

Public Works Inquiry into the state controlled roads from Birdsville to Bedourie and Birdsville to Windorah

Submission No: 4
Submitted by: Department of Transport and Main Roads
Publication:
Attachments: No attachment
Submitter Comments:

Submission to the Transport and Resources Committee: public works inquiry into the state-controlled roads from Birdsville to Bedourie and Birdsville to Windorah

Department of Transport and Main Roads

July 2023

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Document control options

Departmental approvals

Refer to the appropriate Risk Assessment Tool for relevant reviewer and approver

Date	Name	Position	Action required (Review/endorse/approve)	Due
23 June 2023	Dale Bowden	A/Regional Planning Manager (Central Queensland)	Review	23 June 2023
30 June 2023	Gavin Hill	District Director (Central West)	Endorse	30 June 2023
4 July 2023	Dave Grosse	Regional Director (Central Queensland)	Endorse	4 July 2023
6 July 2023	Ann-Maree Knox	General Manager (Program Delivery and Operations)	Endorse	6 July 2023
10 July 2023	Julie Mitchell	Deputy Director-General (Infrastructure Management and Delivery)	Endorse	10 July 2023

Risk level

GACC major GACC minor High risk (but not GACC) Medium risk

Prepared by	Central West District
Title	Queensland Parliament Transport and Resources Committee: Inquiry into the state-controlled roads from Birdsville to Bedourie and Birdsville to Windorah
District & Region	Central West District Central Queensland Region
Branch & Division	Program Delivery and Operations Branch, and Infrastructure Management and Delivery Division
Project/program	Bedourie to Birdsville and Windorah to Birdsville
Project number	1687978, 1999355, 470262, 285273, 670699, 883795, 1647774, 1687043, 2127443, 1834565, 2085023, 1834565
Project location	Far Western Queensland
Status	Final
DMS ref. no.	

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Introduction

On 22 May 2023, the Transport and Resources Committee (the Committee) resolved to conduct a public works inquiry into the state-controlled roads from Birdsville to Bedourie and Birdsville to Windorah. The terms of reference for the Inquiry are:

- (1) Examine works (< 5 years) on the Birdsville to Bedourie and Birdsville to Windorah roads and report to the Legislative Assembly on:
 - (a) the stated purpose of the works and the apparent suitability of the works for the purpose
 - (b) the necessity for and the advisability of the works
 - (c) value for money achieved or likely to be achieved, by the works
 - (d) revenue produced by, and recurrent costs of, the works or estimates of revenue and costs for the works
 - (e) the present and prospective public value of the works, including, consideration of the impact of the works on the community, economy and environment
 - (f) procurement methods for the works
 - (g) the balance of public and private sector involvement in the works
 - (h) the performance of –
 - (i) the constructing authority for the works
 - (ii) the consultants and contractors for the works with particular regard to the time taken for finishing the works and the cost and quality of the works
 - (iii) the actual suitability of the works in meeting the needs and in achieving the stated purpose of the works.

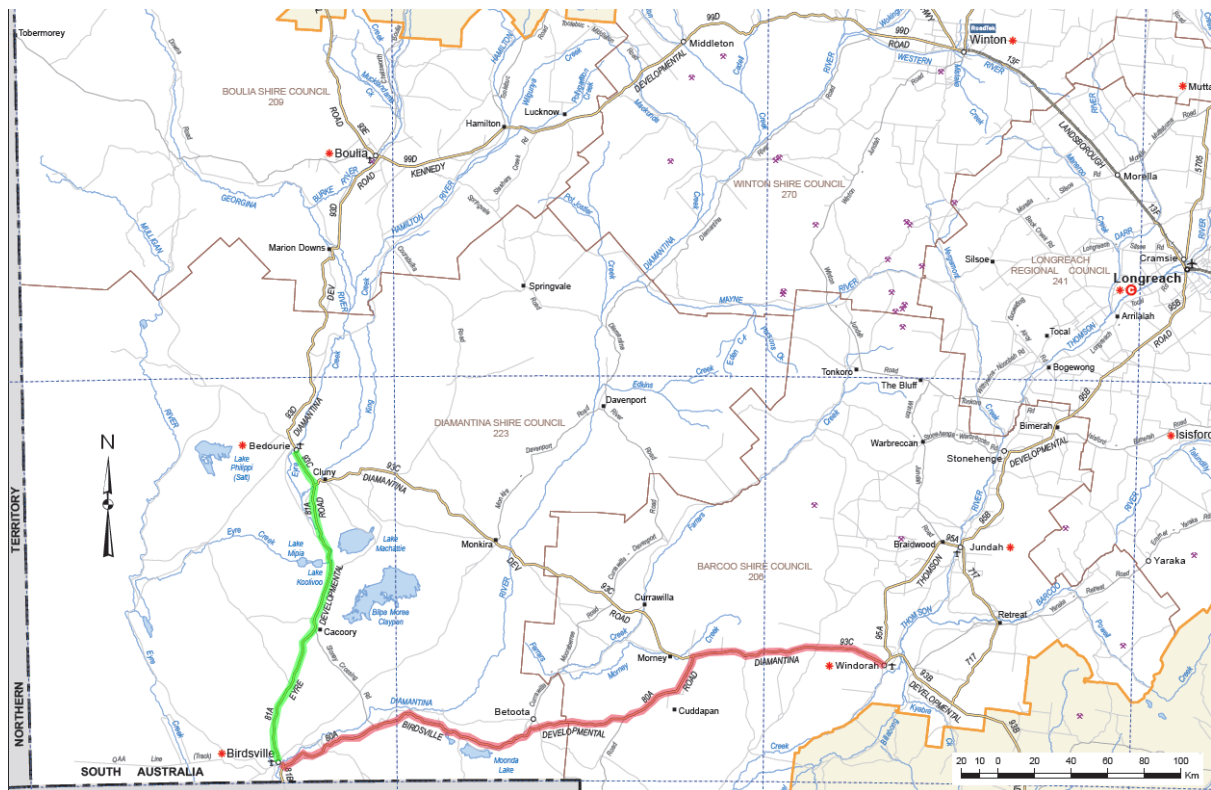
TMR welcomes the opportunity to provide a written submission to the Committee on the Inquiry. This submission is structured under general headings which are reflective of the Inquiry's terms of reference.

1. Background

1.1 Location

The Birdsville area, encompassing the townships of Bedourie, Birdsville and Windorah is home to approximately 364 residents of which about one quarter identify as Aboriginal and Torres Strait Islanders (2021 Census). The Birdsville area is a very remote area of Queensland and experiences significant disadvantage because of the tyranny of distance, combined with the quality of its land transport infrastructure including no rail network and predominantly unsealed sections of road. In recent years, the Bedourie – Birdsville segment of road has been targeted with available funding to achieve a bitumen seal (albeit narrow in most places) connection between all towns in the Central West.

As the predominant transport and tourism link within this area, the state-controlled roads network linking Bedourie and Birdsville and Birdsville and Windorah provide for the local community's connectivity with essential services beyond the area including health, education, business, and social amenities.



These state-controlled roads have their own challenges as they can be impassable during extended rainfall events or from water flowing down from the large northern catchments that drain into the channel country. The area is also subject to significant traffic volume increases due to tourist events during the cooler months which include the annual events of Big Red Bash and Birdsville Races in Birdsville. The traffic increase can be as much as 2000% above the average annual daily traffic figure. These traffic increases cause extensive damage to the road network, especially the unsealed sections which require formation grading before and after annual events, which places a strain on the routine maintenance budget allocations for the unsealed road sections.

Figure 1 – Locality Map (Extract from Central West District Map 2021)

1.2 Road Segments

This report identifies the various capital works project sites located between the road segments of Birdsville to Windorah and Birdsville to Bedourie. Three state-controlled roads are involved in this inquiry, including the Diamantina Developmental Road, Birdsville Developmental Road and Eyre Developmental Road.

The road descriptions are as follows:

- Diamantina Developmental Road (Windorah – Bedourie) (Road No. 93C)
 - 0.0km to 108.9km (Windorah – 93C/80A intersection)
 - 366.96km to 388.78km (93C/81A intersection - Bedourie)

- Birdsville Developmental Road (Morney – Birdsville) (Road No. 80A)
 - 0.0km to 265.42km
- Eyre Developmental Road (Bedourie – Birdsville) (Road No. 81A)
 - 0.0km to 162.89km
- Eyre Developmental Road (Birdsville – South Australia Border) (Road No. 81B)
 - 0.0km to 4.09km

1.2.1 Diamantina Developmental Road (Windorah – Bedourie) (Road No. 93C)

The Diamantina Developmental Road forms a link between the Warrego and Barkly Highways. The 93C link extends between the townships of Windorah (Ch. 0.0km, intersection with 93B) and Bedourie (Ch. 388.78km, intersection with 93D). The road varies between a sealed road width of 4.0m and 8.8m. As well, 175.34km of the link is unsealed. The link facilitates the movement of freight, local traffic, service vehicles and acts as a stock route.

Characteristics of the link include:

- It is approved for use by Road Trains Type 2 up to 53.5m in length.
- The Annual Average Daily Traffic (AADT) volume is 56 vehicles per day, with a heavy vehicle percentage of 23.6% (TARS 2022).
- The regulated speed of this link is 100km/h; however, this speed is reduced to 50km/h on the approaches to the townships of Windorah and Bedourie.

The Central Queensland Region Unsealed Road Priority Planning Report, completed in 2016, ranked the Diamantina Developmental Road (Windorah – Bedourie) the 18th highest priority out of 41 high priority unsealed links in the Central Queensland Region. This road is now ranked 17th highest priority in Central Queensland Region as previously ranked highest Blackwater – Rolleston Road has been fully sealed. The unsealed sections on this road segment have not triggered as works completed recently and hence are not included in this report.

1.2.2 Birdsville Developmental Road (Morney – Birdsville) (Road No. 80A)

The Birdsville Developmental Road forms a link between the Diamantina Developmental Road (Windorah – Bedourie) and the Eyre Developmental Road (Birdsville – South Australia Border). This link extends between the intersection with the Diamantina Developmental Road near Morney and extends 265.42km where it intersects with the Eyre Developmental Road, approximately 4km south of the township of Birdsville.

The road varies between a sealed road width of 4.0m and 10.0m. As well, 196.7km of the link is unsealed. The link facilitates the movement of freight, local traffic, service vehicles and acts as a stock route.

Characteristics of the link include:

- It is approved for use by Road Trains Type 2 up to 53.5m in length.
- The Annual Average Daily Traffic (AADT) volume of the link is 42 vehicles per day, with a heavy vehicle percentage of 27.23% (TARS 2022).
- The regulated speed of this link is 100km/h.
- The Central Queensland Region Unsealed Road Priority Planning Report, completed in 2016, ranked the Birdsville Developmental Road (Morney – Birdsville) road the third highest priority

out of 41 high priority unsealed links in Central Queensland Region. This road is now ranked second highest priority in Central Queensland Region as previously ranked highest Blackwater – Rolleston Road has been fully sealed.

1.2.3 Eyre Developmental Road (Bedourie – Birdsville) (Road No. 81A)

The Eyre Developmental Road forms a link between the Diamantina Developmental Road and the Queensland and South Australia Border/ the Birdsville Track. The Eyre Developmental Road (Bedourie – Birdsville) extends between the intersection with Diamantina Developmental Road (Windorah – Bedourie) and the intersection with Eyre Developmental Road (Birdsville – SA Border).

The road varies between a sealed road width of 4.0m and 8.0m, in addition, 15.7km of the link is unsealed. The link facilitates the movement of freight, local traffic, service vehicles and acts as a stock route.

Characteristics of the link include:

- It is approved for use by Road Trains Type 2 up to 53.5m in length.
- The Annual Average Daily Traffic (AADT) volume of the link is 42 vehicles per day, with a heavy vehicle percentage between 29.6% (TARS 2022).
- The regulated speed of this link is 100km/h; however, this speed is reduced to 50km/h on the approach to Birdsville.

The Central Queensland Region Unsealed Road Priority Planning Report, completed in 2016, ranked the Eyre Developmental Road (Bedourie – Birdsville) the second highest priority out of 41 unsealed links in Central Queensland Region. This road is now ranked the highest priority in Central Queensland Region as previously ranked highest Blackwater – Rolleston Road has been fully sealed.

1.2.4 Eyre Developmental Road (Birdsville – South Australia Border) (Road No. 81B)

The Eyre Developmental Road forms a link between the Diamantina Developmental Road and the Queensland and South Australian Boarder / the Birdsville Track. The Eyre Developmental Road Link extends between the township of Birdsville (Ch. 0.0km, intersection with 81B) and the state border with South Australia (Ch. 13.5km, intersection with the Birdsville Track). The road varies between a sealed road width of 3.6m and 8.0m, in addition, 9.53km of the link is unsealed. The link facilitates the movement of freight, local traffic, service vehicles and acts as a stock route.

Characteristics of the link include:

- The link allows access to level 4 traffic and is approved for use Type 2 Road Trains up to 53.5m in length.
- The Annual Average Daily Traffic (AADT) volume of the link is 87 vehicles per day, with a heavy vehicle percentage of 16.9% (TARS 2022).
- The regulated speed of this link is 100km/h however this speed is reduced to 50km/h on the approach to Birdsville.

The unsealed sections on this road are not part of the route involved in this report.

1.3 Projects Funding Sources

Over the last five years, funding has been approved for capital works projects on the Birdsville to Windorah and Birdsville to Bedourie links from various sources. The Australian and Queensland Government partnered in jointly funded roads infrastructure stimulus packages in 2020-21. These projects were crucial in helping to secure jobs and support the Queensland economy to bounce back after COVID-19. The funding also aided in ensuring safe transport connections were maintained for all of Australia to keep moving.

The various stimulus packages included:

- Regional Economic Enabling Fund (REEF) - capital projects with an 80:20 funding split between the Australian Government and Queensland Government respectively
- Road Safety Program (RSP) - roadworks to improve road safety and move towards zero fatalities and serious injuries on state-controlled roads. This was an 80:20 funding split between the Australian Government and Queensland Government respectively
- State Road Network Upgrades (SRNU) - The SRNU Investment Program is primarily focused on delivering road enhancement projects to improve transport productivity, capacity and access, safety and resilience. 100% funded by Queensland Government.
- Roads and Transport Alliance TIDS (RTA TIDS) - The Outback Regional Roads and Transport Group (ORRTG) comprising the seven local authorities in the TMR Central West District manage annual Transport Infrastructure Development Scheme funding (TIDS). They can elect to use their Queensland Government funded local government grants on the state-controlled road network. 100% funded by Queensland Government.
- Targeted Road Safety Program (TRSP) - The TRSP Investment Program's purpose is to achieve targeted benefits by coordinating safety interventions to the delivery of a safer road environment.
- Transport and Tourism Connections program (TTC), managed by TMR, provides financial support for state and local governments and the private sector to work together to provide a transport system to connect tourism experiences, essential to Queensland's social and economic infrastructure. 100% funded by Queensland Government.

Since 2018-19 (over the past 5 years), along the Birdsville to Windorah and Birdsville to Bedourie Road segments, capital projects have included:

- Nine road upgrades comprising earthworks, subgrade compaction, place unbound pavement (stabilised for floodways) and bitumen seal
- Two rest area upgrades
- Three small cell towers installation to provide mobile phone coverage at three rest areas.

1.4 Project Descriptions

1.4.1 Birdsville Developmental Road (Morney – Birdsville) (80A)

Project No.1687978

Road	80A
Location	23.2km to 29.51km
Length	6.31km
Value	\$4.5M

Funding Source	REEF
Description	Pave and seal – 6m sealed width on an 8m wide formation. 8m sealed width on an 8m wide formation for crest and curve widening
Principal Contractor	Barcoo Shire Council
Completion Date	02/03/2022

Project No.1999355

Road	80A
Location	83.86km – 90.48km
Length	6.62km
Value	\$3.75M
Funding Source	TRSP
Description	Pave and seal – 6m sealed width on an 8m wide formation. 8m sealed width on an 8m wide formation for floodway, crest and curve widening
Principal Contractor	Barcoo Shire Council
Contract	MIC-SI (Minor Infrastructure Contract Sole Invitee)
Completion Date	08/06/2023

Project No.470262

Road	80A
Location	264.36km - 265.54km
Length	1.18km
Value	\$0.99M
Funding Source	TTC
Description	Pave and seal - 8m sealed width on an 8m wide formation
Principal Contractor	Diamantina Shire Council
Contract	MIC-SI (Minor Infrastructure Contract Sole Invitee)
Completion Date	20/11/2018

1.4.2 Eyre Developmental Road (Bedourie – Birdsville) (81A)

Project No.285273

Road	81A
Location	68.23km - 72.00km
Length	3.77km
Value	\$1.82M
Funding Source	RTA TIDS

Description Pave and seal - 6m sealed width on an 8m wide formation.
8m sealed width on an 8m wide formation for floodway, crest and curve widening

Principal Contractor Diamantina Shire Council

Contract MIC-SI (Minor Infrastructure Contract Sole Invitee)

Completion Date 23/07/2020

Project No.670699

Road 81A

Location 68.23km - 72.00km

Length 2.60km

Value \$1.16M

Funding Source RTA TIDS

Description Pave and seal - 6m sealed width on an 8m wide formation.
8m sealed width on an 8m wide formation for floodway, crest and curve widening

Principal Contractor Diamantina Shire Council

Contract MIC-SI (Minor Infrastructure Contract Sole Invitee)

Completion Date 24/01/2019

Project Nos 883795/1647774

Road 81A

Location 72.95km - 86.06km

Length 13.11km

Value \$11.153M

Funding Source RTA - \$1.153M
SRNU- \$10.0M

Description Pave and seal - 6m sealed width on an 8m wide formation.
8m sealed width on an 8m wide formation for floodway, crest and curve widening

Principal Contractor Diamantina Shire Council

Contract MIC-SI (Minor Infrastructure Contract Sole Invitee)

Completion Date 13/10/2022

Project No.1687043

Road 81A

Location 136.4km - 146.21km

Length 9.81km

Value \$4.5M

Funding Source REEF

Description Pave and seal - 6m sealed width on an 8m wide formation.
 8m sealed width on an 8m wide formation for floodway, crest and curve
 widening

Principal Contractor Diamantina Shire Council

Contract MICSI (Minor Infrastructure Contract Sole Invitee)

Completion Date 9/6/2023

Project 2127443

Road 81A

Location 129.2km - 136.4km

Length 7.2km

Value \$4.5M

Funding Source TRSP

Description Pave and seal - 6m sealed width on an 8m wide formation.
 8m sealed width on an 8m wide formation for floodway, crest and curve
 widening

Principal Contractor Diamantina Shire Council

Contract MIC-SI (Minor Infrastructure Contract Sole Invitee)

Completion Date Ongoing

Project No.1834565

Road 81A

Location 83.14km - 83.34km

Length 0.20km

Value \$0.35M

Funding Source RSP

Description Carcoory Ruins Rest Area upgrade including installation of one toilet building
 and two shelters with tables and seating
 Gravel pad for small cell tower assembly
 Construction of parking area and turnouts
 12-volt lighting

Principal Contractor Diamantina Shire Council for civil works
 Orca Solar Lighting - supply and install 12-volt lighting
 Moodie Outdoor Products – supply and install buildings

Contract Sole Invitee/RMPC with Diamantina Shire Council (Routine Maintenance
 Performance Contract)

Completion Date 01/10/2022

Project No.2035023

Road	81A
Location	83.2km
Length	-
Value	\$0.192M
Funding Source	TRSP
Description	Small cell tower installation providing Telstra 4GX mobile service at Carcoory Ruins Rest Area plus eight other sites in Central West District.
Principal Contractor	Telstra Corporation Limited
Contract	Enterprise Works Agreement
Completion Date	01/06/2022

1.4.3 Diamantina Developmental Road (Windorah – Bedourie) (93C)

Project 2035023

Road	93C
Location	109.2km
Length	-
Value	\$0.18M
Funding Source	TRSP
Description	Small cell tower installation providing Telstra 4GX mobile service at Morney Turnoff Rest Area plus eight other sites in Central West District.
Principal Contractor	Telstra Corporation Limited
Contract	Enterprise Works Agreement
Completion Date	11/04/2022

1.4.4 Various Sites

Project 1834565

Road	80A, 81A
Locations	111.16km, 83.14km
Length	- km
Value	\$0.75M
Funding Source	RSP
Description	Rainbow Serpent Rest Area upgrade including installation of one toilet building and one shelter with table and seating Gravel pad for small cell tower assembly Construction of gravel parking area and turnouts

	12-volt lighting
Principal Contractor	Diamantina Shire Council for civil works Orca Solar Lighting - supply and install 12-volt lighting Moodie Outdoor Products – supply and install buildings
Contract	Sole Invitee/RMPC with Diamantina Shire Council (Routine Maintenance Performance Contract)
Completion Date	11/06/2021

Project 2035023

Road	80A, 81A, 93C
Locations	111.16km, 83.14km, 109.2km
Length	-
Value	\$0.563M
Funding Source	TRSP
Description	Small cell tower installation providing Telstra 4GX mobile service at Rainbow Serpent Rest Area plus eight other sites in Central West District.
Principal Contractor	Telstra Corporation Limited
Contract	Enterprise Works Agreement
Completion Date	31/05/2022

1.4.5 Summary

Road	Pave & Seal Length (km)	Expenditure (\$M)	Other Capital Works (\$M)
Birdsville Developmental Road (80A)	14.10	9.235	0.592
Eyre Developmental Road (81A)	32.72	23.134	0.542
Diamantina Developmental Road (93C)	0.00	0	0.180
Total	46.82	32.369	1.314

Table 1 – Summary of projects total costs and lengths per road segment

1.5 Asset Strategic Plan and Service Delivery Strategy

The projects deliver on the strategic priorities of the Queensland Government by providing a safe, integrated, reliable and efficient transport system accessible to everyone. With the key aims of shaping the system and building the network, this project aligns with the department's key strategic documents and objectives as shown below.

The Queensland Plan (2014)

<https://www.queenslandplan.qld.gov.au/assets/images/qld-plan.pdf>

The Queensland Plan is a long-term strategic blueprint for the State. The Queensland Plan recognises that one of its nine key foundations is Infrastructure, ensuring that the State can cater for on-going economic and population growth into the future.

Central West Regional Transport Plan (2019)

The progressive sealing of the Eyre Developmental Road (Bedourie – Birdsville) complements the Department of Transport and Main Roads' (TMR) long-term strategy to seal significant roads in Central Western Queensland to support regional communities and industries.

TMR's strategic document - The Central West Regional Transport Plan 2019 has the following action:

A2.04 Road improvement project planning. Implement the region's road improvement prioritisation strategies through undertaking planning for the region's key road projects, in particular planning to have at least one sealed road access to every town in the Central West Queensland region to support the efficient, safe and reliable movements of people and freight. This includes undertaking business case development to complete paving and sealing on the Eyre Developmental Road (Bedourie to Birdsville) and Blackall-Jericho Road.

These planning objectives have been achieved/are ongoing. The Blackall – Jericho Road was fully sealed in 2021 and the Eyre Developmental Road has reduced the unsealed road length sections by 32.72km over the last five years.

State Infrastructure Plan (2016)

The Queensland Government's State Infrastructure Plan (SIP) provides a coordinated and integrated approach to infrastructure planning, prioritisation, funding and delivery. The delivery of the projects aligns with its policies and initiatives to support economic growth, productivity enhancement and job creation in the short (0-5 years), medium (5-15years) and long term (15-25 years).

Moving Freight Strategy (2013)

<https://www.tmr.qld.gov.au/-/media/busind/Transport-sectors/Freight/Moving-Freight-final/Section1ForewordandIntroduction.pdf?la=en>

The Moving Freight Strategy outlines the Government's 10-year strategy and policy direction for the freight system. Of the six priorities identified in the Moving Freight Strategy, this project supports Priority 2: increase road freight network access and Priority 4: support future freight growth.

Transport Infrastructure Asset Management Policy (November 2021)

<https://www.tmr.qld.gov.au/-/media/busind/techstdpubs/Asset-management/TIAM-Policy/TIAMPolicy.pdf?la=en>

TMR has a strategic role in leading a safe and accessible transport system that contributes to economic development and enhances the quality of life for all Queenslanders. Long-term sustainable asset management is essential to fulfilling this role and delivering cost-effective transport infrastructure and services.

Transport Coordination Plan (2017)

<https://www.tmr.qld.gov.au/About-us/Corporate-information/Publications/Transport-Coordination-Plan>

TMR's Transport Coordination Plan (2017) sets the direction for the transport network over the next 10 years identifying broad objectives for Queensland's transport system. The following table demonstrates how the projects achieved the transport coordination plan objectives:

TCP Objectives	Strategies	Project Alignment
Transport meets the needs of all Queenslanders, now and into the future	<ul style="list-style-type: none"> Shape deliverables and services with a customer focus Co-design solutions that embrace the future and create value for customers Communicate effectively and meaningfully with customers 	<ul style="list-style-type: none"> The preferred option provides a reference design that improves network capacity beyond the design year of 2031. The improved design addressed key community issues associated with this part of the State-Controlled Road Network including congestion and road user safety.
Transport connects communities to employment and vital services	<ul style="list-style-type: none"> Integrate land use and transport to promote community cohesion and environmental sustainability Protect and maintain and operate our network to ensure resilience and safety 	<ul style="list-style-type: none"> The additional capacity provided by the projects will facilitate ongoing economic growth in the area.
Transport facilitates the efficient movement of people and freight to grow Queensland's economy	<ul style="list-style-type: none"> Enable the movement of goods and people cost-effectively, reliably and quickly Reduce the impact of network disruption Provide access to important centres of economic activity in regions and cities Maintain high quality standards of service and delivery without onerous compliance 	<ul style="list-style-type: none"> These roads provide key access for commercial (including Type 2 road trains) vehicles accessing remote communities.
Transport is safe and secure for customers and goods	<ul style="list-style-type: none"> The Queensland Government will aim to reduce the rate of transport related fatalities and injuries 	<ul style="list-style-type: none"> The projects improved road user's experience by sealing sections of road to provide overtaking opportunities.

Table 2 – Project specific compliance with Qld Transport Coordination Plan

The TMR Strategic Plan 2019-2023 (revised for 2022-23)

[Pages - TMR Strategic Plan 2019–2023 \(revised for 2022–23\)](#)

The projects align with the TMR Strategic Plan through:

- augmenting TMR's strategic direction over a four-year horizon, including the department's vision and purpose,
- showing the alignment between TMR's business objectives and the Queensland Government's objectives for the community,
- being part of the government's commitments and supporting businesses at all levels.

Sealing of roads connecting to Birdsville and surrounding area is recognised by the Queensland Government as critical infrastructure, essential in supporting remote communities' connectivity within Queensland. More broadly as well, the funding supports growth and productivity and jobs in the far western centre.

2. The stated purpose of the works

2.1 Purpose

The purpose of the pave and seal road projects was to bitumen seal as much of the road as possible to reduce maintenance costs associated with gravel re-sheeting of unsealed roads. Bitumen sealing of the roads was also aimed at improving network resilience to achieve benefits in road safety, freight efficiency and reliability of the network.

This in turn significantly improves connectivity of the Birdsville area remote communities to larger economic centres via road. The flood resilience is also improved to enable the road to be open to traffic sooner following prolonged wet weather and subsequent minor and major flooding in the channel country river systems (Thomson River, Coopers Creek, Georgina River and Eyre Creek catchments).

The channel country in far western Queensland supports the lucrative 100% grass-fed beef cattle industry. Delivery of stock to market using cattle trucks on potholed and unsealed roads damages and maims a percentage of the livestock. Smoother, bitumen sealed roads enable transport of cattle to market/saleyards with less cattle damage and reduced transport costs (cost of breakdown due to tyre punctures).

Benefits that the projects provide include:

- improved transport efficiency and reliability
- improved road surface conditions contributing to lower maintenance costs
- increase freight efficiency and trip reliability
- improved road user safety
- improved access to healthcare in Birdsville and beyond
- Improved access to education in Birdsville and beyond
- employment, training and business development opportunities for Indigenous and non-Indigenous people.

3. The apparent suitability of the works for the purpose

3.1 Functional requirements of the projects

The overarching functional requirements of the road projects were to improve operational functionality for the predicted road user types (local, tourist and freight traffic volumes) into the future, with a 20-year design life for the pavement life.

The functionality improvement requirements included the following:

- improve safety by reducing traffic accidents
- increase freight efficiency and delivery reliability
- improve infrastructure to meet TMR standards
- reflect prevalent government priorities in promoting growth and employment to local suppliers
- environmental considerations for legislative requirements

- optimise whole of life costs of the asset
- minimise impacts on the health and wellbeing of the local community.

3.2 Suitability of the projects for their purpose

All road projects utilised the pavement material WQ35 material specification, which aims to deliver practical locally sourced road base material for use on Western Queensland roads.

Design of the road projects was undertaken by TMR's Central West District office, based in Barcaldine, or by the design consultant – GBA Consulting Engineers. The horizontal and vertical alignment was designed to achieve 110km/h speed zone requirements with a posted speed of 100km/h. Extended design domain was considered in various locations when standard design elements were not achieved, such as, sight visibility.

Line-marking is not provided on the completed road segments as it deters from the overall strategy of maximising the length of pave and sealing for the funding provided. However, delineation is provided in the form of road edge guideposts and reflective markers secured to the road surface to delineate the centre of the road, required to be installed where visibility is restricted that is, traversing crests. Signage also compliments the delineation.

The predominant typical road cross-section of 6.0m sealing on an 8.0m formation is historically based in the Central West District, which again strives to utilise the limited road funding in providing maximised length of road upgrades. Based upon reduced traffic volumes for the non-tourism months of the year on the Birdsville area road network, vehicles can and do travel in the centre of the road due to no lane line marking delineation. For the high tourism winter months, coinciding with tourism events in Birdsville and surrounds, the width of 6m seal enables vehicles to pass by oncoming traffic (but not necessarily overtake) without fully shifting off the road.

The projects were designed to TMR design standards to meet TMR Road Safety Policy requirements.

Widening of the road to 8.0m bitumen seal on 8.0m formation has also occurred within the projects to manage drainage locations/floodways to provide for overtaking opportunities, strategically placed to reduce driver frustration when motorists are stuck behind long and wide vehicles for extended periods of road network.

The works at all project sites were determined as fit for purpose in terms of utilising the existing topography and remaining within the road corridor.

The aim of all the projects was to increase capacity of the road network by bitumen sealing to a two-traffic lane standard, thereby improving road safety on the state-controlled road network.

3.2.1 Functional performance

TMR design and construction standards were used to specify quality requirements for the projects. The delivery model involved undertaking a design, and then procuring the construction contractor using TMR's Transport Infrastructure Contracts. The contract sets out requirements for participation of local suppliers, and training targets.

Procurement criteria for both the designer and construction contractor required pre-qualification and quality assurance. The works were supervised by TMR engineering resources for the construction and to administer the contract.

3.2.2 Technical and environmental performance

The projects were designed to TMR design standards aligned with national harmonised standards and practices.

Environmental criteria are used to develop the environmental elements for design consideration and construction requirements. The various criteria and standards for the design and construction included land use and planning, noise and vibration, air quality, water quality, hydrology, ecology, cultural heritage, visual, soils and topography, social and sustainability considerations.

4. The necessity for, and the advisability of, the works

4.1 Necessity

Birdsville is the only township in the Central West District located on a state-controlled road that does not have a fully sealed access.

The intent of the projects was to seal as much of the unsealed network as possible from various funding sources. The primary focus was the unsealed sections on the Eyre Developmental Road (Bedourie – Birdsville) as that road has the least length of unsealed road.

4.2 Options Considered

The only options considered were to provide low-cost sealing treatment that included the following:

- 6m seal on an 8m formation
- 8m seal on an 8m formation at crests, curves, and floodways
- No improvement to flood immunity
- Low-cost pavement using best available local material.

This has been the chosen option by TMR Central West District for an extended period, on low volume roads, with evidence of its success over many years.

5. Value for Money achieved

5.1 Steps taken to achieve value for money

TMR considered various assessment criteria to achieve value for money for this project. 'Value for Money' is defined in broader terms than the initial cost of a project. To achieve value for money within the bounds of the Queensland Procurement Policy, the project requirements included consideration of the following:

- overall objectives of the procurement and the outcome being sought
- local content and local benefit objectives being met
- targeted Indigenous participation objectives are being met (refer to the Queensland Indigenous Procurement Policy)
- cost related factors including whole-of-life costs and transaction costs associated with acquisition, use, holding, maintenance, and disposal
- non-price factors such as fitness for purpose, quality, service and support and sustainability impacts, and

- opportunities to advance economic, environmental, and social objectives.

For the pave and seal projects, it was decided to engage the local councils on a sole invitee basis for the construction contracts. This constitutes best value for money procurement due to:

- the remoteness of the location and unavailability of an established contractor
- the local councils are already maintaining the road network as part of their existing Routine Maintenance Performance Contract (RMPC) and hence understand the road network management
- local councils have the expertise in the use of local materials with proven performance over many years
- availability of the local council to carry out the prescribed works
- enables workforce continuity to local authorities to keep their staff employed/staff retention and opportunities for training on these projects.

5.2 Estimates of Costs for the works

3PCM Project ID	Principal Contractor	Original Contract \$	Final Contract Value \$	% Increase	Description of Variations
1687978	Barcoo Shire Council	2,290,977.20	2,695,403.61	18	<ul style="list-style-type: none"> Bitumen rise and fall (C170 & S35E) unsuitable subgrade replacement, wet weather delay rework and additional costs for sealing works
1999355	Barcoo Shire Council	3,481,644.70	3,591,223.67	3	<ul style="list-style-type: none"> Costs associated with additional subgrade and formation works Bitumen rise and fall (C170 & S35E) and prime, Bitumen increase in supply cost of pre coated 7mm cover aggregate
470262	Diamantina Shire Council	737,108.61	764,327.91	4	<ul style="list-style-type: none"> Additional drainage works u/s and d/s of culvert
285273	Diamantina Shire Council	1,517,268.68	1,704,119.81	12	<ul style="list-style-type: none"> Addition of 2nd coat seal and bitumen overs/unders
670699	Diamantina Shire Council	1,062,686.34	1,055,492.70	-0.67	<ul style="list-style-type: none"> Bitumen spray/aggregate spread rates utilised were less than scheduled
883795	Diamantina Shire Council	1,152,711.50	1,152,711.50	0	Nil – N/A
1647774	Diamantina Shire Council	10,741,005.91	10,873,590.05	1	<ul style="list-style-type: none"> Carcoory Rest Area, additional floodway, additional culvert works

3PCM Project ID	Principal Contractor	Original Contract \$	Final Contract Value \$	% Increase	Description of Variations
1687043	Diamantina Shire Council	4,123,136.78	4,123,136.78	0	Nil - N/A
2127443	Diamantina Shire Council	3,648,012.60	3,744,085.05	2.6	<ul style="list-style-type: none"> • Bitumen rise, basecourse rework (damaged by public)
1834565	Moodie Outdoor Products	187,000.00	203,400.00	8.7	<ul style="list-style-type: none"> • Gravel pad for Telstra small cell • V-drain and bin slab \$16,400
2085023	Telstra Corp. Limited	191,900.00	191,900.00	0	Nil - N/A
1834565	Moodie Outdoor Products	340,000.00	341,000.00	0.29	<ul style="list-style-type: none"> • Bin Slab added \$1,000
2085023	Telstra Corp. Limited	191,900.00	191,900.00	0	Nil - N/A
2085023	Telstra Corp. Limited	179,600.00	179,600.00	0	Nil - N/A

Table 3 - Comparison between Original Contract and Final Contract including listing of variations

5.3 Review of costs and variations for value for money

As listed above, final costs for all projects were well managed and no cost blows outs occurred reflecting an informed tendering process and design was understood by the contractor. Cost per km does vary between \$260,000/km and \$650,000/km but this can be related to varying factors including access to gravel material, site establishment costs including accommodation, water supply and plant and human resources availability. As well, the cost of material supply during COVID-19 varied due to some strain on supply materials including pre-cast concrete culverts, reinforcing steel, cement supply and workforce supply. The overall costs were also impacted due to extended wet season for 2021-22 to 2022-23 causing in some cases reduction in productivity.

The variance between the final contract value and original contract value was well managed and was 118% as an upper limit, but on average 104% - which is less than 10% (nominal amount allowed for contingencies).

6. Public Value of the Work

6.1 Impact of the work on the community

The need for sealed roads is inherent in remote communities like Birdsville, who utilise roads in everyday business and expect a level of service as per other parts of the state. Strategic planning has been undertaken involving TMR and the ORRTG (comprising the seven local authorities in the Central West area) in identifying the need to connect townships via a network of bitumen sealed roads. Hence, for these works' projects, no consultation was undertaken in the pre-construction phase with the community.

During construction, the local authorities (Principal Contractor) utilised various forms of communication to advise the community of the disruption due to the road construction. This included but was not confined to website updates, community forums with Councillors and advertising in hard copy.

For TMR, the works are considered low risk and a high order management strategy for the works occurred with updates of Qld *Traffic* website and notification to elected representatives occurring additional to the Principal Contractor requirements.

During construction, there was limited disruption to the travelling public due to the utilisation of side tracks which maintain a similar level of service. TMR is not aware of any formal complaints in the outcome of the bitumen sealed road projects. Feedback from Diamantina Shire Council is that the bitumen sealing works projects have enabled an improved standard of access to the township of Birdsville and hence an improved standard of lifestyle.

Engagement with key stakeholders including native title claimants and directly affected property owners was an ongoing process throughout the project. This strategy was implemented progressively throughout the project lifecycle including the pre-construction phase.

Traffic management during construction was undertaken in accordance with the contract requirements as well as utilising the construction code of practice and best practice. The works were integrated into the operation of the road network; considered all foreseeable traffic related risks to workers and road users and provided treatments to minimise various traffic and environmental impacts of the works on road users and the local community.

6.2 Impact of the work on the economy, environment

The project areas are located within a largely un-touched rural environment, with some small areas of environmental and cultural heritage significance.

Environment and cultural heritage for the various projects were managed in accordance with the TMR Environmental Processes Manual. Overall, the project was assessed as having an environmental and cultural heritage low risk.

All projects reviewed were deemed as compliant with the project documents and TMR standard specification requirements. Additional comments are provided below:

- Project No. 2085023 – Installation of small cell towers – artifacts were identified and re-located to within the road reserve but beyond the boundaries of the hazard clear zone for motorists.
- Project No. 2127443 – Built formation impacted drainage flow-paths into adjacent properties at two locations. Ongoing rectification works determination is occurring.

7. Procurement Methods for the Works

7.1 Procurement strategy

TMR works in line with the Queensland Procurement Policy principles. The Transport Infrastructure Project Delivery System (TIPDS) is used to provide guidance for the procurement of works including:

- developing the best delivery strategy
- how tenders should be called, compiled and assessed

- who should be eligible to tender.

A traditional principal's design with a benchmark estimate was undertaken for the pave and seal roadworks projects. This was utilised as the proposed construction agency was to be local authorities who do not have design capacity or the ability to manage this task. A construction contract based upon a sole invitee justification with the local authorities was utilised based upon workforce commitments and best value for the construction location (local authorities have a workforce and sub-contractor arrangements in place that enable value for money considerations). The contracts comprised a schedule of unit rates based upon a set of documents including plans and specifications and a schedule of items of works for submission of unit rates per items. An offer for the works was tendered, negotiated, and agreed to between TMR and the local authorities based upon the benchmark estimate as a guide.

The procurement mechanism utilised was a Minor Infrastructure Contract - Sole Invitee (MIC-SI). This Transport Infrastructure Contract is utilised for simple and low risk works and where traffic volumes are relatively low such as rural environments. The contract documents reflect a lower level of detail based upon the complexity of the works.

As per the contract requirements for all road projects, the Contractor (local authority) was required to submit a traffic management plan, environmental management plan, safety management plan and construction details to the Principal, TMR.

7.2 Local industry policy and project compliance

7.2.1 Local content:

The Queensland Government genuinely supports local businesses and creates opportunities through government agencies. As part of this, the Queensland Charter for Local Content aims to provide all businesses with full, fair and reasonable opportunities to tender for Queensland Government procurements. For the projects reported, TMR utilised locally based Principal Contractor's - Diamantina Shire Council and Barcoo Shire Council and their local buy arrangements to ensure compliance.

Both Principal Contractor's construction procurement have a strong focus on supporting the communities in which they operate, by engaging locally based suppliers and owner operators.

Hence, there is adherence to the Queensland Government's 'Local Industry Policy' by utilisation of local networks of employees, suppliers and subcontractors that mutually achieve successful outcomes.

7.2.2 Building and Construction Training Policy

Queensland Government Agencies are required to comply with the provisions under the (TIC-CO/MIC-SI) contracts and the TPAS system. This requires submission of project information into the TPAS system for eligible projects once the contract has been awarded.

The road projects reported were required to meet compliance with the Queensland Government Building and Construction Training Policy by:

- Employing on the site, either directly or indirectly through subcontractors, apprentices and trainees and upskilling workers employed on the site, the deemed hours for the training policy were determined by the contract sum multiplied by 0.03% for civil construction projects
- In complying with the training policy, not less than 60% of the required number of deemed hours were allocated toward the employment of apprentices and trainees (new entrants) with the remaining deemed hours allocated to other workforce training

- The number of attributable deemed hours to upskill a worker were limited to the hours necessary to adequately present the educational material, in a classroom delivery mode, for the worker to achieve an identified competency or qualification.

The road projects reported were challenged in compliance with the Queensland Government Building and Construction Training Policy due to availability of human resources to trigger training as per TPAS requirements.

7.2.3 Design Consultant

TMR undertook the planning and scoping of the works described.

TMR also completed the detailed design task, except for the following projects :

- Project No. 1999355 – McMurtrie Consultant Engineers
- Project No. 670699/1647774 – George Bourne Associates Engineers
- Telstra provided design of the small cell towers (non-civil works).

TMR conducted a restricted tender process involving prequalified consultants to select the consultants mentioned. The criteria for invitation of consultants include past performance, experience, technical expertise in the various areas of engineering appropriate to the project requirements. Tenders were assessed using a Value Based Selection (VBS) on both Price and Non-Price Criteria consistent with TMR's Manual Consultant for Engineering Projects (CFEP).

7.2.4 Contract Administrator

TMR Central West District representatives undertook the contract administration of all projects and works undertaken, that is, no external contract administrators were utilised.

7.3 Public and Private Sector Involvement

No private sector involvement was considered for the projects. Sourcing of the appropriate resources for the specific activities was based upon availability, value for money, timeframe and procurement governance requirements.

7.4 Performance of Contractors/Consultants

TMR considers the engagement of Barcoo Shire Council and Diamantina Shire Council workforces for state-controlled road network constitutes best value for money procurement due to:

- The remoteness of the location and unavailability of an established contractors
- Both Shire Councils have the experience of completing similar works within the Central West District
- Both Shire Councils were available to undertake the works within the required timeframes and budget to the required quality standards.

The projects were conducted utilising TMR requirements of project management including pre-start meetings, ongoing monthly meetings (on site or via video conferencing or via phone) and inspections on site as per hold point requirements based upon the TMR Technical manuals for construction.

Construction was in accordance with the project specifications and approved drawings.

The Principal Contractors' delivered quality outcomes, but where compliance rectification was required, non-conformance records and corrective action requests after a critical assessment by the contract administrator or representative were undertaken.

The projects were completed to TMR's expectations, with all achieving Practical Completion status for the works. All projects were managed within project/program budgets and delivered in a timely manner, except where wet weather impacted the completion date.

The projects met their contractual obligations, utilising the local workforce to meet workforce commitments for employment and use of local business and supplier support, quality and compliance deliverables, stakeholder engagement, construction timeframes, resources, safety, environmental and cultural heritage aspects.

7.4.1 Design Consultant

The design consultants utilised were highly skilled, providing engineering advice throughout all stages of the project. The team were on hand to provide specialist technical advice to the Principal's Representative and Contract Administrator at key times during the construction phase as required.

Overall, McMurtrie Engineering Pty Ltd and George Bourne & Associates Engineering provided design support to TMR and the Contractors which was reflected in the minimal design triggered variations for projects utilising the external engineering firms. The quality of the design documentation facilitated projects where there was no delay or disruption claims put forward by the contractor.

7.4.2 Contract Administration

TMR Central West District resources acted as the Contract Administrator to administer the TMR contracts with the Principal Contractors (Diamantina Shire Council, Barcoo Shire Council or commercial operators). The local authorities delivered satisfactory outcomes considering their workforces are continuously challenged in capacity and capability due to ongoing workforce changeover. Due to the location of the works, TMR supervision is challenge whereby resources are based in Barcaldine and Winton – more than 600km from the project sites in the Birdsville area and require a well-coordinated and managed site presence.

8. Conclusion

The above report was produced as a response to the Transport and Resources Committee's public works inquiry into the state-controlled roads from Birdsville to Bedourie and Birdsville to Windorah. It provides feedback on the suitability and purpose of the works, value of money achieved, and the social, economic and environmental impacts of the works. The Department of Transport and Main Roads would like to thank the Committee for the opportunity to provide a submission.