



Regional Road Inspection Tour

November 2014



Alternative 'Inland' Highway - Brisbane to Cairns

- D'Aguilar, Burnett, Leichhardt, Capricorn, Gregory and Kennedy Highways
- Gregory and Kennedy Developmental Roads

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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.

EXECUTIVE SUMMARY

In October 2014, RACQ's Advocacy Division conducted a road inspection tour of an 'Inland' alternate route to the Bruce Highway along State Highways from Caboolture to Cairns. This included the D'Aguilar Highway, Burnett Highway, Leichhardt Highway, Capricorn Highway, Gregory Highway, Gregory Developmental Road, Kennedy Developmental Road and Kennedy Highway.

Almost 75 percent of crashes on rural highways are run off-road, head-on and intersection crashes. As a result, the focus of the inspection was to assess the standard and quality of the road infrastructure including intersection safety, roadside conditions, road and shoulder width, as well as median treatments.

It was pleasing to note there has been significant investment in widening, rehabilitating and strengthening of the road surface on the Gregory and Kennedy Highway (and Developmental Roads).

While RACQ welcomes this investment, sections of narrow sealed surface (<8m) still exist on all the highways, including single lane seal (3.5m) on Developmental Roads. This should be prioritised for widening to at least an 8m seal in the short term (3 - 5 years) and a minimum of 10m with either 1.5m shoulders, or incorporating a wide centre-line treatment, in the longer term (>10 years).

Other problems common to all highways surveyed included the presence of roadside hazards such as trees and poles, and flooding that can cut access along the road reducing productivity.

To improve road safety, Audio Tactile Line Marking (ATLM) is a relatively cheap but effective road safety countermeasure that could be expanded to greater lengths of edge and centre lines, especially on curves, crests and bridge approaches. It should be prioritised to sections where roadside hazards are present. Centre line ATLM could be substituted with Raised Retroreflective Pavement Markers (RRPMs) - 'cats-eyes' - as they provide a tactile effect and additional guidance at night or in rain.

RACQ also noted, phone reception dropped out in regional areas which can delay emergency notifications of incidents, crashes or hazards, and delay response times.

While not forming part of an alternative inland highway from Brisbane to Cairns, the Hann Highway (Kennedy Developmental Road) between Hughenden and The Lynd in north-west Queensland is another strategic link road in need of upgrade for improved safety and productivity for freight, tourism and general traffic.

Finally, now that the condition of many of the roads has been improved; a greater level of maintenance funding is required to ensure that these roads remain acceptable into the future.

Table 1 (over) presents a summary of recommendations and priorities for improvements on the surveyed highways.

Table 1 – Summary of recommendations

	KEY		Priority			
			High	Medium	Low	Not Required
Road Segment	Widen seal or shoulders	Hazard removal / protection	Install audio tactile line marking	Additional overtaking lanes	Improve flood immunity	Rehabilitate / strengthen pavement
D'Aguilar Hwy (Caboolture to Nanango)	Medium	High	Medium	Medium	Low	Low
Maintain the road surface, widen narrow sections <8m from Kilcoy to Nanango. Target a minimum 10m seal width on higher volume sections and consider a wide centre-line treatment. Requires additional overtaking opportunities or overtaking lanes and roadside hazard reduction or protection. Investigate improvements to flood immunity.						
Burnett Hwy (Nanango to Dululu)	High	High	Medium	Medium	Medium	Low
Requires significant investment in capital works to upgrade sections that have substandard width (<8m) and alignment. Install ATLM treatments on edge and centre lines and construct additional overtaking lanes or climbing lanes / turnouts, especially in hilly / winding range areas. Remove or protect roadside hazards <10m from edge line. Investigate flood immunity improvements.						
Leichhardt Hwy (Dululu to Capricorn Hwy)	Low	Medium	Not Required	Not Required	Not required	Medium
Extend the clear zone and improve ride quality over the first 10km north of Dululu.						
Capricorn Hwy (Westwood to Emerald)	Medium	Medium	Medium	Medium	Medium	Low
Widen short sections of narrow seal <8m. Widen narrow seals to 10m and consider a wide centre-line treatment where 10m seal is achieved. Improve overtaking opportunities by installing additional overtaking lanes. Extend ATLM use on the edge line (and centre line) to all sections, especially through range crossings, on curves, crests and culvert/bridge approaches. Investigate improvements to floodways and creek crossings to improve flood immunity.						
Gregory Hwy (Emerald to Clermont)	Medium	Low	Medium	Not Required	Low	Medium
Widen and rehabilitate the 10km section south of Clermont. Install ATLM on the edge line and centre line especially on approach to culverts and river / creek crossings.						
Gregory Developmental Rd (Clermont to The Lynd)	High	Medium	Low	Not required	Medium	Low
Widen all narrow sections to at least 8m seal width. In particular widen 25km, 45km and 125km north of Clermont for 10km, 35km and 8km respectively. Widen 25km north of Belyando (for 55km), 70km north of Charters Towers (for 15km) and 30km south of Greenvale (for 10km). Improve flood immunity and widen narrow bridges and floodways. Maintain unsealed shoulders within the single lane width sections in the interim. Install ATLM on the edge line (and centre line) especially on approach to culverts and river/creek crossings. Remove roadside hazards (trees), especially north of Charters Towers. Improve phone reception.						
Kennedy Hwy / Developmental Rd (The Lynd to Cairns)	Medium	High	Medium	Low	Low	Medium
Widen sections of narrow seal to at least 8m. Remark faded line markings and install ATLM on the edge and centre line, especially on crests and curves or where roadside hazards are unable to be removed or protected. Kuranda Range upgrades should focus on curve widening, additional safety barriers and intelligent signs that warn of excess speed / substandard curves, adverse weather and slippery surface conditions. Consider additional overtaking lanes from Cairns to Ravenshoe.						

#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.

INTRODUCTION

The information contained in this document is based on visual inspections of an 'Inland' alternate route to the Bruce Highway, along State Highways from Caboolture to Cairns conducted from 29 September to 2 October, 2014. The RACQ performs these surveys so it can better understand the condition of Queensland highways with respect to road safety, capacity and vulnerability to flooding.

It also provided the opportunity to see how Queensland roads have recovered since the floods in 2010 and later, and better comprehend the challenges of engineering roads to withstand harsh weather and inferior soil conditions.

The inspection focussed largely on intersection safety, roadside conditions, road / shoulder width and condition, as well as median treatments. This is because the three most prevalent types of crashes on rural highways (approx. 75%) are run off-road, head-on and intersection crashes.

The RACQ argues that the standard of all one and two-star highways (rated under the Australian Road Assessment Program - AusRAP) should be raised as a matter of priority. 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 meeting these standards and reducing crash rates and road trauma.

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

METHODOLOGY

Two staff from RACQ's Advocacy Division undertook the tour. Together they drove each of the highways listed below in one direction only. Visual inspections 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 and types of roadside hazards.

Approximate chainage distance was logged using the vehicle's odometer with photographs taken using a Sony Cyber-shot 8.1 megapixel camera. Distances and photographs are used as references to construct this report. Video data was also collected using a Contour 'Contour+2' action camera, forward facing with a wide angle lens.

SURVEY ROUTE

The highways surveyed during this regional road inspection tour are listed below. In total, approximately 2000km of road was surveyed.

- D'Aguilar Highway (Caboolture to Nanango)
- Burnett Highway (Nanango to Dululu)
- Leichhardt Highway (Dululu to Capricorn Hwy (Westwood))
- Capricorn Highway (Westwood to Emerald)
- Gregory Highway and Gregory Developmental Road (Emerald to The Lynd)
- Kennedy Developmental Road and Kennedy Highway (The Lynd to Cairns)



RESULTS

D'Aguilar Highway (Caboolture - Kilcoy)

In general the road width is satisfactory between Caboolture and Kilcoy (8-9m). There are some sections which are more prone to surface damage, e.g., pot holes, resulting in some minor ride quality issues even though the pot holes have been filled.

The poor horizontal and vertical geometry of the road combined with relatively high traffic volumes (including heavy vehicles) means there are limited overtaking opportunities, with much of the road marked with double barrier lines.

There is a distinct lack of overtaking lanes along the higher volumes sections (east of Kilcoy) which tends to increase driver frustration and can lead to unsafe overtaking manoeuvres.



Audio Tactile Line Marking (ATLM) is used in sections and roadside hazards (trees) are positioned too close to the edge line.



D'Aguilar Highway (Kilcoy - Nanango)

The road is hilly and winding along much of its length to Kingaroy. The road width varies between narrow (<8m) and adequate (8m or more) through to Nanango, with some bumpy sections contributing to poor ride quality.



ATLM is used in sections but could be extended to all edge and centre lines, especially on approach to crests, curves and bridge approaches.

The D'Aguilar Highway is mostly tree-lined, travelling through lush forest areas and undulating terrain. There are many roadside hazards (trees) with limited use of safety barriers.



The Blackbutt Range has been upgraded after land slips caused significant damage due to heavy rains.



A new overtaking lane with wide centre line treatment is a welcome addition about 10km south of Nanango, although overtaking lanes and opportunities are minimal between Kilcoy and Nanango.



Summary and Recommendations

In general the D'Aguilar Highway is narrow (<8m) in sections from Kilcoy to Nanango. Surfaces can be prone to failures along most of its length but have been patched leading to some ride quality issues.

Roadsides are poor due to the forested areas, with the presence of trees within the clear zone a common safety issue. There is a lack of safety features such as safety barriers and ATLM.

Overtaking demand is quite high along the entire length of the D'Aguilar Highway, with limited overtaking opportunities present due to the hilly and winding terrain. The D'Aguilar is also subject to flooding.

Improvements should focus on maintaining the road surface, widening narrow sections <8m, installing ATLM to all edge and centre lines, improving overtaking opportunities and removing or protecting roadside hazards. Improving flood immunity is also worth investigating.

Burnett Highway (Nanango - Eidsvold)

The road between Nanango and Goomeri continues as winding and hilly with seal width generally 8m or more - apart from a 10km narrow section (6 – 7m) approximately 25km north of Nanango. Heavy vehicles drop the left wheels onto the unsealed surface due to limited seal width when passing. Trees close to the road are a safety issue.



ATLM is present in sections along with some crack sealing to prolong the life of the pavement and avoid surface failures. In general the surface condition is good.



Safety at some intersections could be improved by widening the shoulders or providing a dedicated right turn lane, even where side road volumes are low.



The road between Goomeri and Eidsvold is winding and hilly, with some narrow sections (<8m), especially from Ban Ban Springs to Eidsvold.

In general the road surface is in good condition and an improvement over the last survey (2010).

There are newly upgraded sections, including through cuttings, but also sections that still require improvements to the condition and quality of the road surface.



Safety barrier could be used in the sections with poor roadsides including steep embankments and tree hazards.

Some cuttings were prone to landslips. Distance to roadside hazards (trees) also varies, as does the presence of ATLM.



Some road markings (centre-line) have faded and require remarking approximately 5km north of Tansey.



The Binjour Range section has received an upgrade with safety barriers and drainage improvements, but still requires an overtaking lane, or alternative (e.g., climbing lane / slow turnout) to reduce frustration at being behind a slow moving vehicle.

In general, overtaking opportunities could be improved between Nanango and Eidsvold due to the poor horizontal and vertical alignment.



There are few formal rest areas, however there are a number of towns along the journey where drivers can stop and rest.

Burnett Highway (Eidsvold - Dululu)

Between Eidsvold and Biloela (~160km) the road and roadside quality is generally poor. The seal width is <8m over long lengths and requires widening.

About 35km north of Eidsvold the seal width drops below 7m with larger vehicles having to drop wheels off the sealed surface to pass safely.



Some upgrades and repairs have been undertaken, e.g., 60km from Biloela. However the ride quality is generally poor, bumpy and undulating with sections prone to surface failures and cracking.



Roadside hazards such as trees are close to the carriageway and pose a serious safety risk. The lines require remarking approximately 20km north of Monto and ATLM would be beneficial over the entire section between Eidsvold and Biloela.



From Biloela to Dululu (~75km) there are recently widened (8m+) and upgraded sections with some road works taking place at the time of inspection (see image below, ref. between Biloela and Jambin).



The road is generally flatter and roadsides are mostly clear of roadside hazards, or a clear zone has been established. However there are still sections that require roadside hazard removal or protection.

North of Jambin there are some sections that are narrow (<8m) along with a number of narrow bridges, although the quality of the road surface appears to have improved from the previous survey in 2010.

Sections are still prone to surface failures and there has been extensive crack sealing works to extend the life of the pavement and make it more resilient to damage.



There are many floodways and creek crossings which may require flood immunity improvements to ensure the frequency and duration of road closures due to flooding is minimised.



Summary and Recommendations

In general the Burnett Highway is narrow (<8m) in sections from Nanango to Dululu. Roadsides are poor due to the forested areas, with the presence of trees within the clear zone a common safety issue, especially in winding / hilly sections.

There is a lack of safety features such as safety barriers and ATLM, and not enough safe overtaking opportunities.

Surfaces can be prone to failures along most of the length. The Burnett Highway is also subject to flooding.

In addition to greater levels of funding for maintenance, the Burnett Highway requires a significant investment in capital works to upgrade sections that are substandard in width and alignment.

Improvements should focus on widening, rehabilitating and strengthening narrow sections <8m, installing ATLM to all edge and centre lines, improving overtaking opportunities and removing or protecting roadside hazards.

Improvements should be considered at creek crossings to improve flood immunity.

Leichhardt Highway (Dululu - Capricorn Highway)

Most of the 26km of highway between Dululu and the Capricorn Highway is reasonable width (8m or more) apart from the first 10km north of Dululu, which is slightly narrower and is tree-lined.

These trees pose a hazard to errant vehicles, especially as they become more established in the future.



The road surface quality and ride quality is generally good over most of this link apart from the 10km section north of Dululu which was bumpy and was prone to surface cracking. ATLM was used in sections on the edge and centre line, including at curves and crests.



Summary and Recommendations

The Leichhardt Hwy between Dululu and the Capricorn Highways requires relatively few upgrades compared to other highways in this report.

Improvements should focus on clearing roadside hazards and improving ride quality over the first 10km north of Dululu.

Capricorn Highway (Leichhardt Highway - Emerald)

There are higher traffic volumes on the Capricorn Highway but the road width is generally good (>8m) and the speed limit is 110km/h apart from the range section.

Overtaking can be an issue due to the higher traffic volumes and presence of trucks and oversize loads.



The Emerald – Rockhampton section of Capricorn Highway is generally good, apart from the Comet to Emerald section where the road narrows and road condition suffers.



There are some roadside hazards (trees mainly) that could be removed, e.g., west of Duaringa, east of Bluff.



ATLM is present over long lengths but not over the entire section. ATLM could be extended to all edge and centre lines, especially on approaches to curves, crests, bridges and narrower sections with roadside hazards.

Summary and Recommendations

Apart from maintaining the road, additional overtaking lanes/opportunities would be beneficial for traffic flow and safety.

Widen and strengthen all sections <8m in width to a 10m standard and consider a wide centre-line treatment on sections (or widening upgrades) that achieve a minimum 10m seal.

Some improvements to clear zones would enhance the general safety and condition of the road, as would extending ATLM to all edge and centre lines.

Improvements should also be considered at floodways and creek crossings to improve flood immunity.

Gregory Highway (Emerald - Clermont)

In general the road width from Emerald to Capella is 8m or more and the road condition (and roadsides) are good, with only some sections that are bumpy. Some surface cracking is present.

Floodways and creek crossings are common.



A Channelised Right Turn (CHR) intersection treatment was located approximately 20km south of Capella and is a positive safety improvement, as is ATLM which is present over much of this length.



North of Capella the road appears wider and in better condition than the previous survey in 2010, only let down by a slight narrowing approximately 10km south of Clermont and a bumpy ride.

Roadsides are generally clear of hazards and some ATLM is present on edge lines, but not over the entire link.



Some shoulder repair / widening works have taken place.



Some floodways have been improved.



Summary and Recommendations

The Gregory Highway (Emerald - Clermont) is generally wide, has clear roadsides and is in good condition. There are areas prone to flooding.

Projects to improve the flood immunity should be programmed into future budgets.

Gregory Developmental Road (Clermont - Belyando)

The distance along the Gregory Highway to the Peak Downs Highway turnoff is approximately 10km, is >8m wide and in good condition.

Between Clermont and Belyando the road width varies from narrow to wide. Narrow sections were at approximately:

- 25km north of Clermont (7m width for ~10km including a single lane bridge);
- 45km north of Clermont (6.5m-7m for ~35km); and
- 125km north of Clermont (40km to Belyando Crossing), (7m for ~8km)





Roadsides are generally clear of hazards, or a clear zone to trees has been established. However ATLM would be beneficial on edge and centre lines, especially at curves, crests, and bridge approaches.

The road narrows to ~6m wide at approximately 25km north of Belyando (for approx. 55km) with poor edges (drop-offs) due to trucks dropping wheels off the seal, and is generally bumpy.

The ride quality is generally poor along narrow sections, being bumpy, uneven and undulating, some with and some without edge lines.

Centre (and edge) lines were typically in poor condition and should be remarked. Roadsides were generally free from hazards.

Loss of telephone reception was noted, which can delay the response of emergency services if a crash (or other issue) was to arise.

Gregory Developmental Road (Belyando - Charters Towers)

The road width is 8m or more and the surface is in good condition north of Belyando.





The road width increases to 7.5m – 8m near Cape River and this continues until Charters Towers, apart from narrowing at some creek crossings / floodways, e.g., narrow bridges approximately 55km from Charters Towers.

It appears that some floodways and creek crossings have been improved (e.g., rehabilitated, widened, safety barriers) since the previous survey in 2010.



The road section immediately north of Cape River appears suitable to support a 110km/h speed limit.

A rest area was noted approximately 35km from Charters Towers and there are a number of truck pullover areas, however there could be more rest areas, stopping pads or pullover bays between Clermont and Charters Towers.

The road is wide (>8m) and the speed limit increases to 110km/h for the last 30km to Charters Towers.

Summary and Recommendations

The Gregory Developmental Road from Clermont to Charters Towers is narrow in sections.

The road is also generally bumpy and rough, especially in narrow sections, however the road surface is generally free from surface defects and failures. The roadsides are also clear of hazards, or a clear zone has been established.

The narrow sections can suffer from broken edges due to vehicles dropping wheels off the sealed surface when passing.

It is recommended that road improvements focus on widening narrow sections to at least an 8m sealed width, including consideration for further floodway and creek crossing improvements to improve safety and flood immunity.

While the roadsides are generally flat and free from hazards, ATLM could be considered as a fatigue countermeasure, especially on curves, crests, and approaches to bridge and culverts – including where trees are located outside the clear zone.

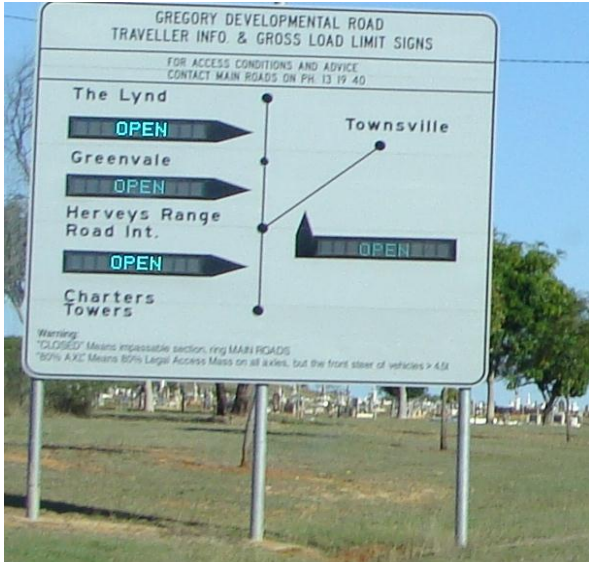
Telephone reception should also be improved to ensure that incidents, crashes or emergencies can be reported without delay.

Some additional rest area, stopping places or stopping pads would be beneficial.

Depending on current speed zoning guidelines, consideration should be given to extending the 110km/h zones along this section.

Gregory Developmental Road (Charters Towers – The Lynd)

Leaving Charters Towers in the northbound direction a traveller information and gross load limit sign is present to warn of any current road closures or imposed axle weight limits which apply.



A significant investment has been made under the Gregory Developmental Road Restoration Program to upgrade the road north of Charters Towers.



The road is in generally good condition on a straight and flat alignment with good overtaking opportunities for the initial 70km north of Charters Towers.

There are tree-lined sections with some trees within the clear zone. ATLM would be beneficial.



The seal width is generally 8m with wide drainage channels at the side of the road. However there are still a number of narrow bridges and narrow (single lane seal) sections between Charters Towers and Greenvale.





The more notable (longer lengths) of reduced width are at:

- 70km north of Charters Towers (~3.5m width) for 15km
- 30km south of Greenvale (~3.5m for 10km)

The unsealed shoulders were typically in satisfactory condition at the time of inspection. However these may rapidly deteriorate in wet weather.

There are some drop-offs from sealed surface to unsealed shoulder and these should be monitored and maintained carefully.

From Greenvale to The Lynd (50km) the road width is 7.5m – 8m and is in generally good condition (apart from a short section around Greenvale, including a narrow crossing). Some new seals have recently been laid.



Summary and Recommendations

In general this section is constructed to a good standard and is in good condition.

Improvements should focus on a continued widening program, including widening narrow crossings.

In the short term, the unsealed shoulders within the single lane section should be checked regularly for damage, drop-offs and rutting and maintained on an 'as needed' basis to provide an acceptable level of safety at all times.

Trees within the clear zone should be removed. ATLM would also be of benefit along tree-lined sections, regardless of whether they are outside the clear zone.

Kennedy Developmental Road (The Lynd - Mareeba) including Kennedy Highway

The seal width is generally 8m apart from a number of short, narrow width sections (5m – 6m) for 20km north of The Lynd turnoff.



The most notable narrow section occurs approximately 35km north of The Lynd turnoff and is 8km in length.

The narrow sections have issues such as deep drop offs and an unstable shoulder meaning that passing vehicles (especially road trains) must be taken with caution.



The Kennedy Highway begins at Gulf Developmental Road and the road continues as 8m but with some 7-8m sections. There are also a few narrow bridges, e.g., 15km and 35km north of Gulf Dev. Road, and just south of Mt Garnet.



Trees are generally outside the clear zone but ATLM would be beneficial along this section, including some tree removal where they encroach on the clear zone.



The road continues as 7.5m – 8m up to Innot Hot Springs where the Nettle Creek bridge upgrade has been completed.



The road width varies between Innot Hot Springs and Ravenshoe. Some lengths require shoulder widening to meet a minimum 8m standard, although due to the terrain (cuttings and rocky outcrops) it would be more expensive to widen.

Narrow sections are susceptible to surface failures and have significant roadside hazards such as trees, and rocks. ATLM on edge and centre lines should be installed.



The intersection to Millstream Falls (a tourist attraction) currently lacks safe intersection features such as a protected right turn lane and left (auxiliary) deceleration lane.



The road width varies but can be <7m in sections to Mareeba, traversing rainforest areas.

A group of cyclists (20 or more) were encountered along a narrow section, and extra care had to be taken when overtaking. A wider paved shoulder would improve safety for motorists and cyclists, especially on bicycle training routes such as this.

Pavement markings require remarking 5-15 km south of Atherton.



Traffic volumes (especially heavy vehicles) ramp up, and with limited overtaking lanes and opportunities, waiting to pass a slow vehicle can be frustrating.

An overtaking lane (in each direction) between Tolga and Walkamin would reduce driver frustration and potentially unsafe overtaking manoeuvres.

Roadside hazards continue to be a concern.



The road widens from Walkamin to Mareeba but is varied width from Mareeba to Smithfield.

Kennedy Highway (Mareeba - Smithfield)

The Kennedy Highway north of Atherton has noticeably more traffic and generally clear roadsides.

Just north of Mareeba the road has 7-7.5m sealed width with a limited width of sealed shoulder (0-0.5m), but then widens to 8-9m.

There are sections with roadside hazards such as trees and poles close to the carriageway.



ATLM is used on the edge line and the road surface is in good condition, however this could be extended, especially on curves and crests or where roadside hazards are unable to be removed or protected.

The road alignment is winding and rolling approaching Kuranda.

The Kuranda Range is very steep and winding. It is generally narrow and carries a significant amount of traffic.

There are very limited overtaking opportunities and encountering slow moving vehicles such as trucks and caravans is common.



There continue to be works to widen corners and stabilise the roadside along the Kuranda Range.



There is considerable use of safety barriers along the range section, however not all hazardous roadsides or embankments are protected.

Summary and Recommendations

Excluding the Kuranda Range, it is recommended that all sealed widths <8m be widened to at least a 8m standard and all hazardous roadside objects within the clear zone be removed or protected by suitable safety barriers.

In line with other roads in this region, the use of ATLM on the edge and centre line is encouraged, especially on crests and curves or where roadside hazards are unable to be removed or protected.

Some pavement markings require remarking. Overtaking lanes would be beneficial in reducing driver frustration at

being stuck behind a slow vehicle between Kuranda and Ravenshoe.

The Club also believes that an improved network of distance markers could provide enhanced driver information on the Kennedy Highway.

Kuranda Range upgrades should focus on widening curves, additional safety barrier treatments and intelligent signs that warn of excess speed / substandard curves, adverse weather or slippery surface conditions.