



CARPENTARIA SHIRE

*Outback by the Sea*

***LATE BUSINESS PAPER***

***16 SEPTEMBER, 2020***

## LATE BUSINESS PAPERS

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### 11 REPORTS FROM DIRECTOR OF ENGINEERING - ROADS & SERVICES

#### 11.7 TOWN PLANNING APPLICATION - MATERIAL CHANGE OF UES - EXTRACTIVE INDUSTRY

**Attachments:** 11.7.1. Attachment 1 - Site Plan - Christmas Pit [↓](#)  
11.7.2. Attachment 2 - Site Plan - McAllister Pit [↓](#)  
11.7.3. Attachment 3 - Site Plan - Pixie Pit [↓](#)

**Author:** Liz Taylor - Consultant Planner

**Date:** 11 September 2020

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**Key Outcome:** 4.1 - Sustainable urban and rural development

**Key Strategy:** 4.1.1 Ensure development accords with Carpentaria Shire Council's planning scheme, planning instruments, codes and legislation.

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#### Executive Summary:

The Council is in receipt of an Application for Material Change of Use (MCU) for Extractive Industry, three (3) quarry/pits, on two (2) lots:

- McAllister Mail Run Quarry – Lot 59 SP280700;
- Christmas Quarry – Lot 4 SP120452; and
- Pixie Quarry – Lot 4 SP120452.

The Extractive Industries will operate under an Environmental Authority issued separately by the State:

- Environmentally Relevant Activities (ERA's):
  - 16 2(a) Extracting rock or other material: 5,000 – 100,000 t/yr; and
  - 16 3(a) Screening rock or other material: 5,000 – 100,000 t/yr.

The MCU Application is generally in accordance with the Carpentaria Shire Planning Scheme and is recommended for approval, subject to conditions.

#### RECOMMENDATION:

That Council resolve:

In accordance with the *Planning Act 2016*, the applicant be notified that the Application for a Development Permit for a Material Change of Use for Extractive Industry at;

- McAllister Mail Run Quarry/Pit – Lot 59 SP280700;
- Christmas Quarry/Pit – Lot 4 SP120452; and
- Pixie Quarry/Pit – Lot 4 SP120452

Co-ordinates:

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<u>Pit ID</u>	<u>Latitude</u>	<u>Longitude</u>
<b>Christmas</b>		
C1	-18.57501266	140.0328496
C2	-18.57523970	140.0330662
C3	-18.57868112	140.0327341
C4	-18.58193115	140.0356156
C5	-18.58529092	140.029939
C6	-18.57996093	140.0267946
C7	-18.57863467	140.032488
<b>Pixie</b>		
P1	-18.59179134	140.1363898
P2	-18.58869893	140.1301314
P3	-18.58460520	140.1321234
P4	-18.58636326	140.1390897
<b>McAllister</b>		
M1	-18.35263523	140.5284482
M2	-18.35310329	140.5313337
M3	-18.35040395	140.5325714
M4	-18.35125996	140.5352004
M5	-18.35454175	140.5355986
M6	-18.35762835	140.533792
M7	-18.35606761	140.5276059
M8	-18.35588711	140.5277106
M9	-18.35489401	140.5281486
M10	-18.35398168	140.5283594

is approved subject to the conditions detailed below.

### A. ASSESSMENT MANAGER CONDITIONS (COUNCIL)

#### General

- The development shall be undertaken substantially in accordance with the approved Plans, the supporting documentation submitted with the application and the approved GPS Coordinates, except as modified by this approval:

PLAN NAME	DRAWING NUMBER	DATE	PREPARED BY
SITE LAYOUT PLAN: MCALLISTER QUARRY/PIT	C010	28/04/2020	HUGHES CONSULTING
SITE LAYOUT PLAN:	C011	28/04/2020	HUGHES

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PIXIE QUARRY/PIT			CONSULTING
SITE LAYOUT PLAN: CHRISTMAS QUARRY/PIT	C012	28/04/2020	HUGHES CONSULTING

2. This approval, granted under the provisions of the *Planning Act 2016*, shall lapse six (6) years from the day the approval takes effect in accordance with the provisions of Section 85(1) of the *Planning Act 2016*, if the development has not been commenced.

### Permits and Fees

3. The quarry/pit operator is required to apply for an Extractive Industry Permit/Licence and pay all relevant Council fees required to operate an Extractive Industry in the Shire.
4. The quarries/pits are required to operate in compliance with the conditions of the Environmental Authorities issued by the State of Queensland.
5. The applicant shall ensure the quarry/pit sites and the immediate surrounds are maintained, during and after operations commence, in a clean and tidy condition at all times, to the satisfaction of the Chief Executive Officer or delegate.
6. Upon cessation of quarry activities rehabilitation is to be completed in accordance with an approved Rehabilitation Plan, within a one (1) year period from the date of cessation, or other timeframe specified in the Rehabilitation Plan, whichever is the lesser, to the satisfaction of the Chief Executive Officer or delegate.

### Vehicle Access

7. Haul routes and on-site access roads/tracks to quarry/pit sites are to be maintained at all times by the proponent in a serviceable and trafficable condition and to an acceptable standard:
- be regularly graded and maintained by the quarry operator;
  - any damage to the road/s caused by heavy machinery is to be repaired and made good on a regular, 2 monthly bases; and
  - upon cessation of the quarry use on the site the road/s used to access the quarry are/is to be graded and left in an acceptable and trafficable condition suitable for rural purposes;

to the satisfaction of the Chief Executive Officer or delegate.

### Storage of Fuel

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8. A maximum of 10,000 litres of diesel can be brought to a quarry/pit site for the operation of plant and equipment. Fuel must be stored in a self-bunded containment system and handled in accordance with Australian Standard AS 1940 – 2004. The fuel tank and any refuelling must be located at least 100 metres away from any drainage line, to the satisfaction of the Chief Executive Officer or delegate.

### **Hours of Operation**

9. Quarry/pit operations are carried out between 6am and 6pm seven (7) days per week, unless an emergency necessitates out of hours operations, to be authorised by the Chief Executive Officer or delegate.

### **B. REFERRAL AGENCY CONDITIONS - NIL**

CONCURRENCE AGENCY- NIL

### **C. SUBMISSIONS**

None

### **D. FURTHER DEVELOPMENT PERMITS REQUIRED**

Environmental Authority for:

- Environmentally Relevant Activities (ERA's):
  - 16 2(a) Extracting rock or other material: 5,000 – 100,000 t/yr; and
  - 16 3(a) Screening rock or other material: 5,000 – 100,000 t/yr.

### **E. APPLICABLE CODES FOR SELF ASSESSABLE DEVELOPMENT**

- Shire of Carpentaria Planning Scheme
- Standard Building Regulation 1993
- Building Act 1975
- Building Code of Australia
- Water and Sewerage Act 1949

### **F. RIGHT OF APPEAL**

Appeal Rights from the *Planning Act 2016* are attached.

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This report has been prepared by Council's Consultant Planner, in consultation with Council Officers. The application is recommended for approval.

### MATERIAL CHANGE OF USE

The application seeks approval for Extractive Industry three (3) quarries/pits to establish on two (2) different lots, to facilitate the legal operation of gravel quarries/pits in the Shire.

#### 1.0 SITE AND APPLICATION SUMMARY

<b>FILE NUMBER:</b>	1/2009
<b>APPLICANT:</b>	Carpentaria Shire Council
<b>REGISTERED LAND OWNER:</b>	State of Queensland – Department of Agriculture and Fisheries- (both lots)
<b>REAL PROPERTY DESCRIPTION AND LAND</b>	<ul style="list-style-type: none"> <li>• McAllister Mail Run Quarry/Pit – Lot 59 SP280700;</li> <li>• Christmas Quarry/Pit – Lot 4 SP120452; and</li> <li>• Pixie Quarry/Pit – Lot 4 SP120452.</li> </ul>
<b>EXISTING USE:</b>	Cattle Stations, Rural land and Quarries/Gravel Pits
<b>PROPOSED USE:</b>	Extractive Industry (in addition to existing rural uses)
<b>TYPE OF APPLICATION:</b>	Material Change of Use
<b>TOWN PLANNING ZONING:</b>	Rural
<b>SUBMISSIONS:</b>	None
<b>CONCURRENCE AGENCY</b>	Nil

#### 2.0 BACKGROUND

The Council is in receipt of an Application for Material Change of Use for Extractive Industry, which was lodged with Council on 20 June 2020 and 'properly made' on 26 June 2020.

The Application did not triggered referral to the State.

Public Notification was required and was completed on 10 September 2020 and no submissions were received.

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The Application is now tabled for the final determination of the Council.

### 3.0 SITES

The proposed quarry/pit sites are located as follows:

- McAllister Mail Run Quarry/Pit – Lot 59 SP280700;
- Christmas Quarry/Pit – Lot 4 SP120452; and
- Pixie Quarry/Pit – Lot 4 SP120452.

<p>SITE 1 McAllister Quarry/Pit</p>	<p>Located 93 km south of Normanton on Warren Vale, a freehold pastoral enterprise of 50,430ha. The proposed quarry/pit site has an area of 41.35ha and previous quarry activity sourced gravel at the site. The elevation of the land is at 49-55 metres and gently undulating with an average slope of 1.7%. There are no mapped creeks on the site.</p>
<p>SITE 2 Christmas Quarry/ Pit</p>	<p>Located 148 km south-south-west of Normanton on Augustus Downs, a pastoral lands lease of 262,000ha. The proposed quarry/pit site has an area of 38.62ha. The land elevation is at 30-40 metres and gently undulating with an average slope of less than 1%. There are no mapped creeks on the site.</p>
<p>SITE 3 Pixie Quarry/Pit</p>	<p>Located 140 km south of Normanton on Augustus Downs, a pastoral lands lease of 262,000ha. The proposed quarry/pit site has an area of 43.42ha. The land elevation is at 40 metres and generally flat with an average slope of less than 1%. There are no mapped creeks on the site.</p>

Plans showing the layout of the quarry/pit sites are attached at [Attachment 1](#).

The proposed Environmentally Relevant Activities (ERAs) for the sites are as follows;

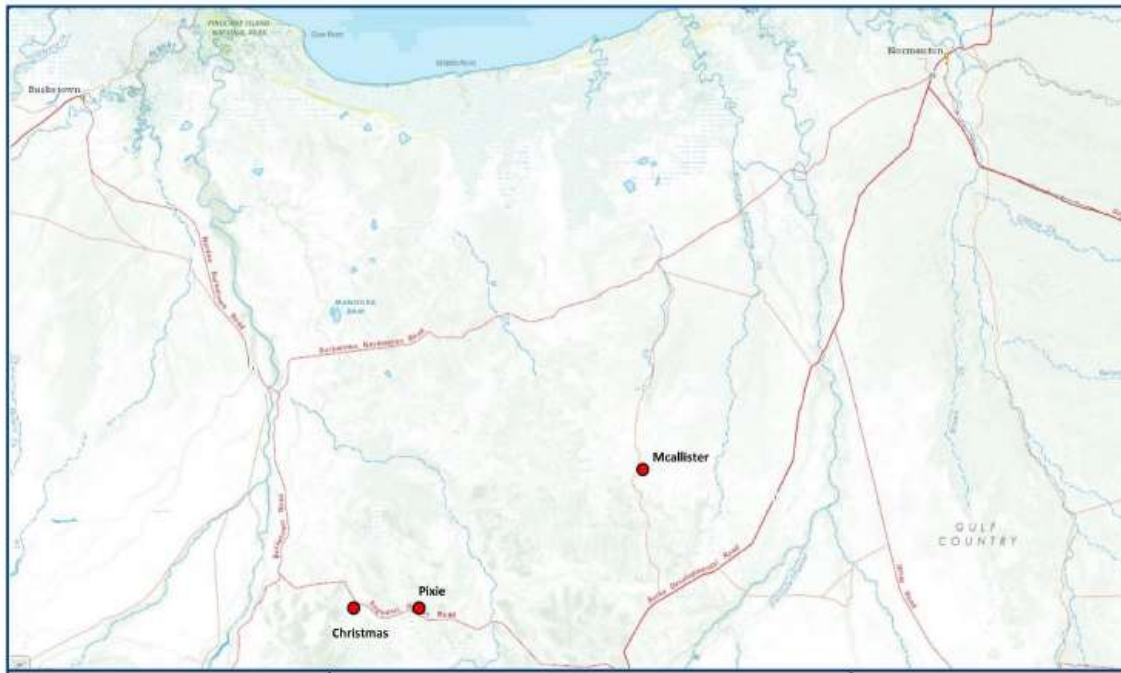
- ERA 16(2a) – Extracting rock or other material: 5,000 – 100,000 t/yr;
- ERA 16(3a) – Screening rock or other material: 5,000 – 100,000 t/yr.

The locations of the three (3) quarry/pit sites are identified on the plan below.



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### 4.0 PROPOSAL

The three (3) Extractive industry quarries/pits will provide a local source of road construction material for maintenance of local roads.

Extractive industry processes, ERA 16(2a) and ERA 16(3a) extracting and screening rock or other material, will be carried out as part of the project. Quarrying of deposits will be undertaken using open cut extraction techniques comprising the following basic elements:

- Progressive removal of vegetation as required and stripping of topsoil. Topsoils will be stored separately and used for rehabilitation works;
- Stripping of overburden by dozer to reveal competent rock;
- Winning of competent rock, in line with recommendations of Quarry Management Plan;
- Extraction of the reserves to take place on an 'as needed' basis with a maximum stockpile of 40,000 tonnes stored at any one time.

The quarries/pits are planned to operate as demand dictates within the annual threshold of 100,000 tonnes. Once extracted the rock will be transported via a site haul road to the stockpile area on site adjacent to the local Council road. To minimise the extractive and cleared land footprint during development, the quarry is to be progressively worked.

McAllister quarry/pit and Pixie quarry/pit are adjacent to a council road. Christmas quarry/pit is located 430 metres off Augustus Downs Road. Construction and ancillary activities will be established as required and may include mobile plant, haul roads, erosion and sediment controls and security measures.

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Quarry/pit development and planning will be on-going as ground conditions and Council operational demands dictate. As a result, each quarry/pit will evolve with the development and needs of the operations. During the life of each quarry/pit, there will inevitably be times when demand is high and conversely periods of inactivity. The quarries/pits will be managed according to these different circumstances. Operations will occur as and when the resources are required.

While there are three (3) quarries/pits the subject of this application, the properties form part of a larger integrated operation for Carpentaria Shire Council, with other MCU Applications previously made and also being made in the future.

The projects, proposed rock quarries/pits, will be operated in the same manner and provide resource for maintenance of local roads. The site establishment and construction are relatively simple and will only occur intermittently as a response to the Shires requirements for road maintenance. It includes improvement of site access and internal roads, establishment of the stockpile areas by clearing and levelling, where necessary. Development of the processing area will involve extraction of materials.

Although both ERA 16 (2)(a) and 16 (3)(a) are applied for, ERA 16(2)(a - screening is only likely to be used on rare occasions and has been applied for as a future proofing exercise. Water, if required for dust suppression will be brought by water truck or sourced from an excavation pit.

The following Extractive industry processes will be carried out as part of the project:

- Excavation by bulldozer and excavator;
- Stockpiling;
- Stabilisation and rehabilitation of disturbed areas.

It is anticipated that the quarries/pits will be operated on an as-required basis to service resource demand, at a rate not exceeding the annual threshold of 100,000 tonnes. Material will be extracted using diesel powered machinery (e.g. excavator, loader). Once extracted, the rock will be transported via the site roads to the main stockpile area. Extraction activities may occur at any time of the year, unless seasonal rainfall prevents safe operation and access and may result in undue disturbance to the environment.

Rock will be extracted in a staged approach to minimise disturbance to land. Vegetation buffer zones and bund walls (including diversion banks, where appropriate) will be maintained at the margins of the excavation and stockpile areas. Prior to commencement of quarry/pit operations, the disturbance boundary will be defined on the ground by metal pickets. Material extracted from the excavation area is planned to be stockpiled on-site.

Fuel will not ordinarily be stored on site, however there may be a requirement for fuel to be transported to site to facilitate temporary refuelling of equipment. It is expected that less than 10,000 litres of diesel will be brought to site for the operation of plant and equipment. Fuel will be stored in a self-bunded containment system and will be handled in accordance with Australian Standard AS 1940 – 2004. The fuel tank and any refuelling will be at least 100 metres away from any drainage line. Minor fuel spills may be remediated on-site via bioremediation, all other spill material will be removed

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as regulated waste. A spill kit will be retained on the project site for the duration of the works.

### 5.0 STATUTORY PLANNING CONSIDERATIONS

Under the provisions of the Shire of Carpentaria Planning Scheme, the sites are all located within the Rural Zone.

The intent of this zone relevant to this application is as follows: -

*The Rural Zone contains the Rural Activities of the Shire, predominantly grazing (cattle breeding and fattening), as well as agriculture and extractive activities of mineral and extractive resources and Aboriginal traditional uses and activities, together with their immediate support facilities such as Station Homesteads and Dwelling Houses.*

*In assessing any proposal to establish new land uses or expand and intensify existing land uses within the Rural Zone, there will be a focus on the avoidance or minimization of adverse impacts on the environment or adjacent and nearby Rural Activities. Defined uses or use classes along major tourist routes (road or rail) are to avoid any adverse impacts on Tourism experiences.*

*Known mineral and extractive resources and existing and potential haulage routes will be protected from incompatible uses.*

There is a clear intent to protect extractive industry resources in the Shire and to also ensure any such activities have minimal environmental impact.

Rural Zone Objectives which are relevant to the application are:

- (a) *The primary uses established in the Rural Zone will be Animal Husbandry and Agriculture, together with Station Homesteads and Dwelling Houses. Where adequate and economically viable mineral and extractive resources are identified, the provision of the necessary infrastructure to extract and market these resources will be supported;*
- (b) *.....*
- (c) *It is recognised that the Shire contains natural features, natural resources (including extractive and mineral resources), cultural features and homestay activities which are of interest to tourists. Where such features and facilities exist and it can be shown that:-*
  - (i) *the necessary facilities for tourists to view, experience or appreciate these resources and features cannot reasonably be established in a town area; and*
  - (ii) *tourist based facilities can be established in close proximity to the relevant resource, feature or existing property Station Homesteads without adverse environmental or amenity impacts, then the establishment of such facilities will not be opposed;*

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- (d) .....
- (e) *The health and safety of residents in, and visitors to, the rural area, and the amenity they enjoy, are maintained;*
- (f) *Uses and works are located and designed to maximize the efficient use, extension and safe operation of infrastructure wherever possible;*
- (g) *Uses and works are located, designed and managed to be compatible with other uses and works and to avoid significant adverse effects on the natural environment;*
- (h) .....
- (i) *Extractive and mineral extraction operations and resources will be protected from inappropriate development or encroachment that might result in a loss of natural resource values.*

The Rural Zone Objectives also seek to support Extractive Industry in the Shire. Extractive Industries are a valuable asset and an important contributor to the economy of the Shire.

### **6.0 DEVELOPMENT REQUIREMENTS**

The application is Impact Assessable and so is required to be assessed against the whole of the Planning Scheme.

#### **6.1 Desired Environmental Outcomes**

##### *3.1.1 Valuable Features*

- (e) *To protect significant extractive and mineral resources as well as Good Quality Agricultural Land from an adverse defined use or use class.*

##### *3.1.2 Land Use and Defined Uses or Use Classes*

- (e) *To protect the area from loss of vegetation, soil degradation, plant and animal pests, and water pollution due to erosion, chemical contamination, effluent disposal and the like;*

.....

- (h) *To maximise the economic base of the Shire by increasing the Shire's Tourism, Business, Commercial, Industrial and Agricultural potential;*

.....

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- (j) To protect extractive and mining resource areas, associated haul routes and major transport corridors from incompatible land use.

### 3.1.3 Infrastructure

- (e) To provide for the integration and safe operation of all transport modes.

*(My emphasis)*

The DEO's also support Extractive Industry in rural areas of the Shire, provided the environment, water ways, adjacent rural activities and transport routes are protected or not compromised.

## 6.2 Codes

The applicable Planning Scheme Code is the Rural Zone Code.

### Rural Zone Code

The Overall Outcomes are the purpose of the Rural Zone Code and those that are relevant to this application are as follows:-

- (a) to minimise the adverse impacts of a defined use or use class on rural activities and resources which underpin and support the economic base of the Shire;
- (b) to ensure all new defined uses or use classes implement and continue appropriate measures to maintain the existing biodiversity, natural and semi-natural habitats of the Shire;
- (c) .....
- (d) .....
- (e) to ensure that a defined use or use class does not adversely impact on the Shire's National Parks and landscape areas;
- (f) .....
- (g) .....
- (h) .....
- (i) to protect known mineral and extractive resources and existing and potential haulage routes; and
- (j) to ensure that a defined use or use class does not adversely impact on existing transport infrastructure.

*(My emphasis)*

*The Overall Outcomes of the Rural Zone Code support the establishment of Extractive Industries in the rural area of the Shire.*

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Column 1 Specific Outcomes	Column 2 Probable Solutions for Assessable Development <sup>1</sup>	Comment
<p><b><i>Consistent and Inconsistent Activities in the Rural Zone</i></b></p> <p>The following defined uses or use classes are consistent with the Overall Outcomes sought by the Zone:-</p> <ul style="list-style-type: none"> <li>(i) Accommodation Building (where associated with Tourism);</li> <li>(ii) Aerodromes and Aviation Facilities;</li> <li>(iii) Agriculture;</li> <li>(iv) Animal Husbandry;</li> <li>(v) Caretaker's Residence;</li> <li>(vi) Community Facilities;</li> <li>(vii) Community Infrastructure;</li> <li>(viii) Dwelling House;</li> <li>(ix) Extractive Industry;</li> <li>(x) Home-based Industry;</li> <li>(xi) Industry (where located adjacent to an associated natural resource or known mineral or extractive resources);</li> <li>(xii) Intensive Agriculture;</li> <li>(xiii) Minor Aquaculture;</li> <li>(xiv) Service Station;</li> <li>(xv) Special Industry;</li> <li>(xvi) Sport and Recreation;</li> <li>(xvii) Station Homestead; and</li> <li>(xviii) Tourism - minor and major.</li> </ul>	<p>No Probable Solutions are prescribed.</p>	<p>Extractive Industry is a consistent use in the Rural Zone</p>

<sup>1</sup> Refer to Section 1.1.4 (Probable Solutions).

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Column 1 Specific Outcomes	Column 2 Probable Solutions for Assessable Development <sup>1</sup>	Comment
<p>The following defined uses or use classes are inconsistent with the Overall Outcomes sought by the Zone:-</p> <ul style="list-style-type: none"> <li>(i) Accommodation Building (except where associated with Tourism);</li> <li>(ii) Business;</li> <li>(iii) Duplex Dwelling;</li> <li>(iv) Hotel;</li> <li>(v) Industry (except where located adjacent to an associated natural resource or known mineral or extractive resources);</li> <li>(vi) Medical Centre;</li> <li>(vii) Motel;</li> <li>(viii) Multiple Dwelling;</li> <li>(ix) Shop;</li> <li>(x) Showroom; and</li> <li>(xi) A use that could be located in another Zone, within a town area, where the population is better served by the closer proximity of the use.</li> </ul>	<p>No Probable Solutions are prescribed.</p>	
<p><b>Amenity, Public Health or Safety</b></p> <p>There are no significant adverse effects on amenity, public health or safety with regard to the following:-</p> <ul style="list-style-type: none"> <li>(i) sewage disposal;</li> <li>(ii) water supply for human use;</li> </ul>	<p>No Probable Solutions are prescribed.</p>	<p>The proposed development complies with the Performance Outcome.</p>

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Column 1 Specific Outcomes	Column 2 Probable Solutions for Assessable Development <sup>1</sup>	Comment
<p>(iii) permanent or temporary occupation of, or access to, areas subject to natural hazards; or</p> <p>(iv) Agriculture or Extractive Industry or works located in close proximity to towns, roads, or other occupied places (such as accommodation or other facilities for Residential Activities or Tourism).</p>		
<p><b>Operation and Provision of Infrastructure</b></p> <p>Uses are of a type and scale that maintain the standards of service identified in Schedule 1, Part 12.</p> <p>Water supply, sewerage and roads are provided to:-</p> <p>(i) meet appropriate standards at the least whole-of-life cost, including avoiding unnecessary duplication;</p> <p>(ii) be robust and fit for the purposes and intended period of operation;</p> <p>(iii) be easily maintained without unnecessarily requiring specialist expertise or equipment;</p> <p>(iv) be comprised of components and materials that are readily accessible and available from</p>	<p>No Probable Solutions are prescribed.</p> <p>Water supply, sewerage and roads are constructed to relevant standards stated in Schedule 1, Part 33.</p>	<p>N/A</p>



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Column 1 Specific Outcomes	Column 2 Probable Solutions for Assessable Development <sup>1</sup>	Comment
<p>numerous local sources; and</p> <p>(v) be readily integrated with existing systems and facilitate the orderly provision of future systems.</p> <p>The safe and efficient operation of roads and railways is maintained having regard to:-</p> <p>(i) the nature of vehicles using the road;</p> <p>(ii) the location of uses that may be adversely affected by noise and dust generated from use of the road or railway;</p> <p>(iii) the location and design of access points; and</p> <p>(iv) the design of stormwater drainage.</p>	<p>No Probable Solutions are prescribed.</p>	<p>The haul routes to and from the quarries will be maintained by the quarry operator</p>
<p>Uses and works are located and designed to avoid significant adverse effects on safe aircraft operations due to:-</p> <p>(i) physical intrusions;</p> <p>(ii) reduced visibility;</p> <p>(iii) collisions with birds;</p> <p>(iv) electromagnetic interference with aircraft navigation systems; or</p> <p>(v) other functional problems for aircraft (including artificial</p>	<p>No Probable Solutions are prescribed.</p>	<p>N/A</p>

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Column 1 Specific Outcomes	Column 2 Probable Solutions for Assessable Development <sup>1</sup>	Comment
lighting hazards).		
<p><b>Gravel Pits, Resource Reserves, etc.</b></p> <p>The continuing or new use of gravel pits, resource reserves, mining lease areas and other areas of known mineral interest is not significantly constrained by the siting of incompatible uses or works<sup>2</sup>.</p>	<p>Tourism facilities and Station Homesteads are:-</p> <p>(i) located more than 1km from mineral sources and more than 500m from gravel pits; and</p> <p>(ii) located so they are not visible from tracks and roads providing access to mineral resources or gravel pits.</p>	<p>Complies</p> <p>Complies</p>
<p><b>Tourism - minor</b></p> <p>Tourism - minor facilities are only in areas remote from an established town area.</p>	<p>Tourism - minor facilities are:-</p> <p>(i) located more than 500 metres from a road; and</p> <p>(ii) located so that they are more than 20 kilometres by road from an established town area.</p>	<p>N/A</p>
<p><b>Residential</b></p> <p>Residential Activities that are not ancillary to other uses in the Rural Zone, are a minor use in the Rural Zone and do not locate to create clusters with other Residential Activities.</p>	<p>No Probable Solutions are prescribed.</p>	<p>N/A</p>

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Column 1 Specific Outcomes	Column 2 Probable Solutions for Assessable Development <sup>1</sup>	Comment
<p><b>Home-based Industries</b></p> <p>If a Home-based Industry, the predominance of the primary Residential Activity is retained and there are no significant adverse effects on local amenity.</p>	<p>If a Home-based Industry providing visitor accommodation - up to 10 visitors are accommodated:-</p> <p>(i) the floor area used either in a separate building or a separate part of the main building, is not greater than 50m<sup>2</sup>;</p> <p>(ii) display goods and stored goods or materials are not visible from outside the building;</p> <p>(iii) there is only one sign and the sign is:-</p> <ul style="list-style-type: none"> <li>• not greater than 0.5m<sup>2</sup> in area;</li> <li>• not illuminated; and</li> <li>• wholly within the premises or on a fence facing the road;</li> </ul> <p>(iv) there is no hiring out of materials, goods, appliances or vehicles; and</p> <p>(v) there is no repairing, servicing, cleaning, or loading of vehicles not normally associated with use of premises as a Dwelling House.</p>	<p>N/A</p>
<p><b>Water Quality Maintenance</b></p>		

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Column 1 Specific Outcomes	Column 2 Probable Solutions for Assessable Development <sup>1</sup>	Comment
<p>All activities maintain the water quality of Carpentaria Shire's groundwater, waterways and Surface water storages.</p>	<p>Any activities which:-</p> <p>a) involve the handling of water-borne pollutants are provided with bunded, impervious surfaces linked to an integrated drainage and treatment system;</p> <p>b) involve the storage of waste water are provided with properly designed and constructed, secure, sealed storage facilities; or</p> <p>c) contain all liquid wastes and discharge them to a sewer or removed from the site for treatment and disposal to an approved facility.</p>	<p>N/A</p> <p>N/A</p> <p>N/A</p>
<p><b>Built Form</b></p> <p>The built form is compatible with the desired character and amenity of the surrounding area and does not adversely affect the visual amenity.</p>	<p>The maximum height of a building, structure or object, or height at which an activity is carried out, is 11m.</p>	<p>N/A</p>
<p><b>Other Uses</b></p> <p>Uses other than Residential, Home-based Industry and those stated inconsistent defined uses or use classes are accommodated in the Rural Zone if, in each case, the use satisfies a community</p>	<p>No Probable Solutions are Prescribed.</p>	<p>N/A</p>

## LATE BUSINESS PAPERS

Column 1 Specific Outcomes	Column 2 Probable Solutions for Assessable Development <sup>1</sup>	Comment
<p>need or takes advantage of an economic opportunity, and:-</p> <p>(i) the nature and scale of the use is such that there are no suitable sites available within Normanton or Karumba;</p> <p>(ii) the effects of the use mean that it cannot practicably be made compatible with other uses in the towns except by location outside the town area; or</p> <p>(iii) in order to operate effectively the use needs to be located close to a particular cultural feature, natural feature or resource, infrastructure item or activity that occurs in the locality.</p>		

### 7.0 PUBLIC NOTIFICATION

During Public Notification, no properly made submissions were received.

### 8.0 CONCLUSION

The proposal to formalise land use approvals over three (3) quarries/pits in the Shire and facilitate ongoing extraction is compliant with the Planning Scheme. The quarry/pit operations can be controlled and managed by the imposition of Council conditions, and conditions applying to the Environmental Authority for the operation of the quarry sites under the ERA's.

The application is recommended to the Council for approval, subject to reasonable and relevant conditions.

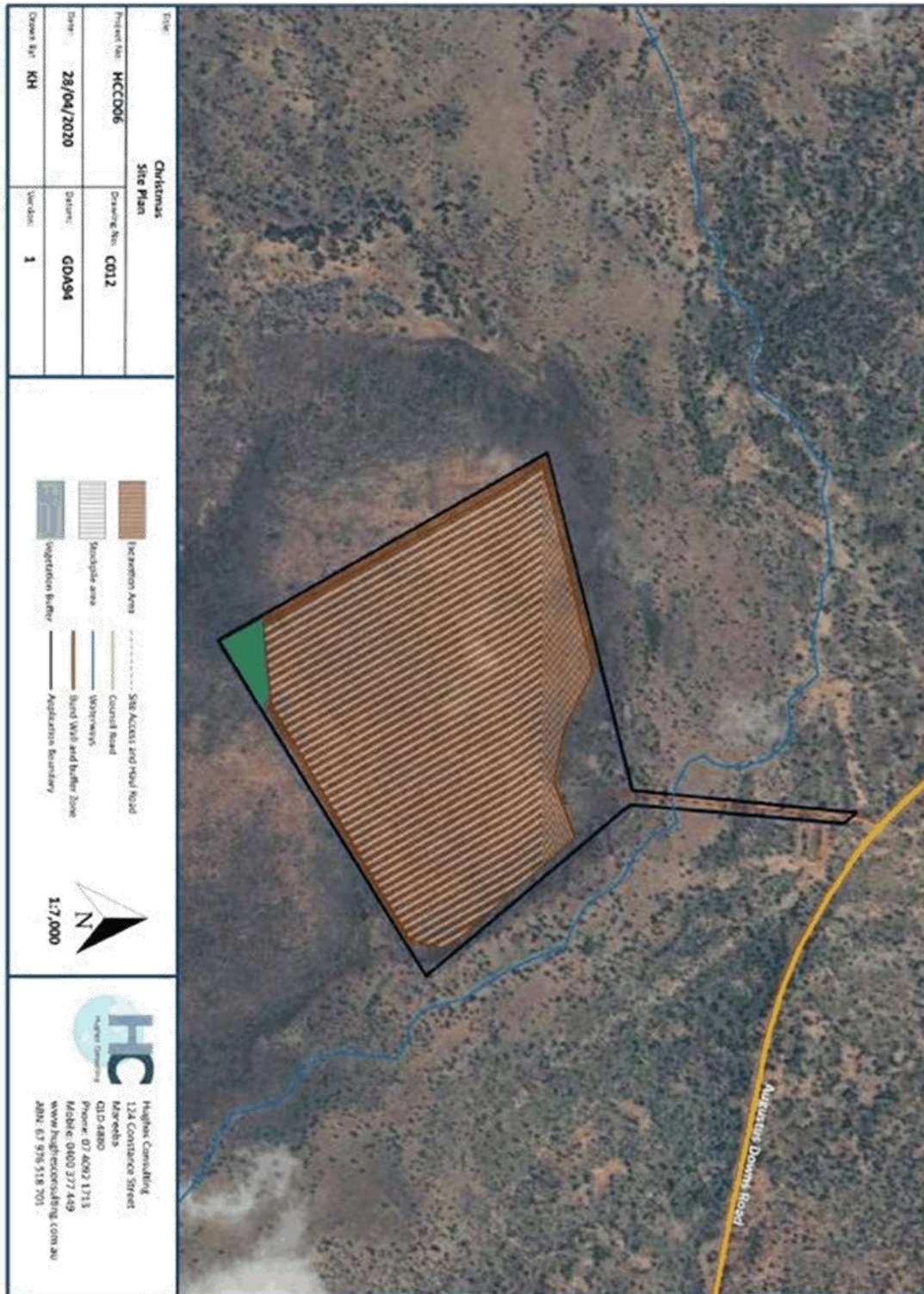


Figure 12 Site Plan - Christmas Pit

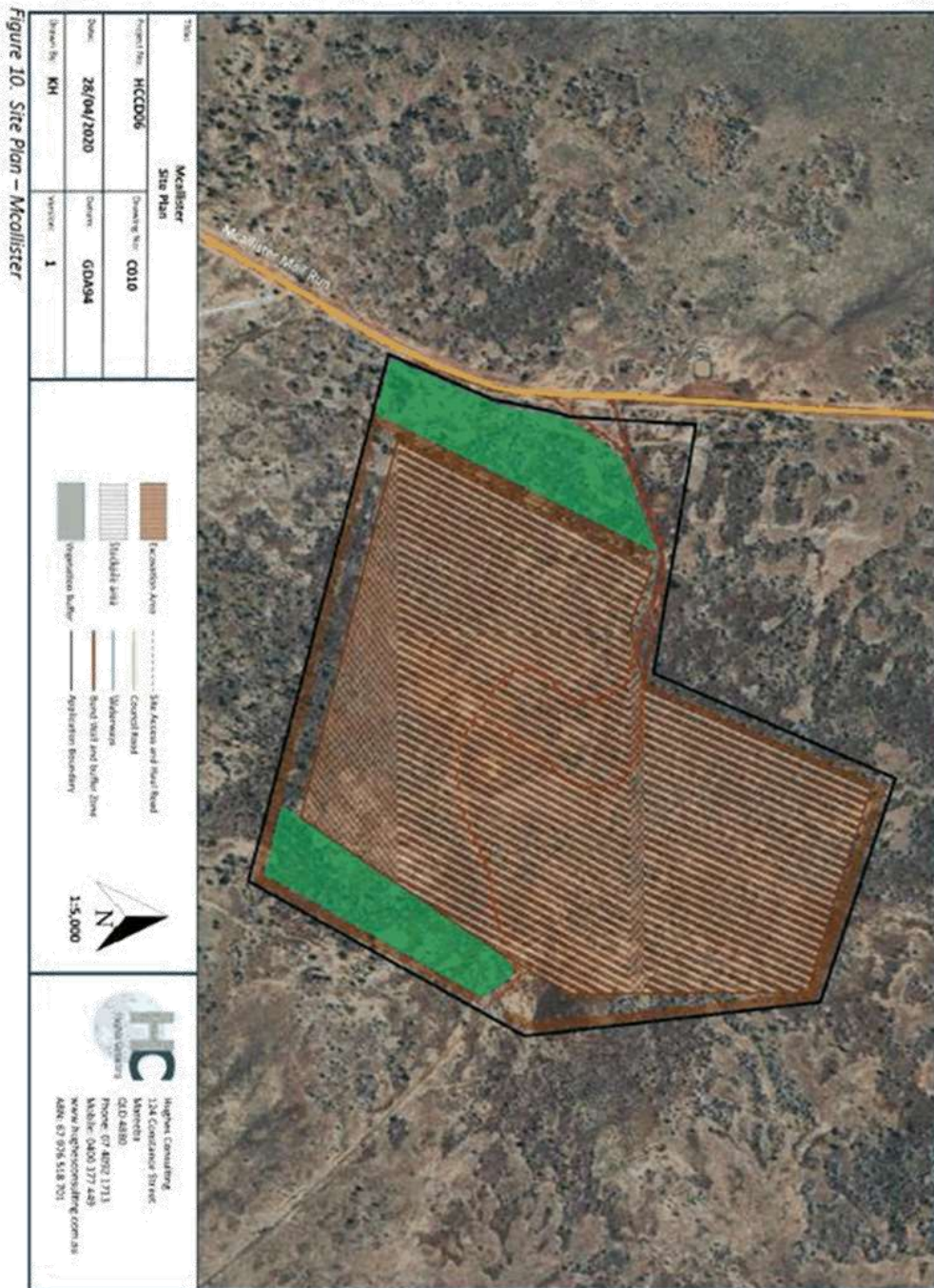
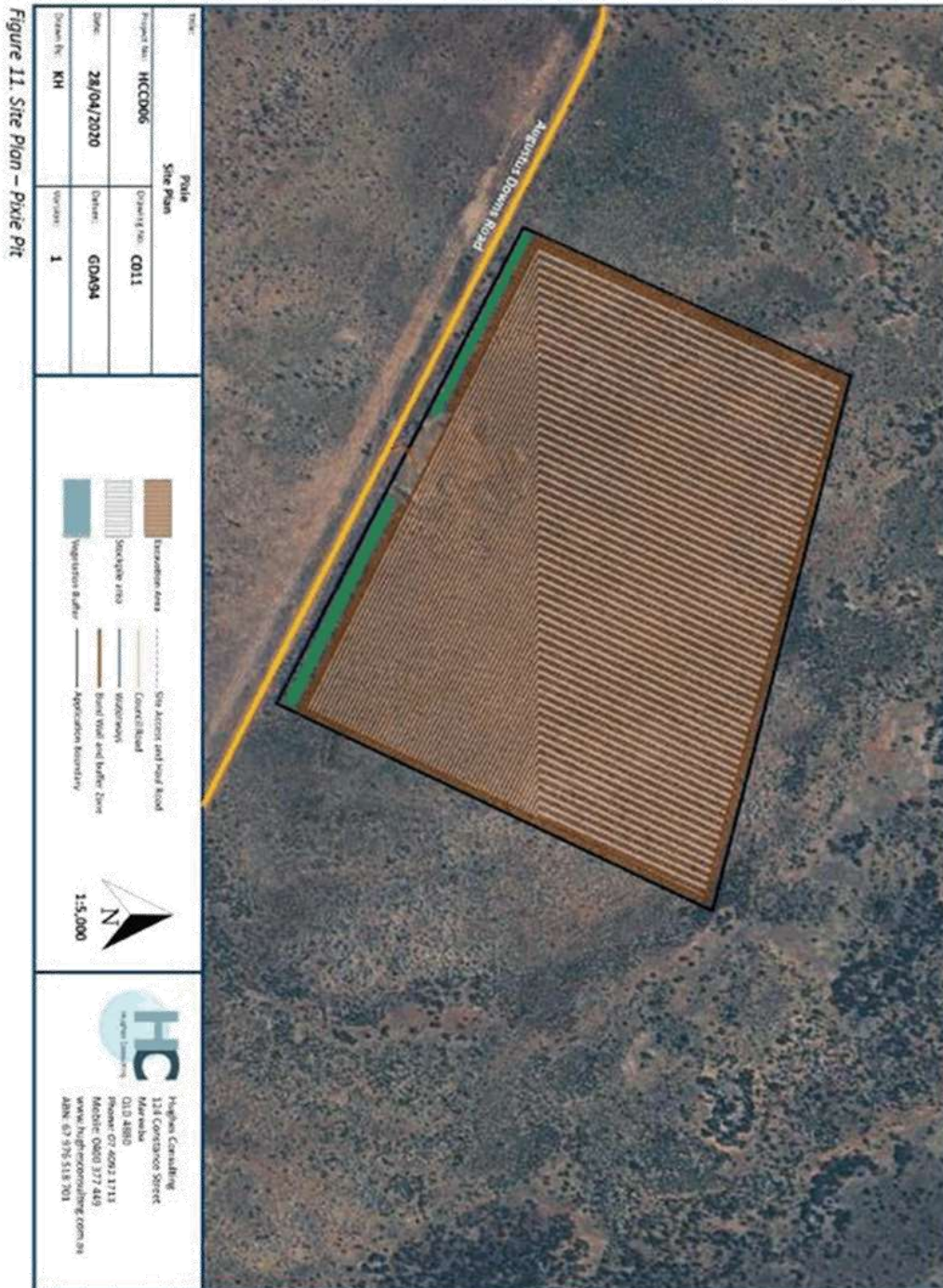


Figure 10. Site Plan – McAllister





## LATE BUSINESS PAPERS

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### 11.8 MIPP2 - STRATEGIC DEVELOPMENT PLAN, EXPANSION OF TOURISM WITHIN THE SHIRE

<b>Attachments:</b>	11.8.1. MIPP2 Induction <a href="#">↓</a> 11.8.2. Appendix A - MIPP2 Carpentaria Road Network <a href="#">↓</a> 11.8.3. Appendix B - MIPP2 Raw Water Report <a href="#">↓</a> 11.8.4. Appendix C - MIPP2 Normanton Areas of Interest Report <a href="#">↓</a> 11.8.5. Appendix D - MIPP2 Karumba Town Plan Report <a href="#">↓</a>
<b>Author:</b>	John Martin - Consultant Engineering
<b>Date:</b>	11 September 2020
<b>Key Outcome:</b>	6.1 - A strong and diverse economy
<b>Key Strategy:</b>	6.1.4 Promote and develop Carpentaria Shire as a unique destination and to manage tourism in a sustainable way.

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#### Executive Summary:

Council have been awarded a grant through the Maturing the Infrastructure Project Pipeline Program 2 (MIPP2) for preparation of a strategic development plan for expansion of tourism within the Shire. The strategic plans for the four identified projects (Normanton Raw Water Irrigation Network, Carpentaria Road Network, Normanton Town Areas of Interest and Karumba Town Plan) have been completed and are provided as appendices to this report.

#### RECOMMENDATION:

That Council:

1. Review and comment on the reports: and
2. Those matters not covered be noted and updated.

#### Background:

Council was awarded a grant through the Maturing the Infrastructure Project Pipeline Program 2 (MIPP2) for preparation of a strategic development plan for expansion of tourism within the Shire. The project funding is to identify and develop key projects within the Shire which will enhance economic productivity and liveability.

The following four (4) projects have been developed under this funding and are attached in Appendices A – D. A summary of the items covered in each of the reports is detailed below.

#### 1. Carpentaria Road Network

- Identification and designs of upgrades to the Savannah Way.
  - Identification and designs of upgrades to Principal Roads and Local Roads of Regional Significance.
  - Cost Estimates of all proposed upgrades.
  - Collect traffic data for Shire Roads.
  - Benefit Cost Analysis of proposed works to the road network.
-

## **LATE BUSINESS PAPERS**

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- Tourism Data of the Shire.

### **2. Normanton Raw Water Irrigation Network**

- Benefit Cost Analysis of proposed project.
- Development and detailed design of Stage 1.
- Identification of future stages of the raw water network.

### **3. Normanton Town Areas of Interest**

- Beautification plans of Landsborough Street.
- Other Upgrades to Landsborough Street.
- Normanton Historic Walk.
- Landscape plans of the School Dam.
- Landscape plans of LEW Henry.

### **4. Karumba Town Plan**

- Karumba Point Master Plan.
- Karumba Esplanade Upgrades.
- Palmer Street Roundabout Options.
- Tourism opportunities within Karumba.
- Current Tourism Industry.

#### **Consultation (Internal/External):**

- Chief Executive Officer – Mark Crawley
- Director of Engineering – Michael Wanrooy
- ERSCON Consulting Engineers – John Martin

#### **Legal Implications:**

- Nil

#### **Financial and Resource Implications:**

- Nil

#### **Risk Management Implications:**

- Nil

# MIPP2

## Expansion of Tourism Within the Shire



PREPARED BY



# 1. Introduction.

## **Regional Context:**

Carpentaria Shire, an area of 64,381 sq. km, adjoins the south-east shoreline of the Gulf of Carpentaria. Cook Shire (Cape York Peninsula) is on its northern boundary and several shires, mainly Croydon, are on its southern boundary.

Named after the Gulf, itself named in 1623 after the Governor-General of the Dutch East Indies, Pieter de Carpentier, the shire was proclaimed in 1903. Prior to then the Carpentaria divisional board (1883) had been the regional local authority.



The report of William Landsborough's expedition (1861) in search of the failed Burke and Wills exploration brought an influx of pastoralists to the Gulf region. Burketown on the Albert River tended to be fever-ridden, and Normanton on the Norman River became populated in the late 1860s. It was later a freight center for Etheridge, Cloncurry and Croydon mine areas. The Queenslander-style shire offices in Normanton were built in 1890, and a railway from Normanton to Croydon was opened in 1891.

The vast pastoral estates throughout the shire often form chains through which livestock can be fattened or moved, depending on seasonal conditions.

The shire's other main town is Karumba at the mouth of the Norman River, Karumba's port was enlarged in the 1990s for the export of zinc-lead concentrates piped from the Century mine at Lawn Hill.

Karumba enjoys the distinction of being the only town along the southern Gulf of Carpentaria that is within sight of the Gulf itself (the Gulf's extensive tidal flats prohibits settlement elsewhere along its shore), and is also home to the rare Morning Glory cloud that roll through Karumba in the early hours of some mornings in September and October.

The Morning Glory cloud is a rare meteorological phenomenon consisting of a low-level atmospheric solitary wave and associated cloud, occasionally observed in different locations around the world. The wave often occurs as an amplitude-ordered series of waves forming bands of roll clouds. The southern part of the Gulf of Carpentaria in Northern Australia is the only known location where it can be predicted and observed regularly due to the configuration of land and sea in the area.

Both Normanton and the shire lost population in the years after World War II; some people who had been evacuated because of the risk of Japanese invasion had no reason to return. A slight upturn came when basic tour and fishing facilities were installed at Karumba, and prawn fishing (1960s) and improved road access for tourism brought Karumba's population from 359 to 1043 between 1971 and 1996. The Matilda Highway brings tourists from as far south as Cunnamulla, passing through numerous outback towns.

In the early years there was a large Aboriginal population as well. Some Aboriginal people were moved to Mornington Island and Doomadgee in the early 20th century but the Carpentaria shire is still home to the Gkuthaam, Kukati and Kurtijar people.

## Climate

Normanton has a tropical savanna climate with two distinct seasons. There is a hot, humid and extremely uncomfortable wet season from December to March and a hot and generally rainless dry season usually extending from April to November. During the wet season most roads in the area are usually closed by heavy rainfall, which on several occasions has exceeded 650 mm (26 in) in a month or 250 mm (10 in) in a day from tropical cyclones. On occasions, as with all of Queensland, the wet season may fail and deliver as little as 240 mm (9.4 in) between December 1934 and March 1935

Temperatures are uniformly hot, ranging from 36.8 °C (98 °F) in November just before the wet season begins to 29 °C (84 °F) at the height of the dry season in July. In the wet season, temperatures are marginally lower, but extremely high humidity means conditions are very uncomfortable and wet bulb temperatures averages 25 °C (77 °F) and can reach 28 °C (82 °F). In the dry season, lower humidity, cloudless days and cool nights provides for more pleasant conditions.

Climate data for Normanton Post Office, Queensland													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °C (°F)	43.1 (109.6)	41.0 (105.8)	40.1 (104.2)	39.5 (103.1)	37.2 (99.0)	35.6 (96.1)	35.6 (96.1)	38.3 (100.9)	40.1 (104.2)	41.8 (107.2)	43.3 (109.9)	43.3 (109.9)	43.3 (109.9)
Average high °C (°F)	34.7 (94.5)	33.9 (93.0)	34.2 (93.6)	34.0 (93.2)	31.7 (89.1)	29.2 (84.6)	29.1 (84.4)	31.1 (88.0)	33.9 (93.0)	35.9 (96.6)	36.8 (98.2)	36.1 (97.0)	33.4 (92.1)
Average low °C (°F)	25.1 (77.2)	24.9 (76.8)	24.4 (75.9)	22.4 (72.3)	19.1 (66.4)	16.1 (61.0)	15.2 (59.4)	16.5 (61.7)	19.5 (67.1)	22.6 (72.7)	24.7 (76.5)	25.3 (77.5)	21.3 (70.3)
Record low °C (°F)	18.3 (64.9)	17.3 (63.1)	16.7 (62.1)	14.4 (57.9)	7.2 (45.0)	6.7 (44.1)	7.0 (44.6)	6.6 (43.9)	11.1 (52.0)	13.7 (56.7)	15.5 (59.9)	18.9 (66.0)	6.6 (43.9)
Average rainfall mm (inches)	260.2 (10.24)	249.2 (9.81)	157.7 (6.21)	30.9 (1.22)	7.5 (0.30)	9.2 (0.36)	3.2 (0.13)	1.7 (0.07)	3.0 (0.12)	10.5 (0.41)	45.1 (1.78)	144.4 (5.69)	922.6 (36.34)
Average rainy days (≥ 0.2 mm)	13.9	13.9	9.4	2.4	0.9	0.7	0.5	0.3	0.4	1.3	4.4	9.0	57.1
Average relative humidity (%)	74	78	70	57	52	52	48	44	45	49	54	65	57

Source: [\[29\]](#)

## Heritage listings

Normanton has a number of heritage-listed sites, including:

- Burke and Wills Access Road (Private Road): Burke and Wills Camp B/CXIX
- Burke Developmental Road: Normanton Cemetery
- 27 Haigh Street: Normanton Gaol
- Cnr Landsborough Street and Caroline Street: Burns Philp Building
- Landsborough Street: Westpac Bank Building
- Matilda Street: Normanton railway station
- Normanton to Croydon: Normanton to Croydon railway line

### **Buildings**

There are a number of interesting buildings in the town, including the distinctive 'Purple Pub', the 'Albion Hotel' where Captain Percy Tresize drew a series of humorous paintings on the barroom walls, and the Bank of New South Wales which is now a listed National Trust Building. It is an unusual building which looks more like a house than a bank. Designed by Richard Gailey in 1896 it is an extraordinarily beautiful timber building with cross bracing on the verandah and a fashionable exposed frame

### **Mutton Hole Wetlands**

Mutton Hole Wetlands Regional Park is part of the largest continuous estuarine wetland aggregation of its type in northern Queensland. It offers significant wildlife observation opportunities. Mutton Hole Wetlands Regional Park has both diverse and complex habitats from fresh to hypersaline while also being a crocodile breeding habitat.

The primary purpose for conserving Mutton Hole Wetlands Regional Park is its varied and complicated system of estuarine and freshwater wetlands that supports an outstanding number of water birds. It is a significant breeding, feeding, resting, and moulting water bird site while also being an important dry season refuge for water birds and water fowl.

Mutton Hole Wetlands Regional Park lies within the Southern Gulf Aggregation which is listed in the Directory of Important Wetlands in Australia (DIWA). It is included in and surrounded by the Gulf Plains Important Bird and Biodiversity Area (IBA) due to its significance as a bird habitat. Eleven species of internationally conservation significant bird species have been recorded in the area.

There are currently no registered native title claims or indigenous land use agreements (ILUA) that cover the park. The Kukatj and Gkuthaarn tribes both have documented linkages to the area. QPWS is building relationships with Indigenous people in the area and attempting to identify the correct people to represent the Traditional Owners.

### **The Gulflander and the Railway Station**

The town's greatest tourist attraction is undoubtedly 'The Gulflander'. The railway line was originally planned to service the beef industry by running from Normanton to Cloncurry but the discovery of gold at Croydon redirected it.

The rail is a masterpiece of adaptive design. George Philips, the supervising engineer, designed special steel sleepers which proved so successful that they are still in use today. They can be seen at the railway station which is listed by the National Trust. It is an unusual building which has distinctive decorative patterns on the cross-braces which hold up the corrugated-iron roof. It has become one of Normanton's most distinctive landmarks. The railway line was only a brief success. When it opened it was planned that it would become a major line and that Normanton would grow to become a major port. In its first year of operation there were 55 railway employees and the train were carrying 10 000 passengers each year.

As a result of the Croydon goldfield's demise in 1906 the Gulflander has not made a profit since 1907. Today it runs a once weekly service leaving Normanton at 8.30 am on Wednesday and returning from Croydon at 8.30 am the next morning. It is occasionally booked to make the tour at other times.

### **Historical Development.**

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The vast flat plains surrounding the south-eastern Gulf of Carpentaria are primarily old seabed. Predominant vegetation is either open Flinders or Mitchell grass plains or tropical savannah woodland. The area is subject to a wet season that comes in heavy rain periods associated with tropical lows (that can develop into cyclones), over the period December to April. Intense tropical lows and cyclones can result in major flooding episodes in some years when large areas can be inundated. The wet season is followed by a winter and early summer period of very low rainfall and annual drought conditions.

Normanton was first established as a port at the head of navigation in the Norman River in 1867 to service pastoral industry settlement expanding into the area and to service mining of newly discovered copper deposits around Cloncurry to the south and gold to the east at Croydon. Normanton was serviced by shipping services mainly out of Cairns up until the 1960s. Improved road links have led to road transport being used more recently for import and export of goods into and out of the region.

A railway line was commenced to Cloncurry but diverted east to Croydon. The goldfields around Croydon faded by the 1920s and today the railway line is used only for tourist experience (the Gulflander Railmotor), and some supply of goods during wet season flooding episodes.

During the 1930s/40s, Karumba at the mouth of the Norman River became a stopover on the Imperial Flying Boat route from Australia to England with a lodge established.

With mining fading and the railway from Townsville reaching Cloncurry, Normanton tended to decline during the 1930s, 40s and 50s.

The 1960s saw a major new phase of economic growth commence. The Beef Roads programme saw the road from Cloncurry sealed and the Gulf Developmental Road sealed in from the east to the Gilbert River crossing and improved (although not sealed), from the Gilbert across to Normanton. The Burke Developmental Road from Normanton north to Dunbar Station on the Mitchell and thence east into the Mungana railhead near Chillagoe was improved although not sealed.

During the 1960s, extensive prawn resources were discovered in the Gulf and Karumba developed as a fishing industry base.

Road improvements into the area saw visitor numbers increasing (mainly touring "grey nomads"), and recreation fishermen especially visiting Karumba.

The development in the 1990s of the substantial Century Zinc deposits to the south west saw a slurry pipeline developed to Karumba with barge shipments to bulk carriers standing offshore.

By 2000, further sealing of the Gulf Developmental Road reached Normanton.

Live cattle shipments commenced via Karumba and for a time, shipping ex Karumba to Weipa.

By 2000, further sealing of the Gulf Developmental Road reached Normanton.

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Tourism has developed in recent decades, especially following the completion of sealing of the Gulf Developmental Road about 2000, and the development of Karumba as a seaside recreation and fishing area. Separate figures are not readily available for the Shire. However, based on data for the Carpentaria SA2 region (including Burke Shire, Doomadgee and Mornington), estimated income from overnight visitors is probably of the order of \$30m per annum.

These days, much of the prawn fishery is operated by fishing vessels based in Cairns or other east coast ports and supplied at sea by motherships out of Cairns, which also take on catches for transport back to Cairns. There is however, locally based vessels catching prawns and other species including mackerel and barramundi based in Karumba with catch value estimated at about \$20m per annum.

#### **VISITORS TO THE GULF**

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The total number of visitors to the gulf in 2012 was approximately 58,000 leisure visitors as compared to 2017 where there were approximately 53,150 leisure visitors to the Gulf Savannah region.

The average length of stay in 2012 was 11.5 days as compared with the 2017 where there was a total of 13.98 days. The survey data suggests the lengths of stay were 12.3 nights in Croydon-Etheridge and 13.18 in Carpentaria in 2012 and 14.21 in Croydon-Etheridge and 15.32 in Carpentaria in 2017.

The average expenditure in 2012 was 79.11 per person per day and increased to \$94.02 in 2017. This expenditure created a total value of \$65 m to the gulf in 2012 with an increase to \$69.8m for 2017.

#### **STATE OF ORIGIN:**

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In 2012 and 2017 the majority of visitors to the region were from Queensland, however, the number and proportion of visitors from Queensland in 2017 (63%) was far higher than in 2012 (36%). The National Visitor Survey data for 2012-2017 suggests between 60-80% of domestic visitors to the region were from Queensland.

#### **COUNTRY OF ORIGIN:**

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Between 2012-2017, German and New Zealand tourists remained by far the most well represented nationalities among those visiting the Gulf for leisure.

#### **AGE GROUP OF VISITORS:**

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The 60+ age group remained the dominant age group represented in the Gulf with 2012 at 66% but in 2017 the 60+ age group dropped to 59% with the 40-49 age group doubling from 2012 at 6% to 2017 at 12%.

#### **TYPE OF TRAVEL PARTY:**

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Couples were the dominant travel party type with 2012 at 59% and 2017 increasing slightly to 60.1%. There was an increase from 2012 at 16% to 2017 24.24% for friends travelling together.

#### **FIRST OR RETURN VISIT:**

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In 2012 64% were first time visitors with 36% returning to the gulf with the opposite for 2017 at 36% first time and 56% return.

#### **MOST VISITED TOWN:**

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In 2017, 88% of visitors stopped at Georgetown, 80% stopped in Karumba and Normanton, while 66% stopped in Mount Surprise. Burketown registered a significant increase in visitations between 2012 (22%) and 2017 (54%).



#### **ACCOMMODATION TYPE:**

In 2017 69% of visitors stayed in commercial caravan parks and 24% stayed at free-camp sites compared to 57% in commercial caravan parks and 33% free-camp in 2012.

#### **VISITOR SATISFACTION:**

Overall visitor satisfaction declined very slightly between 2012 (94%) and 2017 (96%). However, there was a significant decline in the proportion who were Very Satisfied in 2012 (74%) to the proportion who were Very Satisfied in 2017 (56%).

The highest "Overall Satisfied" ratings were with the 'friendliness of locals' (89.06%), with feelings of 'personal security and safety' (86.16%) and the 'variety of things to see and do' (85.94%). Only 25.81% were "Overall Satisfied" with telecoms/internet/Wi-Fi in the region, which was down from 42.40% in 2012 despite significant investment into digital infrastructure in the Gulf Savannah region. This is likely due to continued connectivity/capability issues in key tourism sites such as Karumba, Undara Experience, Boodjamulla National Park, Adels Grove and so on.

There was also a significant decline in the overall satisfaction rating for Charters and Tours, with 94.2% in the Overall Satisfied group in 2012 versus 54.9% in 2017.

#### **ENTRY & EXIT POINTS:**

In 2017, 38% of visitors to the Gulf entered via Cairns/Mt Garnet/Mt Surprise along the Gulf Developmental Road, followed by 34% at Burke & Wills Roadhouse.

In 2017, 38% departed through Mt Surprise/Mt Garnet/Cairns and 15% through Burke & Wills.

An estimated 20% lift in visitation through the widening of the narrow sections of the Gulf Developmental Road and the Cloncurry Road with a Present Value of addition to Gross Regional Product of the order of \$86m.

- a) Upgrading of the Burketown Road leading to more efficient access to Lawn Hill attraction and Savannah Way traffic with most benefits in Burke Shire but some in Carpentaria Shire.
- b) Upgrading the Dunbar and Koolatah/ Dixie roads providing an alternative route to and from the Peninsula that would result in avoidance of backtracking with an estimated Present Value of addition to Gross Regional Product of the order of \$62m.

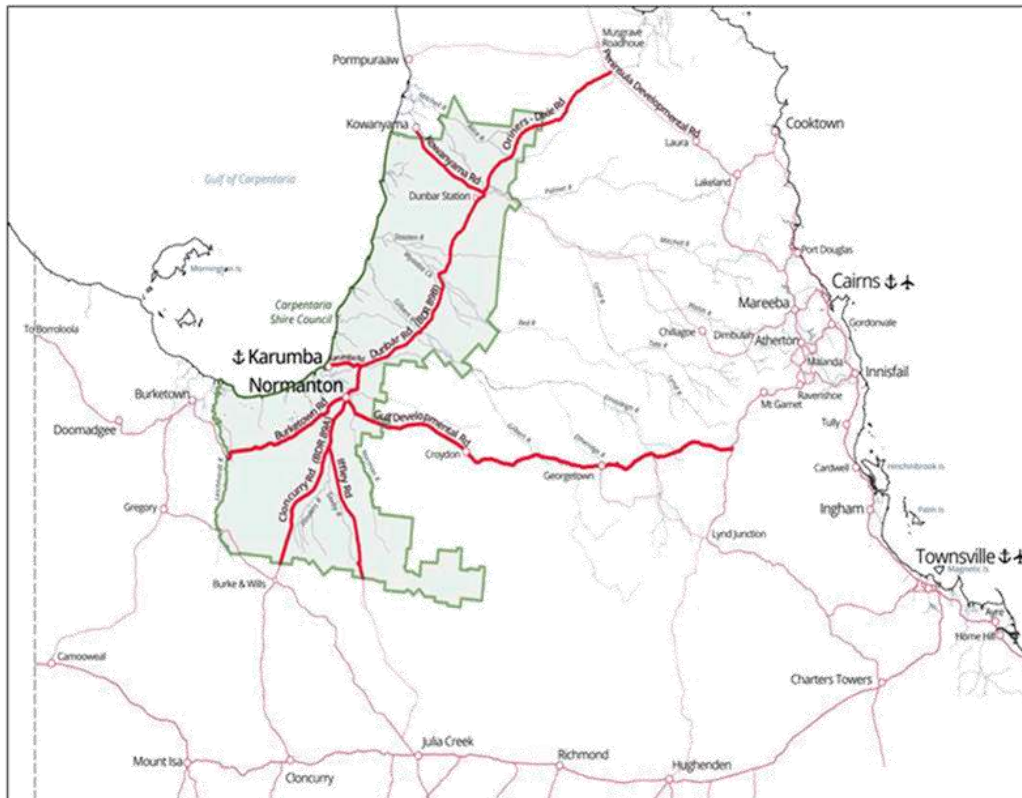
#### **High visitor population winter months**

On top of residential population, 2016 Census data indicates a very high level of visitors during the winter months totaling 1,375 (Queensland 547, interstate 806, overseas 22), taking on-the-ground population at the time of the Census from 1,700 to over 3,000.

## General

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- a) Upgrading the Dunbar Road leading to more visitation traffic to Normanton from Kowanyama presently moving across to the Tablelands/ Cairns area.
- b) Upgrading the Dunbar Road and Burketown Road, improving access to Normanton as a service centre.



## EXISTING ROAD NETWORK

### ROLE

The road network in the area serves three major functions.

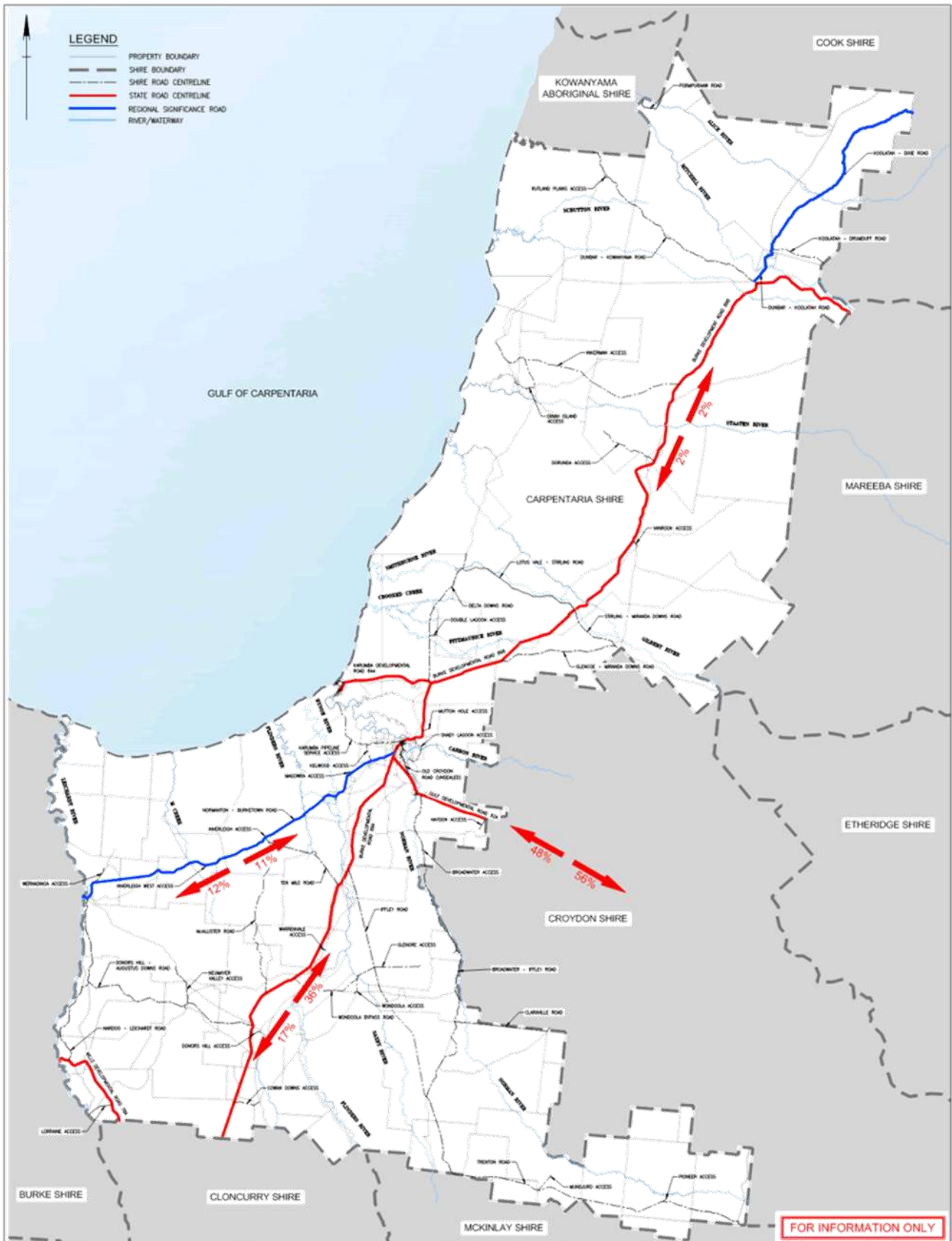
Internal connection – Links Normanton as the major service centre with the rest of the Shire – all the subject roads.

External connection – Links the Shire with the rest of Australia for import and export of goods and inward and outward transport of people.

Gulf Developmental Road ..... Cairns and Townsville regions  
Cloncurry Road ..... Mt Isa and Townsville regions  
Dunbar Road..... Peninsula and Mareeba regions  
Burketown Road..... Northern Territory  
Koolatah/ Dixie Road..... Peninsula region

Through connection – Provides through routes between other major regions.

- Especially Gulf Developmental Road/ Cloncurry Road - Cairns region with Mt Isa and Central West
- Gulf Developmental Road/ Burketown Road – Savannah Way link across the North
- Potentially – Koolatah/ Dixie/ Dunbar Road and Cloncurry Road – Tourism linking North West/ Central West with Peninsula region

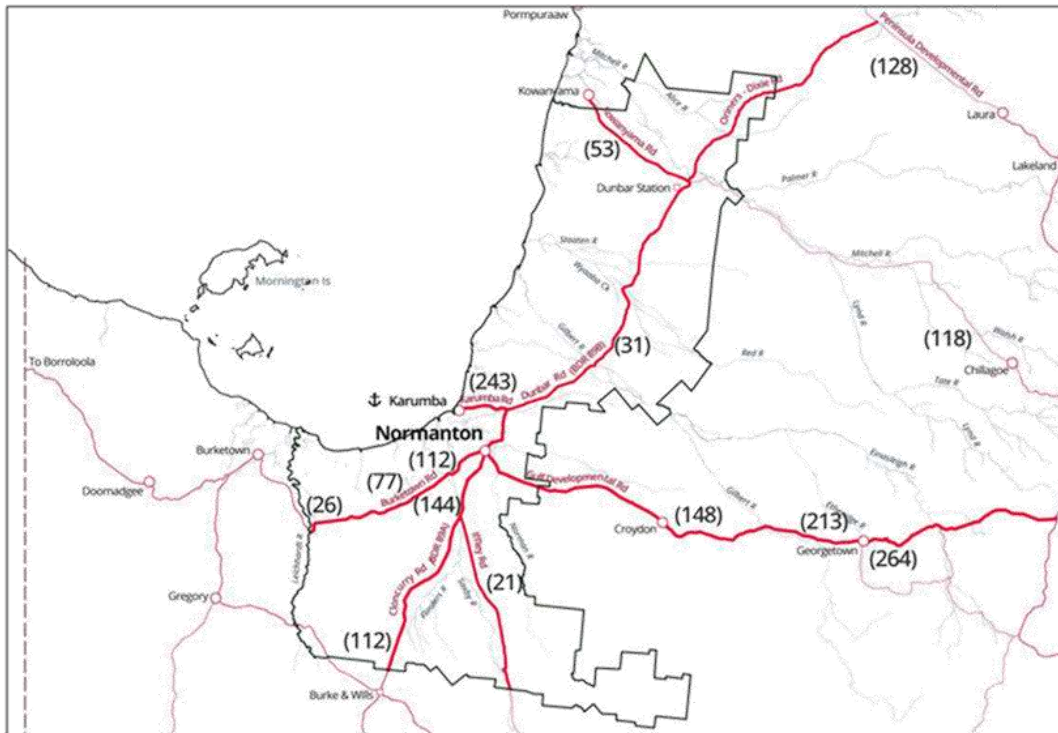


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**EXISTING ROAD TRAFFIC PATTERNS**

Map 5 shows official vehicle counts from Transport and Main Roads or Carpentaria Shire – 2018 or latest.

**Map 5 - Road Traffic Average Annual Daily Traffic (AADT), 2018 or latest**



The map indicates roads in order of traffic flows.

Karumba Road .....	242
Gulf Developmental Road & narrow sections .....	148 to 213 to 264
Cloncurry Road .....	144 to 112
Burketown Road .....	112 to 77 to 26
Kowanyama Road .....	52
Dunbar Road .....	31
Iffley Road .....	21
Koolatah/ Dixie Road .....	Not recorded

Appendix 2 gives detailed traffic figures, where possible over time, as provided by the Queensland Main Roads or Carpentaria Shire Council.

It can be seen that most traffic is on the sealed Karumba Road followed by the sealed Gulf Developmental Road and the Cloncurry Road. Of the unsealed roads, the Burketown Road is followed by the Kowanyama Road with Dunbar Road lower and the Iffley and Koolatah/ Dixie very low.

## TOURISM

Tourism has become a significant part of the area's economy. Statistical data currently or potentially relevant to the Carpentaria road system is collected in a number of areas.

**Table #9: Average Domestic Visitors Last 3 Years <sup>(1)</sup>**

	Average domestic visitors last 3 years
Carpentaria SA2 – (Carpentaria, Burke, Doomadgee, Normanton)	72,000
Croydon Etheridge SA2 – (Croydon and Etheridge Shires)	51,000
Cape York SA2 – (Cook Shire and relevant communities)	123,000
Weipa – (Weipa township)	35,000
Northern Peninsula Area – (NPA Council Area)/ Torres <sup>(2)</sup>	40,000
Mt Isa – LGA	150,000

Note <sup>(1)</sup>: The tourism data at this level is subject to statistical variance due to low sample numbers making year to year variations unreliable.

Note <sup>(2)</sup>: Of this, it is estimated that about 20,000 are in road vehicles reaching the Northern Peninsula Area.

Source: Cummings Economics from Tourism Research Australia – National Visitor Survey.

The data indicates that about 100,000 visitors a year are moving along the Flinders Highway and about 60,000 a year along the Gulf Developmental Road. Over 100,000 are moving north into the Cooktown district but only about 20,000 travelling through to the tip of Cape York.

### Type of visitor

Interviewing in the industry indicates as follows.

Work Purposes – There is a significant level of FIFO/DIDO to Normanton and Karumba including teachers, hospital staff, for construction and road work purposes that come mainly out of Cairns and Townsville. Some will use the bus from Cairns to Normanton/ Karumba.

Leisure – Most arrive in their own vehicle and tend to be in five categories.

1. Locals from within the North with a high proportion from Mt Isa after the wet season and for get-away weekends. They are in their own vehicles and especially visit Karumba for recreation/ fishing. This group will include family traffic and non- 4WD vehicles.
2. Regular annual visitors from southern Queensland and interstate mainly to Karumba and mainly for fishing. This group will often stay in units/ lodges.
3. Round-Australia travelers, mainly “grey nomads”, who will stay in caravan parks including Normanton. They will mainly be in 4WD vehicles and mainly tow caravans not suited to travel on unsealed roads. Most of this group are from interstate.
4. Round-Australia adventure travelers with 4WD vehicles, with camper or with trailers suited to off-road travel. Most will be from interstate.
5. Dedicated fishers and shooters, mainly locals in 4WD who will go to suitable spots throughout the Shire including remote locations.

**Hunters and Fishers** – This group use all roads and go into remote locations.

Operators in Normanton indicated that 80% of vehicles were 4W

During the tourist season, about 7 – 9 vehicles a day come through Hells Gate (ie. about 1500 a year), but this is increased by 4WD rallies each year when up to 250 vehicles can come through. If the road was made suitable for round-Australia tourists, there would be a major increase that would also add to the traffic on the Normanton – Burke Shire section. The following analysis provides for towed visitor traffic to rise about 5-fold from 4 to 20 and for non-towed to rise from 6 to 30. It should be noted however, that much of this rise would be at the expense of the Cloncurry Road traffic.

1. Karumba Road – The current road is efficient for its purpose. However, if traffic rose on the main spine route, this route would increase.
2. Dunbar Road – Sealing would allow the round-Australia visitors to travel up the road but unless there was sealing through to the Peninsula Developmental Road or into Chillagoe, substantial numbers would still not travel the road. In the following analysis, the current number towing of 2 is quadrupled to 8 and non- towing increased from 10 to 16. If the Koolatah/ Dixie Road was upgraded also, there would be a further substantial increase. If the road Dunbar/ Chillagoe was sealed, there would be a further leap.
3. Koolatah/ Dixie Road – There is already some 4WD adventures also visiting the Cape coming through this road and some of these going on to travel the Savannah Way to the Northern Territory. It is estimated that of the order of 30,000 per annum 4WD adventurers visit Weipa/ Cape York, ie. about 80 vehicle movements a day.

If the Koolatah/ Dixie Road was upgraded to sealed standard, it is estimated that a substantial diversion of vehicles would take place to take advantage of the alternative route to and from the Peninsula and avoid travelling over the eastern route to Cairns twice. In the analysis, we have allowed for the current estimated traffic of 4 visitor vehicles to increase 4-fold to 16. This would represent about 40% of the Peninsula traffic diverting one way to use the western route. Given the progressive sealing of the Peninsula Developmental Road over the next 10 years, future growth is estimated at an average of 4% per annum.

Tourism in the area is heavily affected by the standard of the road network and tourism flows in the surrounding regions. Data available for the Carpentaria SA2 area that includes Carpentaria Shire but also Burke Shire and Mornington Island has been showing an upward trend.

**T Tourism Visitors, Carpentaria SA2 Area**

	Domestic	International	Total
Average 3 years to 2018	72,000	4,000	<b>76,000</b>
Average 4 years to 2015	52,000	3,000	<b>55,000</b>
Average 4 years to 2012	51,000	4,000	<b>55,000</b>

Source: Cummings Economics from TRA.

Note: The data is collected through a sample survey and for low volume areas subject to statistical variance. The last three years were 76,000, 50,000, 96,000. The above table averages provide an estimate.

It is likely that almost all those who visit Burke Shire also visit Carpentaria Shire and that visitation to Carpentaria Shire is up around the 70,000 a year level. However, a number of those would have been for work purposes and visiting friends and relatives.

Most of these visitors come by motor vehicle and it is thus estimated, at average two persons per vehicle, that of the order of 30,000 tourism vehicles enter and leave the region each year. Census 2016 data indicated the following Australian visitor numbers.

**Visitor Numbers, Census 2016**

	Queensland	Interstate	Domestic	International	Total
Normanton	214	192	406	na	na
Karumba	254	555	809	na	na
Remainder Carpentaria	79	59	138	na	na
<b>Total Carpentaria LGA</b>	<b>547</b>	<b>806</b>	<b>1353</b>	<b>22</b>	<b>1,375</b>

*Source: Cummings Economics from ABS Census 2016.*

The Census was held at close to peak tourism season that is estimated to last from early May (Mothers Day) to early September (Fathers Day), ie. about 5 months. Outside that period, visitor numbers drop off sharply to very low levels. However, at peak, it can be seen that visitors swell on-the-ground population as follows.

**Population Count, Census 2016**

	Residents at home	Visitors	% Visitor Increase to Population
Normanton	1,137	406	+36%
Karumba	470	809	+172%
Remainder Carpentaria	154	138	+90%
<b>Total Carpentaria LGA</b>	<b>1,761</b>	<b>1,353</b>	<b>+77%</b>

*Source: Cummings Economics from ABS Census 2016.*

Thus, during the tourism season, there will be approaching twice as many visitors in Karumba as residents and in Normanton, add a further third to the population and, overall in the Shire, add some 77%. A notable feature is that at peak times, interstate visitors (especially to Karumba), exceed Queensland visitors, some of whom will be for non- leisure purposes. International visitation is low.



## FISHING INDUSTRY

- The fishing industry based on Karumba is an important generator of traffic movements in the Carpentaria Shire area including:
- Outward product movements;
- Inward industry supplies;
- Supplies to population located in the area because of the fishing industry.

The fishing fleet operating from Karumba is estimated at about 40, consisting of prawn trawlers, mackerel, barramundi and crabbing vessels.

In addition, there are calls by fishing boats that operate in the Gulf but are based in other ports, especially Cairns.

Prawn trawlers are mainly those operated by Raptis with a fleet of 15. Today, much of the prawn trawler fleet operating in the Gulf come out of Cairns and other ports and are resupplied at sea with fuel and stores by motherships out of Cairns which also take on catch. There are only occasional visits by these vessels to Karumba.

Raptis' catch is mainly transported to Brisbane via the Cloncurry Road.

Most of the other catch is either delivered to Cairns and Townsville via the Gulf Developmental Road or Brisbane via the Burke Developmental Road. Mackerel is delivered mainly to Cairns or Townsville for local consumption.

Fuel for the fleet is mainly supplied out of Townsville by Carpentaria Transport, 3 a week but 1 – 2 trucks a fortnight by Mobil out of Cairns, both via the Gulf Developmental Road.

Other supplies mainly come out of Cairns via the Gulf Developmental Road but some from Townsville via the Gulf Developmental Road and some out of Brisbane via the Cloncurry Road.

Catches vary from year to year depending on seasonal conditions; however, it is estimated the annual value is about \$20m.

General consensus is that this industry has probably stabilised and that no major further resource development would occur. However, it is noted that price of wild caught fish has been rising. Wild barramundi is facing competition from farm-bred output.

It is thus our expectation that the current level of activity will continue but not grow substantially. Although the upgrading (especially of the Gulf Developmental Road and the Cloncurry Road), will assist the industry's viability, it is not likely to cause any substantial additional traffic to be generated.

# MIPP2

## Expansion of Tourism Within the Shire

### Carpentaria Road Network



PREPARED BY



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## 1. Normanton to Burketown

### 1.1. Background

Normanton to Burketown Road is 141km long and connects Normanton and Burketown up to the Normanton/Burke Shire border. The road has an 8m pavement width and is currently sealed for the first 38km of the road.

Normanton to Burketown Road is a Principal Road within Carpentaria Shire and has been a high priority for improvements with significant betterment funding expended in recent years. Normanton to Burketown Road forms part of the Savannah Way (Cairns to Broome) and has been identified for the Roads of Strategic Importance Fund (ROSI) funded by the Australian Government. It is a key link in the Savannah Way and improvements are programmed progressively between now and 2030. Normanton to Burketown Road falls within the Cairns to Northern Territory Corridor.

Carpentaria Shire Council have set a target to seal Normanton to Burketown Road to the Carpentaria/Burke Shire border by 2030. Currently CSC has funding approved to seal up to chainage 61km of 141km by the end of 2021.

The priority for this road is to seal the currently unsealed sections to a two-lane width giving sealed access from Normanton to Burketown (226km) and to Doomadgee Aboriginal community a further 134km. Of relevance to the level of traffic on the Normanton Burketown section to be sealed in Carpentaria Shire, is the fact that there is sealed access south to the tourist attraction of Lawn Hill Gorge/Adels Grove area and to the Century mine.

### 1.2. Traffic Volumes

The road is currently an even combination of station, construction, and tourism traffic throughout the year. Full traffic counts (2017-2019) are provided in Appendix B.

It is expected that there will be approximately 2% p.a. growth in tourism traffic volumes and 1% p.a. growth in general traffic (Cummings, 2019).

### 1.3. Recent Improvements

- **Bynoe/Little Bynoe/Flinders River Causeways** – Three (3) concrete causeways were constructed in 2015 to raise the existing floodway level and provide a more flood resilient crossing. Total project value approx. \$6million.
- **M Creek Causeway** – Large Box Culverts installed through M Creek and the M Creek overflow channel to improve access along Normanton to Burketown Road. Total project value approx. \$5million.
- **Sealing**
  - CH0 to 37.458 Sealed prior to 2016.
  - CH46.661 to 53.218 Pavement improvements and sealing completed in 2018/19.
  - CH37.458 to 46.661 – \$3.1million approved for pavement improvements and sealing in 2020/21.
  - CH53.218 to 57.205 – \$1million approved for pavement improvements and sealing in 2020/21.
- **Pavement Rehabilitation and Restoration**
  - QRA16 – \$7.1million approved and constructed in 2017.
  - QRA17 – \$2.1million approved and constructed in 2018.
  - QRA18 – \$0.6million approved and constructed in 2019. See appendix C.8.
  - QRA19 – \$8.3million approved and under construction in 2020. See appendix C.8.
  - QRA20 – \$1.9million approved for construction in 2021/22.

#### 1.4. Identified Future Projects

- Appendix C.1 – Identifies all proposed projects on Normanton to Burketown road within Carpentaria Shire. Includes: causeways, sealing and horizontal realignments.
- Appendix C.2 – Identifies all proposed projects on the Savannah Way (Leichardt River to Doomadgee, outside Carpentaria Shire). Includes: causeways, sealing and horizontal realignments.
- Appendix C.3 – Priorities and cost estimates of all identified projects.
- Appendix C.4 – Project drawings for the Armstrong Creek upgrade.
- Appendix C.5 – Preliminary project drawings for realignment upgrades.
- Appendix C.6 – Project plan and estimate for the Poingdestre Creek upgrade.
- Appendix C.7 – Project drawings for the Leichardt River crossing.

#### 1.5. Future Planning of Road

- The Roads of Strategic Importance (ROSI) funding is key for improvements of Normanton to Burketown Road.
- A 10-year improvement plan is targeted for the identified projects above.
- CSC is aiming to seal to the Carpentaria/Burke shire border by 2030. The Savannah Way from Cairns to Doomadgee (990km) will be sealed once this section is completed.
- There is an option once Normanton to Burketown Road is sealed to transition it to a state-controlled road as it will form a key link in the Savannah Way and the state route network. This will ensure adequate maintenance budget is available to keep the road in good condition.

#### 1.6. Benefit Cost Analysis

- A Benefit Cost Analysis for Normanton to Burketown Road was completed by Cummings Economics in August 2019.
- NPV Gross Benefits = \$44.5million
- NPV Costs = \$27million
- Benefit Cost Ratio = **1.65**
- The best value for money strategy as recommended by Cummings Economics within Carpentaria Shire is to *“Lock the Commonwealth Strategic Road Funding into the Burketown Road and sealing Doomadgee to the Northern Territory border and with Northern Territory interests, seek to have strategic road funding extended through to sealing to Borroloola.”*

#### 1.7. Summary

Normanton to Burketown Road is a very high priority road within Carpentaria Shire and has been a key target for betterment works in recent years. There are several key opportunities for funding in the short to medium term which should be targeted to reach Carpentaria Shire Councils goal of sealing Normanton to Burketown to the border of Normanton and Burke Shire. This will provide a sealed all-weather access from Cairns to Doomadgee by 2030.

This plan is reinforced by a positive BCR of **1.65**.

## 2. Burke Developmental Road 89B

### 2.1. Background

The Burke Developmental Road 89B is 330km long and runs from Normanton to the Carpentaria/Mareeba Shire Boundary. 89B is a state-controlled road and forms part of the Savannah Way alternative route (Cairns to Broome). The road has an 8m pavement width and is sealed for 30km of the total 330km. River and creek crossings are treated with some bridging over major crossings, culverts and causeways. The road generally runs through flat savannah forest of varying, but not high, density.

89B is currently in poor condition with minimal maintenance completed given the length and criticality of the road.

The current condition of the road has been noted recently and has had two betterment projects approved for pavement improvements and sealing (\$10million, 30km). 89B is a high priority road for Carpentaria Shire as it the key link for the Northern half of the Shire and has some of the largest cattle stations in the Shire which depend on it for exporting.

### 2.2. Recent Projects Completed

- Pavement Improvements CH55 – 60. Project cost approx. \$0.9million. Completed in 2018.

### 2.3. Identified Future Projects

Due to the length and associated cost for improvements on 89B it is recommended to stage the works into multiple sections which can be targeted to provide benefits progressively to local stations that have significant cattle exports. The proposed first three (3) stages are identified in Appendix D.1. The road is currently in stage 1 however is expected to be finished by the end of 2021.

Specific identified projects are listed below:

- Pavement Improvements and Sealing – 200mm of stabilised basecourse including two coat seal CH45.5 to 60 currently under construction for completion by the end of 2020. Project value approx. \$5.5million.
- Pavement Improvements and Sealing – CH30 to 45.5. Estimated project value \$5million. Funding allocated and exact location to be confirmed for construction in 2020/21.

### 2.4. Benefit Cost Analysis

- A Benefit Cost Analysis for the Burke Developmental Road 89b was completed by Cummings Economics in August 2019.
- NPV Gross Benefits = \$44million
- NPV Costs = \$60.9million
- Benefit Cost Ratio = **0.72**

### 2.5. Summary

Due to the length of Burke Developmental Road 89B there is a requirement for significant capital expenditure to improve the current condition of the road. \$10million is currently allocated to 89B to be spent by the end of 2021. The staged approach should continue to be targeted to get the best benefit in the short to medium term.

### 3. Dunbar to Kowanyama Road

#### 3.1. Background

Dunbar to Kowanyama Road is approximately 90km long and provides access to Kowanyama Aboriginal Shire. The road is generally flat and fringed by savannah woodland. It services Rutland Plains Station to the South. The road has an 8m pavement width and currently has approximately 2km of seal on approaches to the Scrutton River.

Kowanyama Shire is targeting 3 main areas for improved resilience and connection with other Shires:

- 1 – Kowanyama Airport – Project Complete.
- 2 – Kowanyama Barge Ramp – Project Complete.
- 3 – Dunbar to Kowanyama Road – Focus of this report.

Dunbar to Kowanyama Road is a high priority road for Carpentaria Shire and has had approximately \$30million expended on pavement improvements since 2016. It is key to seal the road in the short to medium term while there is quarry material on the road to ensure it is not lost during flooding.

#### 3.2. Traffic Data

Dunbar to Kowanyama Road has predominately local traffic and delivery traffic (food, fuel, medical supplies etc). Full traffic counts (2017-2019) are provided in Appendix B.

It is expected that community traffic to Cairns will continue growing at 2% p.a. (Cummings, 2019). Sealing of Dunbar to Kowanyama Road will not likely increase tourism volumes only reduce maintenance for rehabilitation of pavement.

#### 3.3. Recent Improvements

- **Scrutton River Causeway** – Large Box Culverts installed through the Scrutton River to improve flood resilience and access along Dunbar to Kowanyama Road. Sealing 1km of approaches each side. Total project cost approx. \$2million.
- **Dunbar Creek Causeway** – Design currently underway for box culverts through the Dunbar Creek crossing. Project cost approx. \$1million to be completed by the end of 2020.
- **Pavement Rehabilitation and Restoration**
  - QRA16 – \$14.4million approved and constructed in 2016/17. See appendix E.4.
  - QRA17 – \$0.2million approved and constructed in 2018.
  - QRA19 – \$14million approved and under construction in 2020. See appendix E.4.

#### 3.4. Identified Future Projects

The Cape York Access Strategy – Kowanyama (2015) prepared by AECOM for the Department of Transport and Main Roads has been used to prioritise projects on Dunbar to Kowanyama Road. The Very High priority projects are summarised below. The full Cape York Access Strategy is provided in Appendix E.1.

- Dunbar Creek Floodway – Elevate formation and install large box culverts. Funding approved and design currently underway for construction by the end of 2020.
- Scrutton River Causeway – Elevate formation and install large box culverts. Construction completed in 2019.



- Plain Creek Causeway – Elevate formation and install large box culverts.
- Topsy Creek Causeway – Elevate formation and install large box culverts.

### 3.5. Benefit Cost Analysis

- A Benefit Cost Analysis for Dunbar to Kowanyama Road was completed by Cummings Economics in August 2019.
- NPV Gross Benefits = \$18million
- NPV Costs = \$7.6million
- Benefit Cost Ratio = **2.37**

### 3.6. Summary

Dunbar to Kowanyama Road is a high priority road within Carpentaria Shire and has had significant expenditure on betterment and maintenance in recent years. There are several key opportunities to continue funding works on Dunbar to Kowanyama Road including ATSI TIDS to provide a benefit to Kowanyama Aboriginal Shire.

The positive BCR of **2.37** reinforces that works on Dunbar to Kowanyama Road are high priority and should continue.

## 4. Koolatah to Dixie Road

### 4.1. Background

Koolatah to Dixie Road is approximately 89km long and provides connection between Carpentaria and Cook Shire. This road runs from Dunbar Station to a causeway crossing of the Mitchell River, then to Koolatah Station, north over the Alice River, through Olkola National Park, past the old Dixie Station, to join the Peninsula Developmental Road at Artenus Station south of the Musgrave Roadhouse. The road has a 6m pavement width and currently has no seal. The road runs through savannah forest country that in parts, becomes quite dense in the Olkola National Park area. Towards the PDR in the hilly country is savannah forest but at some altitude and with larger Eucalypts. Generally, creek crossings are wet and in the hilly section subject to washouts. The road is obviously not heavily used, especially in the central section.

Total length of the road from Dunbar to the Peninsula Developmental Road is 204km, 110km up to the Cook Shire boundary and 94km to the Peninsula Developmental Road.

Council recently applied to convert the road to a Local Road of Regional Significance (LRRS) to allow additional funding sources to become available.

Koolatah to Dixie Road is a medium priority road for Carpentaria Shire as it provides a critical connection to Cape York however due to the distance from Normanton and limited capital funding it is not prioritised over other roads listed above. There would be a benefit to Council to widen the pavement width to 8m and improve to a good gravel standard.

### 4.2. Traffic Data

Koolatah to Dixie Road has no traffic data available however it is estimated that the AADT is around 5. It is estimated that improving the road to a good gravel standard will quadruple current tourist traffic volumes from 4vpd to 16vpd (Cummings, 2019).

#### 4.3. Recent Projects Completed

- **Pavement Rehabilitation and Restoration**
  - QRA16 – \$3.2million approved and constructed in 2017.
  - QRA18 – \$1.6million approved and constructed in 2019. See appendix G.2.
  - QRA19 – \$1million approved and under construction in 2020. See appendix G.2.
  - QRA20 – \$4million approved for construction in 2021/22.

#### 4.4. Identified Future Projects

- See Appendix G.1 for all identified future projects.
- The priority of projects are as follows:
  - 1 – Increase pavement width to 8m – \$1million.
  - 2 – Alice River Floodway (CH30.25) – \$0.4million.
  - 3 – All other Floodways.

#### 4.5. Benefit Cost Analysis

- A Benefit Cost Analysis for Koolatah to Dixie Road was completed by Cummings Economics in August 2019.
- NPV Gross Benefits = \$17.4million
- NPV Costs = \$92.5million
- Benefit Cost Ratio = **0.16**

#### 4.6. Summary

Koolatah to Dixie Road is an important link between Carpentaria Shire and Cape York.

Due to the remoteness of the road and significant cost to improve the standard of the road this should be targeted for upgrade in the medium to long term once higher priority roads (Normanton to Burketown, Burke Developmental Road 89B and Dunbar to Kowanyama) have been improved.

The low BCR of **0.16** reinforces this strategy.

### 5. Iffley Road

#### 5.1. Background

Iffley Road is approximately 131km long and is predominately used to service cattle stations through the area. Iffley Road is part of a connection road to Julia Creek however the distance saved compared to the state route sealed alternative is minimal and not commonly used. Under various names, it connects south/south-east to Julia Creek in McKinlay Shire, 324km. The pavement width is 8m and currently has no seal along the road. Approximately half of Iffley Road is black soil and becomes difficult to pass after any rainfall.

The Iffley Road branches off the Cloncurry Road (BDR 89A), 58km south of Normanton and passes through flat country, mostly open Flinders/ Mitchell grass plains, to the border with McKinlay Shire at 131km. Apart from a short section at the beginning, the road is generally unsealed and passes through red gravel up to 41km and then 90km of mainly black soil country that becomes boggy and difficult to pass through after only minor amounts of rain. In McKinlay Shire, there are some sections sealed through to the junction with the sealed Wills Developmental Road close to Julia Creek.

Iffley Road is a medium priority road for Carpentaria Shire Council and with current regional development is not a primary target for funding opportunities.

## 5.2. Traffic Data

Traffic on Iffley Road is primarily station traffic. Full traffic counts (2017-2019) are provided in Appendix B.

It is expected that there will be little growth in traffic volumes in the future if agriculture continues as it is currently. There is potential that if the proposed "Three Rivers" cotton growing scheme proceeds there will be massive growth to traffic volumes for the first 37km of the road (Cummings, 2019).

## 5.3. Recent Projects Completed

- **Pavement Rehabilitation and Restoration**
  - QRA16 – \$1.7million approved and constructed in 2017.
  - QRA17 – \$2.1million approved and constructed in 2018. See appendix H.2.
  - QRA18 – \$0.4million approved and constructed in 2019. See appendix H.2.
  - QRA19 – \$8million approved and under construction in 2020. See appendix H.2.
  - QRA20 – \$4.8million approved for construction in 2021/22. See appendix H.2.

## 5.4. Identified Future Projects

- See Appendix H.1 for all identified future projects.
- The priority of projects is as follows:
  - 1 – Import gravel on black soil areas - \$9.7million.
  - 2 – Floodways.

## 5.5. Benefit Cost Analysis

- A Benefit Cost Analysis for Iffley Road was completed by Cummings Economics in August 2019.
- NPV Gross Benefits = \$11million
- NPV Costs = \$22.8million
- Benefit Cost Ratio = **0.16**

## 5.6. Summary

Iffley Road is a medium priority road within Carpentaria Shire.

As Iffley Road does not provide direct connection between business hubs improvements should be targeted in the medium to long term once higher priority roads (Normanton to Burketown, Burke Developmental Road 89B and Dunbar to Kowanyama) have been improved. If the "Three Rivers" agricultural scheme proceeds, Iffley Road should be brought up the priority list as there will be a significant increase in agricultural operations and traffic movements on this road.

## 6. Mitchell River Crossing

- The Mitchell River crossing was constructed in 2014 to provide a more robust crossing linking the far North with the rest of Carpentaria Shire.
- The crossing is slightly raised above bed level and has been designed as a dry season crossing only.
- Significant maintenance and rectification was completed in 2017 with track mats replaced and build-up of sand underneath crossing removed.
- Due to remoteness and span of the Mitchell River it has been deemed uneconomical to construct a bridge crossing for all weather access.
- There needs to be further investigation into how to strengthen the current crossing to reduce flood related damage and ensure it is open to traffic once flood waters recede.
- Additional rectification works are approved for construction in 2020. Scope of work approved is provided in Appendix F.2.

## 7. Other Shire Roads

### 7.1. Donors Hill to Augustus Downs Road

- Donors Hill to Augustus Downs Road is approximately 78km long and is a Principal Road within Carpentaria Shire.
- Donors to Augustus provides access between local stations and the Burke Developmental Road 89A.
- As it does not provide connection between major centres there is a possibility to reduce it down the hierarchy to a secondary road and allocate the additional funding to adjacent Nardoo to Leichardt Road, which provides direct access between Cloncurry and Burketown.

### 7.2. Glenore Access Connection

- Provide an East-west connection through the South of the Shire to reduce travel times and improve connection between stations.
- There are currently limited opportunities for access through the centre of Carpentaria Shire.
- Stations located in the South are required to travel North to Normanton or South to the Four Ways to travel across which can be up to an hour in each direction.
- There is only a small section required to be constructed to link Croydon with the Burke Developmental Road 89A.
- Refer Appendix I.1 for layout of proposed road.

### 7.3. Changes to Councils Asset Register (Delta Downs Triangle)

- The "Delta Triangle" consists of the following roads – Delta Downs Road, Lotusvale to Stirling Road, Stirling to Miranda Downs Road and Glencoe to Miranda Downs Road.
- The four (4) roads form a loop which requires significant maintenance following each wet season.
- There is an opportunity to allocate funding from Lotusvale to Stirling and Glencoe to Miranda to the other two roads for significant improvements including raised pavement height, floodways and improved pavement strength. This will reduce ongoing maintenance costs and still provide a similar level of accessibility to stations within the area.
- See Appendix I.2 for proposed changes.

#### 7.4. Gulf Developmental Road 92A

The Gulf Developmental Road from the Kennedy Developmental Road turnoff is sealed all the way to Normanton (450km). It was initially sealed under the Beef Roads programme in the 1960s from the turnoff west to the Gilbert River as a single lane road.

Sealing was subsequently extended to two-lane width from the Gilbert through to Normanton by about 2000. Most sections of the old Beef Roads have subsequently been widened to two-lane width. However, approximately 55km remain of the old width. Field inspection indicated the following pattern of narrow sections.

**Table: Pattern of Narrow Sections of Gulf Developmental Road**

	No. Sections	Length	Total
Mt Surprise Georgetown	10 sections	0.9km – 15.8 km	32.9 km
Georgetown to Gilbert	7 sections	0.9 km – 9.4 km	22.0 km
<b>Total</b>	<b>17 sections</b>		<b>54.9 km</b>

These narrow sections pose a substantial hazard, particularly due to the use of the road by road trains up to “triple” configuration and tourists towing caravans. Only 54.5km of the road is in Carpentaria Shire. It is satisfactory two-lane sealed. The narrow sections are mainly in mildly undulating to flat country in Etheridge Shire. There are no narrow sections in the Newcastle Range area. Surrounding country is open savannah forest. The major priority on this road for the Shire is to support the widening of the 55km of narrow sections in Etheridge Shire. The narrow width of the Gilbert River bridge and susceptibility to flood closure was raised by transport operators as a concern. However, it is suggested that the widening of the narrow sections should be first priority and this analysis covers the widening of the narrow sections only.

#### 7.5. Burke Developmental Road 89A

The Burke Developmental Road (89A) referred to in this study as the Cloncurry Road has a length of 381km and was sealed during the 1960s to a single-lane width. Some 198km are in Carpentaria Shire. The road mainly runs through flat country with some mildly undulating sections. Surrounding vegetation is a mixture of open Flinders grass plains and savannah woodland.

Like the Gulf Developmental Road, it has been widened over large sections. However, of the 198km in Carpentaria Shire, it is estimated that approximately 50km of narrow sections remain. Priority on this road is to widen these sections.

#### 7.6. Karumba Developmental Road

This road runs from the Burke Developmental Road 89B to Karumba and is approximately 40km long. The road is a good sealed double-lane carriage way. Most of the way, the road runs through flat open Flinders grass plains skirted by salt flats in parts, carrying substantial numbers of cattle.

There are no major needs for upgrading. Priority would be to carry out some minor maintenance/ upgrading improvements only and, apart from recording some estimated capital costs, this road is not further analysed.

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## **Carpentaria Shire Road Network**

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## **Traffic Count Data**

# **APPENDIX C**

## **Normanton to Burketown Rd (Savannah Way)**



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## **Overall Improvements (Witihn Carpentaria Shire)**

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## **Overall Improvements (Burke and Doomadgee Shire)**

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## **Approved Restoration Work**



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## **Proposed Changes to the "Delta Triangle"**

# **APPENDIX J**

## **Cummings Economics Benefit Cost Report**

# MIPP2

## Expansion of Tourism Within the Shire

### Normanton Raw Water Irrigation



PREPARED BY



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**Appendix A – Cummings Economics Strategic Development Plan**

**Appendix B – Stage 1 Raw Water Irrigation Design**

## 1. Raw Water Reticulation Network

### 1.1. Background

Normanton is located in a relatively low average rainfall area and on a low “red ridge” above surrounding plains that can be subject to heavy seasonal flooding. This means that it has a relatively high need for water supply.

In addition, most rainfall comes during the annual wet season and the town experiences a long annual very low rainfall (drought) period during the winter months and early summer.

The water supply for Normanton is pumped from the Glenore Weir on the Norman River. The supply to Normanton also extends to the township of Karumba. The pondage of the Glenore Weir has recently been increased to provide more capacity during the later months of the dry season. The water is treated in Normanton to required drinking standards.

Historically, the water supply has been inadequate and the town has strong permanent water restrictions. The additional storage available means there is an opportunity to increase supply but the existing pipe network from the Weir is old and restricted which needs to be replaced at a substantial cost. Other options to reduce the water restrictions have been investigated including a raw water irrigation network to reduce the demand of water required from the WTP. From initial investigation it is estimated that only one-third of the water treated at the WTP is for human consumption.

### 1.2. Project Details

Instead of replacing the existing system, it is proposed to install a second system of “raw” untreated water for non-human consumption purposes, initially to larger water users.

The project involves installation of a ring main from the Normanton WTP throughout the central district of Normanton with property connection branches to key identified businesses. Locations eligible for connection the network have been selected based on historic water consumption and getting the most benefit to tourists and locals. The identified places include Normanton State School, Gulf Christian College, The Albion Hotel, The Central Hotel, The Purple Pub, the Council chambers, the police station/courthouse and parks.

The project will allow these key businesses access to additional water for irrigation at a reduced cost for beautification of the town. Design of the first stage has been completed and is provided in Appendix B. Funding has also been secured for stage 1 with construction expected to be complete by the end of 2020.

After completion of Stage 1 the project will be reviewed and further investigation into additional businesses which would benefit from this project and look for additional funding opportunities to design and construct.

### 1.3. Water Usage in Normanton

It is estimated that of the current usage, one-third is used for human consumption and about two-thirds is used for gardening and other non-human consumption purposes. This is evident when assessing usage on a month to month basis throughout the year. Water usage is at its highest during September-December immediately before the wet season and outside of the peak tourism period (June-August).

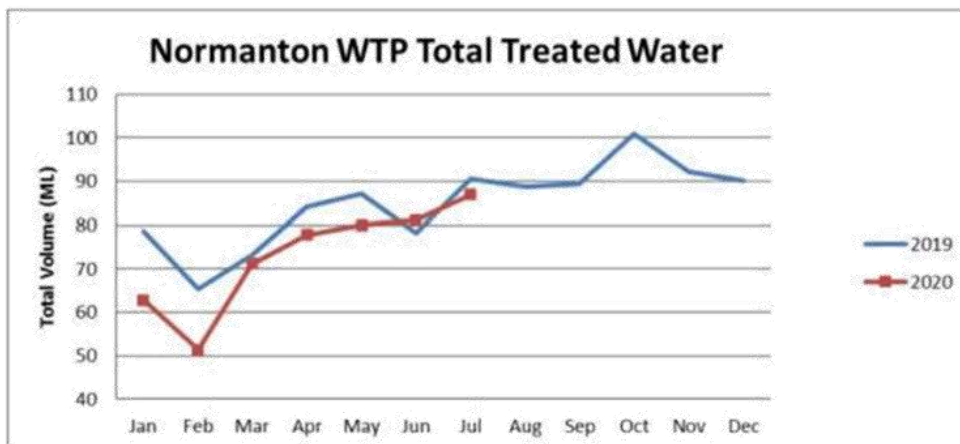


Figure 1: Water Treated at Normanton WTP

The existing system would therefore have adequate capacity to deliver all drinking water needs for Normanton and all water uses for Karumba even if an expansion of population occurred however irrigation restrictions would need to be tightened even further.

#### 1.4. Operating and Maintenance Costs

The raw water for irrigation will not require treatment resulting in operational savings by having raw water diverted to separate storage tanks before reaching the WTP. When considering the cost to increase the capacity of the WTP for future use it is very evident that it is much more cost effective to provide a raw water network. The cost benefit completed by Cummings Economics is provided in Appendix A and summarised below.

##### Expanding the Potable Water System

- Capital Cost \$2million
- NPV Additional Operating Cost \$1.75million
- NPV Total Cost **\$3.75million**

##### Raw Water Reticulation Network

- Capital Cost \$0.95million
- NPV Savings in Operation and Maintenance (-\$1.2million)
- NPV Total Cost **(-\$0.25million)**

## 2. Future Planning

### 2.1. School Dam and Town Dam

As part of the beautification of Normanton the School Dam and Town Dam are both key areas of importance which must also be considered. There is an opportunity to tee off the raw water main where it passes the School dam and pump raw water into the school dam to keep levels consistent throughout the dry season. Improvements to the School Dam are investigated further in the Normanton Town Areas of Interest Report.



The town dam currently provides raw water irrigation to the football fields and park area on the Western side of town. This network should be investigated further for extension after the eastern area of town is complete.

## 2.2. Extension of Reticulation Network

The first stage of the network is only the start of the proposed beautification of Normanton. Extension of the raw water main to additional key businesses within Normanton is required in future stages when additional funding becomes available. The tanks and pumps designed for Stage 1 will have capacity to supply to additional businesses if alternating watering allocation is implemented. Under current water restrictions watering is only permitted 3 days per week so a similar system would be implemented to ensure raw water demand is met.

Further detail on Normanton Beautification is provided in the Normanton Town Areas of Interest strategic plan.

## 2.3. Supply Network – Glenore Weir to Water Treatment Plant

The current network supplying water from the Glenore Weir to the WTP is a bottleneck which needs to be improved as future demand increases. There are currently two AC water mains from the Glenore Weir to Normanton (approx. 23km long). One of the pipes has been capped on the outskirts of Normanton and needs to be reinstalled approximately 2km to the WTP. Finishing off this line will approximately double the current supply to the WTP. The extents of the line have been surveyed ready for future funding opportunities.



Figure 2: Glenore Weir

# **APPENDIX A**

## **Cummings Economics Strategic Development Plan**

# **APPENDIX B**

## **Stage 1 Raw Water Irrigation Design**

# MIPP2

## Expansion of Tourism Within the Shire

### Normanton Areas of Interest



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## Appendices

- Appendix A** – School Dam Concept Plan
- Appendix B** – Landsborough Street Entry Concept
- Appendix C** – Landsborough Street Overall Plan Option 1
- Appendix D** – Landsborough Street Overall Plan Option 2
- Appendix E** – Normanton Town Hall Landscape Plan
- Appendix F** – L.E.W Henry Park Landscape Plan
- Appendix G** – Historic Walk Plan
- Appendix H** – Landsborough/Brodie Street Intersection
- Appendix I** – Landsborough/Philp Street Intersection
- Appendix J** – Cenotaph Improvements

## 1. Background

Normanton is located on the “Savannah Way” and “Savannah Way Alternate Route” between Cairns and Broome. Normanton is heavily reliant on the tourism industry with many businesses in the Shire operating at their busiest during winter and spring (dry season). With significant investment going towards the Savannah Way between Cairns and the Northern Territory Border in the short to medium term, it is expected that the number of visitors either passing through or staying in Normanton will increase as travel becomes more accessible. To entice more visitors to visit and extend their length of stay, it has been identified that improvements to the town area are required including beautification, more enticing attractions to bring visitors and keep them within the Shire.



## 2. Project Details

The purpose of this project is to identify the key elements of Normanton which contribute towards tourism generation and determine how they can be further improved to create a cohesive and marketable tourism precinct. To ensure the project meets its objectives it needs to:

- Creation of a visually appealing streetscape that reflects the heritage, culture and environment of the region.
- Creation of a tangible connection between the existing tourism and heritage infrastructure within Normanton.
- Increase visitors' length of stay by providing a landscape that invites them to explore and discover more about the region.

### 3. Landsborough Street

#### 3.1. Landscape Designs

Landsborough Street is the main street of Normanton where majority of businesses and attractions are located. Upon arriving in Normanton, Landsborough Street is the first street which travelled when arriving from all directions. It is important that the landscape is impressive and provides a welcoming first impression upon arriving to the town.

An overarching landscape plan of Landsborough Street has been completed and is provided in Appendices B, C and D.

#### 3.2. Landsborough/Brodie Street Intersection

The intersection of Landsborough Street and Brodie Street is the start of the “town centre” when approaching from the West. It is proposed to convert the current unsignalised intersection to a roundabout, which would provide a feature point at the start of the “town centre”. Within the centre of the intersection is the old town well which will be built around as the focal point of the proposed roundabout.

Additionally, the proposed roundabout will slow vehicle speeds entering town by forcing them to deviate and give way. See Appendices C and D for the landscape design of the intersection and Appendix H for the engineering design of the intersection.

#### 3.3. Landsborough/Philp Street Pedestrian Crossing

The Landsborough/Philp Street Intersection is one of the first intersections which vehicles pass when entering Normanton from Croydon and Cloncurry. Immediately adjacent the intersection are several areas which children and pedestrians travel regularly. These include the basketball courts, gym, swimming pool, water park, football fields, video store and grocery store. It is proposed to formalise a pedestrian crossing area with pedestrian refuge for improved safety. The upgrade will not include a zebra crossing to ensure the flow of the main road including heavy vehicle movements are not interrupted. Due to the low traffic volumes and available sight distance for pedestrians a zebra crossing was not deemed necessary.

See Appendix I for the proposed design of the intersection.

### 4. The School Dam

The School Dam has been a focus of Council in recent years with the dam extents increased and a track around the dam created. The vision for the School dam is to become the primary visiting point of town which has picnic areas, bird watching, parking, and walking tracks. It is an easy walk from Town and has ample space for caravan parking to tie in with the Normanton Town Historic Walk. An overarching development and landscaping plan of the School Dam has been completed and is provided in Appendix A.



### 5. Normanton Town Historic Walk

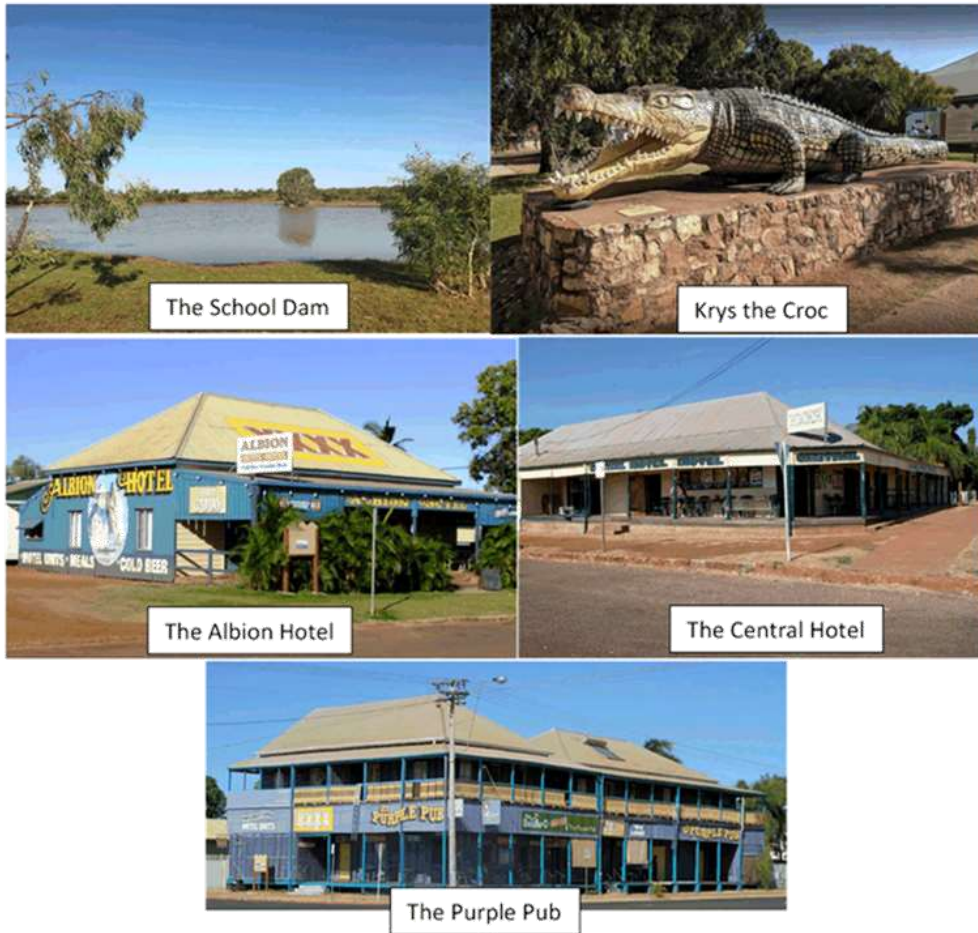
The Normanton Town Historic Walk aims to link the key historical and tourism sites within Normanton in a well-defined walking trail. The walk will link the School Dam, the three pubs, the Norman River including historic culvert sites, the Burns Philp building, the old Gaol and Krys the Croc (see photos below). The aim of the walking trail is to provide a parking area for visitors including ample space for caravans at the start of the track and lead visitors past all historic and monumental sites. The walk will also pass many key businesses including pubs, cafes, and shops to entice people to spend money within the town.

Historical informative signage also needs to be included as part of this project to educate and interest visitors of the historic sites. There is currently historic signage for some areas throughout town, however the historical significance of some sites could easily go unnoticed by many visitors without informative signage. Example signage for Krys the Croc is shown to the right.

The plan for the proposed town walk is shown in Appendix G.







# **APPENDIX A**

## **School Dam Concept Plan**

# **APPENDIX B**

## **Landsborough Street Entry Concept**

# **APPENDIX C**

## **Landsborough Street Overall Plan Option 1**

# **APPENDIX D**

## **Landsborough Street Overall Plan Option 2**

# **APPENDIX E**

## **Normanton Town Hall Landscape Plan**

# **APPENDIX F**

## **L.E.W Henry Park Landscape Plan**

# **APPENDIX G**

## **Historic Walk Plan**



# **APPENDIX H**

## **Landsborough/Brodie Street Intersection**

# **APPENDIX I**

## **Landsborough/Philp Street Intersection**

# **APPENDIX J**

## **Centopath Improvements**

# MIPP2

## Expansion of Tourism Within the Shire

### Karumba Town Plan



PREPARED BY



## BACKGROUND

Karumba is in the Gulf Country region of Queensland, 71 kilometers by road from Normanton and 2,159 kilometers from the state capital, Brisbane.

Karumba is within the Shire of Carpentaria, the administrative headquarters of which is in Normanton. The town is sited at the mouth of the Norman River, and enjoys the distinction of being the only town along the southern Gulf of Carpentaria that is within sight of the Gulf itself (the Gulf's extensive tidal flats prohibits settlement elsewhere along its shore).



Karumba is a fishing destination and industrial port on the banks of the Norman River where, each winter, anglers from all over Australia arrive to try their luck in the fish-rich waters of the Gulf. Once it was nothing more than a small, sleepy outback town but in recent years it has evolved into two interconnected, but quite separate, towns.

There's the "commercial-industrial centre" with its wharves, barramundi farm, prawn processing plant and MMG Century Mine loading facility and then there is the "tourist centre" with a four-star motel, caravan parks, cafes, the Sunset Tavern with its views across the mouth of the Norman River, and there's the justly famous Mud Crab and Crocodile tour.

## HISTORY

By the 1870s a telegraph station had been built on the site of the present town. At the time the tiny settlement was known as Norman Mouth.

In 1937 Karumba became a refueling point for Qantas and BOAC flying boats travelling from Australia to London and in the late 1930s the town was a refueling and maintenance stop for the flying boats of the Qantas Empire Airways.

No. 43 Squadron of the RAAF also operated Consolidated PBY Catalina flying boats from the town between June 1943 and April 1944.

During World War II the town was an RAAF base for Catalinas flying into New Guinea, Timor and Indonesia, and by the 1950s it was the main access point for people wanting to fish in the Gulf of Carpentaria.

In 1954 Lloyd Clarke pioneered fishing in the area and was soon exporting over 58,967kg of barramundi and king salmon from the Gulf. Clarke was the first person to fish commercially in the Gulf of Carpentaria and in 1958 Lloyd Clarke recommended that the Queensland Government conduct a prawn survey in the Gulf. The survey was carried out between 1963-1965.

By the 1960s and 1970s the town became the centre for the Gulf fishing industry with the first catch of commercial prawns occurring in 1964. Today it is still home to extensive prawn, mud crab and the barramundi fishing fleets.

The settlement was previously known as Norman Mouth and Kimberley. The toponym derives from the Kareldi native name, Kurumba, who were the indigenous landholders of this area before the onset of white colonization and expropriation. This name was officially used for the township by the 1880s

Given its access to the Gulf of Carpentaria, the town's economy has revolved largely around fishing. The prawn industry expanded in the 1960s.

### MINING

The Karumba port services the Century Zinc Mine as well as the fishing industry. The MMG Century Mine loading facility may be nothing more than a large building with barges moored beside it in the Norman River but it is a remarkable story of how tenacious a mining company can be when it finds rich deposits in prohibitively difficult terrain.

Most Australians know, through the story of Burke and Wills, that the shoreline of the Gulf of Carpentaria is densely covered with mangrove swamps; that it is very shallow; and that it is infested with singularly unfriendly saltwater crocodiles. So when Century discovered huge deposits of zinc near Lawn Hill National Park they were confronted with a problem: how to get the material to the coast and onto ships.

The solution, because the production is around 480,000 tonnes a year, was to build a 304 km underground slurry pipeline to carry the zinc mined in the huge open cut operation from Lawn Hill to Normanton. MMG then, in the late 1990s, built Century's Karumba Port with a dewatering and drying circuit, a concentrate shed and buildings, and, most importantly the MV Wunma, a barge custom-built for the shallow waters of the Norman River channel which it used to transfer parcels of concentrate to export ships anchored in the Gulf of Carpentaria.

### MORNING GLORY CLOUD

The Morning Glory cloud is a rare meteorological phenomenon consisting of a low-level atmospheric solitary wave and associated cloud, occasionally observed in different locations around the world. The wave often occurs as an amplitude-ordered series of waves forming bands of roll clouds.


The southern part of the Gulf of Carpentaria in Northern Australia is the only known location where it can be predicted and observed regularly due to the configuration of land and sea in the area. The rare Morning Glory cloud rolls through Karumba in the early hours of some mornings in September and October.

**CLIMATE**

Karumba has a tropical savanna climate with two distinct seasons. The "Wet" usually lasts from December to March and is extremely hot and humid, with wet bulb temperatures typically above 27 °C during the afternoons. Most roads during the "Wet" are usually closed by heavy rain, which can exceed 250 millimeters in a day due to the passage of tropical cyclones or monsoonal depressions which provide most of the rain. On occasions, however, as with all of Queensland the wet season may fail almost completely and produce less than 350 millimeters in a full season.

The "Dry" usually lasts from April to the middle of November and is much more comfortable due to lower humidity and milder morning temperatures. This period of the year is essentially bone dry and almost completely cloudless: median rainfall is nil between May and September and over twenty days each month are completely clear.

Climate data for Karumba, Queensland (1938-2012)													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °C	39.8	37.6	38.4	38.9	34.5	32.8	32.4	35.4	36.9	40.4	40.7	41.3	41.3
Average high °C	32.1	31.7	32.5	32.6	29.8	27.9	27.5	28.6	29.9	31.3	32.6	32.4	30.7
Average low °C	24.4	24.1	23.2	20.7	17.2	15.2	14.0	15.2	18.2	21.0	23.3	24.4	20.1
Record low °C	19.6	18.3	18.0	13.6	8.0	6.9	6.1	5.3	10.6	12.2	17.8	17.9	5.3
Average rainfall mm	231.0	260.3	156.6	30.3	1.0	8.5	7.1	2.0	1.6	7.3	45.5	142.1	893.3
Average rainy days (≥ 0.2 mm)	12.7	14.7	9.3	2.8	0.4	1.0	0.6	0.4	0.4	0.9	4.2	8.9	56.3

Source: Australian Bureau of Meteorology 

### The Role and Economic Contribution of Tourism and Events

In the year ending December 2016, the Outback was host to 513,000 domestic overnight visitors, 224700-day trip visitors and 22,000 international visitors.

This created a significant contribution of tourism to the Outback regional economy, with 4,580 jobs directly supported by tourism, while contributing \$461 million in overnight visitor spend to several sectors within the Queensland economy.

While the tourism industry is still only a relatively small sector for the destination in comparison to the mining and agricultural sectors, it is seen as part of a sustainable long-term pathway towards a diversified and vibrant economy.

### Current Attractions in Karumba

- **Fishing Charters**  
There are several fishing charter operators to choose from including those specializing in Barramundi Charters.
- **River Cruises**  
Sunset, Birdwatching, Croc Spotting and special occasions, events or functions.
- **Bird Watching and Photography**  
All year round there are opportunities and seasonal changes with migratory, savannah, marine, parrots, birds of prey and more.
- **Karumba Waterpark and Swimming Pool**  
A great place to cool off, get some exercise, take the family or just chill out
- **Karumba Walking Track**  
Joining Karumba Point to Karumba town approx 3.5km long—passing through marine salt/flood plains and over mangrove/marine creeks—
- **Bowls, Golf and the Karumba Recreation Club**  
There are social bowls activities throughout the year and golf tournaments on Thursday and Sunday mornings through the year
- **Croc and Crab morning nature cruise**  
An exciting nature cruise on the Norman River and Six Mile Creek, enjoy the history of the Karumba Port followed by:
- **The Sand Island Sunset Cruise**  
Commences with a Karumba Port tour before venturing out to Karumba's favorite sunset viewing destination, The Sand Island. The gulf region is renowned for its spectacular sunsets.



### The Les Wilson Barramundi Discovery Centre



A redevelopment and expansion of a visitor centre on a barramundi farm and hatchery has been completed in Karumba.

Designed by Brisbane-based practice Bud Brannigan Architects, the new Les Wilson Barramundi Discovery Centre offers an interpretive experience that will "tell the story of the southern gulf barramundi to visitors."

Karumba is a popular destination for recreational fishing and the only hatchery in the world that breeds the southern gulf barramundi.

The centre offers visitors the chance to fish for barramundi and has a souvenir shop, cafe and a conference centre.

Lead architect Bud Brannigan states that the design for the center's simple plan and structure derived from a consideration of the barramundi itself, as well as an appreciation for the harsh local conditions.

"Karumba is remote, a corrosive environment, and often subject to extreme weather events, requiring a robust materials and assembly strategy for the building," he writes in a design statement. "The structure comprises a series of prefabricated skeletal steel portals set out on a regular radial grid, connected on site, onto which standard framing and metal external cladding is applied, simplifying construction."

The 130-metre-long building is suspended one metre from the ground and takes the form of a linear arc, which wraps around a 2,500 square metre growing pond that contains several thousand young barramundi from the hatchery.

The building increases in height from the southern to northern end, where a pitched-roof tower covers an external arrival and gathering verandah.

A metal screen provides external circulation and access to internal spaces and to outdoor pathways.

The centre is made from 87 tonnes of structural steel, 11, 000 bolts and 50 tonnes of hardwood joists to form the floor frame.

Predominately funded by the Queensland state government's Building Our Regions program, with additional funding from other state government departments and council, the project is intended to draw students and tourists to the area, while also providing jobs and a community meeting place for the local population.

The Carpentaria Shire council estimates the centre currently generates around

\$2.6 million in gross regional product each year and expects this to increase with the expansion of the Barramundi Discovery Centre. The project is also expected to generate new opportunities for council to partner with the tourism, retail, fishing and education sectors, including James Cook University.

There are plans for the upgrade of the existing infrastructure to deliver entertainment and experience areas on the lagoon. (Refer appendix B)

# APPENDIX A

## Karumba Point Master Plan

# APPENDIX B

## Palmer Street Roundabout

# APPENDIX C

## Les Wilson Barramundi Centre Entertainment Area