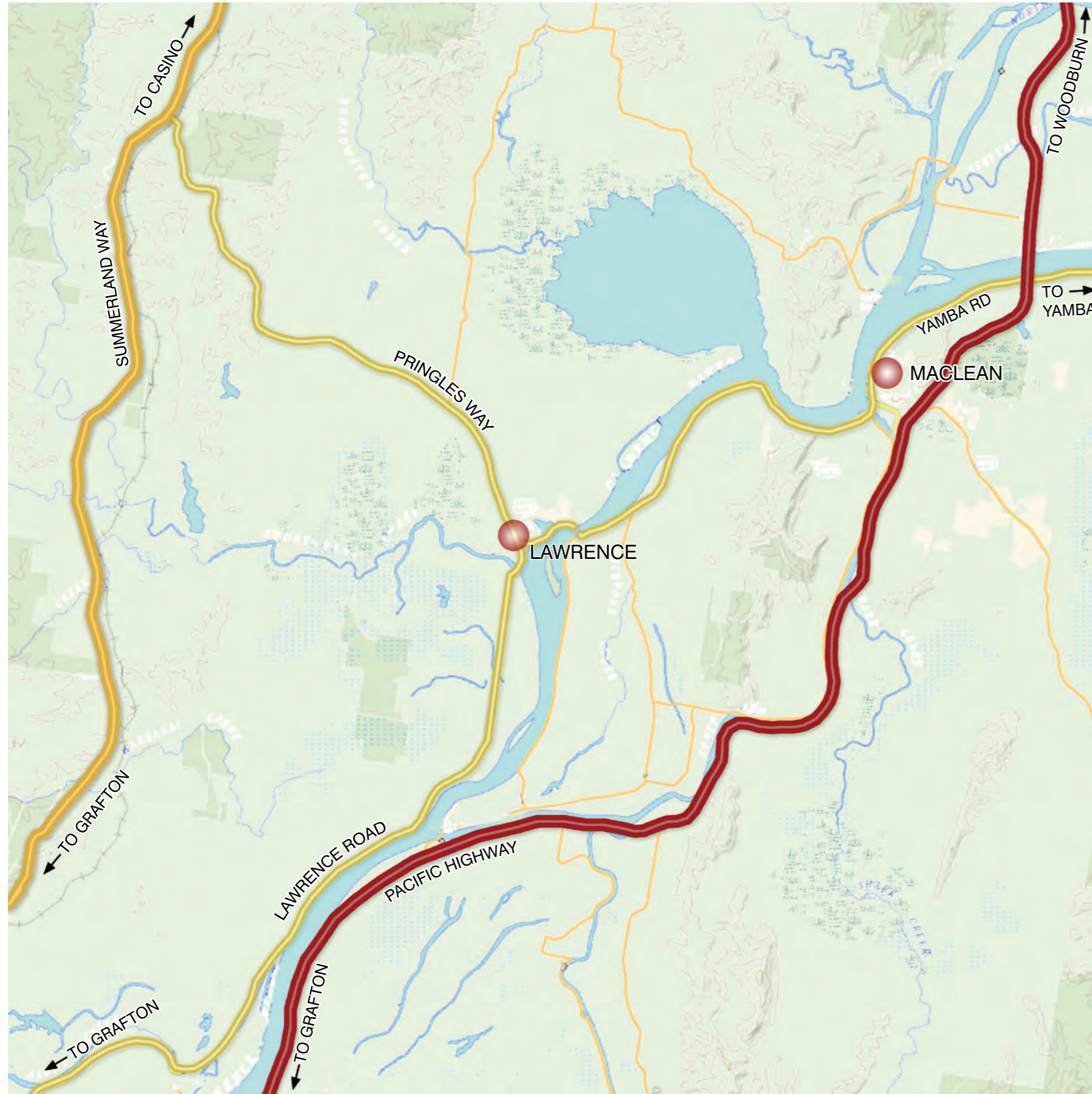


# SPORTSMANS CREEK



landscape patterns





### NETWORK CONTEXT

Lawrence, situated on the western banks of the Clarence River is linked to the greater region via three main roads. As the name suggests, Grafton-Lawrence Road links the township to Grafton; Pringle Way runs northwest to connect with B91 Summerland Way, a significant north-south artery. To the east and via the Bluff Point Ferry, Lawrence Roads provides the linkage to Maclean and the Pacific Highway.

Within Lawrence, Bridge Street, Richmond Street and Rutland Street are the main streets that link to Grafton-Lawrence Road, Pringles Way and the Bluff Point Ferry respectively.

The Sportsmans Creek crossing provides a critical link to Grafton and is accessed via Bridge Street.

### BUILT AND COMMUNITY CONTEXT

Lawrence is a small town with a population of 740 people according to the ABS 2011 census. It is 25 km north of Grafton and 13 km southwest from Maclean and named after Sir Henry Montgomery Lawrence, the hero of the Indian Rebellion of 1857.

The study area is situated on the most southern periphery of the town, a Conservation Area identified in the 2011 DCP. This area used to be part of Upper Lawrence which was one of the two town centres which developed back in the late 1800s.

Lawrence flourished in the 1870s and 1880s through the trade from the tablelands and developed as a port facility along the Clarence River. It did not develop as a farmer's town, and as such the population remained small.

Over time much of the historic fabric of the two town centres has vanished, however a number of old buildings along Bridge Street and Rutland Street still provide evidence of the 'old days'.

The study area interfaces predominantly with open space and agricultural land zoned Primary Production as well as waterways and the heritage village zoned Low Density Residential and Neighbourhood Centre). There are also a couple of parks (Public Recreation) which both have boat ramps.



LEGEND

LANDUSE

Source: Clarence Valley LEP 2011

- B1 Neighbourhood Centre
- R2 Low Density Residential
- RE1 Public Recreation
- RU1 Primary Production
- W2 Recreational Waterways

CIRCULATION

- Regional Route
- Local Traffic
- Minor Track

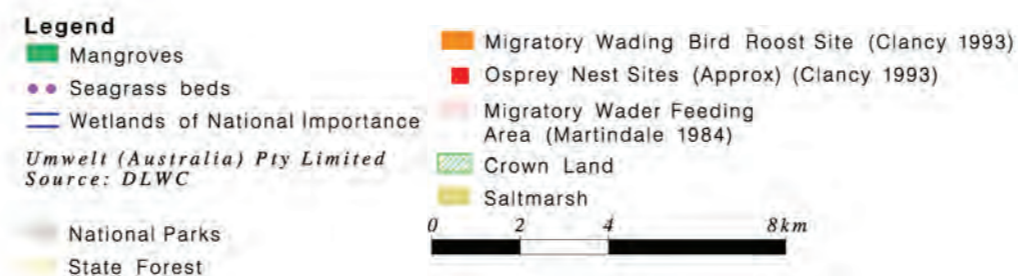
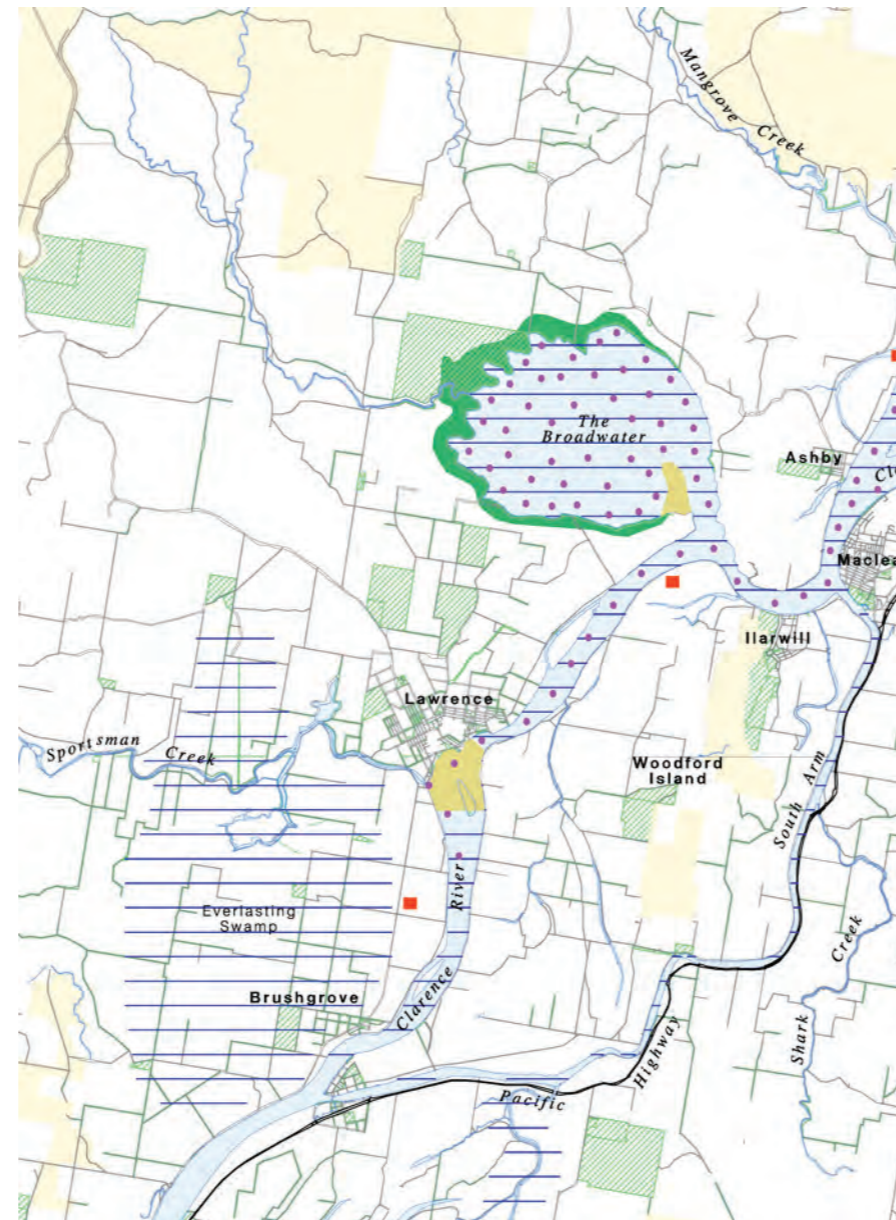
landuse & circulation



## ECOLOGICAL VALUES CONTEXT

The adjacent map excerpt from the DLWC report on Ecological Values (Umwelt) reflects the ecological values of the Clarence Estuary, in vicinity of our subject site.

GeoLink provide further detailed information in relation to these potential ecological values. We have inserted it here to demonstrate the unique qualities of this local areas with the abundance of waterway ecologies. The bridge itself is at the meeting place of salt marsh and seagrass beds- and as such needs to be considered in this overall landscape planning context.



## WATERWAY CONTEXT

Clarence Valley Council commissioned a report in 2010 to create a future vision for the Clarence Valley. This report focussed on the promotion of the identity of the Clarence River as the place for a "Great River Experience".

Developing towns as hubs along the river, packaging local and international market potential and adopting a long term sustainable approach to planning and destination management of the region were key strategies.

Lawrence is a little town along the Clarence River, and key recommendations arising from this Master plan were to:

- emphasise the ferry crossing
- provide bird hide/-interpretation of wetland from adjacent road reserve
- improve public accessibility of the waterfront reserves.

The focus on sustainability to increase water based access as a priority was a recommendation, and the need to provide a range of land/water interfaces access points along the river allied to the townships and tourist nodes.

The adjacent map excerpt from the main report as illustrated, indicates Lawrence as one of the important towns along the waterway.

The project site offers opportunities for improving access to the parks, and retaining access to the boat ramp, to accommodate the above strategies for Lawrence. The waterway context of this town provides remarkable opportunities for recreation, and environmental interpretation.



**2. DEVELOP THE TOWNSHIP HUBS ALONG THE LOWER REACHES.**

The townships of Ulmarra, Maclean and Iluka on the lower reaches of the Clarence are valuable waterfront assets and provide many of the lower reaches attractions. Geographically they create a river linkage between the two anchor destinations of Yamba and Grafton. There is however a lack of sense of arrival into most of these townships and villages, and the quality of presentation of commercial areas for tourism is below market expectation. Access to and from the river along this stretch is also very limited.

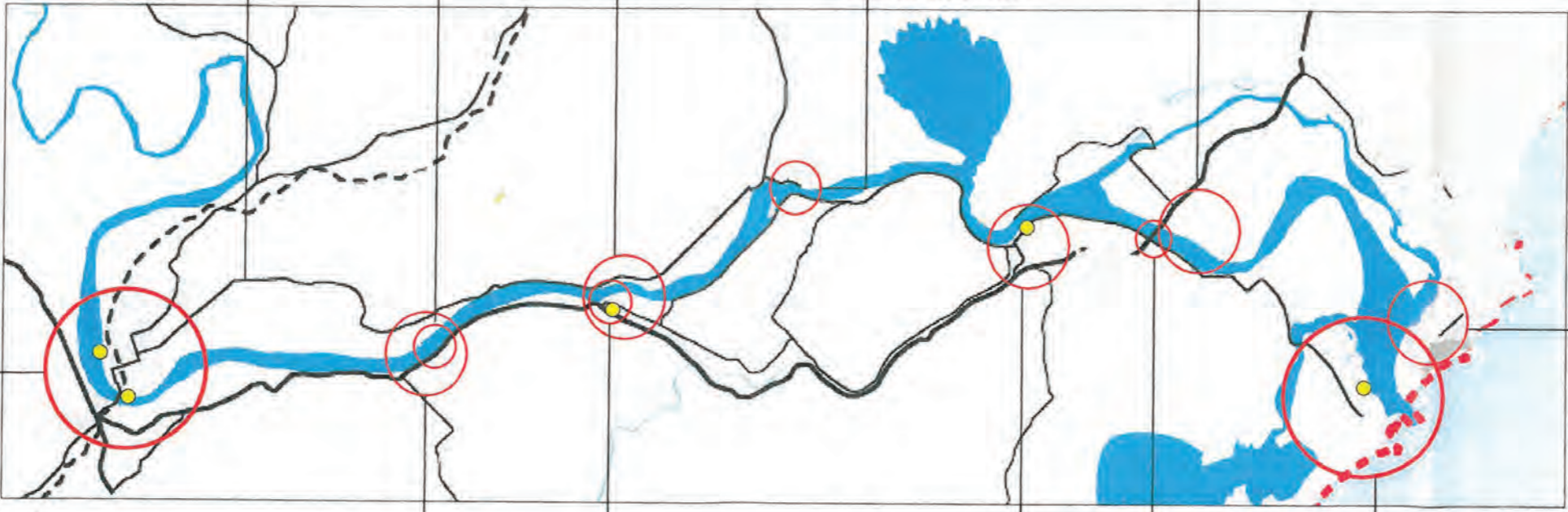
The opportunities here are to develop the townships as integrated, land and water based tourism and transport hubs. Refer to Objectives B1, B 5, C2, D1, D2, D3, and D4.

- Focus on substantially increasing water based access as a priority.
- Provide a range of land/water interface access points along the river allied to the main townships and tourist nodes between Yamba and Grafton. (C2)

- Develop a network of a river based hubs that integrate land based attractions with river front access. (C2)
- Investigate options for additional commercially managed riverside fuel stops at Grafton - upstream and downstream of bridge, Bushgrove, and Maclean. (See yellow dots on plan below)
- Facilitate investment in a range of accommodation, food beverage and entertainment options for key visitor hubs aligned to expectations of CRW target markets. ( D3)
- Develop pedestrian linkages and access to the water particularly through improvements to publicly owned road reserve lands particularly in townships and villages.
- Develop a training package for Clarence Valley businesses addressing experience delivery, interpretation and business presentation. ( D4.3)

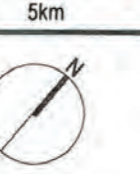
Map Source: © DEPARTMENT OF LANDS  
Panorama Avenue, Bathurst 2795  
www.lands.nsw.gov.au

- Key**
- River based facility and sites which may include Marina / Pontoon, Fuel, Pumpout or other infrastructure.
- Grafton - Northern entries**  
Provide extended gateway avenue planting along Turf Street / Summerland Way and Queen Street / Lawrence Road entries.
- Grafton**  
Reposition as "River City" tourism destination. Refer to separate diagrams.



Map Source: © DEPARTMENT OF LANDS  
Panorama Avenue, Bathurst 2795  
www.lands.nsw.gov.au

- Key**
- River based facility and sites which may include Marina / Pontoon, Fuel, Pumpout or other infrastructure.
- Iluka**  
Protect the bushland entry quality. Open up vista to water at end of Owen Street through selective tree removal/pruning and earthworks to provide a visual gateway for arrival into Iluka. Make road reserve waterfront parkland more identifiably public. Improve public domain setting to the marina precinct.
- Yamba**  
Promote as the gateway port to the Clarence. - See separate diagram.



**Ulmarra**  
Build upon and protect heritage qualities and charm. Augment with greater wharf/pontoon infrastructure and private land developments (Butter factory). Maritime History Muesum. Rebuild boat ramp. Possible riverside amphitheatre at Coldstream Street road reserve.

**cowper**  
Improve clarity of publicly owned waterfront land.

**Maclean**  
Expand options for pedestrian river access. Consider additional pontoons, provision of caravan parking and facilitate investment in waterfront oriented development and marina. Improve lookout.

**Harwood bridge interchange**  
Investigate potential planted gateway in RTA land.

Excerpt from The Clarence River Way, 2010, Clouston Associates, Clarence River Way- (for Clarence Council) - "Summary of Strategic Intent."



# 03 LANDSCAPE CHARACTERISTICS

The following key physical/landscape elements have been identified from our site visit and preliminary information available. They include landscape and built form elements that contribute to the sense of place of the site.

## Higher ground

The higher ground to the north of the village forms the skyline setting and commands views down onto the floodplain, waterways and heritage village below. These views are important to retain.

## Drainage lines

There are many drainage lines- some defined, others broader, and the general direction of fall is shown. They run into the ephemeral wetlands which provide ecological and bird habitat to the west and north of the subject site.

## Ephemeral Wetlands

These areas are commonly with the acid sulfate soils, are low lying and contain wetland grasses and provide bird habitat.

## Salt Marsh, Sea Grass & Wetlands

As identified on the “Ecological Values of the Clarence Estuary mapping, the site is in a critical position in relation to seagrass beds, wetlands of national significance and saltmarsh areas. All three areas provide bird habitat and hence we should consider traffic impact upon these areas, or to adjacent areas

The Clarence Way study highlighted the need to improve public accessibility to the waterfront road reserves, and to provide bird hide/interpretation of wetlands from road reserves.

## Significant trees

There are mature Eucalypts and other trees/vegetation within and around the study area (beyond the salt marsh, and wetland vegetation and park areas) that provide high landscape value to the village and overall setting of the area. Key trees/vegetation from a landscape/visual point of view include:

- mature Eucalypts in the vicinity of Grafton Street
- avenue plantings to the northern end of Grafton Street
- indigenous vegetation along Sportsmans Creek banks - refer GeoLink report which indicates there could be Subtropical Coastal Floodplain Forest vegetation.

## Open space/recreation areas

There are three main open space/recreation reserves in the village area, (LEP) including Olgivie Park, Lawrence Memorial Park and Flo Clark Park. In addition there is Sportsmans Park, which whilst it is not allocated as “recreation” in the LEP, is situated on a critical context at the mouth of the creek, and opposite bank to the village.

## Ecological Resource- bridge and wetlands

As identified by GeoLink, the old timber truss bridge provides a roosting colony for the Micro-bats- Southern Myotis (*Myotis macropus*), as well as potential nesting/ roosting habitat for the Eastern Osprey.

The ecological value of the waterways surrounding the site, including the ephemeral wetlands to the west of the study area, support a number of threatened wetland bird species (GeoLink report, 2013) including the Black-necked Stork and Brolga.

Sportsmans Creek is also a key fish habitat breeding ground.

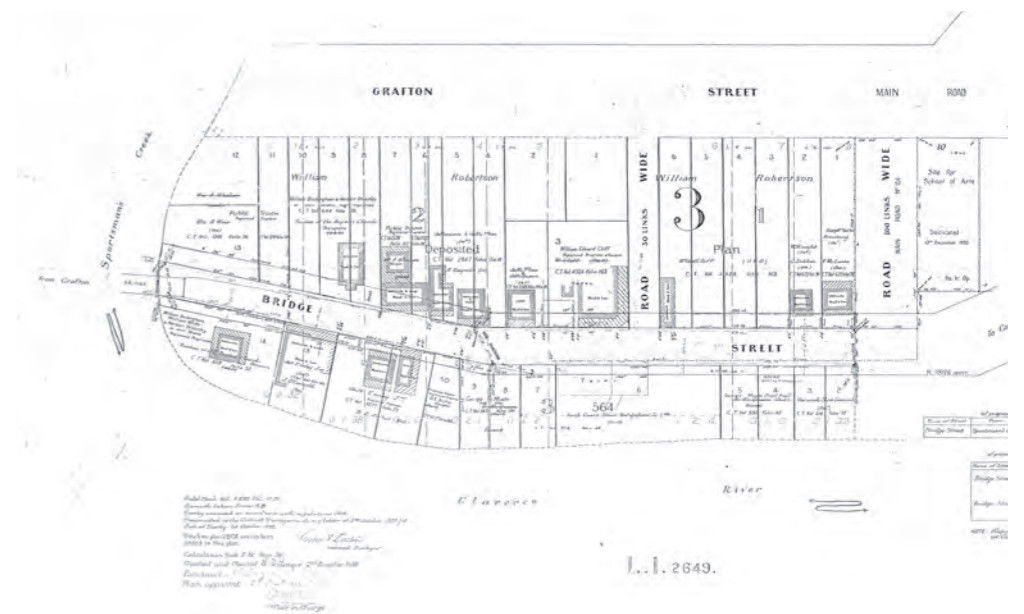
## Heritage precinct

GeoLink provide a detailed heritage assessment of the village. The adjacent plan indicates the extent of the Heritage Conservation area, and the listed buildings. The small scale of the village, the narrowness of Bridge Street and relationship of the village to water are all elements that require a sensitive approach to planning and designing a new bridge and road infrastructure.

The Conservation Area extends along the foreshore and includes the former Baptist Church (1908), Hall and Manse (1901) and residences on either side of Bridge Street and the Sportsmans Creek bridge. The bridge itself provides an iconic gateway to the township.

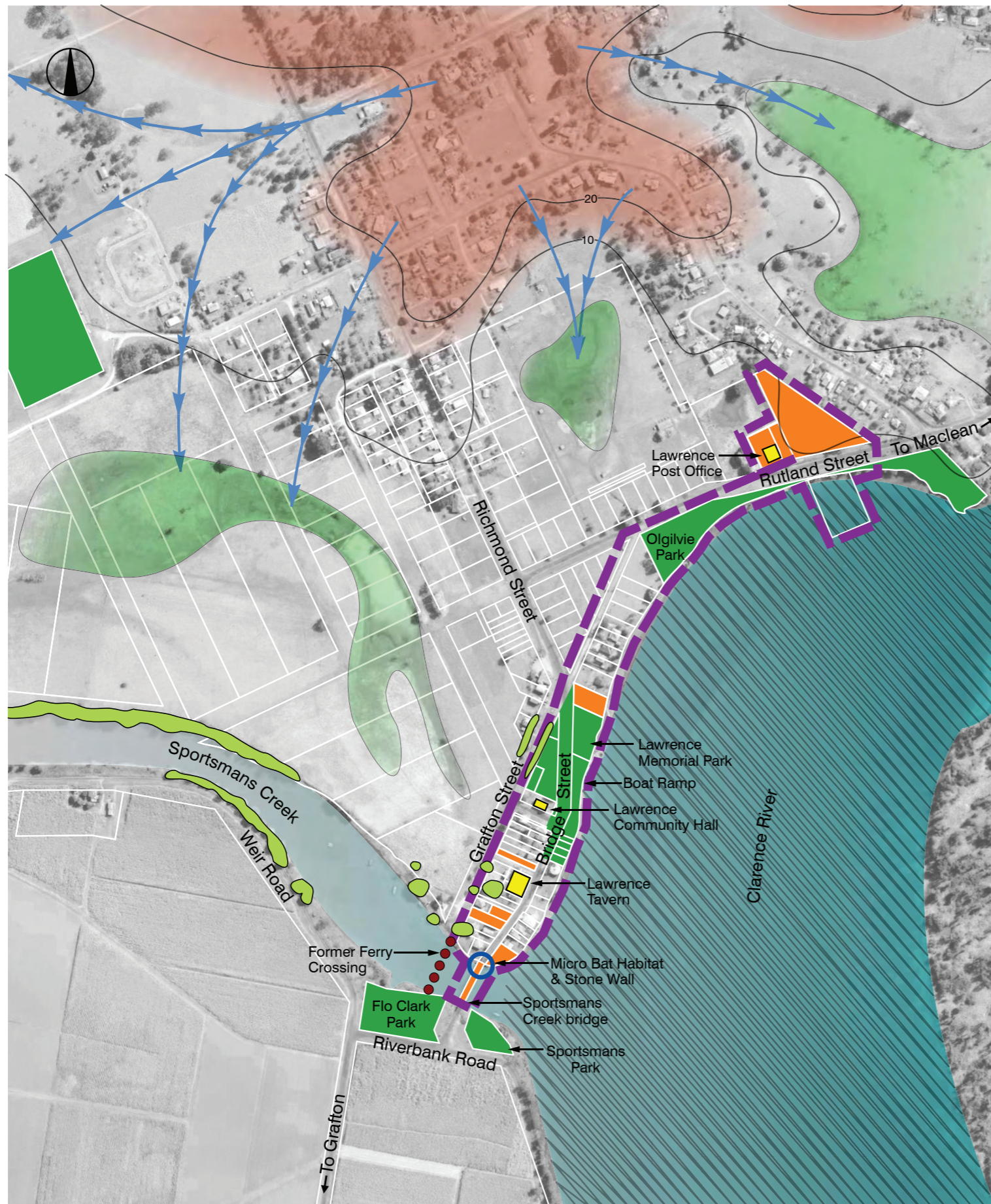
Houses are predominantly weatherboard and most have been raised due to flooding. The Conservation Area also includes the War Memorial Park, School of Arts, former Swimming Pool site, the Post Office and Police Station.

The excerpt of the 1901 Town Plan indicates Grafton Street as the original main road through the town, not Bridge Street.

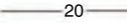


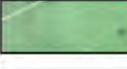








1902 Town Plan Structure- showing Grafton Street as the main street





LEGEND

-  20 Contours  
Source: SIX Maps NSW Land & Property Information
-  Higher Ground
-  Drainage Lines
-  Ephemeral Wetland  
Source: SIX Maps NSW Land & Property Information
-  Seagrass Beds  
Source: Ecological Values of the Clarence Estuary
-  Saltmarsh  
Source: Ecological Values of the Clarence Estuary
-  Public Recreation
-  Significant Trees (beyond parks)
-  Heritage Conservation Area  
Source: Clarence Valley LEP 2011
-  Heritage Listed Properties  
Source: Clarence Valley LEP 2011

landscape characteristics



## VIEWS AND VISTAS

We have identified three primary views and up to thirteen secondary views within the six critical views and vistas within the general project area. These views strongly contribute to the identity and sense of place of Lawrence.

Although the existing bridge across Sportsmans Creek is an important marker that celebrates the entry into town, it is less visible from the township. However, it is a significant marker that contributes to the urban fabric, sense of place and legibility of the township's southern end. Combined with the other heritage elements within the Heritage Village, it creates an ensemble that is memorable to the traveller. Its position on the periphery of the Heritage Village creates an important visual relationship that underpins the identity of this area of the

township. This situation, in conjunction with the aforementioned gateway setting, makes the bridge setting highly sensitive to change due to these complex visual interrelationships.

Hence the location for the new bridge is critical in the mitigation of visual and landscape character impacts. The adjacent map illustrates primary and secondary views in context to the project area. Note the strong overlapping of view corridors directly adjacent to the existing bridge and in the vicinity of the boat ramp.







LEGEND

-  Primary View
-  Secondary View

significant contextual views



primary views



1 Approach to the existing Sportmans Creek bridge, with first glimpse of village from to right. Proliferation of safety signs.



2 Looking across Flo Park, to Sportsmans Creek, the heritage bridge gateway and village of Lawrence.





3 Looking from Flo Park, across Sportsmans Creek, to the Clarence River, with the gateway heritage bridge and river banks.



5 Looking from Bridge Street to the heritage bridge approach, with small scale cottages tight to the road, which has minimal verge. The bridge approach is the skyline at this point, due to the low topography, hence its dominance in the landscape.



4 Looking from Sportsmans Park, across the meeting of Sportsmans Creek, and the Clarence River, with the gateway heritage bridge and Lawrence village beyond.



6 Looking north along Bridge Street, where the views open to the Clarence River to the east.





7 Looking toward the Clarence River from the Lawrence General and Liquor Store, across the road to Lawrence Memorial Park, and Grafton Street to the right.



8 Looking from Bridge Street across to the Hub - Lawrence General and Liquor Store, adjacent housing, and views beyond to the floodplain area.





9 Looking north, across the floodplain, up the hill along Richmond Street, towards the main Lawrence village on the skyline ridge beyond.



11 Clarence River, at sunset, from below the Post Office, Rutland Street.



10 Looking south along Richmond Street, down the hill, over the floodplain/ephemeral wetland area, to the Clarence River and the heritage village.



12 The Post Office on Rutland Street. with higher ground behind on ridge.



secondary views



1 View looking southwest from the end of Grafton street. Flo Clark Park with boat ramp can be seen on the opposite creek bank.



2 View looking north east from Grafton Street to the Clarence River



View from the higher village area looking down to the Heritage Village on the Clarence and ephemeral wetlands in foreground.