

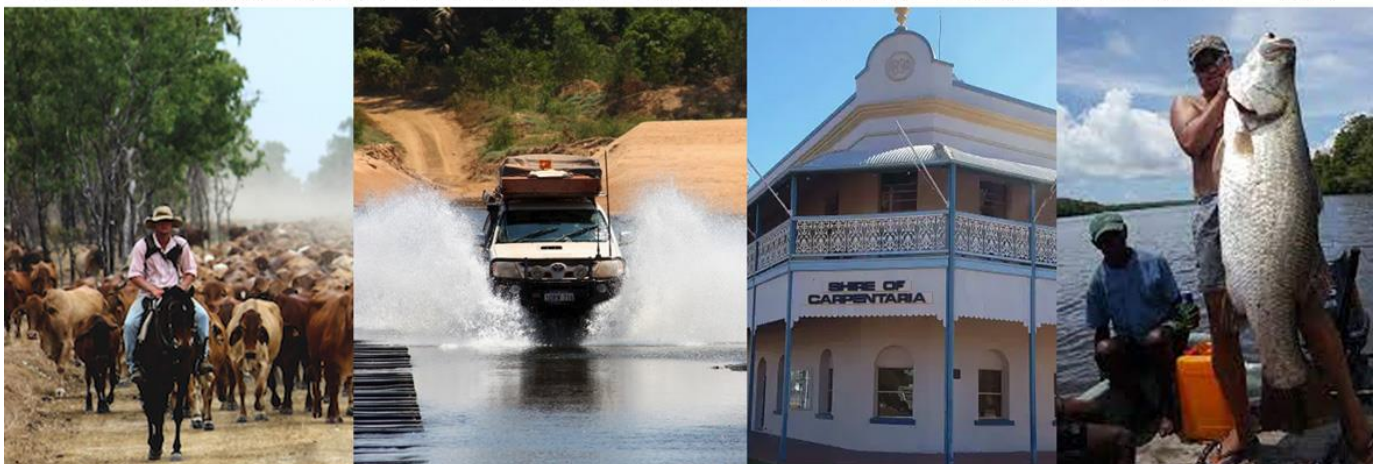
Upgrading the Dixie Way

ECONOMIC IMPACT ANALYSIS.

REF: CE J3363 Dec 2021



CATTLE STATIONS - INDIGENOUS CONNECTIVITY - BIG RIVERS - BARRAMUNDI FISHING
BIRD LIFE - FIRST EUROPEAN CONTACT - EARLY EXPLORERS - COUNTRY LIFESTYLE - 4WD



CARPENTARIA SHIRE COUNCIL



CARPENTARIA SHIRE
Outback by the Sea®

UPGRADING THE DIXIE WAY



ECONOMIC IMPACT ANALYSIS

**CE Ref J3363
December 2021**

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CONTENTS

	Pg
SUMMARY OF MAIN FINDINGS	6
1. INTRODUCTION.....	12
1.1 GENERAL.....	12
1.2 METHODOLOGY	12
1.2.1 Information Gathering	12
1.2.2 Analytical Methodology	14
1.3 TIMING	14
2. BACKGROUND.....	15
2.1 GEOGRAPHICAL FEATURES OF THE AREA TRAVERSED.....	15
2.2 HISTORICAL DEVELOPMENT	21
2.3 CURRENT POPULATION	23
2.4 CURRENT ECONOMIC ACTIVITIES	25
2.4.1 General.....	25
2.4.2 The Pastoral Industry	25
2.4.3 Tourism.....	27
2.4.4 Kowanyama.....	28
2.4.5 Normanton/ Karumba Government, Commercial & Recreation Services	29
2.4.6 Fishing Industry	29
3. THE CURRENT ROAD	30
3.1 TOPOGRAPHY & CONDITION.....	30
3.2 ROAD OWNERSHIP & RESPONSIBILITY	34
3.3 SEASONAL CLOSURES	35
3.4 CURRENT TRAFFIC LEVELS	36
3.4.1 Traffic on Peninsula Developmental Road	36
3.4.2 Koolatah/ Dixie Section	37
3.4.3 Gilbert to Dunbar Section.....	38
4. THE PROPOSED ROAD UPGRADING	40
4.1 UPGRADING PROPOSED.....	40
4.2 UPGRADING COSTS	40
4.3 MAINTENANCE COSTS.....	41
5. IMPACTS OF UPGRADING THE ROAD	42
5.1 MAJOR FUNCTIONS OF THE DIXIE WAY.....	42
5.1.1 General.....	42
5.1.2 Highway One	42
5.1.3 Savannah Way – Alternative Route.....	44
5.2 PORT DISTANCES.....	44
5.3 TOURISM	46

5.4	THE PASTORAL INDUSTRY	48
5.4.1	General	48
5.4.2	Benefits to Cattle Stations Along the Route	48
5.4.3	Peninsula Cattle Diversion	48
5.4.4	Live Cattle Exports	49
5.5	AGRICULTURAL DEVELOPMENT	49
5.5.1	Gilbert River	49
5.5.2	Flinders River	50
5.5.3	Mitchell River & Delta	50
5.6	FISHING INDUSTRY	52
5.7	MINING	52
6.	ECONOMIC EFFICIENCY ANALYSIS.....	53
6.1	GENERAL	53
6.2	KOOLATAH/ DIXIE SECTION.....	53
6.2.1	General	53
6.2.2	Changes in Traffic & Long-Term Growth	53
6.3	DUNBAR ROAD	54
6.3.1	General	54
6.3.2	Light Vehicles.....	54
6.3.3	Heavy Vehicles	55
6.4	SAFETY SAVINGS	55
6.4	TOTAL VALUE OF SAVINGS	56
7.	ECONOMIC IMPACTS.....	57
7.1	GENERAL	57
7.2	THE PASTORAL INDUSTRY	57
7.3	TOURISM	57
7.4	CATTLE TRANSPORT	58
7.5	KOWANYAMA SPENDING	58
7.6	SUMMARY OF ECONOMIC IMPACTS	58
8.	SUMMARY OF COSTS & BENEFITS.....	59
9.	TOURISM PROMOTION RECOMMENDATIONS	60
9.1	DEVELOPING A TOURISM ROUTE	60
9.2	ROADSIDE INFRASTRUCTURE	60
9.2.1	Directional Signage.....	60
9.3	FUEL AND SERVICES	61
9.4	ATTRACTION INFORMATION	61
9.5	RELATIONSHIP WITH MAJOR VISITOR CENTRES	63
9.6	NAME.....	63
9.7	DEVELOPMENT OF ATTRACTIONS	63
9.8	PROMOTIONAL MATERIAL	65
	APPENDIX 1 – Sources of Information	67
	APPENDIX 2 – Technical Note	68
	APPENDIX 3 – Dixie Way – Table of Distances	69
	APPENDIX 4 – Efficiency Benefit Calculations	70

LIST MAPS

MAP 1 – THE DIXIE WAY – LOCATION	13
MAP 2 – MAJOR STREAM CROSSINGS	19
MAP 3 – THE MITCHELL RIVER DELTA AREA	20
MAP 4 – TRADITIONAL ABORIGINAL TRIBAL AREAS	21
MAP 5 – THE OPERATIONAL HISTORIC CATTLE STATIONS ALONG AND ADJACENT TO THE DIXIE WAY	26
MAP 6 – DIXIE WAY – INTER-REGIONAL CONNECTOR FUNCTION	43
MAP 7 – PORT DISTANCES	45
MAP 8 – DETAILED LOCATION OF THREE RIVERS PROJECT ALONG IFFLEY ROAD	50

LIST TABLES

Table 1: Annual Water Runoff Australia’s Largest River Basins	15
Table 2: Census Count Population, 2016	23
Table 3: Dixie Road Catchment – Est Cattle Numbers, Turnoff & Value of Turnoff, 2015-16.....	25
Table 4: Visitor Statistics Cape York & Carpentaria SA2s – Average 4 Years.....	27
Table 5: Kowanyama - Workforce by Industry, Census 2016.....	28
Table 6: Carpentaria Shire - Workforce by Industry, Census 2016	29
Table 7: Crossings Middle/ Lower Sections of the Mitchell River	35
Table 8: Traffic Count, PDR – Kennedy River	36
Table 9: Traffic Count Dunbar Road North of Karumba Turnoff.....	38
Table 10: Upgrading Costs of Dixie Way Road	40
Table 11: Upgrading Dixie Way - Total Cost.....	40
Table 12: Crash Casualties Dunbar Road, 5 Years to 2020.....	55
Table 13: Total Annual Savings & Present Value (2021 Values).....	56

LIST CHARTS

Chart 1: Domestic Overnight Visitors – Cape York & Carpentaria SA2s.....	27
Chart 2: Trend Caravan	47
Chart 3: Trend - Campervan	47

LIST PHOTOS

Photo 1 - Running Through Savannah Woodland Country	16
Photo 2 - Extensive Flooding Experiences in Some Years	16
Photo 3 - Mitchell River Flood Height Markers – Middle Mitchell go up to 19 metres	16
Photo 4 - Dunbar Crossing of the Mitchell River.....	17
Photo 5 - Gilbert River Bridge	18
Photo 6 - Open Grassland Plains - Kowanyama	18
Photo 7 - Historic Inkerman Station on the Gulf Coast	22
Photo 8 - Entrance Sign Olkola National Park Waterhole	32
Photo 9 - Alice River Gold Mine	33
Photo 10 - Musgrave Roadhouse.....	33
Photo 11 - Mitchell River in Vicinity of Lower Crossing Kowanyama/ Pormpuraaw, August 2021	35
Photo 12 - Harvested Sorghum, Strathmore Station	49
Photo 13 - Barge Ramp Topsy Creek, Kowanyama	52
Photo 14 - Gamboola Crossing.....	62
Photo 15 - Historic Cattle Station – Delta Downs	64

PICTURE

The “Duyfken” in the Gulf of Carpentaria	16
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SUMMARY OF MAIN FINDINGS

INTRODUCTION

- Carpentaria Shire are proposing that the roads through the Shire and into Cook Shire from Normanton northwards, to link with the Peninsula Developmental Road (PDR), be upgraded to sealed standard and that the route be marketed as the Dixie Way.
- Apart from improving access to pastoral properties along the route, the upgrading:
 - Provides a second major tourism route into the iconic Cape York Peninsula/Tip of Australia region, at present only able to be accessed on sealed roads via the east coast - in the process linking this iconic tourism region with the iconic Waltzing Matilda country in western Queensland and the iconic Savannah Way across to the Northern Territory, the Kimberley Region and Broome.
 - Improves pastoral industry access out of the Peninsula to cattle fattening areas in the Central West and the developing agricultural areas around the Lower Gulf area that will progressively include feedlots to fatten cattle and supply into the Peninsula feed supplements such as cotton seed and sorghum.
 - Provides sealed access into the currently very remote Kowanyama Aboriginal Community on the west coast of Cape York Peninsula and over time, with improvements to the crossings of the Mitchell River, the Aboriginal Community of Pormpuraaw to the immediate north, greatly improving the prospects of development of economic activity in these communities including the currently proposed major agricultural development in the area.
- The following report provides a Cost Benefit and Economic Impact Analysis of the project using standard road project analysis methodology and parameters.
- The report also contains recommendations for the ongoing promotion of the Dixie Way as a tourism route
- Project period adopted is 30 years with no residual value and Present Values established using a 4% per annum 'real' discount rate. Calculations assume that all upgrading works are carried out in Year 1 of the project.

GEOGRAPHICAL BACKGROUND

- The Dixie Way traverses from south to north the wide flat plains fronting the eastern shores of the Gulf of Carpentaria extending east to the Great Dividing Range area.
- The area receives strong annual 'wet season' monsoonal rains from about December to April followed by a reliably fine cooler winter stretching into a dry early summer annual drought period.
- A series of rivers flow into the Gulf from the Great Dividing Range area that pour down large volumes of water during the wet season causing in some years, extensive flooding in the lower reaches.

- The largest, the Mitchell River, has a river basin with a water runoff just behind that of the entire Murray Darling basin. In strong contrast, during the dry season, much of the river system will dry up.
- By and large, natural vegetation in the area is savannah woodland with some open grassland plains in areas along the coast.

HISTORICAL BACKGROUND

- Pre-European Aboriginal settlements over the area consisted of a number of distinct groups with a strong concentration along the coast and around the river deltas, especially that of the Mitchell River.
- Some of the earliest European contact with the Australian continent took place with Dutch explorers sailing down the coast in the early 1600s.
- Pastoral settlement occurred from the 1860s on and with early mining development at Croydon and in the North West, formed the basis for the development of Normanton and subsequently Karumba as ports. The major Mitchell River Mission (Kowanyama) was established in the early 1900s. Mining faded and the pastoral industry stagnated.
- From the 1960s on, the Beef Road's program saw improved roads developed in the area along with introduction of improved tropical breeds and for a time, live cattle exports via Karumba. A fishing industry developed at Karumba based especially on prawn resources. Century Zinc brought further development of Karumba as an export port.
- Improved roads led to increases in visitor numbers to Normanton but especially Karumba.

POPULATION

- 2016 Census recorded a population (including a large proportion of visitors), just short of 5,000 in Carpentaria Shire, Kowanyama and Pormpuraaw. However, the Dixie Way links an approximate 20,000 in Cape York Peninsula with approximately 35,000 in North West and Central West Queensland.

CURRENT ECONOMY

- The pastoral (cattle) industry (the historic base of the area's economy), dominates land use in the area with value of turnover of over \$200m a year in those parts of Cook Shire and Mareeba Shire relevant to the Dixie Way and the northern section of Carpentaria Shire serviced by the Dixie Way.
- Otherwise, most economic activity in the area occurs in the service centres of Normanton and Karumba. The Kowanyama and Pormpuraaw economies are almost entirely underpinned by government expenditure of varying types.
- Over recent years, agricultural development expanded on the Gilbert River, especially on Strathmore Station with cotton growing, sorghum and mung beans adding to traditional small scale mango growing and fodder production.

- Tourism is an important sector with visitor expenditure in Carpentaria shire in 2019 recorded at \$24m and in Cook Shire \$59m per annum.
- While there is a substantial fishery offshore, onshore activity is concentrated on Karumba.

THE CURRENT ROAD

- The Dixie Way is either currently sealed or funding is in sight to seal up to the Gilbert River. The unsealed section up to Dunbar Station is 157km and thence via Koolatah to the PDR turnoff 204km. There are satisfactory crossings of the Gilbert and Staaten Rivers but Wyabba Creek, Clark Creek and Alice River crossings cause delays.
- The major crossing of the Mitchell River at Dunbar Station is via a causeway that is closed during the wet season up to about April/May (but in 2021 to mid-July). The road is flat and mainly straight or slightly curved throughout except for a hilly section as the road approaches the PDR.
- Turnoffs lead into stations along the way.
- The unsealed Burke Developmental Road from Chillagoe comes into the Dixie Way at Dunbar Station and the unsealed Kowanyama Road leads west approximately 100km to Kowanyama.
- Between the Mitchell River crossing and the PDR turnoff is the Olkola National Park, with the Kimba Road turning off to the east to Laura.

CURRENT TRAFFIC

- Latest traffic count data for 2020 indicates Average Annual Daily Traffic (AADT) as follows.
 - Peninsula Developmental Road adjacent to turnoff..... 145
 - Koolatah to Dixie section..... 21
 - Gilbert to Dunbar section..... 61
- Interviewing in the area indicated that in 2021, there had been a strong jump up in traffic, especially visitor traffic, by about 50% on pre-Covid 2019. The year 2020 was indicated to be lower than 2019 due to Covid restrictions.
- AADTs for 2021 are estimated at:
 - Gilbert to Dunbar section..... 80
 - Koolatah to Dixie section 34

PROPOSED UPGRADING

- To seal throughout and upgrade the Mitchell River crossing to reduce wet season closures is estimated to cost a total of \$227m.

• **Upgrading Dixie Way - Total Cost (Table 11)**

	Formation	Sealing	Drainage	TOTAL
Gilbert River to Dunbar (157km)	\$66m	\$13m	\$16m	\$94M
Dunbar to PDR (200km)	\$86m	\$16m	\$20m	\$123M
Mitchell Crossing	-	-	\$10m	\$10M
TOTAL	\$152M	\$29M	\$46M	\$227M

- Present Value of savings in maintenance costs is estimated at \$8.8m making estimated capital cost net of maintenance savings \$218m.

IMPACTS OF UPGRADING

- Sealing the Dixie Way along with the current sealing of the Peninsula Developmental Road means that it will be logical to extend the Nation’s Coastal Highway One designation north of Cairns up the Peninsula and down through the Dixie Way.
- Sealing of the Dixie Way will provide access to/from the deep water west-facing port of Weipa and facilitate access to the port of Karumba from the Peninsula.
- It is estimated that the opening up of a sealed route will result in an additional 20,000 visitors a year visiting the Upper Cape York and Cooktown area and that a further 20,000 of the existing flow into Cape York and the Cooktown district divert through the Dixie Way one way and a further 13,000 divert from the Cairns/ Tablelands one way via the Chillagoe road through the Normanton/ Dunbar section.
- It is estimated that an additional 30,000 head of cattle will flow down the road from the Peninsula area to western Queensland fattening properties and the fattening opportunities provided by agricultural development in the lower Gulf area.
- Upgrading the Dixie Way will help the economics of cotton growing at Strathmore and other lower Gulf locations and the establishment of a cotton gin making available cotton seed supplements and feedlots based on sorghum.
- The Dixie Way upgrade will enhance the prospects of proposed agricultural development in the lower Mitchell delta area proceeding and other employment opportunities for Kowanyama and Pormpuraaw, including possible linkages with the marine industries and port development.
- The project will provide better all-weather sealed access from Kowanyama to Normanton and Karumba facilities and a substantial increase in Kowanyama traffic to and from Normanton can be expected.

PROJECTED TRAFFIC INCREASE

- ‘One off’ increase in daily traffic due to sealing of the road is estimated at:
 - Gilbert to Dunbar section80 to 154
 - Koolatah to Dixie section34 to 92

- The bulk of the increase is expected to take place in tourist traffic with particularly strong growth in vehicles towing.
- With the progressive sealing of the PDR, tourist traffic is estimated to grow by 3% per annum, Kowanyama traffic and general business traffic by 2% per annum, and pastoral industry traffic by 0.5% per annum.

EFFICIENCY SAVINGS

- Application of standard parameters adjusted to 2021 prices and local cost conditions for vehicle operating costs and travel time savings and safety savings, and an estimated \$20 a head saving in losses to cattle stations through stock damage delays, etc., results in the following estimate of efficiency savings.
- **Total Annual Savings & Present Value (2021 Values) (Table 13)**

	Annual Savings	Present Value
Dunbar Section	\$2.78m	\$85.7m
Koolatah/ Dixie Section	\$3.16m	\$82.6m
TOTAL	\$5.94M	\$168.3M
Estimated savings cattle value losses, damage, etc		\$17.3m
Estimated crash cost savings		\$0.4m
TOTAL		\$186.0M

ECONOMIC IMPACTS

- The sealing of the Dixie Way will result in substantial increases in the level of aggregate economic activity in the region.
- Tourist expenditure is estimated to increase by \$28m per annum in Carpentaria Shire and \$11m per annum in Cook Shire with employment rising by an estimated 130 in Carpentaria Shire and 50 in Cook Shire.
- Present Value of Economic Impacts over a 30-year project period at a 4% 'real' discount rate is estimated as follows.
 - Retention of cattle industry competitiveness.....\$1700M
 - Additional Activity
 - Tourism\$970M
 - Cattle Transport rub off\$18M
 - Additional expenditure from Kowanyama.....\$80M

SUMMARY OF COSTS & BENEFITS

- The foregoing indicates that **Costs** of sealing the Dixie Way and improving stream crossings, and taking into account maintenance cost savings, would be of the order of \$218m.
- Present Value of **Efficiency Benefits** is estimated to be of the order of **\$186m**. Present Value of **Additional Economic Expenditure** generated in Carpentaria Shire and Cook Shire is estimated to be of the order of **\$1070m**. Thus, although the efficiency benefits calculate at less than the costs, the aggregate economic impact outweighs the costs by a very large margin. Benefit Cost Ratio of **Efficiency Benefits** calculates at **0.86** and of **Economic Impact Benefits 4.91**.
- In addition, sealing the Dixie Way would strengthen the competitiveness to ensure the continuous viability of the cattle industry in the area and help support the continuing development of agriculture in the Gilbert River and Flinders River in the Mitchell River delta area.
- It is likely that the upgrading, especially if accompanied by sealing the road from Dunbar into Kowanyama, would increase the likelihood of development in the Kowanyama area.

TOURISM PROMOTION RECOMMENDATIONS

- The last section of the report sets out recommendations to invest in promotion of the road as a tourism route including:
 - Installation of direction signage, especially at the southern and northern entries and in the Dunbar Station/ Mitchell River crossing area;
 - Installation of interpretative signage at key points of interest along the road including about the Mitchell River Basin, wildlife, traditional Indigenous aspects, the cattle industry, historic cattle stations and early Dutch explorers;
 - Provision of information through brochures and visitor information centres.
- This section also sets out recommendations to develop road travel support services, especially the availability of fuel and accommodation in the Dunbar/ Mitchell crossing area and the development of attractions.

1. INTRODUCTION

1.1 GENERAL

In 2019, Cummings Economics prepared for Carpentaria Shire, a road network study as part of an overarching strategic development plan for roads in the Shire.

Inter alia, the 2019 report drew attention to the potential of the road links from Normanton north to the Peninsula Developmental Road (PDR) (see **MAP 1**), to play a major role in more directly linking Australia's iconic Outback regions of the Waltzing Matilda country and the Savannah Way with Cape York Peninsula and the northern most tip of the continent.

The following report extends these studies to provide an analysis of economic impacts and benefits of these road linkages referred to in this report as the Dixie Way. The analysis looks at both local and strategic benefits and is extended to recommendations to development of tourism infrastructure and actions to promote the Dixie Way as a tourism route.

1.2 METHODOLOGY

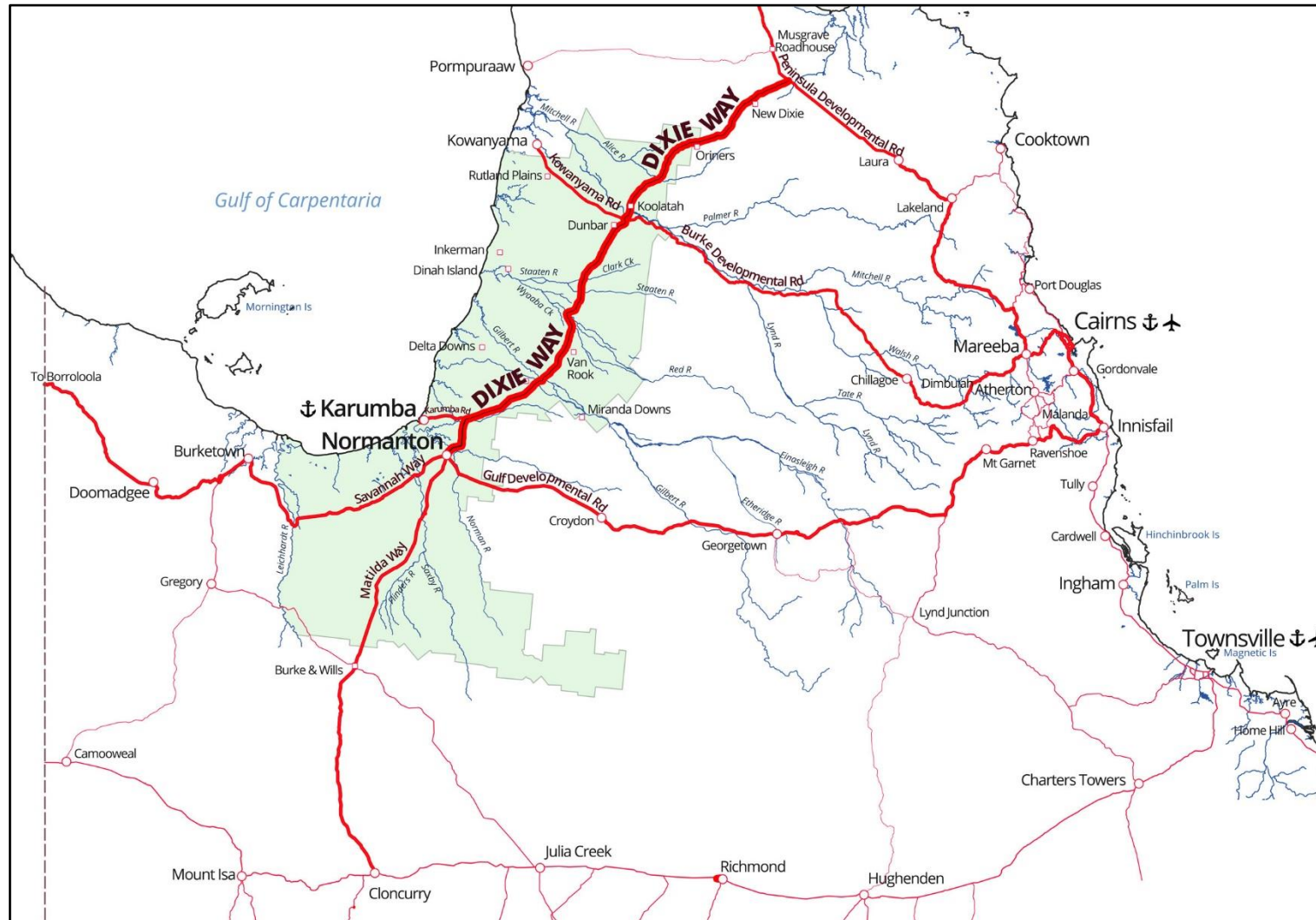
1.2.1 Information Gathering

Information upon which this report has been based, has been gathered from a number of sources, including:

- The 2-19 Road Network Report
- Information supplied by Carpentaria Shire, especially in relation to costs of upgrading the road
- Extensive desk research
- Meetings and interviews with Carpentaria Shire Council and Kowanyama Aboriginal Council representatives
- National Park's representatives
- Pastoral station owners, transport operators and tourism interests (see list Appendix 1)
- Field inspection of the Dixie Way road route and major roads connecting into the Dixie Way.

Appendix 1 gives further information on sources of information and interviews.

MAP 1 – THE DIXIE WAY – LOCATION



1.2.2 Analytical Methodology

Analysis of economic benefits against costs of a project of this nature tends to fall into two different analytical approaches:

- Economic Efficiency
- Economic Impacts.

The first typically identifies direct benefits to road users and the road providers in terms of benefits in travel time savings, vehicle operating costs, and safety and maintenance costs.

The second, Economic Impacts, looks at the impacts on the aggregate level of economic activity in the region including the impacts of construction activity, town expenditure in the region, expansion of primary industry population and the like.

In many road projects, only Economic Efficiency type analysis will be carried out. In this project, it is vital to look at Economic Impacts.

Appendix 2 Technical Note gives details of assumptions and parameters used in Economic Efficiencies Cost Benefit Analysis.

It should be noted that the analysis compares the cost in current dollars against benefits if the road was taken to sealed standard now without consideration of lead in times. It should be noted that even estimating current traffic levels by purpose of travel is difficult and based on estimates and opinions received. Estimating what will happen as a result of the upgrading and underlying trends is also difficult and based largely on opinion. The resulting figures should be regarded as giving 'order of magnitude' estimates only.

1.3 TIMING

The analysis is carried out in current 2020-21 values.

Information gathering for the study was carried out over the period July/ August 2011 with field work carried out over the period August 1st to 6th 2021.

2. BACKGROUND

2.1 GEOGRAPHICAL FEATURES OF THE AREA TRAVERSED

By and large, the Dixie Way runs north from Normanton through wide flat plains fronting the shoreline of the Gulf of Carpentaria eastward for up to 250km in places before reaching the outlying hills of the Great Dividing Range stretching north to south. The road runs north/ north east about 60km inland from the coast in the south to close to 200km inland in the north. The road passes through savannah woodland country of varying density of forest (see **Photo 1**).

The area experiences an annual ‘wet season’ monsoon from about December to April with regularity and intensity increasing to the north. This is followed by a reliably dry winter of very little rainfall resulting in annual drought conditions and fires in the early summer months.

A feature of the wet season is extensive, and in some years very extensive, flooding, especially adjacent to the major river systems coming in from the east (see **Photo 2** and **MAP 2**).

The largest of these river systems, the Mitchell River basin, has a water runoff just behind that of the whole Murray Darling system (see **Table 1**).

Table 1: Annual Water Runoff Australia’s Largest River Basins

	Million Megalitre (ML)
Murray Darling Basin	24.0 million ML
Mitchell River Basin	22.4 million ML
Burdekin River Basin	8.2 million ML
Fitzroy Old River Basin	5.4 million ML
Ord River Basin	4.7 million ML

The size of the river during the wet season (see **Photo 3**), means that there are no bridges over it in its lower reaches and only causeway crossings that are closed during the wet season. The river thus represents a major barrier to north/south movements over a period from about December through to May. (In 2021, the crossing at Dunbar did not become clear for 4WD vehicles until mid-July (see **Photo 4**)).

There are bridges over the major Gilbert River and the lesser Staaten River but minor stream crossing flooding such as at the Alice River (north of the Mitchell River), the Clark and Wyabba creeks, currently cause hold ups. (See **MAP 2** and **Photo 5**.)

A feature of the flat Gulf coast are numerous mangrove lined estuaries and fresh water lagoons behind the coast. Open grassland plains occur in some areas, especially behind the coast in the Karumba area and north to the lower Mitchell delta around Kowanyama (see **Photo 6**). Marine life is abundant in the estuaries and lagoons including prized fish such as Barramundi and crocodiles. Bird life is also prolific in the coastal areas including brolgas.

Photo 1 - Running Through Savannah Woodland Country



Photo 2 - Extensive Flooding Experiences in Some Years



Photo 3 - Mitchell River Flood Height Markers – Middle Mitchell go up to 19 metres



Photo 4 - Dunbar Crossing of the Mitchell River



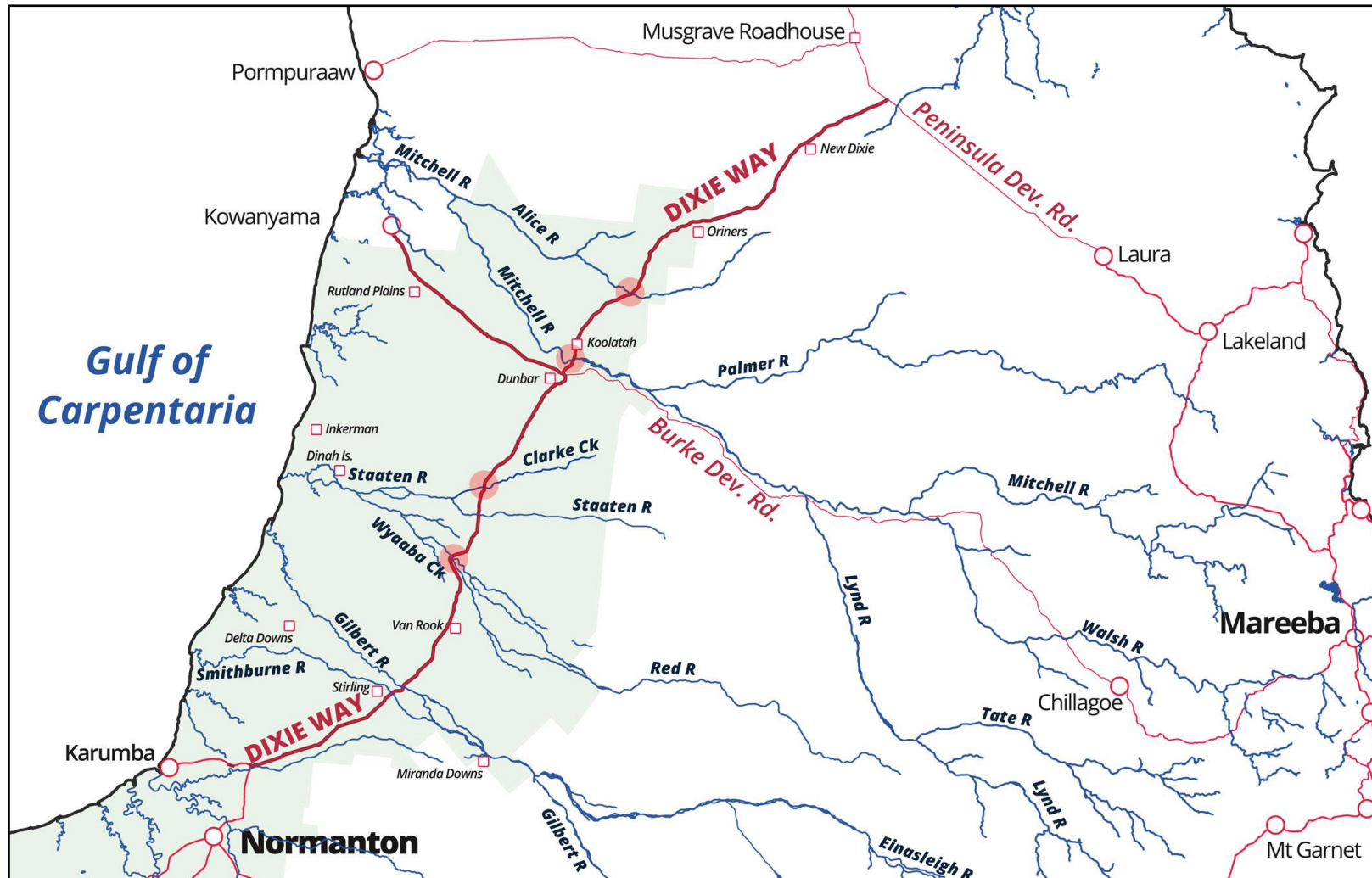
Photo 5 - Gilbert River Bridge



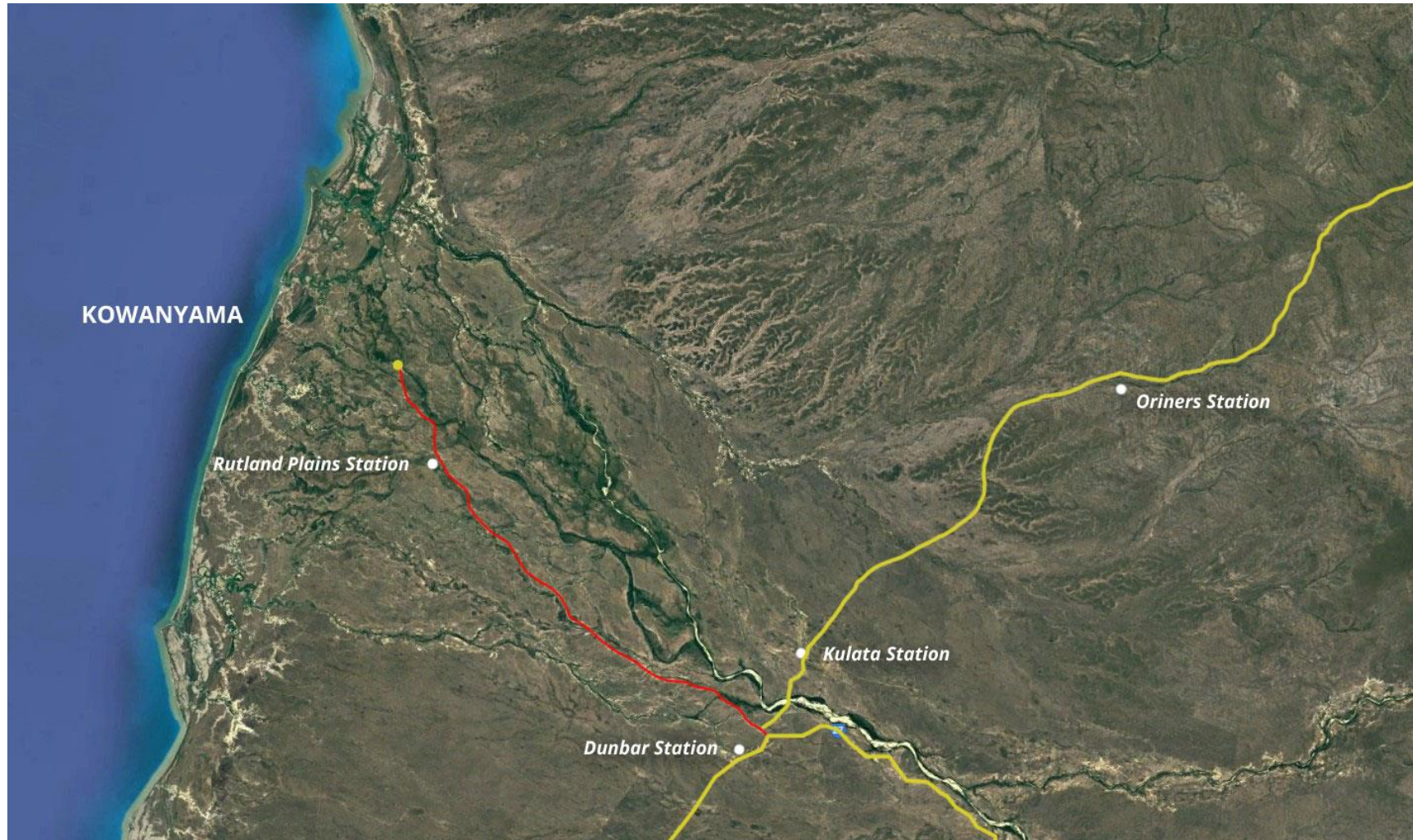
Photo 6 - Open Grassland Plains - Kowanyama



MAP 2 – MAJOR STREAM CROSSINGS



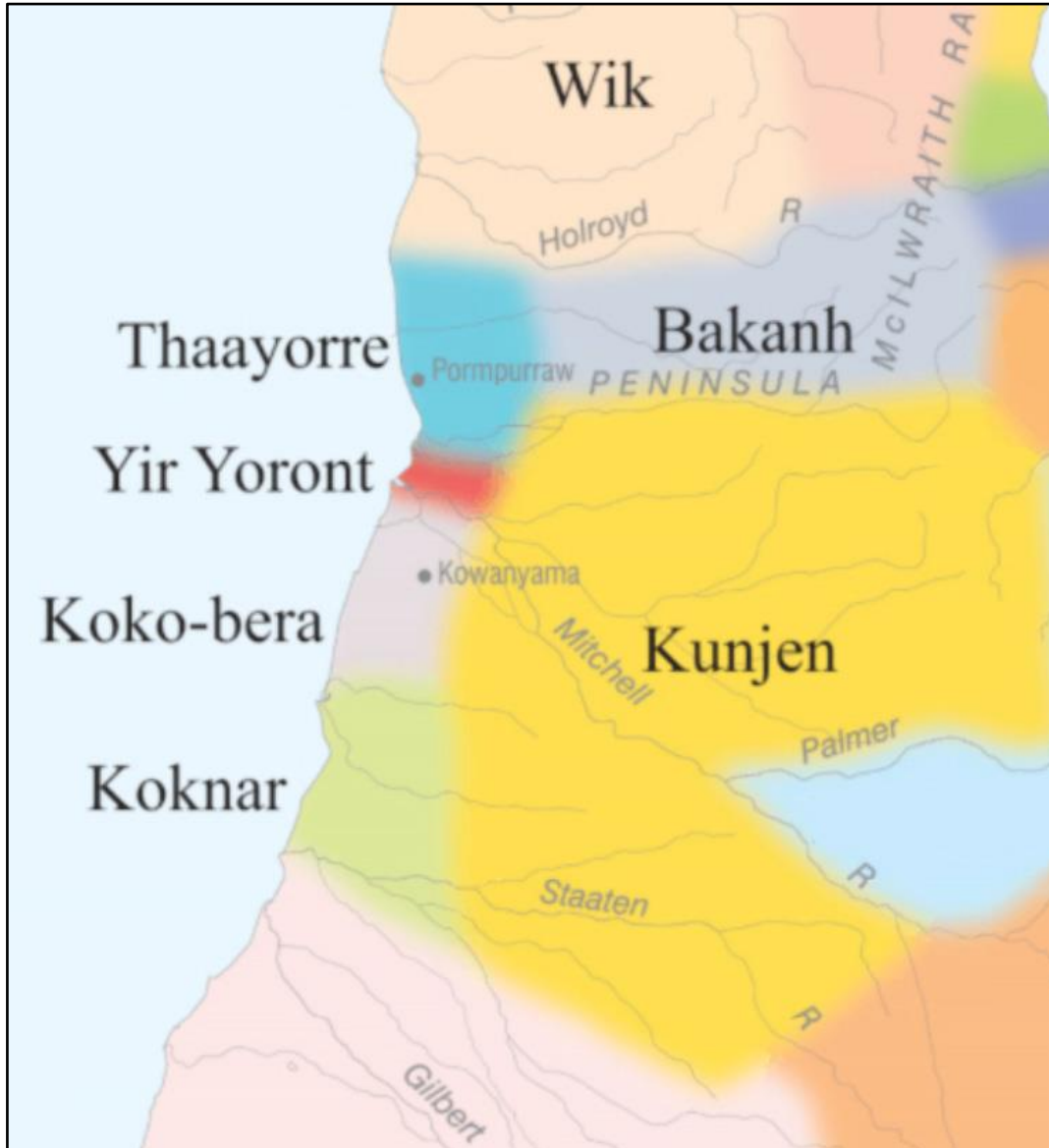
MAP 3 – THE MITCHELL RIVER DELTA AREA



2.2 HISTORICAL DEVELOPMENT

MAP 4 shows traditional Aboriginal tribal areas. Aboriginal people are mainly located in Pormpuraaw (to the north of the Mitchell delta), Kowanyama and in Normanton township.

MAP 4 – TRADITIONAL ABORIGINAL TRIBAL AREAS

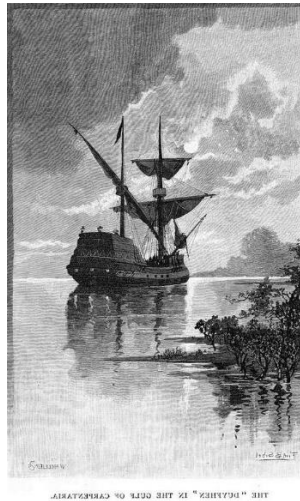


Source: Australian Survey & Land Information Group, 1996.

Some of the earliest European contact with Australia occurred further up the coast near the site of the current Aurukun township when in 1606, a Dutch expedition in the Duyfken (Little Dove) sailed along the coast.

In 1623 however, a Dutch expedition in the vessels Arnhem and Pera sailed as far south as the Staaten River before returning north leaving a legacy of names in the area of Dutch origin including Carpentaria, Staaten, Pennefather, Vanrook (of smoke) (see **Picture**).

Picture: The “Duyfken” in the Gulf of Carpentaria



Leichhardt travelled down the Mitchell River from the east during his 1845 expedition before turning south and losing one of his party in a conflict with local Aboriginal people near the Gilbert River that bears his name.

Pastoralists started moving into the area from about 1860s onwards establishing the historic cattle stations that remain a long-term mainstay of the region’s economy to this day (see **Photo 7**).

Photo 7 - Historic Inkerman Station on the Gulf Coast



Mitchell River Mission (now Kowanyama) was established in 1905 but Edward River Mission (Pormpuraaw) was not permanently established until 1939, both by the Anglican Church.

With early gold mining at Croydon fading, Normanton tended to decline in population. However, the 1960s saw a turnaround commencing with the beef roads program, the development of fisheries in the Gulf and tourism starting to develop. The area serviced by the Dixie Way benefited by some unsealed beef roads development west from Chillagoe in the 1960s and 1970s and, for a time, development of live cattle exports out of Karumba. Government money starting to flow into the former missions from the late 1960s onwards.

2.3 CURRENT POPULATION

The following table gives population in the area serviced by the Dixie Way.

Table 2: Census Count Population, 2016

		No.
Normanton Urban Centre	Residents	1150
	Visitors	406
	Total	1556
	Aboriginal	750
Karumba Urban Centre	Residents	470
	Visitors	809
	Total	1279
	Aboriginal	37
Carpentaria Shire outside Normanton & Karumba	Residents	156
	Visitors	138
	Total	294
	Aboriginal	21
TOTAL CARPENTARIA SHIRE		
	Residents	1776
	Visitors	1375
	TOTAL	3151
	Aboriginal	808
Kowanyama		
	Counted at Home	907
	Visitors	54
	Total	961
	Aboriginal	856
Pormpuraaw		
	Counted at Home	715
	Visitors	69
	Total	784
	Aboriginal	630

Source: Cummings Economics from Australian Bureau of Statistics Census 2016.

It can be seen that population in Carpentaria Shire is mainly located in Normanton and Karumba with a high proportion Aboriginal in Normanton.

In Carpentaria Shire, population classed as visitors (which would include workforce as well as leisure visitors), adds about 80% to the population at Census count that was held during the winter month of August when visitor populations are high.

The small population north of Normanton and Karumba are almost entirely on pastoral properties. Kowanyama adds about 1,000 to population in the area, mainly Aboriginal.

Wider population (2016 Census count including visitors) linked by the Dixie Way is as follows.

<u>Peninsula</u> - Cook Shire, Weipa, NPA and other communities	19,800
<u>Dixie Way</u> - Carpentaria, Kowanyama, Pormpuraaw.....	4,900
<u>Southern</u> - Mt Isa, Burke Shire, North West and Central West	<u>35,800</u>
TOTAL	<u>60,500</u>

2.4 CURRENT ECONOMIC ACTIVITIES

2.4.1 General

Local economic activity related to the road is dominated by four major aspects as follows.

- The pastoral industry along the road;
- The government supported Kowanyama Aboriginal Council.
- Normanton as the commercial and administrative centre;
- Tourism in the area, especially related to Karumba.

There is also a commercial fishing industry based on Karumba but currently little relating to the road.

2.4.2 The Pastoral Industry

The road acts as a major transport link for outward movement of cattle, cattle movements within and between properties, inward movement of supplies, and inward and outward movement of station personnel, especially to and from Normanton/ Karumba as the major commercial centres.

MAP 5 pinpoints operational stations in the area.

The following table gives published cattle herd numbers, estimates of turnoff and published value of turnoff in 2015-16.

Table 3: Dixie Road Catchment – Est Cattle Numbers, Turnoff & Value of Turnoff, 2015-16

Local Government Area	Cattle No.	Est ⁽¹⁾ Turnoff	Value of Turnoff
Lockhart/ Mapoon/ Napranum/ Hope Vale	5,000	2,000	\$5M
Cook Shire	77,000	23,000	\$44M
Carpentaria (estimate - north of Normanton)	170,000	50,000	\$96M
Mareeba	114,000	34,000	\$64M
TOTAL	366,000	109,000	\$209M

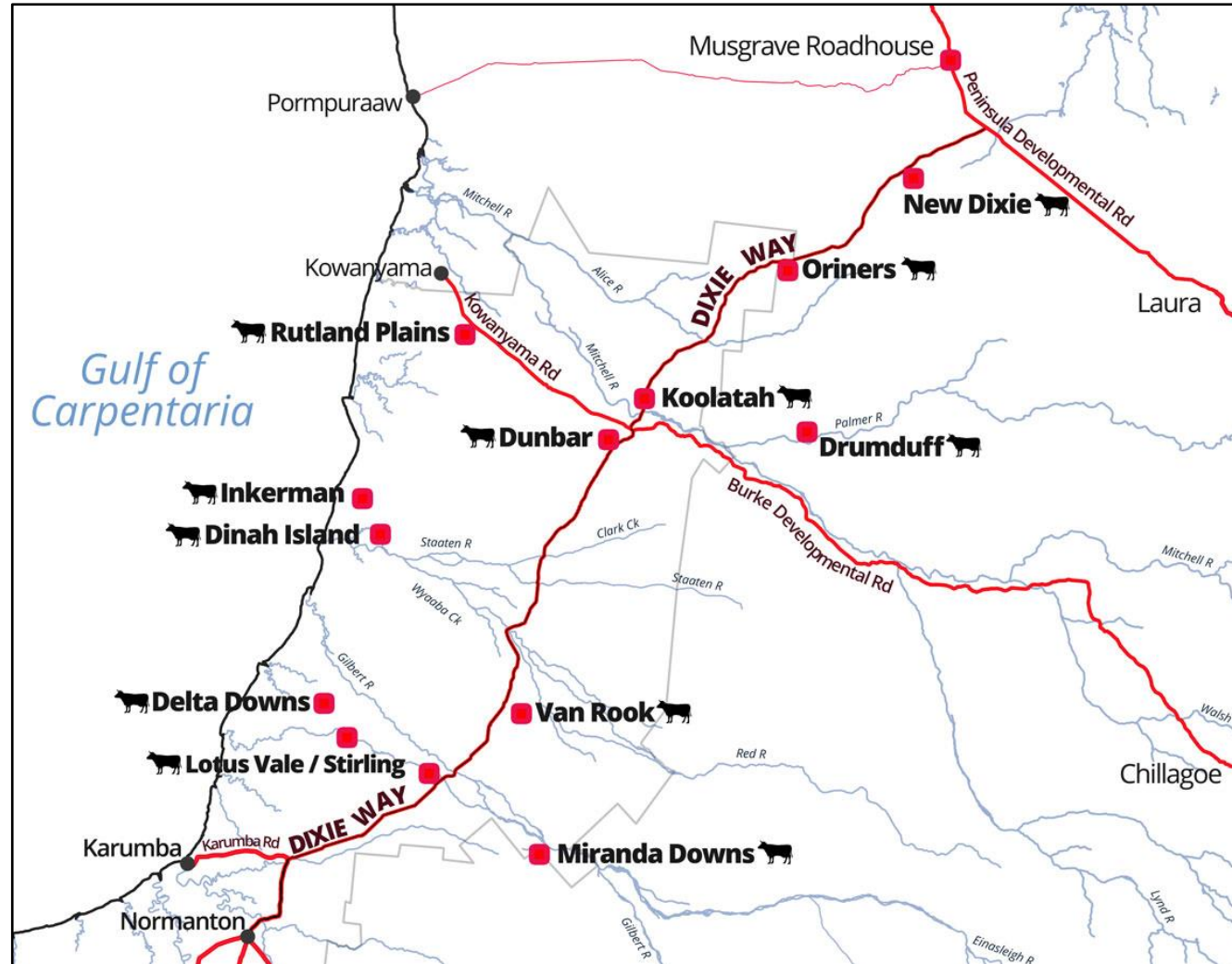
Note ⁽¹⁾: Turnoff estimated at 30% of cattle numbers.

Source: Cummings Economics from ABS Agricultural Statistics, 2015-16.

Stock numbers recorded in the area have been growing over the years, however, as with many primary industries, productivity increases have been resulting in lower on-station employment.

Estimated value of output recorded in 2015-16 in the catchment area was about \$200m.

MAP 5 – THE OPERATIONAL HISTORIC CATTLE STATIONS ALONG AND ADJACENT TO THE DIXIE WAY



2.4.3 Tourism

Tourism in the Carpentaria area is dominated by flows to and from the east via the Gulf Development Road and to and from the south via the Burke Developmental Road’s Normanton/ Cloncurry section, both of which are sealed.

Total tourism expenditure in Carpentaria Shire in 2019 was recorded at \$24m and in Cook Shire \$59m.

Latest National Visitor Survey (NVS) indicates the following visitor numbers recorded for Carpentaria Statistical Area Level 2 (that includes both Carpentaria and Burke Shires), and Cape York Statistical Area Level 2 (that includes Cook Shire and other Cape communities).

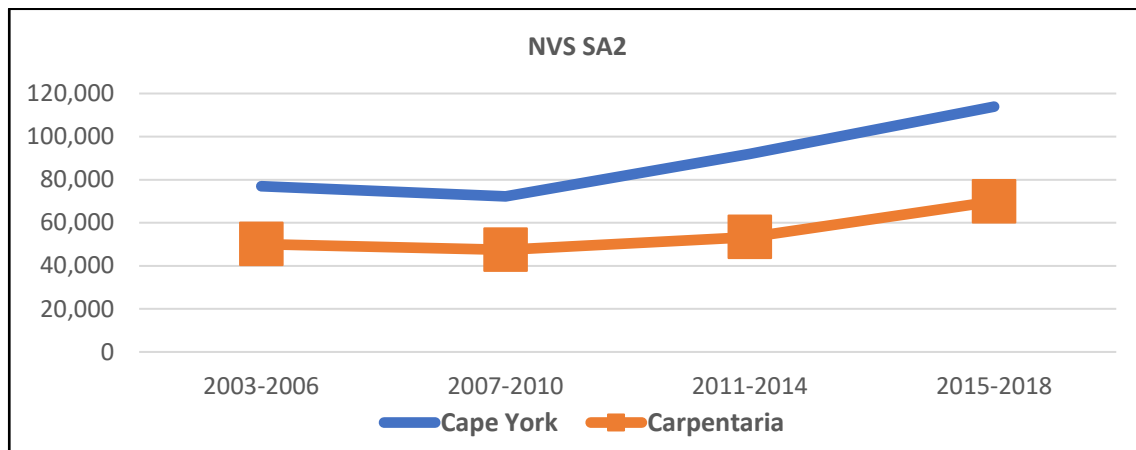
Table 4: Visitor Statistics Cape York & Carpentaria SA2s – Average 4 Years

	2003-2006	2007-2010	2011-2014	2015-2018
Cape York SA2	76,903	72,240	91,917	113,905
Carpentaria SA2	50,000	47,421	53,359	69,891

Source: Cummings Economics from Tourism Research Australia-NVS.

The following chart illustrates growth in four-year averages.

Chart 1: Domestic Overnight Visitors – Cape York & Carpentaria SA2s



Source: Cummings Economics from Tourism Research Australia-NVS.

Most of Cape York visitors travel to and from Cape York via the Mulligan Highway to Lakeland, and the Peninsula Developmental Road if travelling north from the Cooktown area.

There are only very low numbers of visitors coming into Carpentaria Shire north of Normanton/ Karumba at present. In the first place, there are campers, fishers and some hunters (mainly for wild pigs), coming into the area, mainly from the major east coast centres, usually camping in the area using their own camping equipment and accessing using 4WD vehicles. Some of these have arrangements with some of the stations to camp at locations on their properties.

There are commercial accommodation facilities at Kowanyama but these are mainly used by government and business visitors and visiting contract and trade workers.

A commercial fishing lodge operated at Dinah Island on the coast near Inkerman Station up to a few years ago, but is currently closed with no specific plans to reopen.

None of the cattle stations offer ‘farm stay’ type opportunities.

A relatively small volume of 4WD enthusiast visitors from outside the north pass through the Dixie Way between the PDR and Normanton/ Karumba, some on round-Australia adventures that will include travelling across the Savannah Way from/to the Northern Territory and Darwin. Some will travel to/from the south via the Matilda Way. There are some who will use part of the Dixie Way and circuit to/from the east coast via the Burke Developmental Road from Chillagoe.

Cross tabulation of data from the National Visitor Survey (NVS) indicated that average over the four years to 2020 of those visiting both Carpentaria SA2 and Cape York SA2 was about 2000. However, at this level, sample sizes are small and figures not reliable. Local information on road traffic in 2021 indicated that the numbers are likely to be substantially higher and of the order of 8000 (see further discussion, Section 5.3.)

For visitors wishing to use commercial facilities, they are only available at either end of the Dixie Way at the Musgrave Roadhouse and Hann River Roadhouse on the PDR at the northern end or at the facilities at Normanton/ Karumba at the southern end, or, if using the Burke Developmental Road to/from the east, at Chillagoe.

2.4.4 Kowanyama

Kowanyama recorded a low workforce participation rate of 52% and an unemployment rate at the last 2016 Census of 37%. Apart from some past cattle operations that have been much reduced in recent years, all funding flowing into the community from outside is dependent on various government programs. Most employment is in government services (see **Table 5**), and a small amount in servicing local expenditure, especially at stores and the canteen.

Table 5: Kowanyama - Workforce by Industry, Census 2016

Workforce	No.	Workforce	No.
Agriculture, Forestry and Fishing	6	Financial and Insurance Services	0
Mining	0	Rental, Hiring and Real Estate Services	0
Manufacturing	0	Professional, Scientific & Technical Services	0
Electricity, Gas, Water and Waste Services	0	Administrative and Support Services	5
Construction	13	Public Administration and Safety	91
Wholesale Trade	0	Education and Training	51
Retail Trade	12	Health Care and Social Assistance	22
Accommodation and Food Services	3	Arts and Recreation Services	0
Transport, Postal and Warehousing	4	Other Services	16
Information Media & Telecommunications	0	Inadequately described/Not stated	6
		TOTAL	227

Source: Cummings Economics from Australian Bureau of Statistics Census 2016.

With the community cut off due to flooding during the wet season, there is a need for large storage and refrigeration facilities. Most stores come into the community via heavy transport services out of Cairns and Normanton.

2.4.5 Normanton/ Karumba Government, Commercial & Recreation Services

The existence of a range of government, commercial and social facilities in Normanton is a vital part of the area's economy. Karumba adds to this, especially for recreational and social entertainment services.

Much of the traffic on the Dixie Way between Normanton and Dunbar is generated by the supply of goods to stations along the way and Kowanyama. Movement of light business traffic from Normanton to stations and Kowanyama, includes contractors and service personnel and movement of people from Kowanyama and the stations to and from Normanton/ Karumba for business and social purposes. In this service function, Normanton competes in the Kowanyama/ Dunbar area with Mareeba and Cairns and towards the PDR with Cooktown.

The following table illustrates the workforce by industry profile for Carpentaria Shire illustrating the variety of employment and services, typical of a rural area with strong concentrations in primary industries, accommodation and transport and government services.

Table 6: Carpentaria Shire - Workforce by Industry, Census 2016

Workforce	No.	Workforce	No.
Agriculture, Forestry and Fishing	149	Financial and Insurance Services	3
Mining	4	Rental, Hiring and Real Estate Services	4
Manufacturing	9	Professional, Scientific and Technical Services	3
Electricity, Gas, Water and Waste Services	12	Administrative and Support Services	28
Construction	67	Public Administration and Safety	118
Wholesale Trade	14	Education and Training	75
Retail Trade	53	Health Care and Social Assistance	82
Accommodation and Food Services	66	Arts and Recreation Services	4
Transport, Postal and Warehousing	44	Other Services	18
Information Media and Telecommunications	3	Inadequately described/Not stated	51
TOTAL			813

Source: Cummings Economics from Australian Bureau of Statistics Census 2016.

2.4.6 Fishing Industry

The Gulf area is rich in fishery resources with large catches of prawns harvested each year and catches of mackerel and other species offshore. However, these activities are either serviced by trawlers and boats out of Cairns serviced by motherships taking off catches and delivering fuels and supplies or out of Karumba. There is virtually no contact of this activity with the coast along the Dixie Way.

There are substantial inshore fisheries in the estuaries especially for barramundi and mud crabs but again, the boats engaged in these activities are mainly based in Karumba and have little or no contact with Kowanyama or generating traffic on the Dixie Way.

As covered in the tourism section, recreation fishing related to the estuaries accounts for a substantial part of existing visitor activity, mainly from the major east coast centres.

3. THE CURRENT ROAD

3.1 TOPOGRAPHY & CONDITION

It is taken that the road to the Gilbert River will be sealed in the foreseeable future under secured or prospective funding arrangements (see **Photo 5 Gilbert River Crossing**).

Photo 5 - Gilbert River Crossing



The road north of the Gilbert River to Dunbar Station is all unsealed, flat, straight or slightly curving with stream crossings, Staaten River bridged, and other causeways/culverts.

The surface is good when graded but can deteriorate if heavily trafficked. During the dry season, large volumes of dust can be generated, especially by heavy vehicles (eg. cattle road train triples, road maintenance gravel quads), causing major safety issues especially for vehicles without two-way radios.

(Note: During 2021, serious accidents occurred involving a tourist vehicle towing a caravan collision with a road maintenance gravel quad and a two quads collision.)

The road travels mainly through savannah woodland with some open patches and in some sections, fields of anthills.

Regular local users indicate the crossings, especially of Wyabba Creek and to a lesser extent, Clark Creek, as a hold up point causing delays in opening the road after the wet season.

The Kowanyama Road from Dunbar to Kowanyama is flat and good gravel standard over a distance of 101km.

The turnoff north to cross the Mitchell River is 1.4km from the Dunbar intersection. The 7.7km to the crossing is flat, good standard, unsealed road.

The crossing of the Mitchell River is across a causeway of approximately 400 metres constructed of composite material and baskets filled with earthen material. This crossing is one way but strong enough to take loaded triple road trains. It has however a limited life and will need to be upgraded (see previous **Photo 4**).

The height of the causeway is such that it is submerged during the wet season every year and generally closed to traffic from about December to May. The year 2021 was exceptional and the crossing only opened in mid-July. The wet season inundation period usually results in large amounts of sand covering the northern approaches to the causeway that needs to be cleared away before the crossing becomes trafficable.

Koolatah (pronounced Colata) Station is adjacent to the crossing on the north side of the river with road traffic visible from the station.

The road proceeds east from Koolatah and branches a short distance to the east with one branch running south east adjacent to the Mitchell River to Drumduff Station (where there is a further crossing of the river), and continuing to Gamboola Station (where there is a further crossing).

The Oriners/ Dixie Road branches to the north east and runs over flat land to the Alice River which is only a small tributary easily crossed. The Dixie Way passes west of Oriners Station which is a short distance off the road to the right.

The road then enters the southern section of the Olkola National Park. The savannah woodlands in this area tends to be denser.

(Note: A well-presented Olkola National Park feature is located further north along the Dixie Way that presents a waterhole feature that was important in the traditional lives of the Olkola Aboriginal people (see **Photo 8**.)

Just north of the Shire boundary at a distance of 101km from the Mitchell River crossing, the Kimba Road leads off to the east past the Alice River gold mine (see **Photo 9**) area and turnoffs to cattle stations to the south (Kimba, Pinnacles, Kingvale and King Junction), through to Laura.

Photo 8 - Entrance Sign Olkola National Park Waterhole

Welcome to Nukakurra Lagoon walking track

Olkola National Park Cape York Peninsula Aboriginal Land (CYPAL)

We are the Olkola People and we welcome you to our country. This area is of great significance to our people and we ask that you respect the ongoing connection we have with our country.

The Nukakurra area is the story place for the *Kurrumbila* (Grasshopper and boss of this area) and the Blue Tongue Lizard.

We are the 'Freshwater People' and for thousands of years we have been custodians for over one million hectares of land between the now Laura township to the east and Kowanyama and Pompokraaw to the west.

Our people form five main clan groups originating from our Dreamings within the Uw Olkola lands:

- Ootalkarra* – the Dingo and main boss of all of Olkola Country
- Kurrumbila* – the Grasshopper and boss of the Nukakurra area
- Kan Kan* – the Fish Hawke
- Ilanyarra* – the Worm
- Hot Water People.

Each Dreaming has its main story place on Olkola Country, with many other important story places and sacred sites within those Dreaming areas.

Walking track information

Grade 3: Formed gravel track with some steps.
Distance: 1.4km return.
Time: This gentle walk can be done in 45min, however please take your time and enjoy this special place.

Follow this walking track in a clockwise direction as it weaves through a significant cultural area for our people. As you walk, please be respectful and take your time to learn about our culture from the interpretive signs along the way. The track passes through open woodland and alongside Eight Mile Creek and Nukakurra Lagoon. Resting places are provided, so you can stop and enjoy the peaceful surrounds of our country.

For your safety

- Please stay on the track at all times.
- Always carry water, wear a hat and sturdy footwear and walk in the cooler part of the day.
- Be alert for snakes when walking through this area. Wear protective clothing such as long pants and closed-in shoes.

Caring for the park

Olkola National Park (CYPAL) is a culturally significant area. Please help to look after the natural and cultural values of this place.

- Please protect our sites of significance and stay on the walking track at all times.
- Everything in this park is protected—leave everything as you found it.
- Do not interfere with or feed native animals.
- Please take rubbish (including food scraps) home with you.
- Fishing is prohibited in all freshwater streams, lagoons and creeks of this national park (CYPAL).
- Camping is not permitted.
- Lighting fires is prohibited.

Be CROCWISE

Crocodiles occur in all rivers, creeks, swamps, wetlands, waterholes and lagoons in Olkola National Park (CYPAL).

- Don't be ambushed—stay out of the water and away from the water's edge.
- Watch children closely.
- Don't leave food scraps around.
- Never approach, feed or harass crocodiles.

Atwal (Golden-shouldered parrot)

Atwal (Golden-shouldered parrot) is an important totem species for our People. As custodians for this country we have an important cultural responsibility to protect and care for Atwal.

Atwal is an endangered species due to a number of threats and is now only found in a small area of Cape York Peninsula. Since European settlement, fire regimes have changed dramatically, leading to woody vegetation taking over grasslands that Atwal depends on. Other threats include damage to grasslands by cattle grazing and feral pigs.

Olkola Land Managers and Queensland Parks and Wildlife Service are working to improve Atwal habitat by reinstating traditional Olkola burning practices along with other well established monitoring programs.

Legend

- Walking track
- Car park
- Road
- Waterways

OLKOLA
Cape York Peninsula Aboriginal Land

Queensland Government

Photo 9 - Alice River Gold Mine



The Olkola National Park operations office is located further north on the eastern side of the road at the old Dixie Station homestead. The road in this area and through to the junction with the Peninsula Developmental Road (PDR) starts rising in altitude, becomes more curvy with a number of creek crossings. The topography becomes more hilly as the road approaches the higher Great Divide along which the PDR is located. Vegetation changes with larger, taller eucalypt trees, reflecting the higher altitude.

On the western side near the turnoff is a local government sign advising of a development application to construct a Cultural Centre. Artemis Station is located close to the junction with the PDR. The Musgrave Roadhouse (see **Photo 10**) is located 23.8km further north along the mainly sealed PDR.

Photo 10 - Musgrave Roadhouse



3.2 ROAD OWNERSHIP & RESPONSIBILITY

The road between Normanton and Dunbar and thence east to Chillagoe and Mareeba is defined as the Burke Developmental Road Section 69B which extends as Burke Developmental Road 69A south to Cloncurry and is under the jurisdiction and responsibility of Queensland Department of Transport and Main Roads (TMR).

The Gulf Development Road coming in from the east to Normanton is also under the jurisdiction of the Queensland Department of Transport and Main Roads but the Savannah Way extension to the Northern Territory border are local government roads.

The roads from Dunbar Station crossing the Mitchell and north to the Carpentaria Shire boundary with Cook Shire are Shire roads. The remaining 95km to the PDR is a Cook Shire road. The Kowanyama Road from Dunbar Station to the Kowanyama Council boundary is a Carpentaria Shire road but the responsibility of Kowanyama Council over the last section within the Council area.

The Carpentaria Shire is responsible for a number of roads leading out from the Dixie Way including to Delta Downs, Lotus Glen, Stirling Road, the Miranda Downs Road into Vanrook Station, Dorinda and Inkerman stations and Dinah Island Fishing Lodge. Cook Shire is responsible for the Kimba Road that runs east to Laura from the Koolatah/ Dixie section. Carpentaria Shire is responsible for sections of roads within its boundaries along the northern side of the Mitchell River west to Pormpuraaw and east to Drumduff Station.

3.3 SEASONAL CLOSURES

While it is proposed to upgrade the major Mitchell River causeway crossing, this will only shorten the currently extended closure period. It is likely that the route will remain seasonally closed until a large high-level bridge can be built across the Mitchell River. Seasonal closures are able to be reduced by using crossings further up the Mitchell River.

The following table gives information on the five crossings of the Mitchell River in the middle/ lower sections.

Table 7: Crossings Middle/ Lower Sections of the Mitchell River

		Distance from Lowest Crossing
Kowanyama/ Pormpuraaw Crossing	Sand crossing of main Mitchell Channel and Alice River In 2021, still untrafficable in early August	0km
Dunbar Crossing	Causeway	100km
Drumduff Crossing	Sand Crossing	87km
Gamboola Crossing	Causeway	76km
Mount Mulgrave Station	Bridge	52km

Roads link these crossings along the northern and southern sides of the river. Thus, traffic between Kowanyama and Pormpuraaw can use the Dunbar crossing when the lower crossing is closed but involves a 200km diversion (see **Photo 11**).

The Gamboola crossing (see **Photo 14** Page 54), especially can be expected to open earlier than the Dunbar crossing but involves a 320km diversion for Dixie Way traffic.

Photo 11 - Mitchell River in Vicinity of Lower Crossing Kowanyama/ Pormpuraaw, August 2021



3.4 CURRENT TRAFFIC LEVELS

3.4.1 Traffic on Peninsula Developmental Road

Traffic along the Peninsula Developmental Road (PDR) in the vicinity of the Dixie Way turnoff is recorded as follows.

Table 8: Traffic Count, PDR – Kennedy River

Year	AADT	% Heavy Vehicles
2020	147	24.49%
2019	162	17.90%
2018	137	35.97%
2017	137	35.97%

The numbers were down in 2020 due to ‘lock down’ of the Peninsula area with entry barred over an extended period due to the Covid-19 epidemic. Reports indicate that after reopening and in 2021, visitor numbers have been extremely high with some outlets catering to visitors reporting doubling of sales. The indications are that tourism traffic in 2021 was at least 50% up on pre-Covid levels.

Without the Covid effect, the numbers indicate a strong growth over the 10-year period.

Latest 2020 composition of traffic indicates AADTs as follows.

<u>Light Vehicles</u>	<u>AADT</u>
Single.....	98
Towing	11
Body Trucks/ Buses	21
Articulated Vehicles	8
Road Trains.....	7
TOTAL.....	145

The high proportion of light single and towed vehicles indicates a heavy presence of visitors.

Other research and inquiries indicate that before Covid effects, of the order of 20,000 visitors a year were reaching the northern Peninsula area and would be generating traffic flows of the order of 80 a day. On top of this would be substantial visitor traffic terminating short of the NPA in the Lockhart/ Iron Range area and Weipa.

The presence in 2020 when numbers were suppressed of 11 light vehicles towing, represented an estimated 4,000 visitors in the traffic.

The indications are that pre-Covid, about 90 of the approximate 120 light vehicle movements were visitors representing about 35,000 visitors a year.

Interviewing indicates that in 2021 tourism traffic was about 50% up on pre-Covid (ie. 2019), making estimated visitor traffic movements about 150 a day in 2021, representing about 55,000 visitors a year.

Of relevance to the Dixie Way route was the large number of visitors moving into the Cooktown district but not travelling further up the Cape; of the order of 75,000 pre-Covid-19 that are likely in 2021 to have been of the order of 100,000.

An AADT of 18 visitor vehicles would represent total visitor numbers of the order of 13,000 a year.

Advice from Musgrave Roadhouse was that less than 10% of visitor traffic on the PDR would travel the Dixie, ie. 10,000 of the 100,000 visitor movements up and back. The estimated 13,000 is likely to be split, say, 8,000 from the Upper PDR and 5,000 from the Cooktown area not traveling to the Upper Peninsula.

3.4.2 Koolatah/ Dixie Section

Traffic counts for 2020 as provided by Carpentaria Shire Council on this section of road recorded AADT 21 composed of:

Light Single	10.3
Light Towing	1.9
Trucks/ Buses	3.9
Articulated Vehicles	1.6
Road Trains.....	3.1

The PDR traffic counts indicate that 2020 figures were down on those of 2019, ie. pre-Covid. However, inquiries of the Musgrave Roadhouse to the immediate north of the Dixie turnoff indicated that in 2021, there was a surge, especially in visitor traffic, that took totals up to about 50% above pre-covid (2019) levels.

Talking to pastoral properties and national parks indicated the traffic along the Dixie Way rose strongly by a similar amount. It was estimated that of the order of 50 vehicles a day (say 40 visitors, 10 locals), were passing Koolatah Station during the peak months.

Based on the 2020 figures that are likely to be below those of 2019 and the preceding information, it is estimated that the level of Average Daily Traffic over this section of road was of the following order of magnitude.

Estimated Profile 2021 Traffic Koolatah/ Dixie Section

<u>Visitors</u>	<u>AAADT</u>
Single Vehicles	15
Towing	3
Local Light	4
Business Light.....	2
Body Trucks	4
Articulated Vehicles	2
Road Trains Cattle	2
Road Trains Other	2
TOTAL.....	34

3.4.3 Gilbert to Dunbar Section

The following table gives road traffic count data for the section of road just north of the Karumba turnoff.

Table 9: Traffic Count Dunbar Road North of Karumba Turnoff

Year	AADT	% Heavy Vehicles
2020	61	32.79%
2019	38	26.32%
2018	31	30.01%
2017	26	29.91%
2016	30	28.05%
2015	34	30.31%
2014	42	30.98%
2013	36	26.16%
2012	31	24.87%
2011	27	29.65%
2010	32	29.05%

Composition of traffic recorded by TMR in 2020 was as follows.

<u>Light Vehicles</u>	<u>AADT</u>
Single.....	36
Towing	2
Body Trucks/ Buses	8
Articulated Vehicles	2
Road Trains.....	10
TOTAL.....	58

(Note: Total recorded by TMR was 61.)

The figures were up strongly in 2021 reflecting a lift in visitor traffic due to Covid-19 effects and a lift in heavy vehicles believed to be mainly through use of road trains carrying road material for road works in the area.

The heavy presence of road trains also reflects substantial cattle movements and some vehicles servicing north to Kowanyama from Normanton.

The 38 light vehicle movements in 2020 would have been spread across:

- Movements to and from stations;
- Residents of Kowanyama visiting Normanton;
- Business traffic from Normanton to Kowanyama.
- Visitors proceeding to/from the PDE or Chillagoe;

Early indications are that the traffic lifted strongly again and that AADT in 2021 recorded was 78, ie. up by about a further third.

It is likely that numbers of visitors increased in 2021 and that the traffic was composed of:

Estimated Traffic Composition 2021

<u>Visitors</u>	<u>AADT</u>
Single Vehicles	20
Towing	4
Local Business	11
Local Other	4
Kowanyama.....	10
Outside Business	3
Body Trucks	8
Articulated Vehicles	1
Road Trains Cattle	4
Road Trains Other	15
TOTAL.....	80

These figures imply that in 2021, most of the growth took place in tourism movements that recorded the equivalent of 17,500 compared with 10,500 on the Koolatah/ Dixie section, implying an extra 7,000 added in movements coming in and out via the Chillagoe Road or in and out via the Gulf Development Road.

4. THE PROPOSED ROAD UPGRADING

4.1 UPGRADING PROPOSED

The aim is to progressively upgrade the route to good gravel standard and progressively seal throughout, along with improvement of stream crossings, especially Clark River, Wyabba Creek, the major Mitchell River crossing and Alice River. There will need to be special attention to the more numerous creek crossings in the hilly country at the northern extremity of the road in Cook Shire.

4.2 UPGRADING COSTS

Carpentaria Shire have advised the following expected costs of upgrading the road.

Table 10: Upgrading Costs of Dixie Way Road

	\$/KM
Pavement & formation Upgrades	\$420,000/km
Sealing (14/10 double double)	\$80,000/km
Allowance for Drainage, Causeways & Floodways	\$100,000/km
TOTAL	\$600,000/km

In addition, it is proposed that the Mitchell River crossing causeway be upgraded at a cost of the order of \$10m that would bring the closure period down to about similar levels to the rest of the road, of the order of an average of about three (3) months a year.

Thus, total cost of upgrading the Dixie Way from the Gilbert River to the Peninsula Developmental Road (PDR) (371km), is estimated to be of the order of \$230m.

Table 11: Upgrading Dixie Way - Total Cost

	Formation	Sealing	Drainage	TOTAL
Gilbert River to Dunbar (157km)	\$66m	\$13m	\$16m	\$94M
Dunbar to PDR (200km)	\$86m	\$16m	\$20m	\$123M
Mitchell Crossing	-	-	\$10m	\$10M
TOTAL	\$152M	\$29M	\$46M	\$227M

The road between Kowanyama and Dunbar is of good gravel standard but experiences road closures of about three (3) months each year.

Estimated cost to upgrade to sealed standard is estimated by Kowanyama Council engineers as of the order of \$200,000/km but would not appreciably improve annual road closures.

We thus have costs of:

Total Dixie Way\$227M

Dunbar to Kowanyama\$20M

4.3 MAINTENANCE COSTS

Advice from Carpentaria Shire indicates maintenance costs of unsealed sections of \$7700/km and \$6000/km sealed, a difference of \$1400/km.

This gives a Present Value (PV) of savings over a 30-year project period at a 4% per annum discount rate of:

Gilbert River to Dunbar	\$3.8M
Dunbar to PDR	<u>\$5.0M</u>
TOTAL.....	<u>\$8.8M</u>

Present Value of maintenance savings on sealing the Dunbar/ Kowanyama Road would, at \$2.5m

5. IMPACTS OF UPGRADING THE ROAD

5.1 MAJOR FUNCTIONS OF THE DIXIE WAY

5.1.1 General

The Dixie Way serves two major functions as follows:

- 1) As earlier **MAP 1** illustrates, it provides a 'spine' road linking the Shire 'capital', Normanton, with the pastoral properties, Kowanyama Aboriginal community and other activities such as National Parks in the northern section of Carpentaria Shire.

In this role, it competes in servicing Kowanyama and stations in the lower Mitchell basin with the Burke Developmental Road out of Mareeba in the east.
- 2) As **MAP 6** illustrates, it provides a link between the Cape York Peninsula region:
 - with Normanton/ Karumba and the lower Gulf/ Savannah Way region, traversing east west from Cairns across the lower Gulf to the Northern Territory, and
 - with the "Waltzing Matilda Way" coming up from the south via the Waltzing Matilda country and the Cloncurry/ Mt Isa region.

The first function has dominated usage up to the present.

The upgrading, while improving its efficiency for the first function, is especially aimed at developing its second inter-regional connection.

5.1.2 Highway One

National Highway One is based on the principle of circuiting the coastline of the nation. Major gaps in the principle are across the north due to traditionally substandard roads of the Cape York Peninsula and the Top End.

The Dixie Way will potentially fulfill part of this role in the Cape York Peninsula/ Queensland Gulf Region (see **MAP 6**).

Currently Highway One extends up the east coast to Cairns. As the Peninsula Developmental Road is sealed, there will be an opportunity to extend Highway One north from Cairns via Mareeba up the eastern side of the Peninsula to Weipa via Bamaga.

The logical extension would then be to extend National Highway One designation down the western side of the Peninsula via the Dixie Way to Normanton to link with the Savannah Way across the bottom of the Gulf of Carpentaria coastline into the Northern Territory.

MAP 6 – DIXIE WAY – INTER-REGIONAL CONNECTOR FUNCTION



5.1.3 Savannah Way – Alternative Route

While the main Savannah Way route across the continent from Cairns to Broome is through the Gulf Development Road (Tablelands, Mt Surprise, Georgetown, Croydon), the Burke Developmental Road (Section 69b) from Mareeba/ Chillagoe to Dunbar Station and then down to Normanton is designated as an alternative Savannah Way route.

While most traffic moving across the Savannah Way will use the Gulf Development Road route, some, especially 4WD enthusiasts, will use the alternative route. Completion of sealing Normanton to Dunbar Station will make this alternative Savannah Way route more attractive.

5.2 PORT DISTANCES

Sealing the Dixie Way will be of potential development of the port of Karumba as an export and import port. While the shallow depth of the port and the approaches to it in the south-east Gulf constrain the size of shipping that can use the port with mineral exports being transhipped in 5000 tonne barges. Live cattle exports in smaller ships have ceased.

Of potential importance, the Dixie Way along with sealing of the Peninsula Developmental Road will place the deep-water port at Weipa closer to the Carpentaria Shire pastoral properties than Townsville with comparative distances as follows (see **MAP 7**).

Normanton – Weipa.....870 km

Normanton – Townsville via Cloncurry.....1233 km

Road distance to Weipa is much shorter than Normanton to Darwin.

The following sections on the pastoral sector and agriculture explore further possible implications.

MAP 7 – PORT DISTANCES



5.3 TOURISM

The upgrading of the Dixie Way will have a number of impacts on tourism flows.

The major impact will be on long distance road travellers from and to southern Queensland and interstate through opening up:

- a) A more direct route to and from the Cape York Peninsula area for those travelling through Outback Queensland and around Australia via the Savannah Way.
- b) An alternative to the coastal route for those travelling up into and from the Peninsula area thus setting up a circuit and avoiding backtracking.

For local visitation within the north and for fly-in visitors hiring vehicles, upgrading will lead to the establishment of 'outback' circuits including:

- a) A grand circuit of Cairns/ Cooktown/ Laura/ Dixie Way to Normanton/ Georgetown/ Tablelands/ Cairns.
- b) Smaller circuits including use of the Dunbar/ Chillagoe/ Mareeba road one way.

The impact of the upgrading of the road is difficult to predict. The following seeks to estimate.

There will be two elements of growth looking into the future:

- a) 'One-off' growth due to the upgrading of the Dixie Way that will have two impact effects from upgrading:
 - i) In encouraging visitors to the Peninsula area to use this route;
 - ii) The impact on visitation to the Peninsula on numbers visiting the Peninsula area.
- b) Long term natural growth of visitor numbers to the area.

In relation to the latter, it should be noted that 2021 was an exceptionally high year for drive tourism due to Covid effects.

Looking forward, there will be a number of opposing effects from 2022 on:

- a) The opening of international borders that will be negative for domestic visitation;
- b) The opening of interstate borders that will have some positive and some negative effects;
- c) The increase in domestic road tourism including an increase in purchases of caravans and campervans evident in statistical data (see **Charts 2 & 3**).

It seems likely that visitor numbers to the Peninsula could stagnate for a few years at 2021 levels before resuming growth.

Given the progressive underlying growth trend in visitation to the area (see following charts), and the progressive sealing of the Peninsula Developmental Road, it can be expected that future growth will be strong and a figure of 4% per annum is adopted along with 2% per annum in other areas.

Chart 2: Trend Caravan

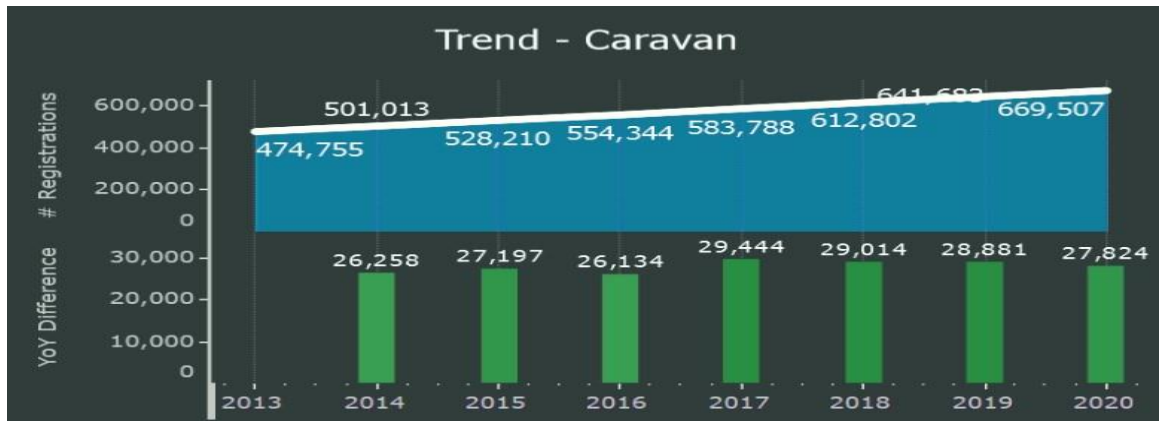
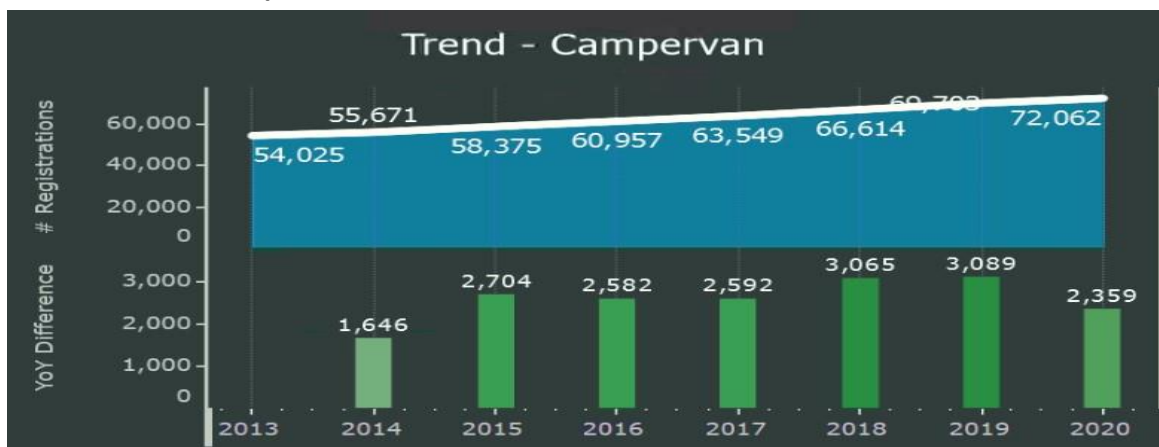


Chart 3: Trend - Campervan



In relation to 'one-off' growth, the following provides for:

- 1) An additional 20,000 a year to be attracted to visit the Peninsula over and above those currently visiting the Peninsula (this represents a 40% increase on estimated existing flows), split 10,000 to/from the Northern Peninsula and 10,000 to/from the Cooktown district.
- 2) A diversion of existing flows of a further 10,000 to/from the Northern Peninsula and a further diversion of 10,000 to/from the Cooktown district.
- 3) Those accessing the area along the Dunbar Normanton section including those coming into and out from the area via the Dunbar/ Chillagoe road increase from an estimated 15,000.

Much of the increase would be in towed vehicles. This would work through to the following.

Estimated Visitor Numbers 2021

	2021	With 'one off' growth	Increase
Koolatah/ Dixie section	13,000	53,000	40,000
Normanton/ Dunbar section	17,000	73,000	56,000

5.4 THE PASTORAL INDUSTRY

5.4.1 General

The major impact of the road upgrading will be two-fold:

- to reduce costs for operations along the road;
- to open up a highly freight efficient triples road train route for transport of cattle from the Peninsula, mainly 'store cattle' for fattening in the central west "Downs" country.

As covered in Section 5.2, of interest to the pastoral industry in the area when combined with the sealing of the Peninsula Developmental Road, it will also expand possibilities for live cattle export development, either:

- through Karumba (if re-established), with cattle also being able to easily come down from the Peninsula, or
- through the deep-water port at Weipa drawing on the large number of cattle in the Carpentaria, North West and Central West.

5.4.2 Benefits to Cattle Stations Along the Route

Information from cattle stations indicates that apart from transport cost savings of outbound turnover (that is reflected in vehicle operating costs including time savings), the upgrading to sealed can result in substantial savings in weight loss, bruising and deaths. Flooding road closures also affect being able to turnoff while cattle are in prime condition after the wet season and to take advantage of market conditions.

From discussions with stations along the route that predominantly send their turnoff down via Normanton, it is estimated that at the northern end, losses caused by these factors because of the unsealed road, could be as high as \$60 per head of value of stock transported, reducing down to \$4 per head near where the unsealed section ends.

Estimated average annual cost of these factors is an average of \$20 on a turnoff of 50,000 head, ie. of the order of \$1m per annum with a Present Value (PV) over a 30-year project period, at a 4% 'real' discount rate, of about \$17m.

5.4.3 Peninsula Cattle Diversion

The sealing of the Dixie Way will be of substantial benefit to those stations in Mareeba Shire and Cook Shire along the Mitchell River and in Cook Shire in the Kimba Road area and further north along the PDR. Although some of the cattle from this area will move into the Mareeba Saleyards, most currently move south for fattening and then to meatworks.

Sealing of the route will make it attractive for those proceeding to the Central West for fattening to switch from the Chillagoe/ Ootann triples route and the Lakeland/ Mareeba route that is restricted to doubles.

It is thus expected that a substantial increase will take place in cattle moving over the Dixie Way flowing in from the PDR, the Kimba Road and from along the middle Mitchell River. It is estimated that additional flow from Cook Shire/ Peninsula area will be of the order of 10,000 head and from Mareeba Shire western section about 10,000 head. This will translate into an estimated 0.3 triples movement on the Koolatah/ Dixie section and 0.6 triples movement over the Dunbar/ Gilbert River section (at average 160 head per road train).

5.4.4 Live Cattle Exports

If live cattle exports are re-established through Karumba, the sealing of the road will bring the Peninsula area in as a potential source of cattle and reinforce the flows down the Dixie Way from that area.

Importantly, sealing of the Dixie Way with the sealing of the Peninsula Developmental Road has the potential to trigger the re-establishment of Weipa as an efficient deep water live cattle export port that being west-facing saves considerable sailing time to Indonesia and other Asian markets than east coast ports and is closer to large areas of cattle turnoff in Queensland, especially compared with Darwin.

5.5 AGRICULTURAL DEVELOPMENT

5.5.1 Gilbert River

The Dixie Way upgrading will complement agricultural development currently underway in the Gilbert River area. Some 60,000ha of land on Strathmore Station is currently being planted with large areas of cotton, sorghum and mung beans for local markets and for export.

Photo 12 - Harvested Sorghum, Strathmore Station

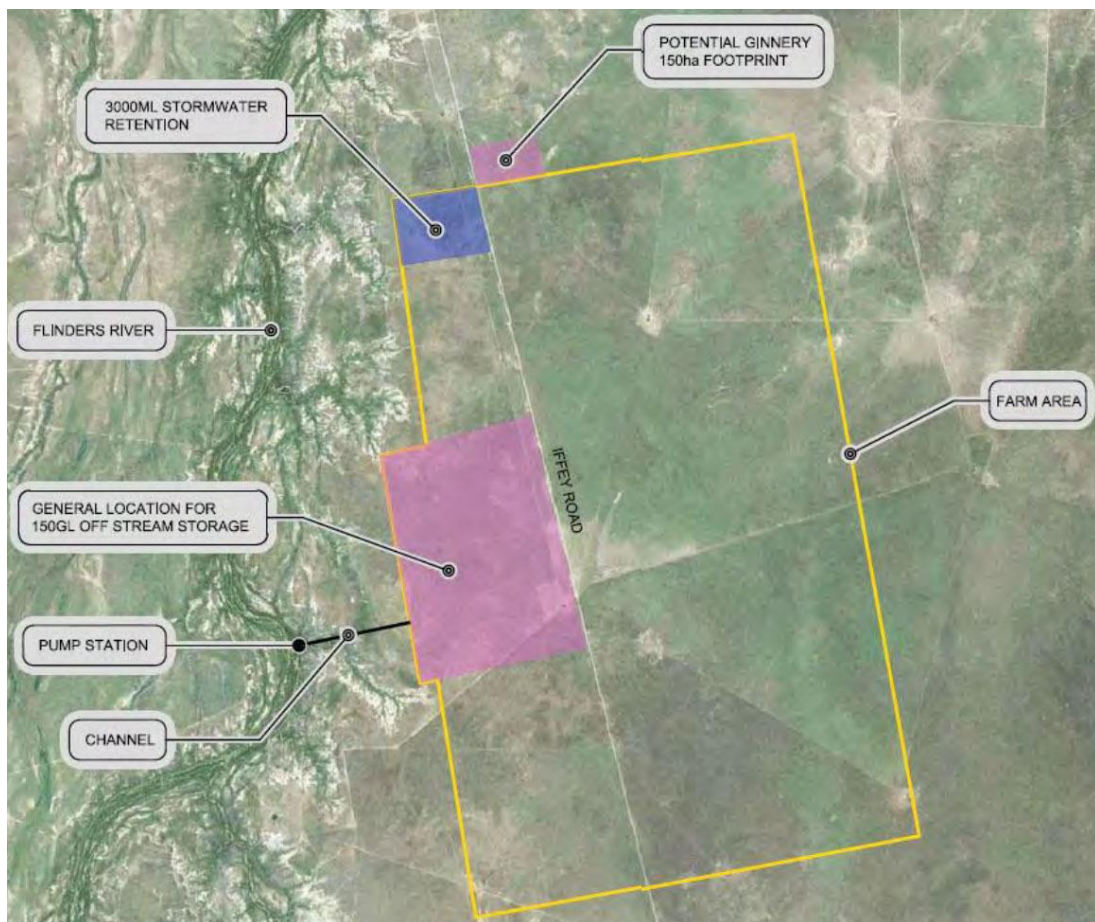


The upgrading of the Dixie Way will facilitate bringing cattle down from the north to fatten on grain crop stubble and fodder crops in the Strathmore area helping the project's economies.

If cotton expands in this area such that a cotton gin is established, the Dixie Way will help the transport of cotton seed meal north into the Peninsula as a feed supplement.

5.5.2 Flinders River

MAP 8 – DETAILED LOCATION OF THREE RIVERS PROJECT ALONG IFFLEY ROAD



As with Strathmore, the upgrading of the Dixie Way would facilitate the transport north of cotton seed meal as a supplement for cattle.

5.5.3 Mitchell River & Delta

Discussions with property owners indicated the suitability of alluvial soils along the banks of the Mitchell River with large potential water availability for irrigation with some interest expressed in exploiting possibilities.

The sealing of the Dixie Way will enhance the possibility of this becoming viable. Alluvial soils in the Delta area plus the large flat clay-based soil areas near potential water supplies are of potential agricultural interest.

Proposals for a large scheme to develop agriculture on the extensive open plains north of the Mitchell River up to the Coleman River have been developed by Cape York Bio Futures Enterprise.

The project is proposed to be inland from the coast and located between the Mitchell River delta and the Coleman River to the north. The project location places it about 40km north east of Kowanyama and 60km south east of Pormpuraaw (see earlier Maps 2 and 3).

It is proposed to draw annual flood overflow water from the Coleman River in the north and the Mitchell River in the south into major offstream storages to irrigate a proposed 65,000ha, mainly of sugarcane, guar and sweet sorghum, and sustain 2000ha of aquaculture of jade perch and red claw.

The project proposes the construction of a sugar mill to produce sugar, a biofuel plant to produce ethanol and biodiesel, guar processing, and a feedlot.

It is proposed to develop a barge transfer port at Pormpuraaw to deliver product to offshore export bulk ships, or alternatively to use the existing port facilities at Karumba.

Total investment including road development from Kowanyama to Pormpuraaw and a bridge over the lower crossing of the Mitchell River, is projected to be of the order of \$3bn.

Construction employment is estimated at over 3,000 and ongoing employment up to about 1,500.

The Cape York Biofutures Corporation is currently negotiating with the Queensland Government for major project status and with major financial interests including international agricultural companies.

Obviously, sealing of the Dixie Way and the Kowanyama Road would enhance the viability of the project and likelihood of agriculture developing in this area. The project in its construction phase will generate a large need to bring in materials and labour force from major centres in the south.

The operational phase would see a continuing need for a wide range of inputs to service an expanded population in the Kowanyama/ Pormpuraaw area. The Kowanyama Road and Dunbar/ Normanton section has the potential to play a major role in carriage of outbound product if a decision was made to export all or part of the output via the existing port facilities at Karumba.

Transport impacts from the project have not yet been modelled.

5.6 FISHING INDUSTRY

The sealing of the road north to Dunbar and into Kowanyama and the existing sealed link to Topsy Creek barge ramp means that a further point could be established where a sealed road reaches the coast.

This will be relevant to the fishing industry enabling vessels operating in the area to potentially drop off catch for road transport out and pick up fuel and supplies without having to travel back down to Karumba and return.

Sealing of the road to Cooktown on the east coast has resulted in a similar effect resulting in development of that centre as a fishing industry centre both commercial and recreation.

It opens up the possibility of the development of Kowanyama/ Topsy Creek landing as a small fishing industry service centre including the development of a wharf structure, possibly initially pontoon type.

Photo 13 - Barge Ramp Topsy Creek, Kowanyama



5.7 MINING

The only recognised mining area serviced by the Dixie Way is the Alice River gold mining area a short distance east of the road adjacent to the Olkola National Park area along the Kimba Road. No mining is currently taking place in the area which is likely to be serviced from east coast centres.

6. ECONOMIC EFFICIENCY ANALYSIS

6.1 GENERAL

The following analysis looks at economic efficiency impacts, especially in terms of traffic growth, travel time savings, vehicle operating cost savings and safety.

Especially for cattle movements, it identified savings to impact on stock weight, mortality and market access.

6.2 KOOLATAH/ DIXIE SECTION

6.2.1 General

Traffic on this section of the Dixie Way has grown very strongly over the last few years.

While there is cattle station activity at the southern end along the Mitchell River (Koolatah and Drumduff) and the northern end (Artemis) and off to the east in the Kimba Road area, the central section however, has been replaced by National Parks.

Tourism traffic has increased substantially over the past years.

Tables, Appendix 4, gives calculation of travel time and vehicle operating cost savings based on the following assessment of a one-off increase and long-term growth rates. Technical Note Appendix 2 gives further details of parameters used.

6.2.2 Changes in Traffic & Long-Term Growth

Light Vehicles

Non-tourism light vehicle traffic is currently estimated at six (6) a day (two local business, three local non-business, one outside business), with no 'one-off' growth and only outside business projected to grow at 2% per annum.

However, tourism traffic is likely to leap with the upgrading (see Section 5), to AADT 72 including about 12 towing. Growth is assumed to be high, especially with the progressive sealing of the Peninsula Developmental Road and other roads in the Peninsula, and is put at 3% per annum.

Heavy Vehicles

Heavy vehicle traffic on the road is estimated to total 10 a day (trucks - 4, articulated vehicles - 2, road trains cattle - 2, road trains other - 2).

However, with substantial diversion of cattle turnoff from the Peninsula/ Cook Shire area down the road is projected to increase substantially from 2 a day to 3 a day. Long-term growth is estimated at trucks and articulated vehicles 1% p.a., road trains cattle 0.5% p.a. and other road trains 2% p.a.

6.3 DUNBAR ROAD

6.3.1 General

The Gilbert River to Dunbar section of the Dixie Way recorded a 2020 traffic flow of AADT 61.

The major influences on traffic from the upgrading will occur when traffic can flow through the Koolatah/ Dixie section to and from the Peninsula Developmental Road and will mainly be related to the projected substantial increase in tourism flows and the diversion of cattle turnoff from the Peninsula/ Cook Shire area away from north/south routes closer to the east coast.

There will be substantial benefits to existing traffic flows to and from stations in the area and Kowanyama.

Tables, Appendix 4, gives details of calculations.

The following gives details of estimated 'one-off' and long-term growth in traffic flows. Technical Note Appendix 3 gives further details of parameters used.

6.3.2 Light Vehicles

Local Business – Includes station traffic, business traffic out of Normanton and Karumba, and Council traffic including light vehicles supporting roadworks.

Assumes a 'one-off' growth of about 20% although road works' traffic may decline.

No long-term growth is projected.

Local Other – This is private traffic especially to and from stations and is assumed to record only marginal growth.

No long-term growth is projected.

Local Kowanyama – This is local non-business traffic between Kowanyama and Normanton and is estimated to increase strongly by 80%, in part a diversion from travelling to and from Mareeba/ Cairns because of sealed road access and generally poorer vehicles in Kowanyama not suitable for unsealed roads.

Indigenous population is growing, vehicle ownership increasing and a 2% p.a. growth projected.

Business – This is non-local business traffic that is expected to grow strongly by a third when sealed. This type of traffic is increasing and a 2% p.a. long-term growth is used.

Tourist – As set out in Section 5.2, this traffic is expected to leap with the road upgrading, especially vehicles towing including boats, camper-trailers and caravans from singles 20 to 75 and towing from 4 up to 15. With the progressive sealing of the PDR and other roads in the area, a 3% p.a. long-term growth is projected.

6.3.3 Heavy Vehicles

Trucks – There are a mixture of stations and other service trucks including roadworks, Telstra, tradie vehicles, and it could include the development of a bus service between Normanton and Kowanyama.

With about a 15% growth provided for, a modest 1% p.a. long-term growth is projected.

Articulated Vehicles – With only one a day, any growth would be small and not lift to 2.

Long-term growth projected 1% p.a.

Road-Train/ Cattle – As set out in Section 5.4, cattle road-train movements are projected to increase by about 25%.

Cattle industry turnoff of 0.5% p.a. long-term growth is projected.

Road Trains/ Other – These include general freight that is expected to grow marginally and roadworks that is likely to decline when sealed.

This type of traffic is projected to grow at 2% p.a.

6.4 SAFETY SAVINGS

The following gives estimation of crash costs by injury severity as published by Transport and Main Roads with costs applied to casualties as follows from National Guidelines for Transport Management in Australian Road Parameters 2013 adjusting to 2021 values.

Queensland	Rural 2013	Rural 2021	Urban 2013	Urban 2021
Fatal crash	8,059,080	9,057,085	7,741,326	8,699,982
Serious injury crash	294,906	331,426	436,471	490,522
Other injury crash	31,268	35,140	23,446	26,349

Traffic is very low on the Koolatah/ Dixie section. Only one crash was recorded (involving a hospitalisation), over the period 2003 to 2020.

The upgrading will result in a large increase in traffic over this section and there is unlikely to be any significant saving in crash costs.

The following table gives crashes on the Howard to (Karumba turnoff) Dunbar section of the road over the five years to 2020 and estimates average crashes per annum and their cost.

Table 12: Crash Casualties Dunbar Road, 5 Years to 2020

Crash Severity	Total 5 years	Average annual	Cost per crash	Average annual cost
Fatal	0	0	\$9,057,085	0
Hospitalisation	2	0.4	\$331,426	\$132,570
Medical treatment/ minor injury	3	0.6	\$35,140	\$21,084
TOTAL	5	1		\$153,654

Note – The accident rates reported seem to be very low resulting in relatively low savings. It is possible that because of remoteness, some accidents are not reported.

Expected crash rates when upgraded compared to the current situation are taken from Queensland Transport Cost Benefit Analysis Manual: Road Project Section 4(6) as follows for accident rates per million vehicle km: The figures indicate that a 14% improvement in crash rates could be expected.

This would give a saving of \$21,511 a year with a present Value over 30 years at a 4% 'real' discount rate no growth of approximately \$0.4m

6.4 TOTAL VALUE OF SAVINGS

The following table sets out the resulting estimates of annual savings and Present Value of savings over a 30-year project period at a 4% per annum 'real' discount rate.

Table 13: Total Annual Savings & Present Value (2021 Values)

	Annual Savings	Present Value
Dunbar Section	\$2.78m	\$85.7m
Koolatah/ Dixie Section	\$3.16m	\$82.6m
TOTAL	\$5.94M	\$168.3M
Estimated savings cattle value losses, damage, etc		\$17.3m
Estimated crash cost savings		\$0.4m
TOTAL		\$186.0M

7. ECONOMIC IMPACTS

7.1 GENERAL

Economic impacts are at two levels as follows.

- a) The transport efficiency improvements help lower costs for, and maintain the viability of, the existing industries in the face of global competitive conditions even if they do not lead to significant growth. If these efficiency improvements did not take place, in some cases, industries risk going backwards with negative impacts on the overall level of activity in the economy.
- b) The transport efficiency improvements lead to a positive response resulting in growth in aggregate economic activity.

The following analysis particularly concentrates on the second aspect of additional growth generated but it must always be kept in mind that the first effect is important, especially for industries exposed to global competition.

The following estimates the increase in gross value of economic activity in the area of Carpentaria Shire and Cook Shire.

There are three major impacts identified as follows.

- 1) Likely increase in value of pastoral operations the upgrading will underpin;
- 2) The value of increased tourism generated;
- 3) The additional value the additional cattle transport will generate;
- 4) Additional spending of Kowanyama residents in Normanton/ Karumba.

7.2 THE PASTORAL INDUSTRY

In the area serviced by the Dixie Way, the cattle industry is estimated to have a turnover value of about \$96m per annum. Present Value of this production at a 0.5% growth rate over a 30-year project period, at a 4% 'real' discount rate, is estimated at \$1.7bn.

7.3 TOURISM

The major economic impact of the road is expected to be a major increase in tourism flows through the Peninsula/ Cook Shire area at 20,000 and Carpentaria Shire at 56,000.

Analysis of Tourism Research Australia data indicates that overnight visitors during their visit to these areas will typically spend about \$510 in Carpentaria Shire and \$530 in Cook Shire. The above figures would translate into increases in tourism expenditure in Carpentaria Shire of \$28m per annum and in the area of Peninsula/ Cook Shire \$11m per annum.

It can be expected in a regional area that this level of expenditure generated would create of the order of 4.7 jobs per \$m, i.e. of the order of Carpentaria Shire 130 and Peninsula/ Cook Shire 52.

Present Value of additional expenditure generated is estimated (over 30 years at 4% 'real' discount rate and 3% per annum growth), of the order of Carpentaria Shire \$700m and Peninsula/ Cook Shire \$270m.

7.4 CATTLE TRANSPORT

Upgrading the Dixie Way is also likely to divert some flow of cattle from the Peninsula from routes to the south via the Tablelands. Numbers coming out of the Upper Peninsula area are not large and the cattle would move through the Shire and economic impact be mainly to the transport sector. If about \$50 a head accrued to the Carpentaria Shire transport operators on 20,000 head, annual value would be \$1.0m with a Present Value over the project period with 0.5% growth each year in cattle numbers of the order of \$18m.

7.5 KOWANYAMA SPENDING

In the analysis, additional business with Kowanyama is indicated to double and instead of Indigenous light vehicle traffic being split over 80% to Cairns and 20% to Normanton, the Normanton percentage is estimated to rise to about a third.

If it is assumed that each of the 1500 light vehicle movements a year result in an average expenditure of \$600 in Normanton, the addition would be of the order of \$4m a year with a Present Value (30 years at 4% 'real' discount rate and 2% per annum growth), of the order of \$80m.

7.6 SUMMARY OF ECONOMIC IMPACTS

The foregoing estimates of Present Value (over 30 years at 4% 'real' discount rate) of economic impacts on Carpentaria Shire and Cook Shire could be expected to be of the order of:

<u>Retention</u> of cattle industry competitiveness	\$1700M
<u>Additional Activity</u>	
Tourism	\$970M
Cattle Transport rub off	\$18M
Additional expenditure from Kowanyama.....	\$80M

8. SUMMARY OF COSTS & BENEFITS

The foregoing indicates that **Costs** of sealing the Dixie Way and improving stream crossings, and taking into account maintenance cost savings, would be of the order of \$218m.

Present Value of **Efficiency Benefits** is estimated to be of the order of **\$186m**. Present Value of **Additional Economic Expenditure** generated in Carpentaria Shire and Cook Shire is estimated to be of the order of **\$1070m**. Thus, although the efficiency benefits calculate at less than the costs, the aggregate economic impact outweighs the costs by a very large margin. Benefit Cost Ratio of **Efficiency Benefits** calculates at **0.86** and of **Economic Impact Benefits 4.91**.

In addition, sealing the Dixie Way would strengthen the competitiveness to ensure the continuous viability of the cattle industry in the area and help support the continuing development of agriculture in the Gilbert River and Flinders River in the Mitchell River delta area.

It is likely that the upgrading, especially if accompanied by sealing the road from Dunbar into Kowanyama, would increase the likelihood of development in the Kowanyama area, development of a relationship with the fishing industry in the Gulf, and participation in tourism and agricultural development in the future.

It will be important if benefits (especially from tourism), are to be realised, that investment be made in tourism infrastructure and promotional activity and private enterprise encouraged to provide travel support facilities such as fuel and other road services in appropriate locations.

9. TOURISM PROMOTION RECOMMENDATIONS

9.1 DEVELOPING A TOURISM ROUTE

Although some four-wheel drivers/ outback adventurers travel the route, it is not generally recognised as a tourism route. As part of the development of the route, it is recommended that funds be committed to positioning the Dixie Way as a recognised tourism route. This will need to take the form of infrastructure in the form of directional and explanatory signage as well as promotional advertising of the route.

Because of the current limitations of the road, especially the Mitchell crossing that acts as a barrier to vehicle movements over substantial periods of the year, the promotion of travel over the route will need to be very clear and explicit about the travel conditions so that travellers are not led into risks and dangerous situations.

This will especially need to refer to the limitations posed by the Mitchell River crossing.

9.2 ROADSIDE INFRASTRUCTURE

9.2.1 Directional Signage

At present, there is no clear signage at critical points of this possibility of using the route for inter-regional travel.

There are three critical locations:

- 1) the northern entry
- 2) the southern entry
- 3) the Dunbar Station crossroads where the Dixie Way is intersected by the Burke Developmental Road coming in from Chillagoe in the east and the Kowanyama Road coming in from the west.

9.2.1.1 The Northern Entrance

At present, the only signage at the northern entrance from the Peninsula Developmental Road (PDR) is a small sign pointing to Artemis Station. Signage at this junction could indicate – Dixie Way with distances to Kowanyama, Normanton, Karumba, but with very clear warnings about distance to next fuel availability and road conditions, especially the Mitchell River crossing status for different types of vehicles. There will be an issue about how the road closure element of the signage is kept up to date.

9.2.1.2 The Southern Entrance

At the southern entrance north of the Karumba turnoff, a similar sign would indicate distances to Kowanyama, and the PDR junction with similar issues about fuel and road closures.

9.2.1.3 The Dunbar Station Crossroads

Signage at the Dunbar junction would need to include signage for traffic coming in along the Burke Developmental Road from Chillagoe and traffic coming in from Kowanyama.

At the turnoff to the Mitchell River crossing, there would need to be barriers and signage on both sides of the Mitchell River crossing.

9.3 FUEL AND SERVICES

One of the clear constraints in promotion of the Dixie Way as a tourism route is the unavailability of fuel along a route with a 370km travel distance. While there is fuel available at Kowanyama, it is 100km off the Dixie Way route.

The obvious optimum point for fuel to be available would be at Dunbar Station where it would also service traffic passing between Chillagoe and Kowanyama and Kowanyama and Normanton. It is believed that Dunbar Station is already disrupted by travellers seeking fuel and services, advice about using the Mitchell River crossing and at times, travellers experiencing difficulties on the crossing.

The possibility of setting up a road-side service centre including possible camping facilities could be explored with Dunbar Station, with support sought from community/ tourism development schemes at state and federal level.

9.4 ATTRACTION INFORMATION

The development of the route for tourism would need to be appropriately accompanied by highlighting features along the route.

The Olkola National Park development waterhole feature south of the northern turnoff from the Peninsula Developmental Road (PDR) is excellent and it is believed that there are plans to develop a Cultural Centre on the western side of the highway closer to the turnoff.

The Kimba Road leading off to Laura to the east should be marked. It is an important potential side link to Laura with old gold mine activity along the route (Alice River gold mine), along with forested country and alternative routes south to Gamboola Station.

It is believed the rare Golden Shouldered Parrot occurs in this area and informative signage could highlight this.

Interpretive signage about the extent of the Mitchell River Basin, Australia's second largest in terms of water runoff, could be established in a pleasant spot at the Dunbar crossing along with some rest area type facilities.

It is recommended that a flood height indicator be established at the crossing similar to the one further upstream near the Gamboola crossing (see **Photo 14**) that visitors can have their photo taken against, that dramatizes the volume of water that passes down the river in the wet season, preferably in a location where the width of the river can be seen in the background.

Photo 14 – Gamboola Crossing



It is suggested that at the Dunbar intersection or at the Mitchell River crossing, interpretive signage be established that provides information on the Aboriginal tribal areas of the lower Mitchell delta area and along the coast (the Olkola National Park covers the inland Aboriginal people), partly with a view to drawing visitors to Kowanyama visitor facilities. Interpretative signage at Dunbar could also provide an introduction to the area's pastoral history and current operations in the region.

It is suggested that at an appropriate location, perhaps the Staaten River crossing, interpretive signage be set up that records the early Dutch expeditions along the coast – the “Duyfken” further north at Aurukun in 1606 and the “Pera” and “Arnhem” further south at the Staaten in 1622.

Interpretative signage at the Gilbert River crossing could record the Leichhardt expedition passing through the area in 1845.

9.5 RELATIONSHIP WITH MAJOR VISITOR CENTRES

It will be important to have the Dixie Way route recorded in key visitor centres including:

- The unmanned Visitor Information Centre established by Cook Shire at Lakeland (current maps developed there show the Kimba Road but without recording the Dixie Way as an alternative, dry season route linking south).
- The Hub Visitor Centre at Chillagoe
- Visitor Information Centre at Karumba
- The proposed Monsoon Centre at Normanton
- Visitor Centres at Mt Isa, Cloncurry and the Waltzing Matilda Centre at Winton.

Carpentaria Shire will need to interact with the local governments involved in these centres.

The roadhouses on the PDR – Hann River, Musgrave, Archer River and Coen, also act as important centres for visitors to obtain information and it will be important to engage with these centres.

9.6 NAME

Council has adopted the name Dixie Way for the route. While this is derived from the name of the road north of the Mitchell crossing which in turn is derived from the name of the old Dixie Station pastoral property, which in turn seems likely to have been derived from the use of the word 'dixie' to describe a cooking pot, attention is drawn to the negative connotations among some of the younger generation exposed to American media, as the name for the southern States of America, involvement with the Civil War and the institution of slavery. While this does not mean that the name should be abandoned (it is a genuine historical name), some research into the origin of the name could usefully be undertaken, especially with a view to disassociate it from the US southern states connotation and associating it with a cooking pot/vessel as commonly used historically by the Australian army.

9.7 DEVELOPMENT OF ATTRACTIONS

The Dixie Way links two major attraction areas that have become well established in the national tourism consciousness – the Waltzing Matilda Country and Cape York Peninsula, especially Cooktown and “the Tip”. However, the Dixie Way passes through an area that is virtually unknown to most Australians and international visitors.

At present, the only visitors to the area are:

- Shooters and fishers
- Intrepid 4-wheel driver explorers.

If the route is to be used, it will be important to develop attractions and visitor facilities on the route. Currently the only developed tourism facilities in the area are:

- 1) The Olkola National Park presentation;
- 2) The Dinah Island Fishing Lodge (currently closed);
- 3) Some camping ground and accommodation facilities at Kowanyama.

What is special about the area to experience would seem to be:

- A strong Indigenous presence and its traditional relationship as a hunter gather culture with the natural environment;
- The monsoon flooding landscape of the area, especially the Mitchell River delta, but also the deltas of the other rivers along the coast with its special natural environment characterised by very strong birdlife including large populations of brolgas, corellas, pelicans and ducks, its special vegetation (the palms at Kowanyama), and its estuary life including large barramundi stocks, crocodiles, crabs.
- The large historic remote cattle stations in the area.

Photo 15 – Historic Cattle Station – Delta Downs



The development of the Dixie Way road infrastructure needs to be accompanied by the development of tourism attraction infrastructure.

The Olkola National Park initiative and the proposed Cultural Centre close up towards the PDR is a first step in the presentation of Indigenous' cultural and relationship with the environment. However, the existence of a large population at Kowanyama presents an opportunity for development of a similar presentation but related to the delta/coastal environment in that area.

In relation to the natural environment of the area, the proposed Monsoon Centre at Normanton and the Barramundi Centre at Karumba provide attractions to highlight natural land and estuary life.

The major feature along the route however, is the crossing of the Mitchell River and the Mitchell River delta. It is recommended that apart from the development of travel facilities (fuel, camping/ other accommodation, shop), in the Dunbar Junction/ Mitchell River crossing area, this area and extending to Kowanyama be viewed as a potential tourism attractions area related to the Mitchell River and its delta, including conducted land but also potentially river tours as well as fishing.

The Dinah Island facility is currently closed as a fishing lodge open to the public. However, increased attention to the area and more road traffic through the area could make it viable to reopen. Past traffic was mainly 'fly-in'. The current alignment of the road causes access and maintenance problems that need to be resolved.

The interface of working cattle station operations and tourism traffic can pose difficulties that lead pastoral properties to wish to exclude visitors. A prime potential attraction is for visitors to call at and experience the atmosphere of one of these historic cattle stations in the area. Dunbar and Van Rook with their proximity to the Dixie Way are excellently placed. Old historic Inkerman near the coast but well off the Dixie Way could be well placed for development as a 'farm stay' type of operation. Road access to Inkerman Station is shared with Dinah Island.

9.8 PROMOTIONAL MATERIAL

Development of promotional material would need to include:

- Incorporation of the name and information on the route into existing tourism promotional material produced by Carpentaria Shire indicating websites;
- Development of a website specifically on the Dixie Way;
- Dixie Way brochure/ leaflet that can be placed with brochures, especially along the Waltzing Matilda Way and the Peninsula Developmental Road.

UPGRADING THE DIXIE WAY



ECONOMIC IMPACT ANALYSIS

APPENDICES

APPENDIX 1 – Sources of Information

List of Persons/Organisations/Businesses Consulted

CARPENTARIA SHIRE COUNCIL

- Mayor
- Engineering Staff
- Engineering Consultants
- Road Works Staff
- Tourism Visitor Information Centre Staff
- Economic & Social Development Staff

Previous Study

- Pastoral Properties
- Tourist Accommodation Owners

KOWANYAMA ABORIGINAL COUNCIL

- CEO
- Engineering Staff

PASTORAL PROPERTIES

- Delta Downs
- Miranda Downs
- Van rook
- Dunbar
- Rutland Plains
- Koolatah

OLKOLA NATIONAL PARK

APPENDIX 2 – Technical Note

Economic Efficiency Cost Benefit Analysis – Assumptions and Parameters

Benefit Cost Analysis is carried out with major assumptions (a 30-year project life using a 4% per annum 'real' discount rate and standard travel time and vehicle operating cost parameters as published by the Australian Transport and Infrastructure Council 2015 National Guidelines for Transport System Management in Australia Road Parameter Values [PV2]).

The basic guidelines and parameters for both the State and Federal requirements are set out in the following.

- Australian Transport and Infrastructure Council 2015 National Guidelines for Transport System Management in Australia Road Parameter Values [PV2].
- Queensland Department of Transport and Main Roads Cost Benefit Analysis Manual Road Projects.
- Principles and Guidelines for Economic Appraisal of Transport Investment and Initiatives – Transport Economic Appraisal Guidelines – Transport New South Wales 2016.

However, in a number of fields, more detailed methodology and parameters are set out in the Queensland Department of Transport and Main Roads Cost Benefit Analysis Manual Road Projects, and where appropriate, the methodology, conventions and parameters set out in this manual are used.

A Cost Benefit Analysis of this nature requires the collection of a great deal of existing statistical information, but also information and opinions about current traffic on the roads and opinions about likely impacts of sealing from persons knowledgeable in the industries and operations relevant to the road. It is also necessary in carrying out the analysis, to make judgements about likely impacts.

Appendix 1 gives a list of important assumptions made based on information received and judgements about likely impacts based on those judgements. Appendix 2 gives a list of persons from whom information and opinions were obtained.

APPENDIX 3 – Dixie Way – Table of Distances

Normanton to Howard	(30.5 km)
(Howard to Karumba)	(39.6 km)
Howard to Gilbert River	72.7 km
Gilbert River to Dunbar	157.0 km
(Dunbar to Kowanyama)	(101.0 km)
Dunbar to Mitchell River Turnoff	1.4 km
Turnoff to Mitchell River	7.7 km
Mitchell River Crossing	0.4 km
Mitchell River to Shire Boundary	101.0 km
Shire Boundary to PDR	95.1 km
(PDR Turnoff to Musgrave Roadhouse)	(23.8 km)
Distance – Normanton to Dunbar	260.3 km
Distance Dunbar to PDR	205.2 km
TOTAL DISTANCE DIXIE WAY	474.5 KM
EST TOTAL DISTANCE DIXIE WAY UNSEALED	371.3 KM
PORMPURA AW LOOP	
PDR to Pormpuraaw	216 km
Pormpuraaw to Kowanyama (via lower crossing)	124 km
Dunbar to Chillagoe	300 km
Chillagoe to Mareeba	142 km
MITCHELL RIVER CROSSINGS	
Pormpuraaw Crossing to Dunbar Crossing	100 km
Dunbar Crossing to Drumduff Crossing (sand crossing)	87 km
Drumduff Crossing to Gamboola Crossing (causeway)	76 km
Gamboola Crossing to Mt Mulgrave Bridge Crossing (bridge)	52 km
Normanton to Mareeba	711.3 km
Normanton to Chillagoe	569.3 km
COMPARISON WITH OTHER SERVICE CENTRES	
Kowanyama to Normanton	370.3 km
Kowanyama to Mareeba	543.0 km
Kowanyama to Gilbert River (unsealed)	267.1 km
Kowanyama to Chillagoe (unsealed)	401.0 km
COMPARATIVE DISTANCES – WEIPA & TOWNSVILLE PORTS	
Normanton to Weipa	
Normanton to PDR	474.0 km
Dixie Way Junction to Weipa	396.0 km
TOTAL NORMANTON TO WEIPA	870.0 km
Normanton to Townsville	
Normanton to Cloncurry	449.0 km
Cloncurry to Townsville	784.0 km
TOTAL NORMANTON TO TOWNSVILLE	1233.0 km

APPENDIX 4 – Efficiency Benefit Calculations

- **TRAVEL TIME &**
- **VEHICLE OPERATING COST SAVINGS**

Table 1: Dunbar Road (2019 Values)

	Dunbar Road	2021 AADT	One-off Growth	Total With one-off growth AADT	Distance	Inflation Factor + Regional Cost	Travel Speed Unsealed	Travel Time Unsealed	Travel Speed Sealed	Travel Time Sealed	Travel Time Saving Hrs	Travel Time Saving Rate Per Vehicle Per Person 2013	Travel Time Saving Rate Per Vehicle Per Person 2019	Persons Per Vehicle	Travel Time Saving Per Vehicle Per Hr	Saving Freight Per Vehicle 2013	Saving Freight Per Vehicle 2019	Total Travel Time Saving Per Hr 2019	Travel Time Saving Per Vehicle	Annual Travel Time Saving 2019
VL	Local Business	11	2	13	157	1.339	85.0	1.85	95.0	1.65	0.19	48.63	65.13	1.30	84.66	0.00	0.00	84.66	16.46	78,106
	Local Other	4	0	4	157	1.339	85.0	1.85	95.0	1.65	0.19	14.99	20.07	1.70	34.13	0.00	0.00	34.13	6.64	9,687
	Local Kowanyama	10	8	18	157	1.339	75.0	2.09	85.0	1.85	0.25	14.99	20.07	2.00	40.15	0.00	0.00	40.15	9.89	64,962
	Business	3	1	4	157	1.339	80.0	1.96	90.0	1.74	0.22	48.63	65.13	1.30	84.66	0.00	0.00	84.66	18.46	26,953
	Tourist Towing	4	11	15	157	1.339	60.0	2.62	80.0	1.96	0.65	14.99	20.07	2.00	40.15	0.00	0.00	40.15	26.26	143,797
	Tourist Single	20	55	75	157	1.339	70.0	2.24	90.0	1.74	0.50	14.99	20.07	2.00	40.15	0.00	0.00	40.15	20.01	547,798
VH	Truck	8	1	9	157	1.339	65.0	2.42	80.0	1.96	0.45	25.72	34.44	1.20	41.33	2.11	2.83	44.16	20.00	65,696
	Articulated	3	0	3	157	1.339	65.0	2.42	80.0	1.96	0.45	26.81	35.90	1.00	35.90	19.80	26.52	62.42	28.27	30,955
	Roadtrain Cattle	4	1	5	157	1.339	60.0	2.62	75.0	2.09	0.52	28.45	38.10	1.00	38.10	60.89	81.54	119.64	62.61	114,270
	Roadtrain Other	13	-3	10	157	1.339	60.0	2.62	75.0	2.09	0.52	28.45	38.10	1.00	38.10	60.89	81.54	119.64	62.61	228,540
	TOTAL	80	76	156																1,310,765

Table 1: Dunbar Road (2019 Values) Cont'd

	Dunbar Road	VOC Per Vehicle km Base Case 184 NRM 2016 Values	Inflation 2016-19 + Regional Cost	VOC Per Vehicle km Base Case 184 NRM 2019 Values	Travel Speed Unsealed	Fuel Consumption Ltr's per 100 km	Fuel Cost	Fuel Cost per Vehicle Base Case	VOC & Fuel Cost per Annum Base Case	VOC Per Vehicle km Project Case 25 NRM 2016 Values	Inflation 2016-19 + Regional Cost	VOC Per Vehicle km Project Case 25 NRM 2019 Values	Travel Speed Unsealed	Fuel Consumption Ltr's per 100 km	Fuel Cost	Fuel Cost per Vehicle Project Case	VOC & Fuel Cost per Annum Project Case	VOC & Fuel Cost per Annum Savings	TOTAL Saving Annual Travel & VOC
VL	Local Business	43.20	1.339	57.85	85.0	12.20	1.60	30.65	659,292.83	33.35	1.339	44.66	95.0	12.90	1.60	32.40	574,123.07	85,169.76	163,276.12
	Local Other	43.20	1.339	57.85	85.0	12.20	1.60	30.65	202,859.33	33.35	1.339	44.66	95.0	12.90	1.60	32.40	176,653.25	26,206.08	35,893.45
	Local Kowanyama	42.75	1.339	57.25	75.0	11.65	1.60	29.26	892,399.76	32.75	1.339	43.86	85.0	12.20	1.60	30.65	768,513.69	123,886.07	188,848.45
	Business	42.90	1.339	57.45	80.0	11.90	1.60	29.89	200,211.02	33.00	1.339	44.19	90.0	12.50	1.60	31.40	173,275.65	26,935.37	53,888.74
	Tourist Towing	42.60	1.339	57.05	60.0	13.90	1.60	34.92	790,522.93	32.50	1.339	43.52	80.0	11.90	1.60	29.89	631,072.46	159,450.47	303,247.40
	Tourist Single	42.60	1.339	57.05	70.0	11.40	1.60	28.64	3,682,708.12	33.00	1.339	44.19	90.0	12.50	1.60	31.40	3,248,918.44	433,789.68	981,587.50
VH	Truck	94.20	1.339	126.15	65.0	22.15	1.60	55.64	937,590.58	52.80	1.339	70.71	80.0	23.70	1.60	59.53	671,727.74	265,862.83	331,559.00
	Articulated	143.50	1.339	192.18	65.0	69.80	1.60	175.34	631,809.63	97.80	1.339	130.97	80.0	72.90	1.60	183.12	539,982.54	91,827.09	122,781.76
	Roadtrain Cattle	296.10	1.339	396.54	60.0	187.10	1.60	470.00	2,482,831.73	186.35	1.339	249.56	75.0	192.90	1.60	484.56	2,103,450.85	379,380.88	493,650.99
	Roadtrain Other	296.10	1.339	396.54	60.0	187.10	1.60	470.00	4,965,663.46	186.35	1.339	249.56	75.0	192.90	1.60	484.56	4,206,901.71	758,761.75	987,301.98
	TOTAL								15,445,889.39								13,094,619.40	2,351,269.99	3,662,035.39
																		2,351,269.99	



Table 2: Dunbar Road (2019 Values) – Adjusted to 2021 Values

	Dunbar Road	Total Saving Annual Travel & VOC	Annual Growth	Discount Rate 4%	Net Discount Rate	2019 With one-off growth AADT	Average Growth	NPV Factor	NPV
VL	Local Business	163,276.12	0.00%	4%	4%	13	0.000	17.292	2,823,371
	Local Other	35,893.45	0.00%	4%	4%	4	0.000	17.292	620,670
	Local Kowanyama	188,848.45	2.00%	4%	2%	18	0.231	22.396	4,229,450
	Business	53,888.74	2.00%	4%	2%	4	0.051	22.396	1,206,892
	Tourist Towing	303,247.40	3.00%	4%	1%	15	0.288	25.700	7,793,458
	Tourist Single	981,587.50	3.00%	4%	1%	75	1.442	25.700	25,226,799
VH	Truck	331,559.00	1.00%	4%	3%	9	0.058	19.600	6,498,556
	Articulated	122,781.76	1.00%	4%	3%	3	0.019	19.600	2,406,523
	Roadtrain Cattle	493,650.99	0.50%	4%	3.5%	5	0.016	18.440	9,102,924
	Roadtrain Other	987,301.98	2.00%	4%	2%	10	0.128	22.396	22,111,615
	TOTAL	3,662,035.39	1.45%			156	2.234		82,020,257
	ADJUSTED TO 2021 VALUES	3,826,826.98							85,711,169

Table 1: Koolatah/ Dixie Road (2019 Values)

	Koolatah/ Dixie Road	2021 AADT	One-off Growth	Total With one-off growth AADT	Distance	Inflation Factor + Regional Cost	Travel Speed Unsealed	Travel Time Unsealed	Travel Speed Sealed	Travel Time Sealed	Travel Time Saving Hrs	Travel Time Saving Rate Per Vehicle Per Person 2013	Travel Time Saving Rate Per Vehicle Per Person 2019	Persons Per Vehicle	Travel Time Saving Per Vehicle Per Hr	Saving Freight Per Vehicle 2013	Saving Freight Per Vehicle 2019	Total Travel Time Saving Per Hr 2019	Travel Time Saving Per Vehicle	Annual Travel Time Saving 2019
VL	Local Business	2	0	2	204	1.339	70.0	2.91	90.0	2.27	0.65	48.63	65.13	1.30	84.66	0.00	0.00	84.66	54.83	40,025
	Local Other	3	1	4	204	1.339	70.0	2.91	90.0	2.27	0.65	14.99	20.07	1.70	34.13	0.00	0.00	34.13	22.10	32,268
	Local 02	0	0	0	204	1.339	60.0	3.40	80.0	2.55	0.85	14.99	20.07	2.00	40.15	0.00	0.00	40.15	34.13	0
	Business	1	1	2	204	1.339	65.0	3.14	85.0	2.40	0.74	48.63	65.13	1.30	84.66	0.00	0.00	84.66	62.52	45,640
	Tourist Towing	3	9	12	204	1.339	45.0	4.53	75.0	2.72	1.81	14.99	20.07	2.00	40.15	0.00	0.00	40.15	72.80	318,881
	Tourist Single	15	45	60	204	1.339	55.0	3.71	85.0	2.40	1.31	14.99	20.07	2.00	40.15	0.00	0.00	40.15	52.56	1,151,042
VH	Truck	4	0	4	204	1.339	50.0	4.08	75.0	2.72	1.36	25.72	34.44	1.20	41.33	2.11	2.83	44.16	60.06	87,682
	Articulated	2	1	3	204	1.339	50.0	4.08	75.0	2.72	1.36	26.81	35.90	1.00	35.90	19.80	26.52	62.42	84.89	92,956
	Roadtrain Cattle	2	1	3	204	1.339	45.0	4.53	70.0	2.91	1.62	28.45	38.10	1.00	38.10	60.89	81.54	119.64	193.71	212,112
	Roadtrain Other	2	0	2	204	1.339	45.0	4.53	70.0	2.91	1.62	28.45	38.10	1.00	38.10	60.89	81.54	119.64	193.71	141,408
	TOTAL	34	58	92																2,122,013

Table 1: Koolatah/ Dixie Road (2019 Values) Cont'd

	Koolatah/ Dixie Road	VOC Per Vehicle km Base Case 184 NRM 2016 Values	Inflation 2016-19 + Regional Cost	VOC Per Vehicle km Base Case 184 NRM 2019 Values	Travel Speed Unsealed	Fuel Consumption Ltr's per 100 km	Fuel Cost	Fuel Cost per Vehicle Base Case	VOC & Fuel Cost per Annum Base Case	VOC Per Vehicle km Project Case 25 NRM 2016 Values	Inflation 2016-19 + Regional Cost	VOC Per Vehicle km Project Case 25 NRM 2019 Values	Travel Speed Unsealed	Fuel Consumption Ltr's per 100 km	Fuel Cost	Fuel Cost per Vehicle Project Case	VOC & Fuel Cost per Annum Project Case	VOC & Fuel Cost per Annum Savings	TOTAL Saving Annual Travel & VOC	
VL	Local Business	42.60	1.339	57.05	70.0	12.20	1.60	39.82	144,259.88	35.90	1.339	48.08	90.0	12.90	1.60	42.11	134,300.34	9,959.53	49,984.92	
	Local Other	42.60	1.339	57.05	70.0	12.20	1.60	39.82	288,519.75	35.90	1.339	48.08	90.0	12.90	1.60	42.11	268,600.69	19,919.06	52,186.80	
	Local 02	42.60	1.339	57.05	60.0	11.65	1.60	38.03	0.00	35.40	1.339	47.41	80.0	12.20	1.60	39.82	0.00	0.00	0.00	
	Business	42.60	1.339	57.05	65.0	11.90	1.60	38.84	142,801.65	35.65	1.339	47.74	85.0	12.50	1.60	40.80	131,857.46	10,944.19	56,584.00	
	Tourist Towing	43.20	1.339	57.85	45.0	13.90	1.60	45.37	922,318.51	32.50	1.339	43.52	75.0	11.90	1.60	38.84	735,953.11	186,365.40	505,246.53	
	Tourist Single	42.70	1.339	57.18	55.0	11.40	1.60	37.21	4,217,121.33	35.65	1.339	47.74	85.0	12.50	1.60	40.80	3,955,723.84	261,397.49	1,412,439.01	
VH	Truck	67.90	1.339	90.93	50.0	22.15	1.60	72.30	486,162.09	57.00	1.339	76.33	75.0	23.70	1.60	77.36	457,753.87	28,408.22	116,089.89	
	Articulated	143.10	1.339	191.64	50.0	69.80	1.60	227.83	937,004.76	113.45	1.339	151.93	75.0	72.90	1.60	237.95	870,909.12	66,095.64	159,051.67	
	Roadtrain Cattle	299.10	1.339	400.55	45.0	187.10	1.60	610.69	2,258,928.28	222.50	1.339	297.97	70.0	192.90	1.60	629.63	2,072,067.52	186,860.77	398,972.71	
	Roadtrain Other	299.10	1.339	400.55	45.0	187.10	1.60	610.69	1,505,952.19	222.50	1.339	297.97	70.0	192.90	1.60	629.63	1,381,378.35	124,573.84	265,981.81	
	TOTAL								10,903,068.43								10,008,544.30	894,524.14	3,016,537.34	
																		SAVING PER ANNUM	894,524.14	



Table 2: Koolatah/ Dixie Road (2019 Values) – Adjusted to 2021 Values

	Koolatah/ Dixie Road	Total Saving Annual Travel & VOC	Annual Growth	Discount Rate 4%	Net Discount Rate	2019 With one-off growth AADT	Average Growth	NPV Factor	NPV
VL	Local Business	49,984.92	0.00%	4%	4%	2	0.000	17.292	864,339
	Local Other	52,186.80	0.00%	4%	4%	4	0.000	17.292	902,414
	Local 02	0.00	2.00%	4%	2%	0	0.000	22.396	0
	Business	56,584.00	2.00%	4%	2%	2	0.043	22.396	1,267,255
	Tourist Towing	505,246.53	4.00%	4%	0%	12	0.522	30.000	15,157,396
	Tourist Single	1,412,439.01	4.00%	4%	0%	60	2.609	30.000	42,373,170
VH	Truck	116,089.89	1.00%	4%	3%	4	0.043	19.600	2,275,362
	Articulated	159,051.67	1.00%	4%	3%	3	0.033	19.600	3,117,413
	Roadtrain Cattle	398,972.71	0.50%	4%	3.5%	3	0.016	18.440	7,357,057
	Roadtrain Other	265,981.81	2.00%	4%	2%	2	0.043	22.396	5,956,929
	TOTAL	3,016,537.34	1.65%			92	3.310		79,271,335
	ADJUSTED TO 2021 VALUES	3,152,281.52							82,838,545