



Regional Road Inspection Tour

July 2021



Inland Freight Route and South-west Queensland Highways

- Gore Highway (Toowoomba to Goondiwindi)
- Barwon Highway (Goondiwindi to Nindigully)
- Inland Freight Route - Carnarvon Highway, Dawson Highway and Gregory Highway/Developmental Road (Mungindi to Charters Towers)

INTRODUCTION

The information contained in this document is based on visual inspections along both national and State Highways in south-west Queensland and along the Inland Freight Route between Mungindi and Charters Towers, most of which is also part of the Great Inland Way tourism route. The inspection was conducted from 8 - 11 June, 2021.

RACQ performs these surveys to better understand the current road surface condition of Queensland roads and assess their road safety, capacity and vulnerability to flooding. Meetings with Department of Transport and Main Roads representatives were also held in Roma and Townsville to discuss road and transport projects and priorities for the regions, as well as discuss the challenges of engineering roads to withstand harsh weather and inferior soil conditions in regional and remote areas.

Road surface conditions and flood immunity levels can decrease freight efficiency and increase vehicle operating costs, resulting in lost productivity. In terms of crashes, approximately 75 percent of those occurring on rural highways are run off-road, head-on and intersection crashes. As a result, a focus of the inspection was to assess the standard and quality of the road infrastructure including roadside conditions, road and shoulder widths (including bridge / culvert / floodway width) and intersection safety.

Implementing proven engineering countermeasures such as lane and shoulder widening, removing roadside hazards, upgrading intersections as well as installing audio tactile line marking and wide centre-line treatment, would go a long way to reducing crashes and providing more resilient and productive highways.

The results of this report are used as supporting information to supplement other RACQ technical surveys such as the Australian Road Assessment Program (AusRAP). The information also helps RACQ prioritise advocacy for those roads most in need of upgrades and additional infrastructure investment.

METHODOLOGY

Two staff from RACQ's Public Policy Department undertook the tour. Together they drove each of the selected highways, generally in one direction. Visual inspections including images taken were performed by the two RACQ staff and included noting traffic lane, shoulder and clear zone widths. It also included observing and cataloguing other visual qualities of the roads such as pavement condition, delineation including audio tactile line marking (ATLM), types of roadside hazards and bridge and culvert quality and width.

CRASH HISTORY

While this report focuses on the inspection results, the latest AusRAP crash results are shown below.

Road Name	From-To	Length km	Avg. Daily Traffic (Veh/day) 2015-19	FSI Crashes 2015-19	FSI Injuries 2015-19	Deaths 2015-19	Collective Risk Rating Annual average FSI crashes per km	Individual Risk Rating Annual average FSI crashes per 100 million veh-km	Combined Risk Rating ^a (FSI Crashes)	National / State Ownership	Annual Avg. All Injury Crash Cost ^{^^}	Annual Avg. All Injury Crash Cost / km	All Injury Crash Cost / km Rating
Gore Highway	Toowoomba to Yandilla	55	3490	21	26	9	0.08 Medium-high	6.00 Low-medium	Medium	National	\$ 13,886,721	\$ 252,486	High
Carnarvon Highway	Injune to Rolleston	172	535	18	23	5	0.02 Medium	10.75 Medium-high	Medium	State	\$ 7,838,405	\$ 45,572	Medium-high
Gore Highway	Yandilla to NSW Border	129	1660	29	38	2	0.04 Medium-high	7.39 Medium	Medium	National	\$ 5,764,824	\$ 44,689	Medium-high
Dawson Highway	Rolleston to Springsure	70	765	9	13	1	0.03 Medium	9.14 Medium	Medium	State	\$ 3,033,897	\$ 43,341	Medium-high
Gregory Developmental Road	Clermont to Charters Towers	351	455	31	41	3	0.02 Medium	10.58 Medium-high	Medium	State	\$ 9,740,749	\$ 27,751	Medium
Carnarvon Highway	Roma to Injune	86	880	14	22	0	0.03 Medium-high	10.12 Medium-high	Medium	State	\$ 1,930,095	\$ 22,443	Medium
Carnarvon Highway	St George to Roma	188	455	16	26	1	0.02 Medium	10.30 Medium-high	Medium	State	\$ 3,923,967	\$ 20,872	Medium
Barwon Highway	Goondiwindi to Talwood	88	605	7	7	3	0.02 Medium	7.20 Low-medium	Low-medium	State	\$ 6,282,296	\$ 71,390	Medium-high
Gregory Highway	Springsure to Emerald	61	1240	9	12	0	0.03 Medium-high	6.54 Low-medium	Low-medium	State	\$ 1,333,399	\$ 21,859	Medium
Carnarvon Highway	Mungindi to St George	118	355	6	8	0	0.01 Low-medium	7.80 Medium	Low-medium	State	\$ 835,889	\$ 7,084	Low-medium
Gregory Highway	Emerald to Capella	46	2050	6	7	0	0.03 Medium-high	3.47 Low	Low	State	\$ 915,180	\$ 19,895	Medium
Gregory Highway	Capella to Clermont	52	1315	5	9	0	0.02 Medium	3.98 Low	Low	State	\$ 720,220	\$ 13,850	Low-medium
Barwon Highway	Talwood to Nindigully	67	275	1	1	0	0.00 Low	3.62 Low	Low	State	\$ 133,472	\$ 1,992	Low

AusRAP assesses generally non-urban high speed sections of the highway network with speed limits of 80 km/h or more. Thus crashes in the table above may not add up to crashes along the whole corridor. ^aCombined Risk Rating - Collective and Individual Risk have been combined with equal weighting to produce a single risk score per road section (the Combined risk score). Once a section of highway has received a combined risk score, it is assigned one of five corresponding rating bands from Low to High (the Combined Risk Rating). The cut-off points between rating bands are determined by ranking sections from worst to least risk across the 21,576 km of Queensland roads included in this assessment (2015-19 crash data analysed in October 2020) and then dividing this result into the five rating bands, each representing as close as possible to 20 per cent of the network length assessed. ^{^^}Crash costs are based on Willingness to Pay (WTP, 2020) values, crash severity and casualty severity. FSI - Fatal and Serious Injury.

Disclaimer: This report is based on a visual inspection of highways. While attempts have been made to ensure the accuracy of the information contained in this report, the Royal Automobile Club of Queensland makes no statements, representations, or guarantees about the accuracy or completeness of it.

SURVEY ROUTE

The highways surveyed during this regional road inspection tour are listed below. In total, approximately 1600km of road was surveyed.

- Gore Highway (Toowoomba to Goondiwindi)
- Barwon Highway (Goondiwindi to Nindigully)
- Carnarvon Highway (Mungindi to Rolleston)
- Dawson Highway (Rolleston to Emerald)
- Gregory Highway and Gregory Developmental Road (Emerald to Charters Towers)



SUMMARY OF RESULTS

In June 2021, RACQ's Public Policy Department conducted a road inspection along national and State Highways in south-west Queensland and along the Inland Freight Route between Mungindi and Charters Towers. This included the Gore Highway, Barwon Highway, Carnarvon Highway, Dawson Highway and Gregory Highway (and Gregory Developmental Road).

While the focus of this report is to identify and catalogue road surface conditions, road safety and infrastructure deficiencies, it is important to recognise that significant lengths of roads in this assessment were in good condition, are built to a standard suitable for the types of vehicles using them and have received investment in upgrades or rehabilitation/strengthening over recent years, for example, the Carnarvon Highway between Mungindi and St George where only minor upgrades are required.

While RACQ welcomes this investment, sections with a narrow sealed surface that are prone to surface defects such as pot holes and edge breaks still exist on all the highways in this survey. Greater levels of funding are required for widening, rehabilitation and strengthening works to improve the condition and deliver a more resilient, safe and productive road network. Increased State and Federal funding is also required to maintain the road network over the long term.

Gore Highway

The Gore Highway is part of the National network, carries significant volumes of heavy vehicles and is prone to pavement damage. Improvements should focus on widening, rehabilitation and strengthening of pavement and floodways west of Pittsworth to Goondiwindi, including installation of wide centre lines (with median barriers where required) and additional overtaking lanes on all higher volumes sections west of Toowoomba. Flood immunity improvements and Audio Tactile Line Marking (ATLM) on the edge and centre line is also recommended.

Barwon Highway

The Barwon Highway is a lower priority, low volume highway in this assessment with some low lying/flood prone areas and has narrow section prone to shoulder damage where trucks dip wheels onto the unsealed shoulder when vehicles pass. Improvements should focus on continued progressive widening, rehabilitating and strengthening pavements and shoulders prone to failures and investigate the need to minimise flood closure frequency and duration.

Inland Freight Route (Carnarvon Highway, Dawson Highway and Gregory Highway)

To operate as an effective 'inland' alternative route to the Bruce Highway for freight, tourists and general traffic, productivity and safety upgrades are required on the Inland Freight Route between Mungindi and Charters Towers.

As part of an estimated \$1 billion total project cost, a \$500 million funding commitment on the Inland Freight Route is shown in the Queensland Transport and Roads Investment Program 2021-22 to 2024-25 (QTRIP), with funding of \$135 million only commencing in 2023-24/2024-25 budgets. RACQ calls on the State and Federal Government to work together to bring forward funding allocations into 2022-23 and accelerate upgrades to the Inland Highway (Inland Freight Route).

A number of sections are constructed with a narrow seal width and are prone to surface failures and shoulder/edge breaks. The Dawson Highway from Rolleston to Springsure and the last 35km to Rolleston on the Carnarvon Highway are in very poor condition. Priorities for widening, strengthening and rehabilitation are sections north and south of Surat, the Dawson Highway from Rolleston to Springsure and the Gregory Highway from Capella to Charters Towers. More details are provided in Table 1.

Increased dedicated maintenance funding is also required over the long term to preserve the road condition, quality and resilience to future flood damage.

Other significant safety and productivity issues are narrow bridges and low level river and creek crossings which require widening and raising.

Flooding, or lack of flood immunity, is a major problem that can cut roads reducing freight productivity as well as access to communities and tourism. There are many flood prone sections along the entire Inland Freight Route which require future upgrade.

A flood immunity study for the entire corridor is required to establish an agreed flood immunity level that minimises the frequency and duration of flooding closures, as well as coordinates and prioritises investment towards priority crossings to offer a viable and productive alternative corridor to the Bruce Highway.

Roadsides in general were safe with established clear zones or safety barriers installed, although some creek and range crossings, tree lined sections or winding alignments could still consider safety barrier options and additional Audio Tactile Line Marking (ATLM) to prevent run off-road crashes.

Intersections were in generally good and safe condition however as traffic volumes rise channelised right turn treatments may be considered. The inspection also revealed a number of new heavy vehicle / vehicle rest areas and upgraded facilities, which is commended and should continue.

Table 1 presents a summary of recommendations and priorities for improvements on the surveyed highways. Appendix A shows a catalogue of images taken during the inspection tour.

Table 1 – Recommendations and Priorities*

	KEY		Priority			
			High	Medium	Low	Not Required
Road Segment	Widen seal and/or shoulders	Bridge / culvert widening	Hazard removal / protection	Additional overtaking lanes	Improve flood immunity	Rehabilitate / strengthen pavement
Gore Hwy (Toowoomba to Goondiwindi)	Medium	Low	Low	Medium	Medium	High
Continue to widen narrow sections to Goondiwindi and install wide centre line treatments (with barrier where required) and additional overtaking lanes, especially on higher volume sections, e.g., Toowoomba to Millmerran. Rehabilitate and strengthen pavements prone to failures and movement west of Pittsworth to Millmerran and Millmerran to the Leichhardt Highway (Goondiwindi). Continue to improve condition and flood immunity of floodways and install ATLM on the edge and centre line, especially at curves, river / creek crossings and maintain safe roadside clear zones west of Millmerran.						
Barwon Hwy (Goondiwindi to Nindigully)	High	Medium	Not required	Not Required	Low	Medium
A lower priority, low volume highway in this assessment with some low lying/flood prone areas. Generally narrow seal west of Toobeah with shoulder edge breaks common due to trucks dipping wheels onto unsealed shoulder when vehicles pass. Improvements should focus on continuing progressive widening of narrow seals to 8m+ width and rehabilitate and strengthen pavements and shoulders prone to failures, e.g., Toobeah to Nindigully. Consider future priorities to minimise flood closure frequency and duration.						
Carnarvon Hwy (Mungindi to Roma)	High	Medium	Not required	Not Required	Medium	Low
Widen narrow sections and improve floodways north of Nindigully (last 30km to St George), as well as widening shoulders south of Surat for approx. 20km, and north of Surat for 45km. ATLM could be applied on edge lines on curves, near crossings, on tree lines sections or where there are steeper batters (e.g., south of Roma). Widen narrow bridges and improve floodways to provide consistent immunity (e.g., Dongle Ck and Blyth Ck). Target 9m vision standard seal width. Investigate road surface texture and skid resistance last 10 km to Roma where flushing/bleeding or aggregate loss may have occurred.						
Carnarvon Hwy (Roma to Rolleston)	High	Medium	Low	Not Required	Medium	High
Widen narrow sections and rehabilitate and strengthen pavements prone to failures and movement, e.g., last 35km to Rolleston. Widen narrow bridges and improve floodways/creek crossings (e.g., Baffle Ck and 60km north of Injune) to provide appropriate and consistent flood immunity standard for Inland Freight Route. Consider additional safety barrier on range section or on curves with hazardous roadsides.						
Dawson Hwy (Rolleston to Emerald)	High	Medium	Not required	Low	Medium	High
Multiple sections narrow and prone to failures between Rolleston and Springsure, e.g., 0-7km and 37-44km NW of Rolleston. Widen narrow sections NW of Rolleston and rehabilitate and strengthen pavements prone to failures and movement. Widen and improve condition of narrow bridges/creek crossings, floodways and culverts to provide consistent flood immunity level. Consider ATLM on curves and range section. No works required from Springsure to Emerald.						
Gregory Highway (Emerald to Belyando)	High	Medium	Not Required	Low	Medium	High
Widen, rehabilitate and strengthen pavement from Capella to Clermont and 0-80km and 125-135km north of Clermont. Widen bridges north of Clermont and improve floodway condition and immunity level. Continue ATLM and consider need for formal overtaking lanes between Emerald and Clermont.						
Gregory Highway (Belyando to Charters Towers)	High	Medium	Low	Not required	Medium	High
Widen/shoulder seal and rehabilitate pavement 25km north of Belyando Crossing for 60km. Improve flood immunity and widen narrow bridges to achieve consistent flood immunity along Inland Freight Route, e.g., Bullock Ck and Crooked Ck. Once widened consider ATLM on edge line and centre line on curves, river/creek crossings and tree lined sections, e.g., 10-45 km south of Charters Towers.						

*Please note that the ranking of priorities should only be compared on the nominated road segment. No comparison of relative priority should be made between highways or road segments.

APPENDIX A - Images

Gore Highway (Toowoomba to Goondiwindi)



Millmerran





Barwon Highway (Goondiwindi to Nindigully)



Toobeah





Carnarvon Highway (Mungindi to Roma)



Nindigully



St George





Carnarvon Highway (Roma to Rolleston)





Injune





Dawson Highway (Rolleston to Emerald)





Springsure



Gregory Highway and Developmental Road (Emerald to Charters Towers)



Clermont





Belyando Crossing



